

# Network Rail Monitor Scotland

Quarters 3-4 of Year 2 of CP5  
18 October 2015 to 31 March 2016

5 July 2016



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# Overview



This Monitor provides ORR's assessment of Network Rail's performance in Scotland over periods 8-13 of 2015-16, the second year of [Control Period 5 \(CP5\)](#).

## Health and safety

In 2015-16 there were no industry-caused workforce or passenger fatalities on Network Rail's infrastructure – a notable achievement and an important step towards the realisation of ORR's vision of zero industry-caused deaths. Network Rail should also take credit for the leadership it has shown during the year in pushing forward the first industry-wide health and safety strategy which was launched in April 2016.

In common with the rest of the network many health and safety performance measures for Scotland are on improving trajectory. A notable exception is animal incursions and concerns about this serious risk precursor have led us to focus on Network Rail's management of fencing.

As in England and Wales, we found evidence of non-compliance with company procedures and believe there is far more that Scotland route could be doing to strengthen its assurance arrangements. An important element of this is devising more meaningful performance indicators, measuring the quality and effectiveness of processes rather than simply recording whether or not they were complied with.

Our inspections this year showed that there were better levels of compliance with [Basic Visual Inspection \(BVI\)](#) requirements. This indicates a good response to previous ORR interventions. Likewise, the route has completed analysis in response to concerns around section manager workload and has appointed additional staff to address those concerns. We continue to press Network Rail to fully realise the improvements it has begun.

We have measured [Risk Management Maturity \(RM3\)](#) within the Scotland Route. It should however be remembered that our scores are based on small sample sizes and the risks targeted vary from year to year. It may therefore be inappropriate to make year by year comparisons of scores. That said, our scores for 2015-16 are predominantly “*managed*” and “*standardised*”, in common with much of the network.

An exception to this is the change management arrangements for the merger of the Network Rail Scotland Route with Abellio ScotRail. These were rated '*excellent*' – the highest evaluation, and the only instance of this judgement by ORR this year – demonstrating what Network Rail can achieve and setting the challenge of doing that consistently across the piece.

## Train service performance

Unlike in England and Wales, in Scotland we are holding Network Rail to account for delivery of its regulated performance targets throughout CP5. Scotland's [Public Performance Measure \(PPM\) Moving Annual Average \(MAA\)](#) was 90.6% at the end of 2015-16. This is short of the year end regulatory target of 92.0%.

The ScotRail Alliance advised us that it would have reached these targets were it not for the impact of different factors such as the closure of the Forth Road Bridge, severe weather, driver shortages and a number of derailments in possessions. Whilst we accept these factors did affect performance, even after adjusting for them our conclusion was that Network Rail would still have missed its targets.

Following engagement with the Alliance we consider that there is a good understanding of the factors impacting performance and that robust plans are in place to meet the targets in 2016-17.

## Asset management

Asset performance has continued to improve in 2015-16, extending the long-term trend. The [Composite Reliability Index \(CRI\)](#) reached 13.1% at year end in Scotland, well above target (9.7%). The improvement is across all areas except telecoms, which deteriorated during the year, contributing -2.3% to CRI on the end of [Control Period 4 \(CP4\)](#) baseline.

Delivery of renewals has improved this year, with the volume of work completed in all the major areas being ahead of or on plan. However £32m of capital spend (10% of budget) has been deferred to future years, including work not due to be completed yet. The cost of the renewals work delivered during the year was slightly more than budgeted (£13m, 4% of budget).

Delivery of maintenance volumes continues to vary compared to plan, reflecting weaknesses in the maintenance plans themselves, which Network Rail is working to address.

## Developing the network

Progress on Scotland enhancements projects has been varied. A number have already been completed successfully including Borders Railway, Rutherglen and Coatbridge electrification and Carstairs gauge enhancements. Elsewhere projects currently under construction are progressing well (Edinburgh Gateway, Glasgow Queen Street platform works and various advanced route clearance packages).

Despite this, we have concerns regarding the ability of key projects to meet their obligations and regulatory milestones. Edinburgh Glasgow Improvement Programme (EGIP) Key Output 1 (electrification of Edinburgh to Glasgow) looks unlikely to complete its key obligation by December 2016, whilst projects currently in development, including Highland Mainline and Aberdeen to Inverness, are making slow progress.

Systemic issues around project planning and delivery continue to present challenges for Network Rail. These include complying with relevant electrical safety legislation and technical specifications. We note however that Network Rail is addressing these issues through the *Enhancements Improvement Plan (EIP)* and we will be holding the company to account for its implementation.

Affordability and deliverability risks are emerging for projects at earlier stages of development and delivery. Increasing cost estimates are also beginning to put pressure on Network Rail's borrowing cap for CP5.

## Expenditure and finance

In 2015-16, Network Rail underspent its net budget of £348m in Scotland by £10m. This underspend included £22m saved in financing costs, largely due to lower than expected inflation.

However, volumes that have not been delivered to the value of £51m will be delivered at a later date (including £26m on renewals work and £27m on enhancements).

Taking this into account, for the work delivered, Network Rail underperformed against its own budget by £8m on renewals (adjusted to £2m in line with the 25% sharing mechanism) and £48m on enhancements (adjusted to £12m in line with the 25% sharing mechanism<sup>1</sup>). This was largely due to supply chain issues, contractor performance, more work than expected to maintain assets in an appropriate condition, severe weather and reduced volumes in some areas resulted in increased unit costs. It has also not delivered all of its planned efficiency initiatives.

Following the company's classification to the public sector by the Office of National Statistics (ONS), Network Rail agreed to borrow from the Department for Transport (DfT) instead of issuing bonds. The amount of new borrowing available from DfT is limited to £3.3bn across CP5 for Scotland.

Compared to its forecast at the start of CP5, Network Rail has spent more on the renewals and enhancements work it delivered in 2014-15 and 2015-16 than it expected. It is also planning to spend more in the remainder of CP5. This means there is pressure on its borrowing facility with DfT.

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<sup>1</sup> Network Rail generally retains 25% of any over/underperformance of renewals and enhancement costs. This is consistent with our RAB roll forward policy.

Network Rail's latest business plan for Scotland as at 31 March 2016, includes financial headroom of £0.3bn, i.e. it thinks it will not need to use that amount of the borrowing facility. The main financial risks to this forecast include the costs of renewals and enhancements (as noted above), delivery of efficiency initiatives and interest rate movements.

# Health and safety



In 2015-16 there were no industry-caused workforce or passenger fatalities on Network Rail's infrastructure – a notable achievement and an important step towards the realisation of ORR's vision of zero industry-caused deaths.

## Assurance

Scotland route's assurance arrangements did not identify failings associated with the recent [scour](#) event at the Lamington viaduct on the West Coast Main Line. The relevant process - placing watchmen on site in the event of forecast flooding - appears to have fallen out of use some time ago, something we are reviewing. Additionally the route's assurance arrangements did not identify problems with the reporting of levels of compliance with [Hand Arm Vibration Syndrome \(HAVS\)](#) health surveillance.

Following earlier ORR intervention, Scotland route undertook a review of the [Track Section Manager](#) role and workloads. The conclusion was that existing management resource was insufficient and the route is in the process of creating a significant number of new Section Manager / Section Supervisor posts. Stronger assurance would have revealed some of the consequences of insufficient management resource earlier.

Our inspections indicate improved compliance with track Basic Visual Inspection (BVI) processes. We note that the measures adopted to address our previous concerns about Track BVI include enhanced assurance arrangements.

## Infrastructure safety

### Track

During 2015-16, Scotland route outperformed other routes in its delivery of [plain line](#) and [Switches and Crossings \(S&C\)](#) renewals volumes – exceeding targets by 13% and 10% respectively. This is welcome, but there is still evidence of pressure on the maintenance function to manage track geometry safely. This is particularly acute in the aging infrastructure of some routes such as the Far North line. Sustainable management of track condition remains a challenge.

### Vegetation

The presence and growth of vegetation can affect the safe maintenance and operation of the railway in a variety of ways. For example, signals and signs may become obscured, users of level crossings may not have sufficient sighting of approaching trains, [Overhead Line Equipment \(OLE\)](#) may be contacted, and track workers may not have a position of safety when trains are running.

Scotland route has reported that it remains on target to deliver the risk-based plan for recovering compliance with the relevant asset policy (over around 20 years). Until compliance is recovered, measures to manage interim risk include closing lines and/or applying speed restrictions when high winds are forecast. However despite such measures, there have still been instances of trains striking fallen trees during high winds.

### Boundary measures

Boundary measures (fences, walls, etc.) form part of Network Rail's means of controlling risk arising from trespass, vandalism and livestock incursion.

Whilst over recent years Scotland route has achieved a downward trend in numbers of animal incursion events, 2015-16 saw a rise in the number of these events. This is against the backdrop of a significant on-going fence renewals programme. We found examples of inadequate fence repairs, for example during our investigation of the bovine incursion and derailment that occurred at Dalreoch on 28 November 2015. The route has introduced a process under which repairs must be carried out by, or checked by, persons holding a fencing competency.

Network Rail has reviewed the results from the route-wide fence inspection and has introduced local changes to how fence renewals are targeted. Funding constraints present a continuing challenge and Network Rail needs to maintain a focus on risk-based prioritisation of resource.

### Civils

Our initial enquires into the recent scour event at the Lamington viaduct revealed that, although Scotland route has a Flood Event process, the process was no longer followed. As a consequence, within the route, there was widespread failure to apply the expected precautions to protect against track remaining open to traffic when bridges may have been affected by scour. Scotland route and the other routes have confirmed that they are following the Flood Event process and it is being reviewed in order to make further improvements. ORR and the Rail Accident Investigation Branch (RAIB) are carrying out investigations into this incident.

### Level crossings

Risk at Ardrossan Princes Street and Dingwall Middle crossings has previously been reduced by upgrading to [AOCL+B](#). During the upgrade we were mindful that although the addition of half barriers was a positive step, it was not the optimum solution for control of pedestrian risk. We have pressed Network Rail to develop a solution and in response the company has committed to the provision of full barrier obstacle detection solutions at both locations by autumn 2017.



## Electrical safety

Investigation of a complaint revealed exposed 230/110 volt conductors within [relay rooms](#) at Haymarket Depot. Suitable local remedial action was taken promptly. Enforcement action was considered when enquiries revealed the problem was likely to exist at other locations. However we established that the equipment in question has been prioritised in Network Rail's time bound action plan stemming from our national focus on 650v [location cabinets](#).

## Worker health and safety

### Fatalities and injuries

There have been no workforce fatal accidents in Scotland during 2015-16. However, two of Scotland's railway workers reported [RIDDOR](#) specified injury accidents. These involved manual handling and slips/trips/falls.

### Occupational health

During the course of the year and following a change of occupational health provider, Network Rail HAVS health surveillance compliance rate has deteriorated. There is a backlog of cases which have yet to be completed and Network Rail has developed a recovery plan to return to business as usual by the end of 2016-17.

## Formation of ScotRail Alliance

This was a complex change that was very well-managed, with effective assessment and monitoring at each stage. Phase 1 went "live" as planned on 7 March 2016 and included:

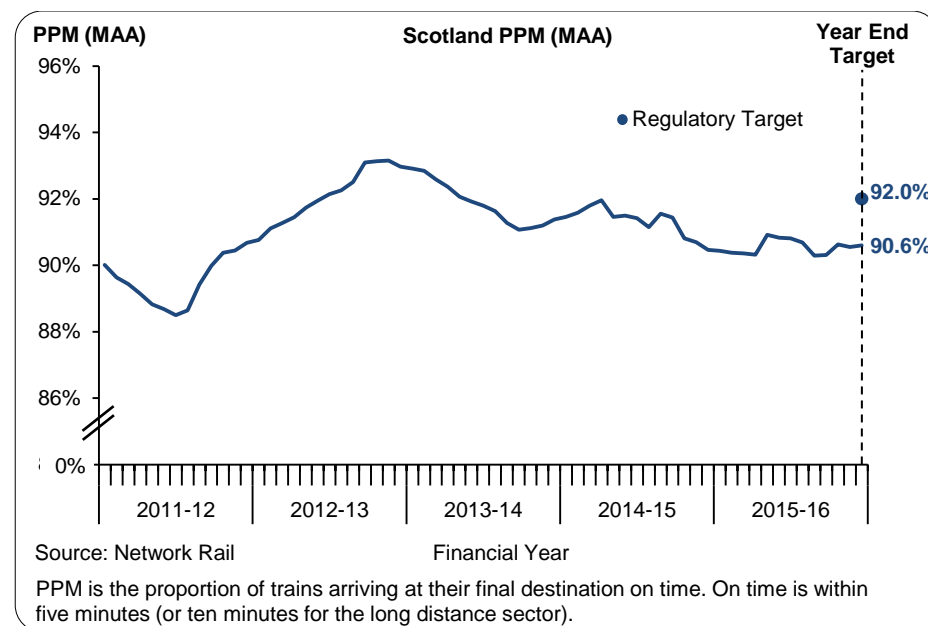
- integration of safety and environment functions;
- integration of "Control" under an integrated Control Manager (all control already co-located at Cowlairs);
- integration of station / facilities management teams;
- integration of station teams;
- combining the "performance" teams;
- application of safety validation process ("Go-live" criteria were identified and met. Post implementation reviews are planned); and
- retention - after consideration and consultation - of the Head of Route Safety, Health and Environment (HORSHE) post, which has now been filled.

# Train Service Performance



## Scotland performance

In Scotland we are holding Network Rail to account for delivery of its regulated performance targets throughout CP5. The [Public Performance Measure \(PPM\)](#) [Moving Annual Average \(MAA\)](#) for the franchises let by the Scottish Government (ScotRail and Caledonian Sleeper) was 90.6% at the end of 2015-16, 1.4 percentage points (pp) below the year-end target of 92%.



The ScotRail Alliance has advised us that it believes it would have achieved its targets were it not for the impact of:

- the closure of the Forth Road Bridge;
- severe weather;
- a number of derailments in possessions; and
- driver shortages.

We accept that these events have had an impact but, although acknowledging that the winter did see well above average levels of rainfall, we are not convinced that over the course of the year the weather was significantly worse than Network Rail was funded to deal with. The derailments within the possessions were the responsibility of Network Rail and should not be put forward in mitigation. ORR's estimate is that after allowing for the impact of the Forth Road Bridge closure and driver shortages, PPM would have been 0.8pp below target.

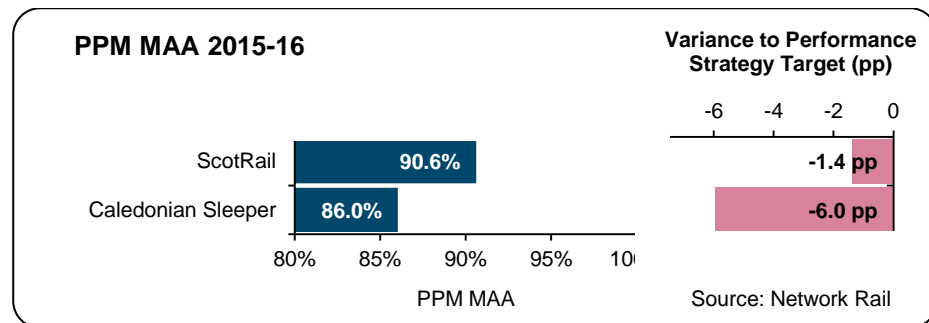
We have met with the Alliance and believe that it has a good understanding of the factors impacting performance and has robust plans in place to meet the target in 2016-17.

Network Rail has committed to providing quarterly reports on delivery of its CP5 Performance Plan. This plan identifies a number of specific actions designed to improve performance to the regulatory target. Network Rail has reported that, at the end of 2015-16, of 64 planned activity milestones, 42 were completed on time, nine are on hold or had been abandoned and 13 were delivered behind schedule. This represents reasonable progress, but it has not translated into the desired performance improvement.

We will continue to meet with the ScotRail Alliance with a view to obtaining assurance that these plans are being delivered.

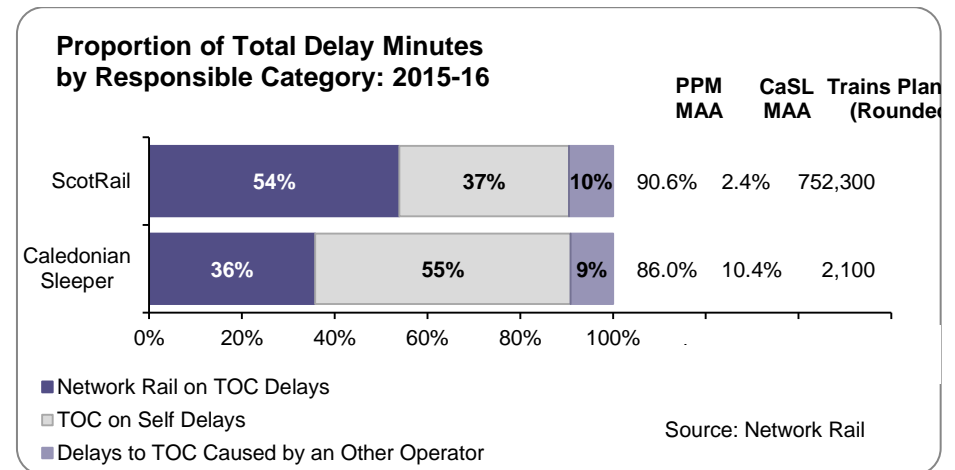
## Performance at TOC level

Both ScotRail and Caledonian Sleeper have performed below target.



## Delay minutes

Network Rail was responsible for 54% of ScotRail delay minutes and 36% of Caledonian Sleeper delay minutes. The percentage of delay minutes caused by other operators for both these operators was similar. The remaining delay minutes were caused by the operators themselves.



## Freight performance

The regulatory performance measure for freight is the Freight Delivery Metric (FDM). This measures the percentage of freight trains arriving at their destination within 15 minutes of scheduled time. FDM covers delays for which Network Rail is responsible i.e. not those caused by other train operators. FDM MAA at the end of the year for the Scotland Strategic Freight Corridor was 96.5%, 4.0pp ahead of the national annual target of 92.5%.

# Asset management



## Maintenance and renewals volumes

Maintaining and renewing the network is fundamental to Network Rail's responsibilities. Regular maintenance counters the effects of wear and aging to keep the assets safe and performing as intended. But eventually they do have to be renewed when it becomes uneconomic or impractical to maintain them any longer.

Network Rail's approach to maintaining and renewing the network sustainably and at least cost is set out in its asset policies. The volume of work required during CP5 in accordance with these policies was set out by Network Rail in its 2014 Delivery Plan, so we monitor the actual volume of work delivered, and compare against the delivery plan to understand whether Network Rail is doing enough to sustain the network.

### Renewals

During the first year of CP5 the volume of renewals work delivered by Network Rail in Scotland was significantly less than planned in some asset categories, creating a backlog of work to be caught up during the rest of the control period.

Year two has gone better with Network Rail delivering the renewals required in all key areas. Plain line track renewals finished the year 13% ahead of plan, with switches and

crossings 10% ahead of plan. In civils, [underbridges](#) finished the year 7% ahead of plan, and earthworks 17% ahead of plan. Signalling and overhead line renewals were delivered on plan.

This is a positive picture, but there is still a concern that overall £32m worth of renewals planned for delivery in Scotland during 2015-16 have been deferred to future years (10% of budget). For example, although the volume of signalling renewal schemes commissioned during the year was as planned, work on schemes not yet due for commissioning fell well behind plan, with £9m of work deferred into future years (23% of the 2015-16 budget). The cost of the renewals work delivered during the year was slightly more than budgeted (£13m, 4% of budget).

### Maintenance

Maintenance delivery remains variable compared to plan, with more work delivered in some areas and less in others. Variances between planned and actual maintenance volumes can arise where part of the work is reactive, but the overall picture suggests weaknesses in the maintenance plans themselves. Scotland route is working with the maintenance delivery units to develop asset management plans at delivery unit level, so that in future plans better reflect local knowledge of maintenance needs.

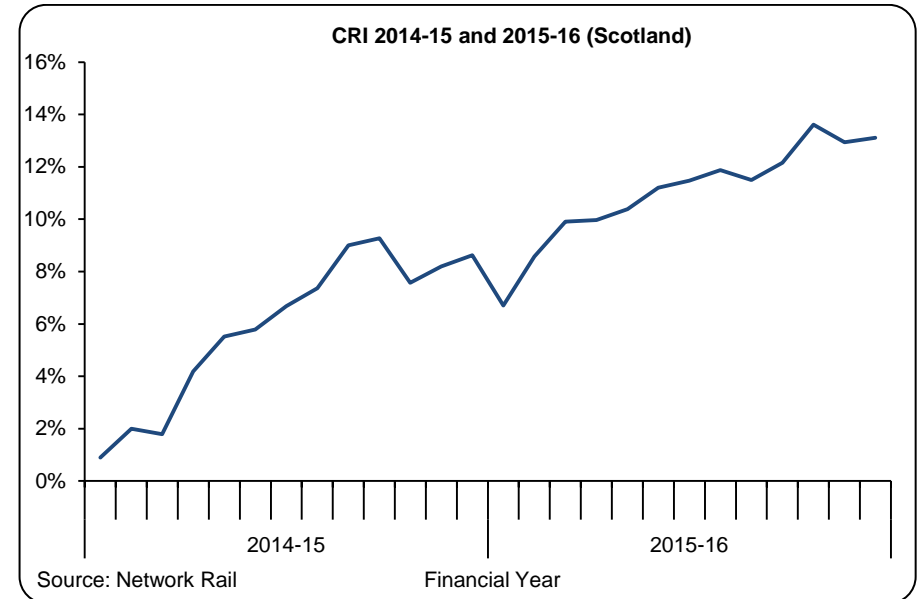
## Reporting

For this control period, we required Network Rail to report in more detail on the work delivered. This revealed shortcomings with the quality of Network Rail's systems for capturing and reporting work done. Problems in this area also impair the company's ability to plan and estimate the cost of future work.

To improve the situation Network Rail set up an Activity Based Planning project. During 2015-16 the project prioritised improvements to its system for recording and reporting maintenance activity with a focus on actions that could be implemented quickly. The project plans to deliver further significant improvements during 2016-17.

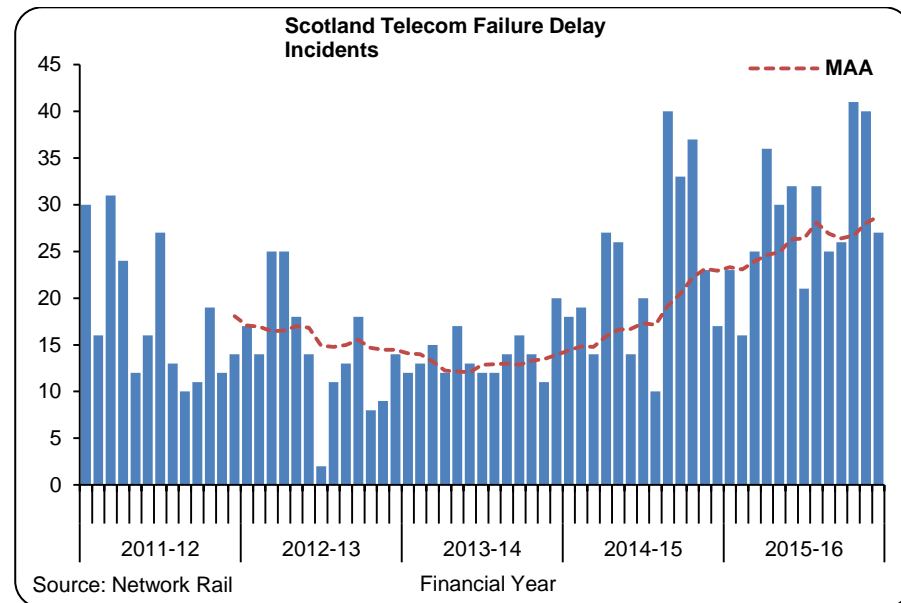
## Asset performance

Network Rail has again reduced the incidence of service-affecting asset failures this year, continuing the long-term trend.



At the end of 2014-15, the Composite Reliability Index (CRI) for Scotland showed an overall improvement of 8.6% on the end of CP4 baseline, exceeding target (2.4%). During 2015-16 the CRI improved further, reaching 13.1%, well above target (9.7%).

The improvement is across all areas except telecoms, which deteriorated during the year, contributing -2.3% to CRI on the end of CP4 baseline. This reflects the migration to [GSM-R](#), but Scotland has not yet achieved the recovery seen elsewhere on the network, following the rollout of software updates and greater effort to manage local interference problems with mobile network operators.



Earlier in the year points were showing no improvement against the end of CP4 baseline, but performance improved in the second half of the year, contributing 2.6% to CRI.

During the winter the number of earthwork failures exceeded the five-yearly average, reversing the improvement earlier in this control period and reducing the CRI contribution to 0.0%.

## ORBIS milestones

ORBIS stands for *Offering Rail Better Information Services*. It is an ambitious programme aimed at improving asset management capability through improved information management. It involves adopting consistent data specifications, providing simpler mobile data capture tools, replacing out-dated asset information systems, and providing improved decision support tools. For CP5 we set specific milestones to help ensure it delivers all the benefits expected. To date all milestones have been achieved on schedule, including the national rollout of the Electrification & Plant Decision Support Tool in December 2015. The next milestone is the adoption of the Ellipse asset management system for civils structures in place of the existing Civils Asset Register and Reporting System (CARRS). This was due in June 2016. However Network Rail has indicated that delays in upgrading core systems have impacted delivery timescales and it is now putting together a revised delivery plan for this output.

## Electrification asset measurement fleet

During the year Network Rail took steps to re-instate the measurement fleet which had been out of service for a number of months. It is also undertaking a project to develop the capabilities of the fleet to ensure sufficient resilience in the systems and equipment and to meet the increased demand for monitoring with the expansion of the electrified network.

In addition, Network Rail has enhanced its standards and assurance regime to mitigate future poor performance/non-availability of the fleet to ensure compliance is managed effectively, and the company is in the process of developing robust plans for those areas of the network that cannot effectively be covered by the fleet.

## Asset Management Capability

For this control period we set Network Rail the target of achieving excellence in asset management capability in time for its Strategic Business Plan for CP6 due for publication in 2017. At the beginning of CP5 we commissioned a review of Network Rail's asset management capability improvement programme. The review concluded that the programme would enable Network Rail to achieve excellence when implemented. We have now initiated an interim assessment of Network Rail's capability, to provide assurance that the programme is delivering the improvements expected. The assessment will use the same [AMEM](#) methodology we have used previously, which is based on the ISO55000 standard for asset management, and will report in September.

# Developing the network



Network Rail is responsible for completing over £1 billion of enhancement projects in Scotland in CP5. In general terms progress has been good (for example, Borders Railway) but affordability and deliverability risks are emerging for projects at earlier stages of development and delivery. Increasing cost estimates are also beginning to put pressure on Network Rail's funding cap for CP5.

## Enhancement project progress

### Milestones

During 2015-16 Network Rail met a number of key regulatory milestones in Scotland. Achieving these milestones demonstrates that the project is either developing according to programme (GRIP 3) or has successfully been delivered on time (GRIP 6), meeting the objectives of the Scottish Government.

The on time completion of Borders Railway in June 2015 was a major achievement for Network Rail, with the construction of the first new rail line in over 100 years, enabling the new Borders services to begin operating as planned. The Carstairs gauge enhancements project also met its GRIP 6 milestone in March 2016, improving overall network availability to a broader variety of freight rolling stock and providing operational

flexibility between the East Coast and West Coast Mainlines in the event of delays and incidents.

EDP Ref	Project Name	Milestone Date	Status
SC006	2013 Advanced Route Clearance Programme (Other Routes)	June 2015	Achieved
SC007	Borders Railway	June 2015	Achieved
SC013	ECML (North) – WCML (Carstairs) Gauge Enhancement	March 2016	Achieved
SC009	Aberdeen to Inverness Improvements Phase 1	March 2016	Achieved
SC012	Motherwell Resignalling Enhancements – Part 1 (Motherwell North – Carfin/Holytown)	March 2016	Revised to July 2016

### Enhancements investigation

In October 2015, we concluded that Network Rail was in breach of its network licence due to weaknesses in its capability to plan and deliver enhancements. However we accepted that Network Rail was taking reasonably practicable steps to remedy the breach through its *Enhancements Improvement Programme (EIP)*. The EIP addresses the root causes of the weaknesses that led to the breach and we are holding Network Rail to account for the delivery of the improvements that the plan is intended to deliver.



The programme was baselined in October 2015, and Network Rail has since made good progress with each of the improvement initiatives. Further details of each of these EIP initiatives can be found in the England and Wales monitor.

As set out below, there are risks to the delivery of some Scotland projects. The challenge for Network Rail is now to embed the new approaches into its business, so that the intended benefits are realised. Some activities will take time, for example assessing staff competency against new skills frameworks and identifying training and recruitment needs. Many will also require cultural and behavioural change so that improved practices become part of “business as usual”. With this in mind, we have asked Network Rail to develop and share its plan on how and when it will check that intended improvements have been achieved across its business, including in Scotland.

### **Edinburgh Glasgow Improvements Programme**

Some aspects of the Edinburgh Glasgow Improvement Programme (EGIP) are progressing to plan, including the new station at Edinburgh Gateway. There are however significant challenges to the achievement of Key Output 1 obligation (introduction of the first electric services by December 2016 and the overall KO1 regulatory milestone of March 2017). Amongst these is the need for Network Rail to demonstrate infrastructure compliance with relevant international engineering specifications and its obligations under the Electricity at Work Regulations 1989. This is an issue that has

been common to a number of electrification projects across Great Britain in this Control Period.

In the CP5 Final Determination we established an assumed efficient price for EGIP of £490m. Estimated costs have since risen, in large part due to the additional compliance scope requirements, the complicated interface with the Buchanan Galleries project and additional linespeed works to achieve journey time improvements.

### **Scotland rolling programme of electrification**

This Rolling Programme of Electrification (RPE) is composed of the following three electrification projects:

- Rutherglen and Coatbridge electrification (Whifflet line);
- Stirling to Dunblane and Alloa electrification: and
- Shotts line electrification.

Network Rail completed the Rutherglen and Coatbridge project in 2014, with electric services now running on the line. The other two projects are currently progressing through the design development and planning stages, with some preliminary work already underway.

In 2014 we determined an efficient price for RPE of £211m. Last year Network Rail developed a significantly increased estimate. As with EGIP, the bulk of this was due to late identification of additional work required to ensure compliance with legal obligations. Network Rail will need to monitor these increases to ensure the Scotland enhancements portfolio is affordable in the light of the potential for further efficiencies on this programme and elsewhere in the enhancements portfolio.

### **Aberdeen to Inverness**

The Aberdeen to Inverness Improvements Phase 1 project will deliver:

- capacity for additional commuter services on the east and west end of the line;
- new stations<sup>2</sup>; and
- make progress towards improved journey time and capacity aspirations.

In our Final Determination we set a spending cap of £191m (based on Network Rail's [GRIP 2](#) estimate) to address concerns that the full scope then being considered was too great to be delivered in the Control Period. Upon completion of development and design works in March this year, Network Rail produced a project estimate significantly outside the cap. The company identified additional scope required to meet its obligations, including accommodating freight access rights as

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<sup>2</sup> Subject to confirmation of third party funding contributions.

well as the systemic issue of engineering compliance (in this case largely additional track and civils work<sup>3</sup>).

Given the potential impact of this increased estimate on both the funding cap for this project and the overall borrowing limit, Network Rail is exploring a variety of options that would affordably deliver the required capacity and infrastructure improvements in CP5. This will include reviewing the most effective delivery programme that minimises the impact of disruption to passengers on the route. Once this work has been completed, we will review the resulting estimate to determine an efficient cost for the work.

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<sup>3</sup> Network Rail Standards establish the required technical specifications of the railway – in this case the permanent way documentation sets out the level, alignment and consolidation that the track must achieve in order to be accepted for use. Currently sections of track and embankments on the Aberdeen to Inverness line do not meet these specifications, as a result of which the project is required to renew them when delivering the scheme. Larger volumes of renewals may be required than originally forecast.

## Highland Mainline

Highland Mainline will deliver journey time reductions of around 10 minutes, an hourly service and increased opportunities for freight on the line between Perth and Inverness. Network Rail has been working with ScotRail to identify how to deliver this via an optimal combination of infrastructure and timetabling interventions and new rolling stock. This has led to a reduction in forecast costs (our Final Determination at GRIP 2 stage included an assumed efficient cost of £121m. The most recent estimate is well below this). But we continue to have concerns regarding the ability of the project to complete within the Control Period as development progress remains slow. We expect Network Rail to have a robust programme and Quantitative Schedule Risk Analysis in place by October this year in order to provide assurance that the regulated milestone of March 2019 can still be achieved.

Once the cost estimate has been further developed we will undertake a review to determine the efficient cost of the work.

# Efficiency and expenditure



## Overall financial performance

We consider Network Rail's financial performance in two different ways; firstly by providing in the tables below a simple comparison of spend against its own budget and secondly by considering our regulatory Financial Performance Measure (FPM).

**Table 1: Income and expenditure for Scotland in 2015-16 – a simple comparison of all Network Rail income and expenditure**

	2015-16		
	Budget	Actual	Variance b/(w)
Turnover	668	667	-1
Schedule 4	-21	-28	-7
Schedule 8	-3	-1	2
Operations	-45	-49	-4
Support <sup>4</sup>	-102	-98	4
Maintenance	-110	-114	-4
Capex - Renewals	-326	-308	18
Capex - Enhancements	-260	-281	-21
Financing Costs	-148	-126	22
	<b>-348</b>	<b>-338</b>	<b>10</b>

In 2015-16, Network Rail underspent its own net budget of £348m in Scotland by £10m. This reflects both upwards and downwards pressures including:

- higher schedule 4 (planned disruption) costs, relating to the seven weeks' closure of the Lamington viaduct (c. £10m) in order to carry out repairs following water damage;
- higher costs of vegetation management (£2m) due to work being brought forward from CP6 and the effect of over optimistic pay award assumptions (£3m);
- higher enhancement costs of £21m. This included recognition of underperformance of £48m in relation to: a £15m increase in the cost of the Rolling Programme of Electrification enhancement as a result of additional scope requirements to deliver the outputs safely and £30m underperformance on EGIP because of higher costs, e.g. contractors. This was offset by timing differences in the delivery of work (£27m), in particular £14m on EGIP; and
- £22m saved in financing costs, largely due to lower than expected inflation.

The renewals underspend of £18m is due to lower volumes of work that have not been delivered in 2015-16 (to the value of

<sup>4</sup> This includes traction electricity, industry costs and business rates.

£26m) offset by an underperformance on the volumes that were delivered of £8m.

The main reasons for the lower volumes were:

- £6m due to delays in plant and machinery purchases by the National Supply Chain (NSC);
- a signalling deferral of £9m driven mainly by reduced renewals work (and increased enhancements) at Motherwell North; and
- £11m IT and Other underspend including offices and accommodation (£5m), commercial property (£2m), asset management (£2m) and ORBIS (£1m).

Taking account of the non-delivery of volumes, the renewals underperformance was £8m and includes £4m of additional work on Lamington Viaduct.

The total value of volumes that have not been delivered in 2015-16 but will be delivered at a later date is £51m (including £26m on renewals and £27m on enhancements).

## Overall regulatory financial performance

We also use our regulatory performance measure to monitor Network Rail's performance against our CP5 Final Determination<sup>5</sup>. The steps in our calculation are shown in Table 2 below. This measure provides a better calculation of Network Rail's performance because it:

- excludes certain types of income and expenditure that are not as controllable by Network Rail. These include network grant, fixed track access charges, traction electricity income and costs and business rates;
- ensures that Network Rail does not benefit by simply delaying work to a later date as it is just a timing difference, i.e. the work still needs to be done in the future;
- we adjust the out/under performance on renewals and enhancements to be consistent with our RAB roll forward policy. We do this by limiting the financial reward/penalty to generally 25% of the under/overperformance. For example in Table 2 below, the gross enhancements underperformance is £48m, so we limit it to 25% by deducting 75% in the line "Capex adjustment – Enhancements", i.e. £36m = £48m x 75%; and

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<sup>5</sup> The financial measures in Network Rail's performance related pay scorecards are also based on our regulatory financial performance measure.

- Network Rail should not benefit by not delivering its outputs, so we adjust for the value of the output not delivered.

Financial performance for the year was £22m adverse to Network Rail's own budget<sup>6</sup>. But Network Rail had already budgeted its performance to be £29m worse than our determination.

Network Rail does not anticipate that there will be any adjustment for missed regulatory output requirement for Scotland in 2015-16<sup>7</sup>. In total this means that Network Rail underperformed the regulatory financial performance measure by £51m in 2015-16.

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<sup>6</sup> The RAB roll forward Capex adjustments for Renewals and Enhancements are £6m and £36m. Therefore, the total financial underperformance compared to Network Rail's budget before the RAB roll forward adjustments is £64m (£22m + £6m + £36m).

<sup>7</sup> We review this and other issues in our annual finance and efficiency assessment, so the final adjustment may be different.

**Table 2: Income and expenditure applicable for FPM for Scotland in 2015-16 – a comparison of the income and expenditure used in our FPM calculation**

£m	2015-16 Full Year				
	Budget	Actual	Variance b/(w)	FPM neutral incl. timing b/(w)	(Under)/out performance
Turnover	110	110	0	0	0
Schedule 4	-21	-28	-7	0	-7
Schedule 8	-3	-1	2	1	1
Operations	-45	-49	-4	0	-5
Support	-63	-59	4	0	4
Maintenance	-110	-114	-4	-2	-1
Capex - Renewals	-326	-308	18	26	-8
Capex adjustment - Renewals					6
<b>Renewals net of Adjustment</b>					<b>-2</b>
Capex - Enhancements	-260	-281	-21	27	-48
Capex adjustment - Enhancements					36
<b>Enhancements net of Adjustment</b>					<b>-12</b>
Capex - Net Total					-14
<b>Financial performance measure compared to Network Rail budget</b>					<b>-22</b>
Less: Network Rail budget compared to PR13					-29
Less: Adjustments for missed regulatory outputs					0
<b>Total financial performance measure (FPM)</b>					<b>-51<sup>8</sup></b>

<sup>8</sup> The financial underperformance for the control period to date is -£64m.

## Efficiency

Network Rail is continuing to work on plans to address the problems arising from cost escalation on enhancements and underperformance on efficiency in the core business.

Network Rail needs to focus on cost efficiency and effectiveness to address the challenges set out in the regulatory settlement. It needs to do this while delivering record levels of enhancement activity, high levels of renewals activity to improve long term asset sustainability and, ultimately, performance of the network. But the cost effectiveness of renewals activity is proving particularly challenging.

Network Rail's efficiency<sup>9</sup> in 2015-16 for the core business was -0.4% for Scotland. This is largely due to the same reasons identified above for expenditure being higher than budget (after taking account of delays in the delivery of renewals volumes).

For the control period to date its efficiency is 1.7%<sup>10</sup>. Its forecast efficiency for the whole of CP5 is 6.7%.

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<sup>9</sup> Our measure of efficiency is a simple measure of the reduction over time in support, operations, maintenance and renewals expenditure. This measure compares actual expenditure in 2015-16 with actual expenditure in 2014-15 adjusted for the level of activity undertaken. Please see next footnote for a numeric example explaining the control period to date figure.

<sup>10</sup> This measure compares actual expenditure in 2015-16 with actual expenditure in 2013-14 (the last year of control period 4) which was £527m. This expenditure was adjusted for the level of activity undertaken. Actual expenditure in 2015-16

## Network Rail's debt, RAB and borrowing

Network Rail's debt attributable to Scotland at 31 March 2016 was £3,606m, which is £140m better than budget. The variance to the determination is mainly due to lower capital expenditure in 2014-15 and 2015-16 than had been assumed in the PR13 Final Determination. For similar reasons, its [Regulatory Asset Base \(RAB\)](#) of £5,644m is £475m lower than our determination and its gearing of 63.9% is 3.6% better than our determination.

Compared to its forecast at the start of CP5, Network Rail has spent more on the renewals and enhancements work it delivered in 2014-15 and 2015-16 than it expected. It is also planning to spend more in the remainder of CP5.

This means there is pressure on Network Rail's borrowing facility with DfT, which is limited to £3.3bn for Scotland in CP5.

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was £518m. This includes (as shown in Table 1) operations (£49m), support (£98m), maintenance (£114m) and renewals (£308m) and includes a deduction of £51m for CP4 rollover costs and traction electricity, rates & industry costs. Expenditure has therefore decreased by £9m (£518m - £527m). As an efficiency percentage this is +1.7% (£9m/£527m).



Network Rail's latest business plan for Scotland as at 31 March 2016, includes financial headroom of £0.3bn, i.e. it thinks it will not need to use that amount of the borrowing facility. The main financial risks to this forecast include the costs of renewals and enhancements (as noted in the previous chapter) delivery of efficiency initiatives and interest rate movements.

**Table 3: Net debt and borrowings for Scotland in 2015-16**

£m	2015-16 (as at 31 March 2016)		
	PR13 Determination	Actual	Variance b/(w)
Net Debt	4,131	3,606	525
Closing RAB	6,119	5,644	475
Gearing (net debt/RAB)	67.5%	63.9%	3.6%

## Expenditure (excluding central unit cost allocations)

Central unit costs, such as various HQ costs and some property, are allocated to the routes. In 2015-16, these central costs of £1.5bn for Great Britain came to approximately 16% of total route expenditure. These include traction electricity costs which are recovered through income, business rates and other industry costs, as well as centrally managed capital projects such as IT, ORBIS and Plant & Machinery.

Earlier tables show figures after these allocations as Scotland has a separate determination that includes these costs. But to be more comparable with other routes as shown in the England & Wales Monitor, Table 4 looks at Scotland's

expenditure compared to Network Rail's budget before the allocation of central unit costs.

**Table 4: Scotland Expenditure v Budget - before allocation of central unit costs 2015-16**

£m	Actuals	Target	Variance	Var/budget
Operations	48	44	-4	-9.1%
Support	4	4	0	0.0%
Maintenance	99	98	-1	-1.0%
Renewals	287	286	-1	-0.3%
Enhancements	285	253	-32	-12.6%

The enhancement overspend of £32m compared to budget was mainly due to variances in the cost of the Rolling Programme of Electrification and EGIP as described earlier.

## Other

In 2015-16, within the Scotland network, we have seen a greater willingness to engage in and take ownership of finance issues. We support this and will continue working closely with Network Rail and Transport Scotland, to develop further improvements to financial reporting in Scotland.

**We publish the Network Rail Monitor every six months, focusing on Network Rail's delivery of its obligations to its customers and funders, for which it is mainly accountable under its network licence.**

**We welcome your feedback on this publication. Please send your comments or queries to:**

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