OFFICE OF RAIL AND ROAD

Network Rail Monitor Scotland

Quarters 3-4 of Year 3 of CP5 16 October 2016 to 31 March 2017

20 July 2017

Contents

1. Overview

1.1 This Monitor provides ORR's assessment of Network Rail's performance in Scotland over periods 8-13 of 2016-17, the third year of Control Period 5 (CP5).

Health and safety

1.2 Network Rail Scotland has delivered a good performance on safety. As with the rest of the country however, there are variations within this overall positive position. Network Rail met the milestones for both scour risk management and fitment of tubular stretcher bars. However, it missed the target for volumes of drainage renewals identified in the corporate risk reduction programme. Network Rail has continued to face challenges on complying with legal standards aimed at improving safety, for example around the risk from electricity. It must carry out proper risk assessments but there is flexibility over how to comply at different sites. We have worked with the company to help it to identify solutions which control risk without incurring disproportionate cost.

Train service performance

1.3 In Scotland Public Performance Measure (PPM) Moving Annual Average (MAA) ended the year at 90.3% compared with the regulated target of 92.0%.

1.4 Performance improved following the implementation of the performance recovery plan early in the second half of 2016-17. The regulatory target was achieved in three of the last four periods of the year.

Asset management

1.5 This year, overall asset performance in Scotland declined slightly, with CRI falling to 12.0%, although this is still well ahead of the improvement trajectory Network Rail originally planned for CP5. Within this overall figure, track performance improved markedly, contributing 3.0% to overall CRI, with the track CRI itself ending the year at 23.8%, up from 9.8% the previous year. The earthworks CRI also improved, ending the year at 7.3%, up from 2.1% the previous year. Scotland is the only route where the earthworks CRI is now above the end of CP4 baseline.

1.6 At the end of the year, Network Rail was on or ahead of plan for the delivery of renewals work in most asset categories. The principal exception was signalling which was behind plan due to the re-phasing of the Scotland Accelerated National Operating Strategy (SANOS) South scheme into next year. Plain line track was 5% behind plan following loss of productivity from high output track renewal, but this was partially offset by over-delivery of conventional track renewal.

Developing the network

1.7 The past year has seen a continuation of the mixed performance that has characterised Network Rail's delivery of its enhancements portfolio in Scotland. Successes, such as the opening of the new Edinburgh Gateway station, have been offset by failures, such as the overrun and missed completion milestone on the electrification of the Edinburgh to Glasgow line and forecast overspends on Aberdeen to Inverness. The cost estimate for the Stirling, Dunblane, Alloa electrification has increased and we have commissioned an Independent Reporter to review if Network Rail is doing everything reasonably practicable to deliver the project on time. On Edinburgh to Glasgow, we are scrutinising Network Rail's revised plans and will undertake a review of lessons learned once Key Output One (delivery of the infrastructure required for electric train services to begin operation) has been achieved.

1.8 Network Rail's transparency and reporting has improved in the past six months and there is evidence that it is taking steps to learn from previous failures and implement improvement plans to recover performance in the final years of the control period.

1.9 ORR has commissioned an Independent Reporter to look at the how effectively the *Enhancements Improvement Programme* (EIP) has been embedded in Network Rail. We consider that implementation of the EIP has been slower in Scotland than in England and Wales and continue to monitor progress.

Expenditure and finance

1.10 In 2016-17, Network Rail overspent its budget of £425m in Scotland by £31m (see Table 1 below). This is largely because of £69m higher enhancement expenditure, of which £60m relates to the Edinburgh Glasgow Improvement Programme (EGIP) and the Rolling Programme of Electrification (three projects electrifying the Shotts, Rutherglen–Coatbridge and Stirling–Alloa lines). The increased expenditure is because the initial designs were found to be non-compliant with the minimum legal requirements for electrical clearances. The large volume of re-design and re-delivery has led to significant increases in the scope and costs of these projects. There were also supply chain and access issues.

1.11 Of this £69m enhancements overspend, work to the value of £13m has not been delivered in 2016-17. Taking this into account, for the work delivered, Network Rail in Scotland has underperformed by £56m. This number is adjusted to £14m in line with the 25% sharing mechanism.

1.12 Net renewals underspend is £30m. Volumes of work to the value of £46m have been deferred from 2016-17 to CP6. Taking this into account, for the work delivered, Network Rail in Scotland has underperformed by £16m. This number is adjusted to £4m in line with the 25% RAB sharing mechanism.

1.13 Following Network Rail's classification to the public sector by the Office of National Statistics (ONS), it 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.

1.14 Compared to its forecast at the start of CP5, Network Rail has spent more than it expected on the capital expenditure work it delivered in each of the control period's first three years. It is also planning to spend more in the remainder of CP5. This means there is pressure on its borrowing facility with DfT.

1.15 Network Rail's latest business plan for Scotland includes financial headroom of £0.1bn to the end of CP5. In other words, 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, movements in interest rates and cash collateral balances and inflation.

1.16 Network Rail has done some planning on how it would deal with further cost pressures. But, given the relatively small size of the headroom, the scale of the above variances and that Network Rail in recent years has continually been too optimistic in forecasting its financial performance, we are discussing with the company how it can make its plan as robust as possible.

1.17 We are making changes to the way we monitor Network Rail's efficiency for CP5 and we will report on this in the next monitor. As part of our work on PR18 we are consulting on the reasons why Network Rail has not delivered renewals efficiency improvements in CP5, and how ORR should change its approach to assessing Network Rail's plans for CP6. In addition we have commissioned an independent reporter study into the progress that Network Rail is making in developing these CP6 plans, to help provide greater assurance that its final plans will contain robust efficiency proposals across all areas of expenditure.

2. Health and Safety

2.1 We reported in the last monitor that during the first two quarters of 2016-17 Scotland had fallen behind in some aspects of the corporate Network Rail train accident risk reduction programme. Performance has improved over the last two quarters and Network Rail Scotland met the milestones for both scour risk management and fitment of tubular stretcher bars. However, we note that the company missed the target for volumes of drainage renewals identified in the corporate risk reduction programme. We recognise that Network Rail Scotland faces constraints in managing its assets but would like to see focus maintained on prioritised risk items.

2.2 Network Rail Scotland has, in common with other routes, pulled out of trials of eddy current detection of rolling contact fatigue, another constituent of the corporate programme to reduce train accident risk. Issues with processing data have delayed the eddy current project nationally and Scotland intends to implement the system in 2017. Network Rail Scotland has done better than other parts of the network in securing improved control of risk at road vehicle incursion sites.

2.3 Network Rail has continued to face challenges in complying with legal standards aimed at improving safety. There has for example been considerable focus this year on issues affecting electrification schemes. Current project teams are working under the constraints of choices made up to a decade ago, without the benefit of the present understanding of electrical safety and minimum standards. Clearances to live electrical equipment from platforms and bridge is a particular concern and we recognise the difficulties of achieving compliance on existing infrastructure.

2.4 However, good risk assessment is required for informed decision-making. Network Rail must carry out thorough risk assessments, but there is flexibility over how to comply at different sites. We have worked with the company to help it to identify solutions which control risk without incurring disproportionate cost.

2.5 At the end of 2015-16, we advised Network Rail that an effective way to start to raise its management maturity would be to strengthen its assurance regime, especially its front line, supervisory activities. During the year, Network Rail Scotland was slow to engage on this topic. However, we have recently seen a more proactive approach and we will be looking for a continuation of this more positive trend in 2017-18.

Track

2.6 In common with other parts of the network, we found that the rationale for deferral of planned track renewals was not always well articulated or recorded. However, we found more examples of good practice in Scotland than elsewhere. Motherwell and Perth Maintenance Delivery Units (MDUs), for example, were able to demonstrate a

well-established and recorded process, incorporating review and endorsement by engineering and asset management staff.

2.7 Work in the second half of the year confirmed our earlier concerns regarding provision of track geometry data from track recording and plain line pattern recognition runs. This data was not consistently provided to reliable timescales. Our experience is that this results in ineffective deployment of resource as MDUs either make provision for anticipated runs that do not then take place, or conversely, have to deploy staff at short notice following unexpected receipt of the data.

2.8 It is taking longer than anticipated for Network Rail to fill the additional posts identified following the useful work done on section manager (track) workload. We also saw that some section managers were not following new role guidelines based on analysis of best practice and were continuing to perform their previous duties rather than delegating. This could risk the success of these changes.

Civils assets

2.9 Following the Lamington bridge scour incident at the end of 2015, Network Rail Scotland reviewed its extreme weather contingency arrangements and amalgamated previously separate procedures in order to ensure future consistency in approach. Network Rail has made considerable efforts to catch up its backlog of examinations and scour risk assessments and is now in a much better position across its portfolio in relation to compliance with standards.

2.10 In June 2016, a bridge failed at Scotstounhill, resulting in debris on the running line. Details of the nature of parts of the composition of the bridge deck had been lost over time, emphasising the importance of accurate asset data, and devising ways to inspect hidden critical elements of structures.

Electrification

2.11 We have had discussions with project teams about the design of new electrical systems on old infrastructure intended to control risks and meet the requirements of legislation. Through this work, we have stressed the importance of a good understanding of risk in order to ensure both a proportionate and compliant response to the challenges faced.

Off-track

2.12 Network Rail Scotland missed its train accident risk reduction target for volumes of work for drainage. It met its target for vegetation. However, we have concerns about compliance with standards for both vegetation and lineside fencing. In the course of inspections of both these aspects of off-track management, we found that MDUs could not demonstrate how they would achieve consistent compliance with the

requirements of the relevant company standards. Network Rail Scotland has a plan to achieve compliance for vegetation management. This plan has been agreed with ORR but has yet to be implemented. There have been occasions when we have had to intervene to improve control of risk, for example at sites where trees have encroached on Overhead Line Equipment (OLE).

2.13 Compared to 2015-16, there were fewer incidents of animal incursion. Possible reasons for this include more targeted fencing renewals. However, a number of boundaries are still not compliant with Network Rail policy. This may be in relation to height, condition, integrity, suitability for characteristics of location (known trespass or livestock incursion, for example) or a combination of all these factors. We continue to press Network Rail to address these gaps in a risk-based, prioritised way.

2.14 Network Rail Scotland has acknowledged that resource constraints have had an impact on the achievement of off-track volumes. We have seen examples of locations where managers are struggling to maintain the current position, with compliance recovery some way off. Some short-term contractor resource has been made available to help off-track sections and, more recently, following an audit, Perth MDU has been considerably strengthened.

Level Crossings

2.15 The Level Crossing Managers are now well-established in this new role. As a result, we have seen a sustained improvement in level crossing condition and more prompt and effective resolution of faults. We have also seen evidence of improved relationships with railway neighbours, especially authorised users of User-Worked Crossings.

2.16 Conversely, the adoption of new technologies, especially those that can give supplementary warnings at passive crossings appears to be slow. For example, nationally, product acceptance was withdrawn for Ebi Gate 200, a system which provides an independent or “overlay” warning to crossing users of approaching trains. This meant that rollout was paused and existing installations were no longer used. The problems were overcome in 2016-17, leading to the gradual re-commissioning of sites. At the end of the year there were only 13 such installations across the entire national network, including East Cottages crossing in Scotland, commissioned on 22 March 2017. Mondynes crossing in Scotland was completed at the start of 2017-18. Similarly, the rollout of CovTec, a means of sounding an additional warning at a whistle board crossing, has been limited by the supplier’s ability to deliver product. For Scotland, this means that the technology has only been deployed at one crossing – Ben Alder near Dalwhinnie. This is slow progress.

Occupational Health and Safety

2.17 During our inspection programme in 2016-17 we intervened to secure improvements in:

- face fitting of respiratory protective equipment;
- provision of edge protection from falls from height;
- the need for thorough examination of lifting equipment;
- human error in line blockage procedure; and
- exposed live conductors in a relay room.

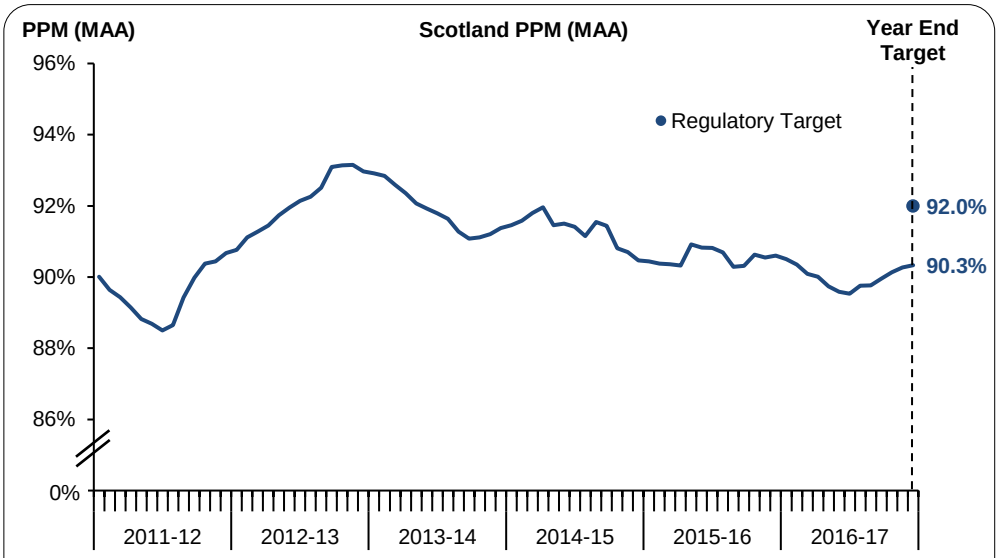
2.18 Building on the previous year's programme, we have continued to press Network Rail Scotland to achieve compliance with Hand Arm Vibration Syndrome (HAVS) health surveillance requirements. During 2016-17, there has been an improvement in Tier 2[1] and Tier 3 compliance. Network Rail Scotland has notably outperformed most other parts of the network, but is not yet fully compliant. We note that Network Rail's revised standard provides for a worker who does not comply with HAVS health surveillance requirements to have their competencies suspended through the Sentinel scheme.

[1] Tier 1, 2, 3, 4 & 5 are different levels of health surveillance. Tier 1 is an initial screening questionnaire. Tier 2 is an annual screening questionnaire, Tier 3 involves a HAVS health assessment by a qualified person.

3. Train service performance

Scotland performance

3.1 We are holding Network Rail Scotland to account for delivery of its regulated performance targets throughout CP5. The PPM MAA for the franchises let by the Scottish Government (ScotRail and Caledonian Sleeper) was 90.3% at the end of 2016-17, 1.7 percentage points (pp) below the year-end regulatory target of 92.0% and 0.3pp worse than at the same time last year.



PPM is the proportion of trains arriving at their final destination on time. On time is within five minutes (or ten minutes for the long distance sector).

3.2 Industrial action earlier in the year along with associated staff shortages and other issues affecting the ScotRail part of the Alliance have had some impact on performance. However, after making an allowance for these, we estimate that performance would still have been below target.

3.3 In general, the trend in delay-causing incidents is flat or declining in Scotland. However across the industry, delay per incident (DPI) has been increasing in recent years, and Network Rail has described reducing DPI as one of its 'must wins'. In Scotland however, DPI decreased from 26.0 minutes per incident at the end of 2015-16 to 24.8 minutes per incident at the end of 2016-17. Both TOCs and Network Rail must continue to work together at a local level to reduce it further. Network Rail needs to improve its incident response, improving its performance against 'time to site, time to fix' metrics. Train operating companies (TOCs) must provide adequate traincrew resource so the train service can recover more quickly and both Network Rail and the TOCs must have effective contingency plans.

3.4 Network Rail has identified a mix of short and long-term initiatives to improve incident response, including increasing resource for incident response staff and exploring technology such as the 'Incident Management System'. It is also looking at ways of improving its system operator capability, for example through traffic management and reviewing train regulation policies.

3.5 The impact of severe weather and related events in 2015-16 has now dropped out of the performance figures for this year, with an improvement seen in performance over the last six consecutive periods of 2016-17. The successful resolution of the industrial relations issues in summer 2016 will have a similar effect.

The performance improvement plan

3.6 In response to poor performance over the first half of 2016-17, the Alliance committed to an increasing focus on performance to arrest the decline in PPM. To that end, the Alliance published a performance improvement plan aimed at delivering improvements in infrastructure, operations and fleet areas. The latter category falls primarily to the train operators, but both infrastructure and operations are issues for Network Rail Scotland and its plans in these areas are listed in the tables below. We have been monitoring the delivery of the plan closely.

Infrastructure improvement

Action Plan	Description
Asset Improvement Plan	An £8m rolling annual programme to replace and/or enhance key pieces of critical railway infrastructure.
Edinburgh & Borders Infrastructure Improvement Plan	A specific action plan to tackle localised infrastructure issues in and around Edinburgh and down into the Borders.
Glasgow & West Infrastructure Improvement Plan	A specific action plan to tackle localised infrastructure issues in and around Glasgow and the West of Scotland.
Lanarkshire Infrastructure Improvement Plan	A specific action plan to tackle localised infrastructure issues in and around Lanarkshire.
Perth, Dundee and Tayside Improvement Plan	A specific action plan to tackle localised infrastructure issues in and around Perth, Dundee and across Tayside.
Trespass Prevention Plan	A multi-agency approach to reducing the number of people trespassing on the railway.

Operational improvement

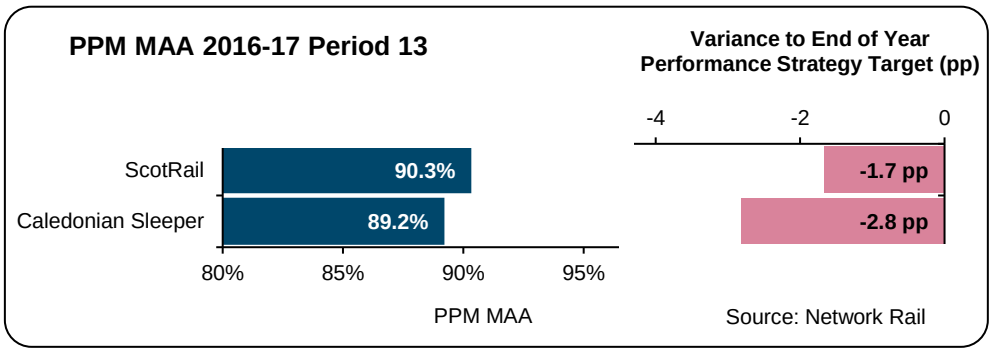
Action Plan	Description
Timetable and Golden Trains Action Plan	A plan to examine and address those trains and areas of the timetable that have the greatest impact on overall performance, including timetable adjustments and 'golden trains'[2].
Operational Planning Action Plan	Working with staff and trade unions to ensure that Network Rail is making the best use of its systems and people.
On-Time Railway Action Plan	An internal staff campaign to ensure that all activities are aligned to delivering a railway that runs on time.

3.7 To fully understand the steps Network Rail Scotland is taking to ensure that performance recovers to targeted levels, we have carried out a detailed review of the performance improvement plan. We have observed how the plan is governed across each function within the Alliance and have been encouraged when it has been strengthened as new actions have been identified. We are also encouraged by assurance from Network Rail Scotland that its improvement plan is designed to deliver longer term benefits and aims to put in place measures that will help achieve 92.0% PPM MAA by the end of 2017-18.

3.8 We will continue to monitor performance in Scotland closely and engage with the Alliance to obtain assurance that all elements of its performance improvement plan are being delivered and having the impact predicted.

Performance at TOC level

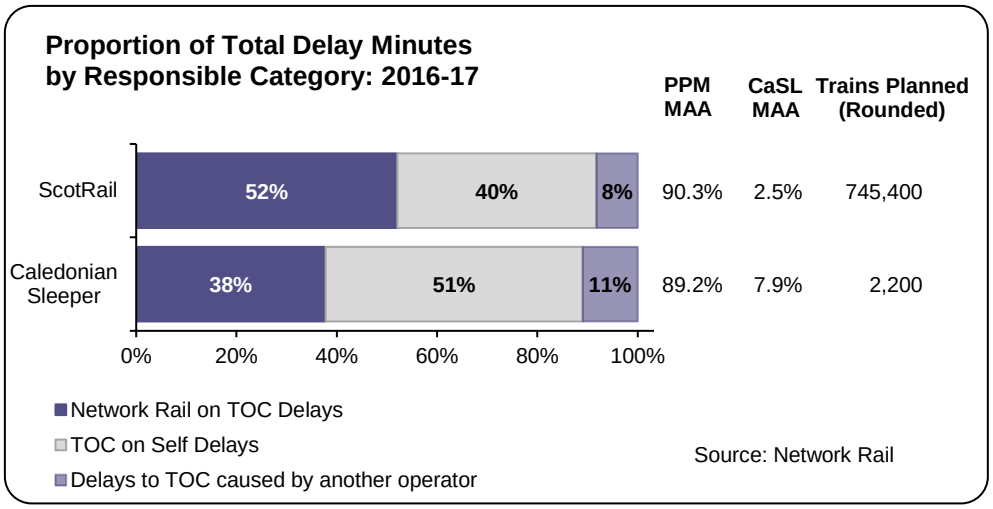
3.9 Both ScotRail and Caledonian Sleeper are performing below target. However, after adjusting for reasons outside Network Rail's reasonable control, ScotRail's performance would be within the threshold specified in the CP5 determination, i.e. better than 90%. PPM MAA for Caledonian Sleeper has increased by 3.4pp in the last six periods of 2016-17 at 89.2%, 3.2pp higher than in 2015-16.



[2] ScotRail describe Golden Trains as those trains that, if delayed, have the biggest impact on the rest of the network

Delay minutes

3.10 In 2016-17, Network Rail was responsible for 52% of ScotRail delay minutes and 38% of Caledonian Sleeper delay minutes. The remaining delay minutes were caused by the operators themselves and by other operators.



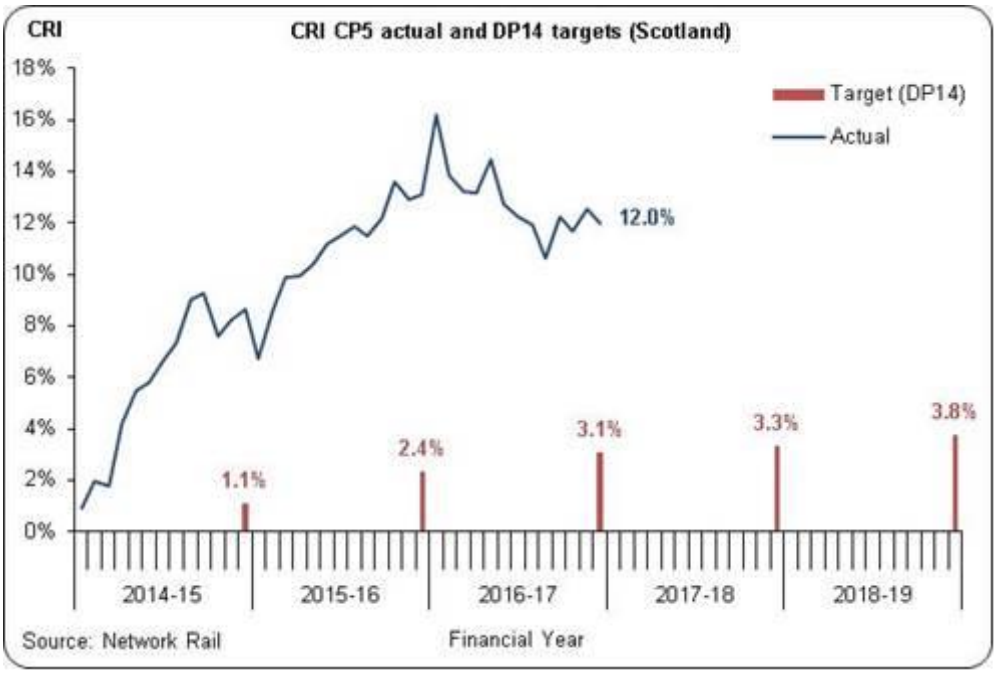
Freight

3.11 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 period 13 for the Scotland Strategic Freight Corridor was 97.3%, 4.8pp ahead of the national annual regulated target of 92.5%.

4. Asset management

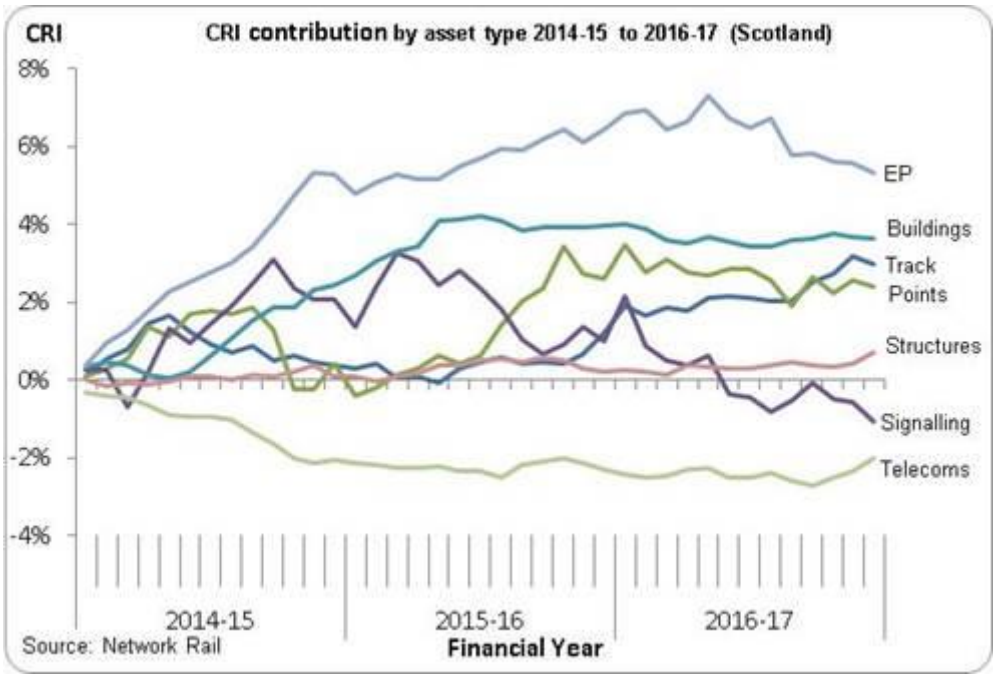
Asset performance

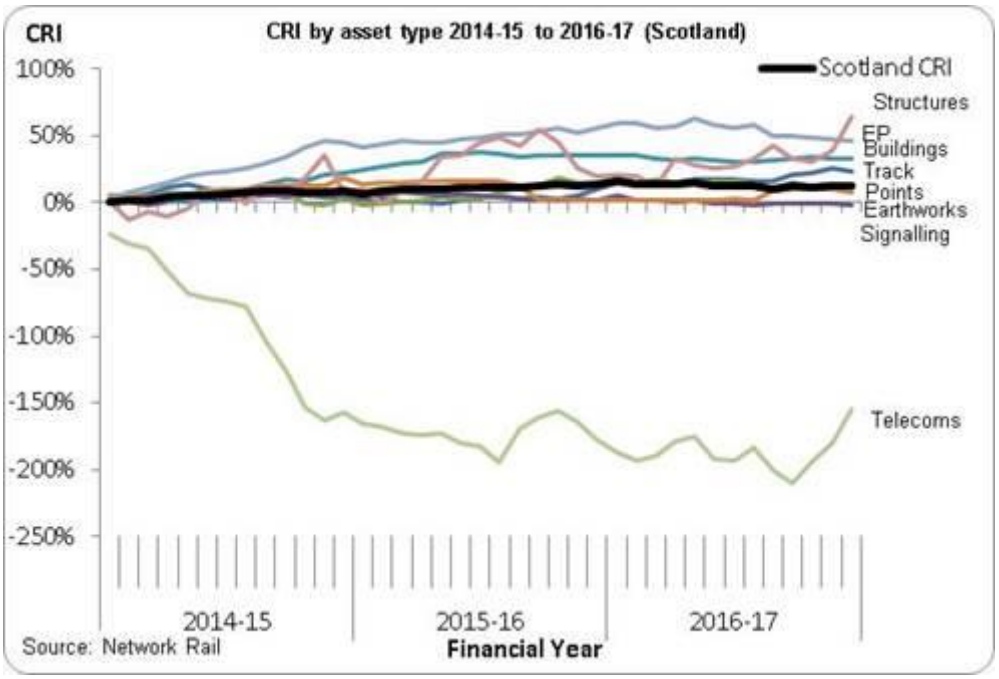
4.1 During the first two years of CP5, Network Rail achieved a significant reduction in service-affecting asset failures in Scotland, with the overall Composite Reliability Index (CRI) showing a 13.1% improvement relative to the end of CP4. This year asset performance has declined slightly, with CRI falling to 12.0%, although this is still well ahead of the improvement trajectory Network Rail originally planned for CP5.

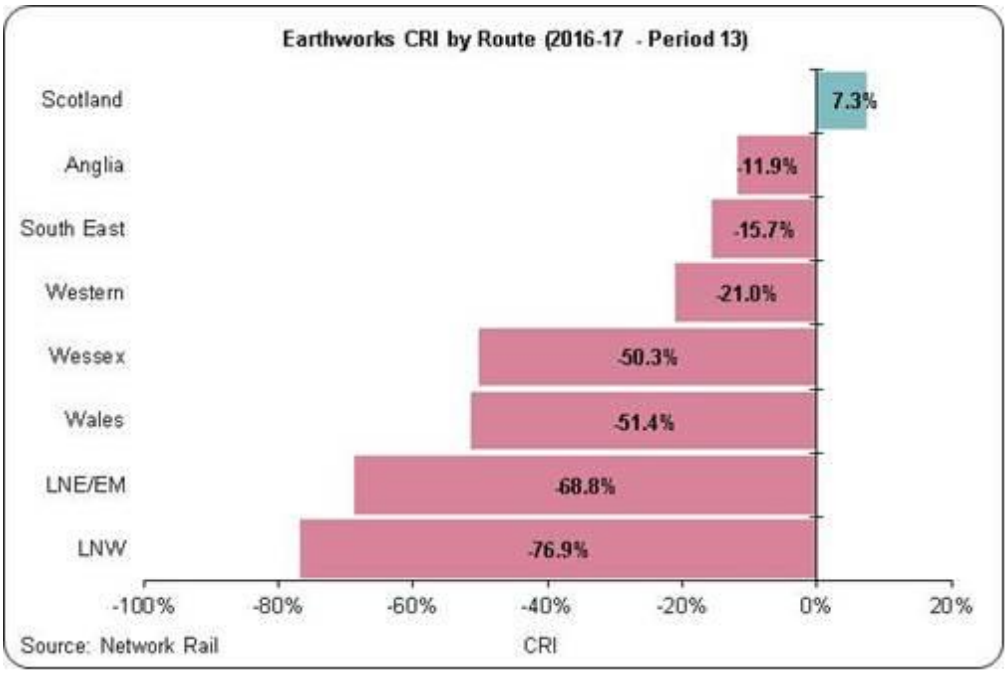


4.2 Track performance improved markedly, contributing 3.0% to overall CRI, with the track CRI itself ending the year at 23.8%, up from 9.8% the previous year. The incidence of rail breaks and immediate action defects halved during the year. The earthworks CRI also improved, ending the year at 7.3%, up from 2.1% the previous year. Scotland is the only route where the earthworks CRI is now above the end of CP4 baseline (see graph below).

4.3 These gains were offset by falls in electrical power, points, and signalling, which is now below the end of CP4 baseline, reversing the improvement made earlier in CP5. Telecoms continues to perform less well than at the end of CP4 (following the rollout of GSM-R).


CRI
CRI contribution by asset type 2014-15 to 2016-17 (Scotland)
8%
6%
4%
2%
0%
-2%
-4%
EP
Buildings
Track
Points
Structures
Signalling
Telecoms
2014-15
2015-16
2016-17
Source: Network Rail
Financial Year


CRI
CRI by asset type 2014-15 to 2016-17 (Scotland)
100%
50%
0%
-50%
-100%
-150%
-200%
-250%
Scotland CRI
Structures
EP
Buildings
Track
Points
Earthworks
Signalling
Telecoms
2014-15
2015-16
2016-17
Source: Network Rail
Financial Year

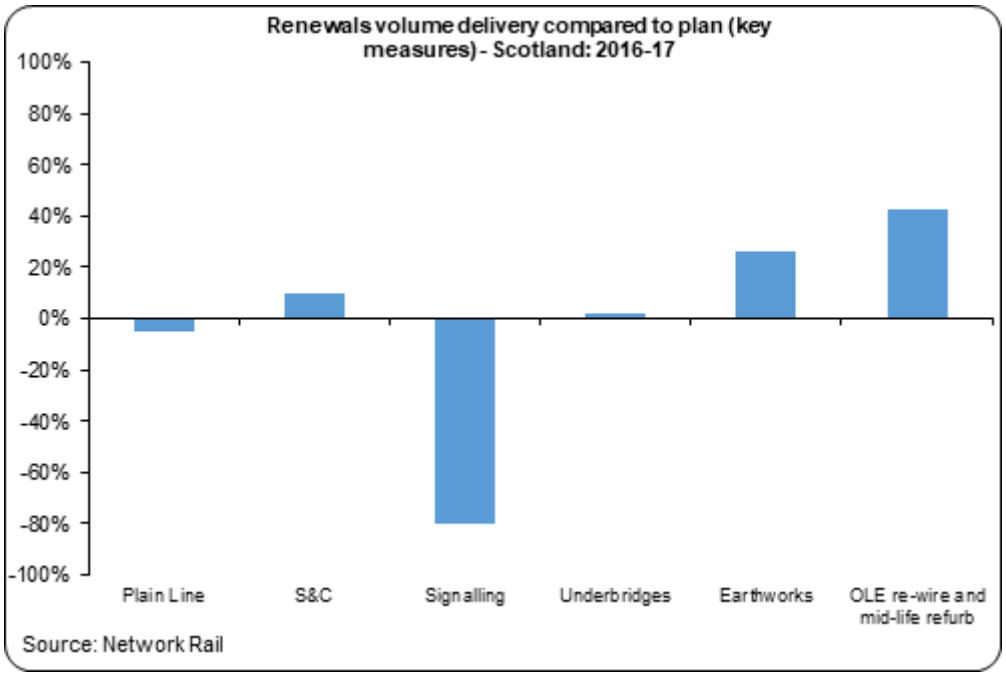


Asset sustainability

4.4 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 it becomes uneconomic or impractical to maintain them any longer and assets do have to be renewed. Network Rail's asset policies set out its approach to renewing the network assets so that overall condition is sustained on the basis of least whole life cost. The volume of renewals work required during CP5 in accordance with these policies was set out by Network Rail in its 2014 delivery plan (DP14), so we monitor the actual volume of work delivered to understand whether Network Rail is doing enough to sustain the network.

4.5 During the first year of CP5 (2014-15) the volume of renewals projects completed by Network Rail Scotland was significantly less than planned. The situation improved last year to finish on or ahead of plan and this has continued during 2016-17, except for signalling, due to the re-phasing of the Scotland Accelerated National Operating Strategy (SANOS) South scheme into next year.

4.6 Underbridges finished the year 2% ahead of plan, and earthworks 26% ahead, reflecting a change in the mix of work towards more targeted refurbishment. Switches and crossing were 10% ahead, but plain line track was 5% behind plan following loss of productivity from high output track renewal, partially offset by over-delivery of conventional track renewal. Overhead line renewal was 42% ahead of plan as a result of bringing work forward from 2017-18.



4.7 The cost of the renewals work delivered this year was £24m (7%) more than budgeted. This is lower than the percentage overspend for GB as a whole (16%). The overspend was mainly due to the loss of high output track renewal productivity and higher civils costs. A further £55m of renewals was deferred this year, bringing the CP5 total to £88m, around 6% of the CP5 budget (£1.4bn). This is much lower than the proportion that has been deferred on the GB network as a whole (25%).

Maintenance activity based planning

4.8 In response to our intervention following PR13, Network Rail initiated a project called *Activity Based Planning*, to develop and implement a bottom-up maintenance planning process. The work has been led from the centre, but with significant input and engagement with the routes. The approach is based on:

- the activity required to maintain each network asset;
- the labour, plant and materials required to deliver that maintenance; and
- their costs.

4.9 This has been assessed individually for each MDU, using its own records of time taken to complete standard jobs, time spent travelling to site, material costs, etc. The large number of maintenance standard jobs has been rationalised and standardised across routes and delivery units, and maintenance reporting is being restructured to differentiate between planned preventative activities and fault finding and fixing.

4.10 During the year, the project rolled out a planning tool implementing the approach. This tool is now being used by the routes and their MDUs to build up their plans for CP6. Some routes have also used it to validate their plans for the remainder of CP5.

The approach also generates a bottom-up requirement for the on-track machines used by maintenance, which will allow Network Rail to manage the supply of these resources more effectively to meet demand across the network as a whole.

4.11 We see this improved capability as a major step forward. We envisage it will promote a wider adoption of risk-based maintenance and remote condition monitoring, as part of Network Rail's wider maintenance strategy to move towards an increasingly preventative maintenance regime.

ORBIS milestones

4.12 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 regulatory outputs based on key milestones in Network Rail's programme, to help ensure it delivers all the benefits expected.

4.13 Prior to this year Network Rail had met all of these milestones, but in June 2016 it missed the milestone for replacing the existing Civils Asset Register and Reporting System (CARRS) with a new Ellipse-based asset management system for civils structures known as CSAMS; and then in December 2016 it missed the milestone to decommission GEOGIS. Network Rail is now expecting to achieve both milestones later in 2017. We will make an adjustment to Network Rail's 2016-17 financial performance to reflect these missed regulatory outputs.

Asset management capability

4.14 During CP4 we assessed Network Rail's asset management capability using AMCL's methodology known as AMEM. This is a benchmarking methodology reflecting best practice across a number of industrial sectors including rail. It is aligned with what has since emerged as the international standard for asset management, ISO 55000. For CP5 we set Network Rail the objective of achieving excellence in asset management during CP5, as measured by AMEM, and we made this a regulated output to underline its importance. Our strategy was to ensure that Network Rail's capability had improved in time for PR18, so that the efficiency benefits would be included in its plans for CP6. We therefore said the output should be achieved by January 2018 rather than at the end of CP5.

4.15 To confirm whether Network Rail was on course to achieve the output we also said we would conduct an interim AMEM assessment partway into CP5. This has now been completed. The assessment found that progress towards achievement of the regulated output was mixed. One of six targets had already been achieved, but in

general much more needed to be done to apply initiatives at route level. AMCL's view was that in some areas the process of devolution had resulted in a loss of clarity about systems and processes, and the new arrangements had not yet settled in and become robust. Network Rail believed it understood where these shortfalls were, and had plans in place to achieve the regulated output in time for the CP6 Strategic Business Plan submission, due in December 2017.

Asset data quality

4.16 The development and application of asset policy, and the use of advanced decision support tools, are heavily reliant on Network Rail maintaining a comprehensive and reliable dataset of information about all the network assets and their condition. In PR13 we assessed the quality of Network Rail's asset data and found it variable. So for CP5 we set Network Rail the objective of delivering an improved asset dataset, and we made it a regulated output to be achieved by April 2017 in order to support the PR18 planning process. We said Network Rail should demonstrate A2 data quality for the core asset data used in asset management decision making, which means it should be maintained by an overarching information management system (A), and that the data itself should be appropriately accurate and reliable (2).

4.17 Network Rail has responded by developing an approach centred on asset information itself being managed as an asset, to be maintained and renewed, with assurance arrangements analogous to the arrangements for physical network assets, including the appointment of a professional head. This is a best practice approach, and reflects the requirements of the international standard for data quality, ISO8000. This year Network Rail has been rolling out these arrangements in the routes, including organising the resources necessary to manage asset data quality at route level, and developing risk registers to focus action on priority areas.

4.18 We are currently assessing Network Rail's evidence that it achieved the "A" requirement in April. We are also in dialogue about how it will demonstrate the accuracy and reliability of the data in its core asset dataset.

5. Developing the network

5.1 Network Rail Scotland is responsible for completing over £1 billion of enhancement projects in CP5. This section provides an update on our reviews and progress on each project.

Enhancements Improvement Programme (EIP)

5.2 The EIP was Network Rail's response to the issues that led to us finding it in breach of its licence earlier in CP5. We have been monitoring Network Rail's progress in delivering the EIP since October 2015 and we have provided a view on this in the GB Monitor.

5.3 The implementation of the EIP has been slower in Scotland than in England and Wales. However, Network Rail has presented a coherent plan against which to track the progress of the implementation of the EIP outputs in the projects and programmes that comprise the Scotland portfolio. This plan also addresses concerns raised by an independent review carried out on behalf of Transport Scotland mentioned in the previous monitor. We continue to monitor progress and have asked the Independent Reporter to review the use of the EIP outputs in a sample of projects.

5.4 As in the rest of Great Britain, we have not seen conclusive evidence to suggest that the EIP is delivering benefits to Network Rail, its funders, and stakeholders. We will continue to press for this evidence.

5.5 On governance of the enhancement portfolio, Network Rail Scotland and Transport Scotland continue to work together on a memorandum of understanding (MOU) setting out respective responsibilities for enhancements.

Project progress

Edinburgh Glasgow Improvements Programme (EGIP)

5.6 EGIP Key Output 1 (KO1) (delivery of the infrastructure required for electric train services to begin operation) missed its regulated milestone of March 2017. This was a significant setback on Network Rail's largest and highest-profile project in Scotland. It follows a year of poor productivity on site, complications around legal standards aimed at controlling risk and improving safety, and cost increases. Network Rail made changes to its delivery organisation, increased its track access time and introduced new engineering methods, but this has proved to be too late to recover the programme. Network Rail has set a revised completion date of October 2017. We are scrutinising its revised plans and will undertake a review of lessons learned once KO1 has been delivered.

5.7 Key Outputs 3 and 4 (delivery of a 42-minute journey time and 8 car services between Edinburgh and Glasgow and the upgrade to Queen Street Station) are now at significant risk and Network Rail is forecasting the regulated milestone of March 2019 will be missed for both key outputs. This is due to a nine-month increase to the timescales Network Rail forecast for obtaining the compulsory purchase powers required to deliver the works to Queen Street station, an issue outside Network Rail's direct control. We are satisfied that Network Rail did everything reasonably practicable to facilitate the process and is now working closely with Transport Scotland and relevant stakeholders to identify suitable options to mitigate the delay and deliver as many of its obligations as possible within the control period.

Scotland Rolling Programme of Electrification (RPE)

5.8 Shotts line electrification has made good progress with the final tranche of advanced works progressing well. The piling programme is ahead of schedule and the project is successfully managing a number of challenging bridge closures on the route. Although costs have increased since they were baselined in 2014, the estimate has remained stable throughout the period under discussion and we have seen evidence that Network Rail is managing project risk appropriately through modelling and advanced warnings to ORR and Transport Scotland. The March 2019 GRIP 6/Entry into Service regulated milestone is not considered to be at risk.

5.9 Stirling Dunblane Alloa electrification continued to progress. Trial holes and foundations for piling were delivered ahead of schedule. In 2015-16 a number of compliance issues relating to structures on the line were identified and the majority of these were risk assessed and mitigated during 2016-17. However some additional work may be required to bridges and stations at key points. Network Rail has been working closely with Transport Scotland and ORR on this point to ensure expectations and roles are properly understood by all parties. Network Rail identified a potential need for additional engineering access in order to increase the likelihood of delivery in time for the GRIP 6/Entry into Service regulated milestone of March 2019. The company began negotiations on this point with its customers in March 2017. After the end of the year, in May 2017 ORR commissioned the independent reporter Nichols to review whether Network Rail was doing everything reasonably practicable to deliver the milestones on this project. The report is due to be completed in July 2017.

5.10 ORR is currently reviewing the forecast costs of both the Shotts and Stirling Dunblane Alloa schemes to determine whether they represent an efficient cost for delivering the outputs.

Aberdeen to Inverness Improvements Phase 1

5.11 The forecast cost for the Aberdeen to Inverness project increased significantly over 2016 as additional scope required to deliver the outputs was identified late in the development cycle. This presented a major challenge to Network Rail's management of its borrowing limit and has the potential to constrain expenditure on other key activities in Scotland. In October, ORR developed a challenging but robust efficient cost determination for the project to incentivise Network Rail to drive down costs and identify efficiencies. This has already had an impact and there is evidence costs are coming down in line with expectations as alternative engineering access methods have been identified and Network Rail has worked with its contractors to deliver more efficiently.

5.12 Work on the west end of the line has begun well and Network Rail is making good progress on the new station at Forres although the project is now forecasting a completion date of December 2019 which has been updated through change control in the June 2017 Enhancements Delivery Plan.

Highland Mainline Journey Time Improvements

5.13 The Highland Mainline project continues to report a lower cost option for delivering the outputs via infrastructure interventions at Aviemore and Pitlochry stations and timetable remodelling. This is a good example of the component parts of the ScotRail Alliance working together to achieve value for money and optimal, industry-wide solutions that are not limited to infrastructure interventions.

5.14 Development remains slow which is a concern. However, Network Rail has provided some assurance that it can achieve the milestone date of March 2019. We will carry out an efficiency review of the estimate in autumn 2017.

6. Expenditure and finance

Overall financial performance

6.1 We can consider Network Rail's financial performance in two different ways; firstly by providing a simple comparison of spend against its own budget (Table 1 below) and secondly by considering our regulatory performance measure (Table 2 below).

6.2 There are several ways in which key messages can be conveyed through the regulatory performance measure and these choices include:

- comparing either to Network Rail's annual budget or to our determination, as we do in our Annual Efficiency and Financial Assessment;
- showing the variances gross, or net of adjustments made in line with the 25% RAB sharing mechanism; and
- including or excluding the adjustments made for missed regulatory outputs.

Expenditure and financial performance[3]

Table 1: Income and expenditure for Scotland in 2016-17 – a simple comparison of all Network Rail income and expenditure

£m	Full Year 2016-17		
	Budget	**Actual**	**Variance b/(w)**
Turnover[4]	690	691	1
Schedule 4	(44)	(39)	5
Schedule 8	(2)	-	2
Operations	(44)	(45)	(1)
Support[5]	(95)	(85)	10
Maintenance	(119)	(122)	(3)
Capex – Renewals	(389)	(359)	30
Capex - Enhancements	(266)	(335)	(69)
Financing costs	(156)	(162)	(6)
Total	**(425)**	**(456)**	**(31)**

6.3 In 2016-17, the overspend is £31m. This is in line with the full year forecast in the previous monitor. This is largely because of £60m higher costs on the EGIP and Rolling Programme of Electrification enhancements (three projects electrifying the Shotts, Rutherglen–Coatbridge and Stirling–Alloa lines). The increased expenditure is because the initial designs were found to be non-compliant with the minimum legal

[3] The numbers quoted in this section are taken mainly from Network Rail's Period 13 Finance Pack and include some later adjustments. There will be some differences between the numbers shown as the actuals in the Monitor and those shown in Network Rail's final published statutory and regulatory accounts and our annual efficiency and finance assessment.

[4] Turnover includes the government grant, income from fixed and variable charges and 'other single till income' such as income from property, freight, stations and depots.

[5] This includes traction electricity, industry costs and business rates.

requirements for electrical clearances. The large volume of re-design and re-delivery has led to significant increases in the scope and costs of these projects. There were also supply chain and access issues.

6.4 Across all enhancement projects, £56m of this has been recognised as underperformance. This enhancements overspend is offset by a £30m underspend on renewals.

6.5 The renewals underspend of £30m is due to £46m of work being deferred. It will be delivered at a later date (see Table 2 below). Taking this into account the value of the work Network Rail has done was £16m higher than expected (adjusted to £4m in line with the 25% RAB sharing mechanism). This underperformance is largely due to less work being delivered by the high output plant and higher costs for the work done.

Regulatory financial performance

6.6 As described in paragraph 6.1 above, we also use our regulatory performance measure to monitor Network Rail's performance. 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 this is just a timing difference, i.e. the work still needs to be done in the future;
- adjusts for the value of the output not delivered as Network Rail should not benefit from not delivering its outputs;
- adjusts the out/under performance on renewals and enhancements to be consistent with our RAB sharing mechanism[6]; and
- adjusts so that the comparison is made against PR13 rather than Network Rail's budgets.

Table 2 shows how the financial performance measure is calculated and the different parts of the calculation as described in paragraph 6.2 above.

[6] We do this by limiting the financial reward/penalty to generally 25% of the under/outperformance. For example in Table 2, the gross renewals underperformance is £16m, so we limit it to 25% by deducting 75% in the line "Capex adjustment - Renewals", i.e. £12m = £16m x 75%. The RAB sharing mechanism also applies to enhancements ("Capex adjustment – Enhancements") in Table 2.

Table 2: Financial Performance Measure (FPM) for Scotland in 2016-17

	£m	Variance to budget b/(w)	Timing b/(w)	Gross Financial (under)/out performance	Net Financial (under)/out performance	Notes
a	Turnover (Incl. Volume Incentive)[7]	3	(1)	4	4	
b	Schedule 4	5	6	(1)	(1)	
c	Schedule 8	2	1	1	1	
d	Operations	0	0	0	0	
e	Support[8]	14	11	3	3	
f	Maintenance	(3)	2	(5)	(5)	
g	Capex - Renewals	30	46	(16)	(16)	
h	Capex adjustment - Renewals				12	
i	Renewals (net)				(4)	g + h
j	Capex - Enhancements	(69)	(13)	(56)	(56)	
k	Capex adjustment - Enhancements				42	
l	Enhancements (net)				(14)	j + k
m	**Financial performance measure compared to Network Rail budget**			**(70)**	**(16)**	(a to h) + j + k
n	Network Rail budget compared to PR13 (gross)			(108)	(108)	
o	Capex Adjustment for renewals & enhancements				62	
p	Network Rail budget compared to PR13 (net)				(46)	n + o
q	**Gross FPM before adjustment for missed regulatory outputs**			**(178)**	**(62)**	m + p
r	Less: Adjustments for missed regulatory outputs	(110)		(8)	(8)	
s	**Total financial performance measure (FPM)**			**(186)**	**(70)**	q+ r

6.7 Network Rail's 'gross' underperformance in Scotland, i.e. without adjustments described in the third and fourth bullet points in paragraph 6.6 above, is £178m compared to our determination. This is because:

- Network Rail's gross financial performance for the full year is £70m adverse to its own budget. This is largely because, compared to its own budget, it has underperformed on enhancements (£56m) due mainly to the large volume of re-design and re-delivery needed for the EGIP and rolling programme of electrification projects; and
- Network Rail's 2016-17 budget was itself £108m worse than our determination on a gross FPM basis (on a net FPM basis it was £46m worse). This is mainly due to lower planned efficiencies and higher unit costs than previously assumed.

[7] Excludes those elements of income not relating to Network Rail's performance: Network Grant, Fixed Access charges and charges for traction costs (EC4T) passed on to the train operating companies. The variance to budget for Turnover in this table is therefore different to the Turnover budget variance in Table 1.

[8] Includes rates & industry costs but excludes others such as those electric for traction costs (EC4T) relating to train operating companies. Numbers therefore differ to the support costs in Table 1.

6.8 As shown in Table 2 above, Total gross FPM is £186m with the addition of a further £8m of adjustments for its underdelivery of the PPM train performance regulatory outputs and for missing two of nine outputs for ORBIS in 2016-17.

6.9 The net underperformance, compared to our determination and as the basis for REBS calculations, is £70m in 2016-17 as shown in Table 2 above. This is the Total gross FPM of £186m reduced by the three Capex adjustments (shown in rows h, k & o of the table).

Efficiency[9]

6.10 In Scotland, Network Rail reported an efficiency improvement of 11.2% on Operations, Support, Maintenance and Renewals (OSMR) for the control period to date[10]. This is below our PR13 assumption of a 13.7% improvement over this three-year period. This improvement is a combination of 13.1% efficiency gains for operations, support and maintenance and 10.1% for renewals[11].

6.11 By the end of CP5 Network Rail Scotland expects to achieve efficiency of 8.2% on OSMR (i.e. it will exit CP5 8.2% more efficient than it started CP5). This compares favourably to the position for Great Britain overall and reflects different levels of activity on different asset types and different baselines specific to this route. But it is lower than our 19.5% assumption.

Network Rail's net debt, RAB and borrowing

6.12 Network Rail's debt attributable to Scotland as at 31 March 2017 was £4,044m, which is £9m higher than budget. This is mainly because enhancement expenditure is £69m higher than budget (mostly attributable to EGIP and the Rolling Programme of electrification), offset by £30m lower renewals expenditure than assumed (mostly attributable to lower track volumes due to high output plant failure and line blockages leading to late cancellation of possessions).

[9] For more information see our consultation

[10] The efficiency numbers include the effects of two changes to the calculation. Firstly, it now excludes some civils costs that were previously included, as Network Rail were not sure of the regulatory treatment as they were civil adjustment mechanism related costs. We have also corrected the calculation of the renewals unit rates for the end of CP4, which is the baseline. As an indication of the materiality of these changes, last year we reported that OSMR efficiency for the first two years of CP5 was 1.7% and we now think it was 0.7%.

[11] Our measure of efficiency is a simple measure of the change over time in support, operations, maintenance and renewals expenditure. This measure compares actual expenditure in 2016-17 with actual expenditure in 2013-14 (the last year of control period 4) adjusted for the level of activity undertaken and other issues.

Table 3: Scotland as at the end of 2016-17: Net debt, RAB and Gearing against budget[12]

£m	Full Year 2016-17		
	Budget	Actual	Variance b/(w)
Net Debt	4,035	4,044	(9)
Closing RAB	6,052	6,099	47
Gearing (net debt/RAB)	66.7%	66.3%	0.4pp

6.13 The Regulatory Asset Base (RAB) of £6,099m, is £47m higher than budget. This is mainly due to the acceleration of EGIP investment.

6.14 Network Rail's latest business plan for Scotland includes financial headroom of £0.1bn, 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, delivery of efficiency initiatives, movements in interest rates and cash collateral balances and inflation.

6.15 Network Rail has done some planning on how it would deal with further cost pressures. But, given the relatively small size of the headroom, the scale of the above variances and that Network Rail in recent years has continually been too optimistic in forecasting its financial performance, we are discussing with the company how it can make its plan as robust as possible.

6.16 We are making changes to the way we monitor Network Rail's efficiency for CP5 and we will report on this in the next monitor. As part of our work on PR18 we are consulting on the reasons why Network Rail has not delivered renewals efficiency improvements in CP5, and how ORR should change its approach to assessing Network Rail's plans for CP6. In addition we have commissioned an independent reporter study into the progress that Network Rail is making in developing these CP6 plans, to help provide greater assurance that its final plans will contain robust efficiency proposals across all areas of expenditure.

Expenditure (excluding central unit cost allocations)

6.17 Central unit costs, such as various HQ costs and some property costs, are allocated to the routes. In 2016-17, these central costs of £1.3bn in Great Britain, came to approximately 14% of the 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.

[12] The decrease in the gearing ratio is 0.4 percentage points. This is the arithmetic difference between two percentages. In percentage terms the change is 0.4/66.7 = 0.6%. When compared to our determination, Net Debt is £453m lower and closing RAB is also lower, by £466m. The resulting change to the net gearing ratio is a reduction of 2.2pp.

6.18 Earlier tables show figures after these allocations. But to be more comparable with route level analysis in the GB Monitor, Table 4 looks at Network Rail's expenditure in Scotland compared to its budget before the allocation of central unit costs.

Table 4: Scotland Expenditure compared to budget – before allocation of central costs 2016-17

	Actuals	Budget	Variance	Variance %
Operations	-44	-44	0	0.1%
Support	-5	-5	0	-5.6%
Maintenance	-118	-116	-2	-2.0%
Renewals	-332	-344	12	3.5%
Enhancements	-333	-278	-55	-19.8%
Total	**-832**	**-787**	**- 45**	**5.8%**

7. Glossary

Term	Explanation
Alliances	The term 'alliances' is currently being used to describe a wide range of different relationships from project-based partnerships through to potentially long-term and comprehensive commercial arrangements covering a wide range of activities carried out by Network Rail routes and train operators. The common factor is that Network Rail and a train operator reach agreement to work together more closely and share the benefits of doing so, within the framework of their existing individual accountabilities and responsibilities. As currently being discussed, alliances do not involve the creation of new legal entities such as formal joint ventures
AMEM	Asset Management Excellence Model
Bridge deck	The flat and largely horizontal part of a bridge
Cancellations and Significant Lateness (CaSL)	The proportion of trains which arrive at final destination greater than 30 minutes from planned arrival, or full/part cancelled or missed calls
CAPEX	Refers to the funds used by Network Rail to acquire or upgrade physical assets on the railway and related infrastructure in order to maintain or increase the scope of their operations. Such expenditure is referred to as Renewals (of existing infrastructure e.g. works that will provide long term benefits such as replacing a section of track) or Enhancements (upgrading existing or building new infrastructure, e.g. electrification of a railway line).
CARRS	Civils Asset Register and Reporting System
Civils	Civil engineering assets including bridges, structures and earthworks
Composite Reliability Index (CRI)	It provides an indication of the contribution of asset reliability to the safety and performance of the railway.

Control Period	A control period is the period to which an access charges review (e.g. a periodic review) applies. Control periods are typically five years in length, but maybe shorter or longer depending on what the regulator decides as part of the review. • CP6 covers from 1 April 2019 to 31 March 2024 • CP5 covers from 1 April 2014 to 31 March 2019 • CP4 covers from 1 April 2009 to 31 March 2014 • CP3: 1 April 2004 to 31 March 2009 • CP2: 1 April 2001 to 31 March 2004 • CP1: from the privatisation of Railtrack to 31 March 2001
CSAMS	Civils Strategic Asset Management Solution
DPI	Delay per incident
DfT	Department for Transport
Earthworks	Natural earth slopes and earth-related structures such as cuttings and embankments
Eddy Current Testing	A system using electromagnetism to detect and assess discontinuities in metal; adapted specialist technology to categorise maximum crack length and depth in every metre of rail.
EGIP	Edinburgh to Glasgow Improvements Programme
EIP	Enhancements Improvement Programme
Ellipse	Computer based asset management system used by Network Rail to record and prioritise the maintenance work required to be done and when.

Enhancements	Schemes to change to network outputs, usually involving construction, that improves network capacity or capability (e.g. enabling higher speeds, allowing heavier loads) relative to the level of network outputs funded at the last relevant periodic review. Usually outputs are required at specific times (in contrast to most renewals).
FPM	Financial Performance Measure
Freight Delivery Metric (FDM)	This measure tracks the punctuality of freight services at destination taking into account Network Rail caused delays.
Gearing	Gearing refers to the level of a company's debt related to its equity capital, usually expressed in percentage form. It is a measure of a company's financial leverage and shows the extent to which its operations are funded by lenders versus shareholders.
GEOGIS	"Geographic and Infrastructure Systems" - A major database of railway infrastructure assets containing information on the physical location of track, buildings and structures.
GRIP	Guide to railway investment projects. A Network Rail formal procedure through which every investment project on Network Rail's network must pass. It consists of a number of stages; at the end of these a review is carried out and if the project cannot meet the pass criteria it is stopped or held until it does.
GSM-R	Global system for mobile communications - railway. An international wireless communications standard for railway communication.
HAVS	Hand Arm Vibration Syndrome

HCE	Hidden Critical Elements
High Output Track renewal	A system for renewing track in part or as a whole far more quickly than has been possible in the past.
IMS	Incident Management System
Independent Reporter	The role of the independent reporter is to provide ORR with independent, professional opinions and advice relating to Network Rail's (as licence holder) provision or contemplated provision of railway services, with a view to ORR relying on those opinions or advice in the discharge by ORR of its functions.
Line Blockage Procedure	The procedure to stop the movement of trains on a section of the network, in order to enable urgent and essential activity
MDU	Maintenance Delivery Units
MOU	Memorandum of understanding
Moving Annual Average (MAA)	Moving annual average - the average of the last 13 four-week time periods.
Network Grant	A proportion of Network Rail's income in the past has been paid directly by DfT and Transport Scotland in the form of network grants in lieu of FTAC. Over CP5, more than 60% of Network Rail's income is forecast to come from network grants.
ONS	Office of National Statistics

ORBIS	Offering Rail Better Information Services. A Network Rail initiative, its aim is to make information available in all forms including a mobile access and a local view to avoid site visits.
Overhead Line Equipment (OLE)	An assembly of metal conductor wires, insulating devices and support structures used to bring traction supply current to suitably equipped traction units. The conducting wires are normally strung between masts or poles in some form of catenary arrangement but simple systems may have a single trolley wire.
Passive crossings	Passive crossings have static warning signs (stop or give way) that are visible on approach. This signage is unchanging with no mechanical aspects or light devices.
Performance Strategy	Jointly prepared plans agreed between Network Rail and a train operator to improve performance.
Plain Line Pattern Recognition (PLPR)	Technology used to monitor the condition of the track
Plain Line Track	Track without switches and crossings
Possessions	Network Rail needs to restrict access to its network to carry out many of its maintenance and renewals activities. These restrictions of access are referred to as possessions.
Public Performance Measure (PPM)	The Public Performance Measure (PPM) is the percentage of trains arriving at their final destination within 5 minutes of their scheduled arrival time (within 10 minutes for long distance services).
RAB	Regulatory asset base: The Office of Rail and Road's calculation of the value of Network Rail's assets.

Relay Room	A building housing safety critical electrical and electronic signalling equipment such as relays that interface with trackside equipment such as points and signals.
Renewals	Major capital works or replacement of the network in order to maintain its required capability. These may be required at specific times but are more often carried out according to Network Rail's own timetable
Rolling contact fatigue	General term covering all types of damage incurred at the wheel rail interface.
Schedule 4	Schedule 4 (the possessions regime) is the part of passenger and freight operators' track access contract with Network Rail that sets out arrangements for compensation to the operator in the event of planned disruption to their services.
Schedule 8	Schedule 8 (the performance regime) is the part of passenger, freight and charter operators' track access contract with Network Rail that sets out arrangements for compensation in the event of unplanned disruption to services.
Scour	The removal of material from a bed or bank of a watercourse or material from a beach by current or wave action. This is a particular problem where the removed material was providing support or restraint to a structure such as a bridge pier or retaining wall, ultimately leading to its collapse.
Section Manager	A supervisory post responsible for the day to day maintenance of the track within a permanent way section or area or division.

Switches and Crossings (S&C)	Track consisting of switches (an assembly of two movable rails – the switch rails) and two fixed rails (the stock rails) and crossings (an assembly that permits the passage of wheel flanges across other rails where tracks intersect.
TOC	Train operating companies: run the (passenger and freight) trains and services on the network.
Track Geometry	The horizontal and vertical alignment of the track.
Train Regulation	The itinerary for any of the driver, guard and/or train manager of a train.
Tubular Stretcher Bars	The function of a stretcher bar is to keep the two rails in a railway switch a defined distance apart at all times and to ensure that both rails move simultaneously as a coupled pair when commanded
Underbridge	Bridges that allow passage under the railway.
Whistle Board	A white circular sign with a grey edge and black W in the centre that indicates to a train driver that they must sound the horn or whistle. This is often used to provide warning to users of accommodation, footpath and occupation crossings.

This publication is available at orr.gov.uk

Any enquiries regarding this publication should be sent to us at orr.gov.uk