

OFFICE OF RAIL AND ROAD

Network Rail Monitor Scotland

*Quarters 3-4 of Year 4 of CP5
15 October 2017 to 31 March
2018*

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1. Overview

- 1.1 This Monitor provides ORR's assessment of Network Rail's performance in Scotland over periods 8-13 of 2017-18, the fourth year of Control Period 5 (CP5).

Health and safety

- 1.2 Network Rail Scotland continued to deliver good health and safety performance. But as with the rest of the country, there are variations. As previously reported, Scotland needs to continue to focus on the safety of key assets and the control of risks. Clearer safety leadership and continuous improvement through strengthened assurance and learning from incidents will help to achieve this.
- 1.3 The variations in health and safety performance suggest that Network Rail Scotland has some way to go to assure itself that all risks are comprehensively managed. In particular, civils assets, level crossings and track worker safety all show areas of weakness that need continuing management focus.

Train service performance

- 1.4 At the end of the year the public performance measure (PPM) moving annual average (MAA) for the franchises let by the Scottish Government (ScotRail and Caledonian Sleeper) was 89.5%. This was 2.5 percentage points (pp) below the year-end regulatory target of 92.0% and 0.9pp worse than at the same time last year.

Asset management

- 1.5 Network Rail Scotland has improved the overall performance of the network assets. The Composite Reliability Index (CRI), which measures asset reliability across the network compared to the end of CP4, has risen to +16.4%, from +12.0% at the end of 2016-17.
- 1.6 During the first year of CP5 (2014-15) the volume of renewals projects completed by Network Rail Scotland was significantly less than planned, but the situation improved in years 2 and 3 with renewals finishing on or ahead of Network Rail's CP5 Delivery Plan in most areas. For this year, the year-end position is variable across the asset areas, with over-delivery of key volumes, change in work mix and some deferred delivery elsewhere.

Developing the network

- 1.7 Network Rail's delivery of enhancement projects in Scotland has improved significantly over the past twelve months. After a lengthy delay the electrification of the line between Edinburgh and Glasgow via Falkirk High, was delivered in December 2017.
- 1.8 Confidence in Network Rail's ability to meet its regulated milestones and remain within the funding settlement has increased. There are however still notable areas of uncertainty and Network Rail faces a challenging final year of the control period with complex construction activity underway on a number of schemes across Scotland.

Expenditure and finance

- 1.9 The efficiency of Network Rail Scotland's operations, support, maintenance and renewals activities improved by £2m (0.7%) in 2017-18, on top of the £73m (11.2%) of efficiencies across the first three years of CP5.
- 1.10 Scotland outperformed against its internal budget by £37m in 2017-18. This was largely because of lower than budgeted enhancements expenditure offset by higher than budgeted Schedule 8 payments for unplanned disruption. Performance has improved compared to the first three years of CP5 (average £50m annual underperformance against budget).

2. Health and Safety

2.1 Safety metrics indicate a mixed performance and a levelling-off of improvements seen in previous years. Track safety continues on an improving trend overall although there are variations across Scotland. Civils assets continue to require close attention and we have seen inconsistent management of scour and drainage during the year. Network Rail Scotland also needs to continue to focus on risks arising from third-party land although more positively, the route achieved its targets for vegetation control and fencing renewals. Level crossing safety showed a modest improvement and we found scope for improvement in the control of risks at certain types of crossings. Track worker safety continues to be well-controlled, but with continuing near misses, improvements need to be made. We found improving management of occupational health risks, albeit with clear areas where risks could be better controlled.

Health and safety performance measures

2.2 Health and safety performance, as measured by corporate scorecards and targets, is still varied. Network Rail's route businesses Lost Time Injury Frequency Rate (LTIFR) is a measure of the number of lost time accidents normalised by the number of hours worked. At the beginning of 2017-18, Scotland had an LTIFR of 0.462. By the end of the year, it had reduced to 0.383, better than the target for Scotland of 0.400 and slightly better than the GB-wide target of 0.402. Overall, the LTIFR downward trend levelled off in 2017-18, although hours worked increased by 3.6%. This may be a factor in the slight overall improvement.

2.3 Scotland achieved or exceeded volumes of key tasks associated with train accident risk reduction. These are activities that contribute to train risk reduction and they are monitored across Great Britain. In contrast to the position reported mid-way through 2017-18, by the end of the year Scotland had achieved target volumes of drainage work, vegetation clearance, fencing renewal and bridge scour prevention. Given the mid-year expectation, delivering this amount of work is an achievement and shows how much can be done given focused management attention and sufficient resources. Serious infrastructure wrong side failures (WSF), ranked +50 and +20 rose slightly compared to 2016-17 in line with the rest of Great Britain. Many of these were signals and telecommunications failures.

Track

2.4 The condition of track, measured by track geometry trends, has continued to improve in CP5, with actionable geometry faults (where track condition is outside tolerance and requires remediation) now at 'best-ever' levels. The percentage of poor track geometry, a measure of the amount of sub-standard track, is low in Scotland

compared to other routes. The percentage of good track geometry is in line with the GB average.

- 2.5 Numbers of twist and repeat faults have reduced but remain sensitive to fault numbers on the Far North and West Highland lines, which see significant fault increases on occasion. Numbers of repeat twist faults are down compared to CP4 exit. Numbers of broken rails are also low compared to long-term performance but are currently trending upwards, with a rising trend in the second half of 2017-18 making numbers of broken rails in Scotland the third highest of all routes. Overall, this performance suggests Scotland's management of track risk is improving but needs to become more consistent.
- 2.6 We carried out inspections looking at how Network Rail Scotland ensures track is safe on completion of works. Overall, it was clear that processes were in place to manage asset safety risks. Managers recognised a number of challenges to improve consistency of delivery of procedures and technical and engineering support. Whilst no immediate safety concerns were identified, we found a number of areas for improvement, as well as some examples of good practice. These included:
- electronic sharing of planning documents to embed consistency and provide an accessible audit trail;
 - tracking of use of the work planning process (asset management plan) to drive improved process compliance; and
 - effective use of a locally-developed project delivery planning processes to allow early identification of supporting services, plant and equipment needed to deliver the work.

Following this inspection, on 25 February 2018 at Cradlehall near Inverness, a train struck a long rail left with one end resting on a running rail following maintenance work. Our enquiries continue into this incident and our conclusions will inform further action on this area of risk.

Civils structures and earthworks

- 2.7 Managing risks from earthworks remained a challenge during the year. We investigated incidents of incursions from neighbouring land, sometimes associated with extreme weather. For example, in January 2018 a landslip originating on neighbouring land caused a train to derail at Loch Eilt. We recognise the difficulties in dealing with third party risk, but look to Network Rail to develop innovative and practical solutions.
- 2.8 There were delays in establishing knowledge of drainage assets, and a backlog of scour risk assessments developed. Although ultimately Network Rail Scotland achieved target volumes of work for these assets by the end of 2017-18, it has some

way to go in consistently and reliably managing the safety of its civils assets. More positively, we found early evidence of good compliance with drainage management plans for higher risk soil cuttings in Scotland.

Electrical safety

2.9 As the expected date for ORR's authorisation of the *Edinburgh Glasgow Improvement Project (EGIP)* Key Output 1 approached, it emerged that minimum distances between overhead line equipment (OLE) wires and platforms/structures in some station areas would not be achieved by the expected date. However, Network Rail was able to demonstrate that it had identified what electrical clearances it was reasonably practicable to achieve at each affected station. It also had timelines for delivery of remedial actions, and (pending delivery of those actions) interim risk was no greater than that which already existed at comparable stations elsewhere in Scotland. The project was authorised in December 2017 with conditions (for example concerning the maximum reasonably practicable value of electrical clearance between standing surfaces and pantograph head in contact with the contact wire).

Off-track

2.10 Network Rail Scotland's decision to increase off-track resources helped to embed improvements in the form of accelerated vegetation management and increased volumes of fencing replacement. Both areas are important in controlling risks to the public either from vegetation encroachment or from derailment due to livestock on the line. Train accident risk reduction targets in these key areas were achieved and Network Rail's approach to risk management was flexible and responsive. Nonetheless, despite these improvements timescales for compliance with Network Rail's own standards are long.

2.11 During the year, we were made aware of a number of complaints from train and freight operating companies concerning vegetation encroachment. Concerns were raised that vegetation was encroaching on rolling stock, damaging trains and dislodging aerials, and raising potential risk with drop light windows or observation verandas. In common with the rest of Great Britain, control of risk arising from trees on third party land continues to be a challenge. On 17 October 2017 at Markinch an on-track maintenance vehicle ran away for four miles after its brakes were damaged when it hit a tree. This incident clearly illustrates the need for adequate management of third party vegetation risks.

2.12 On fencing, reported instances of animal incursion onto the railway continued to decline in 2017-18. This is consistent with the significant volumes of fencing renewal work completed in Scotland as well as the introduction of a new specification for livestock fences. However there were still incidents of livestock gaining access to the

railway from land that is not usually used for grazing, suggesting that there is further scope for Network Rail to improve its control of this risk.

Level Crossings

- 2.13 Level crossing risk continued to improve in 2017-18, with a modest reduction in All Level Crossings Risk Model (ALCRM) fatality weighted injuries (FWI) to 0.304 at the end of the year, a reduction (i.e. improvement) from 0.310 in April 2017. Despite this the long term trend is levelling off after a period of sustained reduction in FWI, suggesting that level crossing improvements are becoming increasingly difficult to achieve.
- 2.14 ORR inspections identified scope to improve risk management at long-section user worked crossings with telephones (UWC(T)s). These are crossings in long signalling sections where the user needs to telephone the signaller to obtain permission to cross. Because they are in long sections, the signaller may not be able to pinpoint a train's exact location. We found that risk assessments focused on equipment and physical conditions at the crossing, rather than considering all influences on the act of crossing the railway. We found some evidence of signallers using local approaches to granting permission to users to cross the railway when trains in section, but without robust information on position of trains relative to the crossing. These findings are in line with our GB-wide findings. In line with the rest of the network, Network Rail Scotland needs to continue to improve its management of level crossing risks, in particular by exploring provision of automatic warning at these crossings.

Occupational health

- 2.15 We saw evidence of increasingly effective leadership in the management of occupational health risks. In a small number of inspections targeting exposure to respirable crystalline silica (RCS) we found evidence of an effective understanding of the risks and control measures. We also found improvement in providing hand arm vibration syndrome (HAVS) health surveillance to workers exposed to this risk. As reported in previous monitors, Network Rail Scotland saw similar failures in health surveillance to those seen in the rest of Great Britain, and has taken appropriate action to remedy the situation. However, it needs to develop a more robust approach to controlling HAVS risks at source through the use of lower vibration equipment.
- 2.16 We found that management surveys were carried out and adequate site specific asbestos management plans were in place for Network Rail's building premises. Various non-building premises were also identified as a high priority for asbestos survey work.

Occupational safety

2.17 Track worker safety in Scotland was generally well-controlled, with lost time injury rates associated with track work among the lowest in Great Britain. However, 2017-18 saw an increase in the numbers of potentially significant and severe operational close-calls associated with track worker protection - up from nine in 2016-17 to 20 in 2017-18. We are also aware of near-miss incidents where line blockages and possession protection was compromised by errors or omissions. There are some concerns around the impact on signallers' workload of the need to provide protection for engineering possessions, particularly for complex, long and/or non-routine possessions. Work under pressure carries with it the risk of mistakes that could compromise track worker protection. All these issues mean that Network Rail will need to continue to give priority to strengthening track worker protection through the adoption of measures such as automatic warning that do not rely solely on human vigilance.

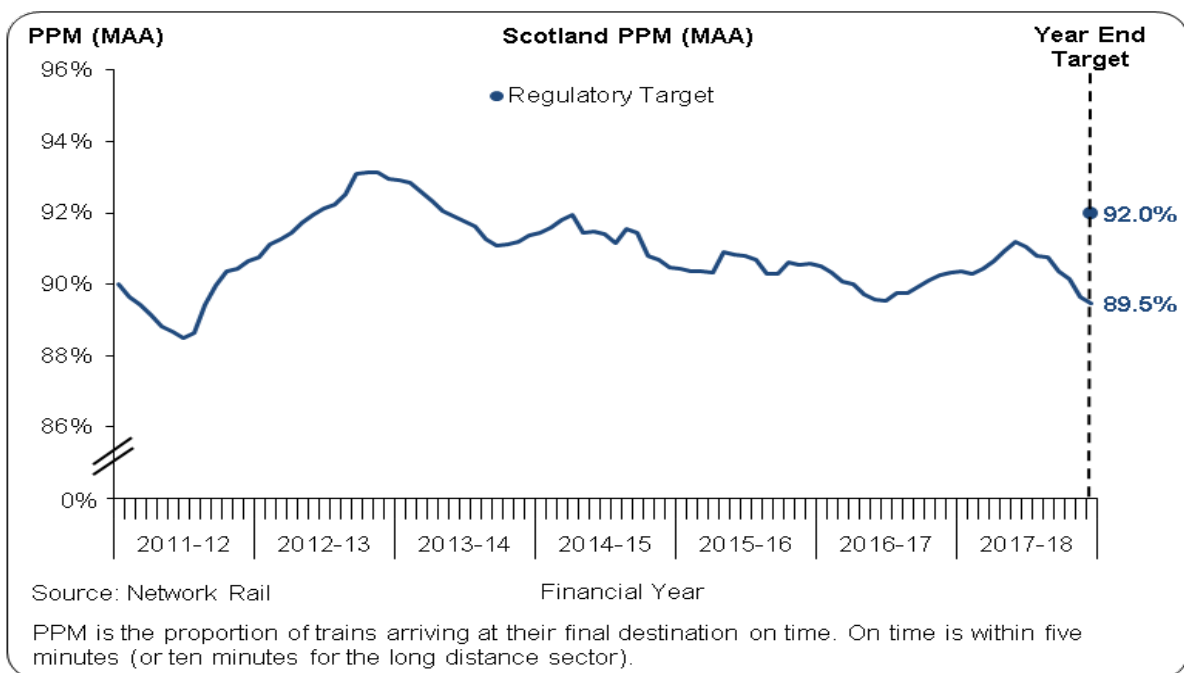
Operations

2.18 We found encouraging developments in reducing the likelihood of signaller critical errors through increasing focus on the influences on human performance. Investigations of operating irregularities now give greater attention to the factors that affect human performance. Incident investigations that identify human error are increasingly challenged, and the reasons behind those errors are more likely to be identified. These developments are a welcome sign of increasingly mature approach to operations in Scotland.

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) at the end of period 13 of 2017-18 was 89.5%, 2.5 percentage points (pp) below the year-end regulatory target of 92.0% and 0.9pp worse than at the same time last year.

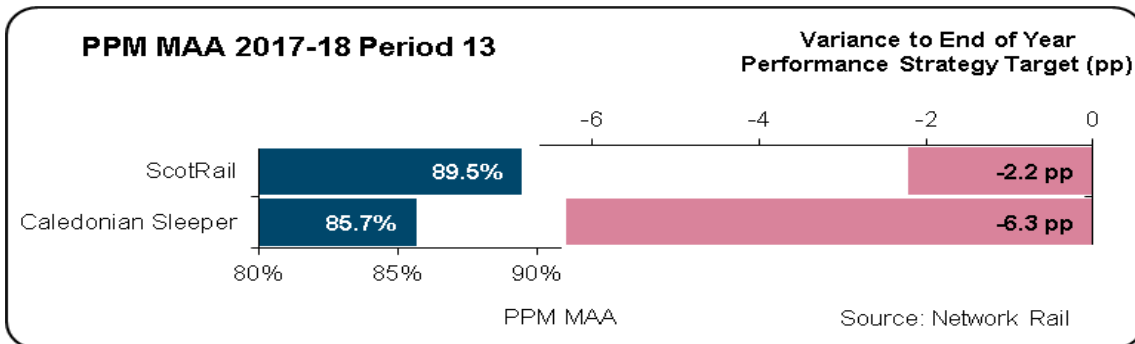


- 3.2 After a long period of improvement, Network Rail Scotland has seen a decline in performance over recent months. There is no one obvious cause for this with fleet, external factors (for example, fatalities and trespass) and non-track assets all contributing to the recent decline in performance.
- 3.3 We have seen some examples of good practice in Scotland, with effective real time management of day to day train performance, and robust management of performance improvement schemes. Network Rail was also proactive in conducting an autumn review, which enabled immediate lessons to be captured following its poor performance in autumn 2017.
- 3.4 In addition to the constantly evolving performance improvement plan and in the light of the recent decline in performance, the ScotRail Alliance appointed Nick Donovan (former TransPennine Express managing director) to carry out an independent review, of train performance. This generated a series of recommendations for action by the alliance intended to drive improvements in performance for the remainder of the control period.

3.5 We have been liaising closely with Network Rail Scotland, reviewing its operational management and implementation of the improvement plan every two months. We will continue close scrutiny of Network Rail's delivery in Scotland.

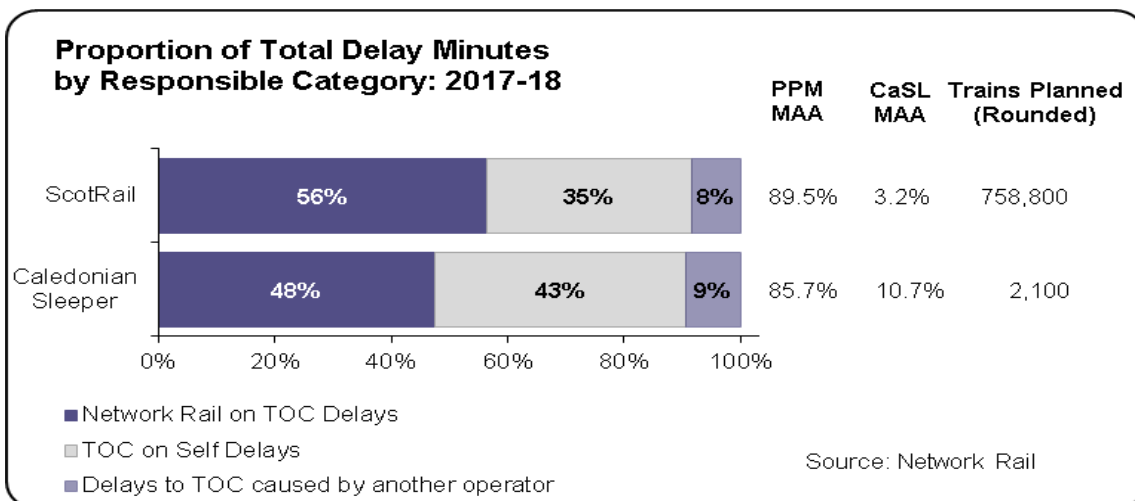
Performance at TOC level

3.6 As mentioned above ScotRail's PPM MAA is behind the regulatory target. Caledonian Sleeper is also behind, with PPM MAA at 85.7%, 6.3pp short of the regulatory target. This is 3.5pp decline since the end of 2016-17.



Delay minutes

3.7 In 2017-18, 56% of ScotRail delay minutes and 48% of Caledonian Sleeper delay minutes were attributed to Network Rail (4pp and 10pp respectively more than at the end of 2016-17). The remaining delay minutes were attributed to the operators themselves and other operators.



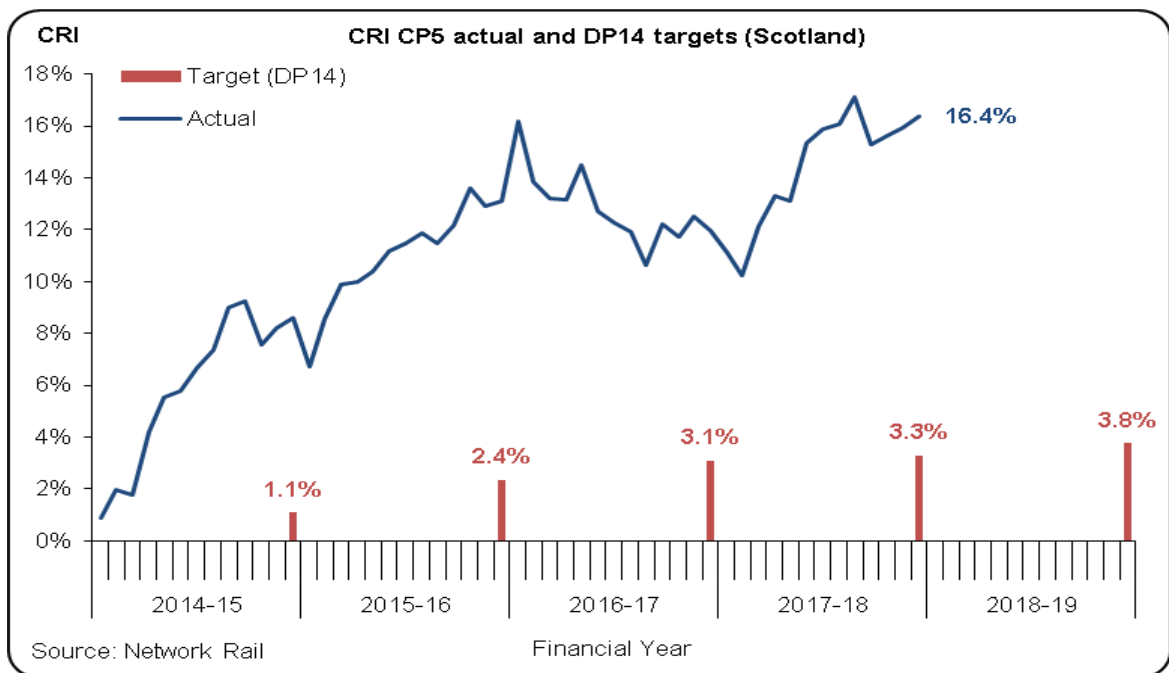
Freight

- 3.8 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 96.7%, 4.2pp ahead of the national annual regulated target of 92.5%.

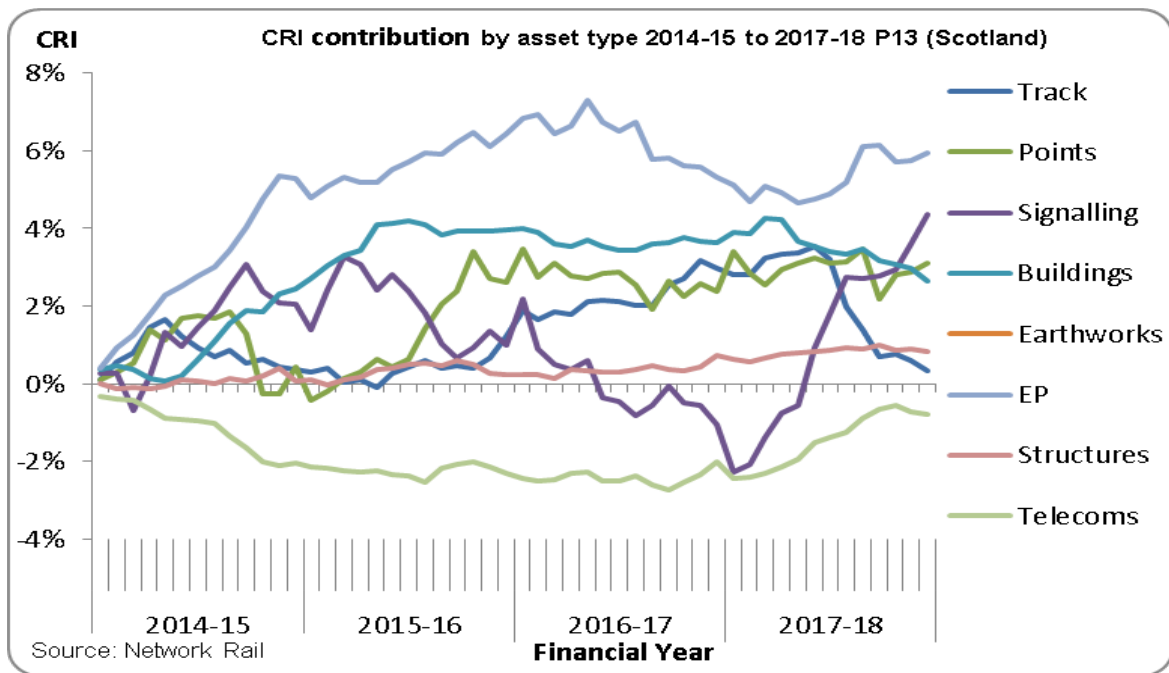
4. Asset management

Asset performance

4.1 The Composite Reliability Index (CRI) declined slightly in 2016-17, falling to 12.0%, but it has since recovered reaching 16.4% at the end of 2017-18. Despite this improvement, the actual number of service-affecting asset failures rose by 7.6% compared to 2016-17. These are now at a similar level to the last year of CP4. The volume of delay minutes attributed to infrastructure faults has also increased by 7.3% compared to the last year of CP4.



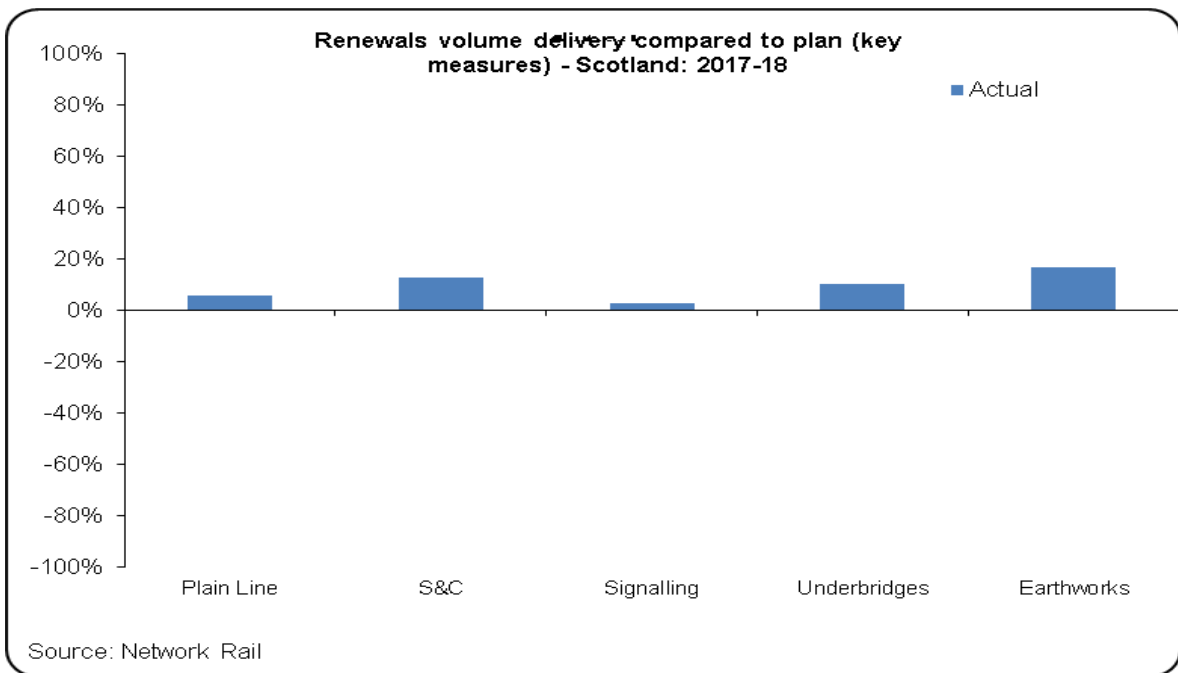
4.2 This recovery in CRI is underpinned by a 6.6pp performance gain in signalling over the year. Signalling is now again performing better than at the end of CP4. Telecoms has improved by 1.2pp in the same timeframe (following the rollout of GSM-R) although performance is still not as good as at the end of CP4. These gains are partially offset by a fall in the track and buildings CRI contributions.



Asset sustainability

- 4.3 Maintaining and renewing the network is fundamental to Network Rail's responsibilities. Regular maintenance counters the incremental 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 they have to be renewed.
- 4.4 Network Rail's asset policies set out the renewal work required to sustain the condition of the network assets efficiently. The resulting volume of renewals required during CP5 was set out in Network Rail's CP5 Delivery Plan (referred to as DP14).
- 4.5 We monitor the actual volume of work completed by Network Rail, to hold it to account for achieving its current plan, and to understand any volume of work deferred from the original DP14 plan, which will increase the cost of future control periods.
- 4.6 During the first year of CP5 (2014-15) the volume of renewals projects completed by Network Rail Scotland was significantly less than planned, but the situation improved in years 2 and 3 with renewals finishing on or ahead of DP14 in most areas. For 2017-18, the year-end position is variable across the asset areas, with over-delivery of key volumes, change in work mix and some deferred delivery.

4.7 The volume of plain line track renewals completed in 2017-18 was 5% ahead of the plan for the year. However, there has been a change in work mix from single rail renewal to refurbishment works, partly due to misallocation in the original targets. As the chart below shows, Switches and Crossings was 13% ahead of plan. Underbridges was 10% ahead of plan. Earthworks delivery was 17% ahead of plan, with the work mix changing reflecting an increase in refurbishment and a reduction in maintenance. Buildings and Electrification have deferred work to 2018-19 and are therefore below planned delivery. Some planned earthworks drainage activities were deemed not necessary.



5. Developing the network

- 5.1 Network Rail's delivery of enhancement projects in Scotland has improved significantly over the past twelve months. As a result of action taken to optimise schedules, secure the supply chain and implement effective delivery methodologies, confidence in Network Rail's ability to meet its regulated milestones and remain within the funding settlement has increased greatly. However as the issues with the Edinburgh Glasgow Improvement Programme show (see below), there are still notable areas of uncertainty and Scotland faces a challenging final year of the control period with complex construction activity underway on a number of schemes.
- 5.2 Relationship management and reporting transparency have also improved during the year and Network Rail has made concerted efforts to keep stakeholders and Transport Scotland, apprised of progress, risks and issues with the portfolio.
- 5.3 The new approach to specifying and funding enhancements will introduce new challenges for Network Rail in Scotland. It is important that the necessary framework is put in place so Network Rail can ensure the continued delivery of its operations, maintenance and renewal obligations, whilst at the same time allowing for staged approval of funding and delivery of enhancements.

Project progress

Edinburgh Glasgow Improvement Programme (EGIP)

- 5.4 The first EGIP key output, electrification of the line between Edinburgh and Glasgow via Falkirk high, was delivered in December 2017. This was over a year late and significantly over budget. Whilst this was a highly complex, multi-discipline project, its delivery was characterised by ineffective and inefficient procurement, poor project controls and on site productivity that fell significantly below forecasts. A lessons learned review of Key Output 1, from initial specification through to completion is underway. We will publish the summary report from this review later in the year.
- 5.5 EGIP Key Outputs 2, 3 and 4, including a number of interventions to enable longer and faster trains as well as the major redevelopment of Glasgow Queen Street, are progressing well and there are no significant concerns regarding the regulated milestone of March 2020. Network Rail has successfully managed the challenges presented by the insolvency of Carillion, the contractor responsible for delivering capacity improvements at Edinburgh Waverley. Whilst this has had an impact on programme and cost, project disruption appears to have been minimised and risks and issues flagged in a timely manner to stakeholders.

Aberdeen to Inverness Improvements Phase 1

5.6 Network Rail successfully opened the new station at Forres in October 2017 following a tightly managed possession for commissioning work. During 2017-18 Network Rail managed risks around securing necessary engineering access to deliver the works as well as major cost risk associated with securing land adjacent to the railway in order to progress satisfactorily. Work on the west end of the line is substantially complete and east end construction work is underway. Project costs have stabilised and whilst there are complex construction activities planned for 2018 and 2019 we do not view the regulated milestone (infrastructure ready for passenger use in December 2019) as being at risk.

Scotland Rolling Programme of Electrification (RPE)

- 5.7 In common with other electrification schemes in Scotland and across the UK, the RPE underwent major cost and scope increases earlier in the control period as Network Rail revised its engineering designs to reflect standards and legislation. Network Rail has worked hard to address these issues with the two remaining projects in the rolling programme, Shotts line electrification and Stirling Dunblane Alloa. Over the past twelve months, the Shotts project has successfully completed numerous bridge reconstructions, many in highly-constrained and busy areas and has made good progress towards electrification, with the majority of equipment necessary for the overhead line now in place. The regulated milestone (infrastructure ready for passenger use in March 2019) is not viewed as being at risk.
- 5.8 During 2017, Stirling Dunblane Alloa was in an uncertain state, with concerns around procurement, engineering compliance, track access and completion dates. It appeared unlikely that Network Rail would be able to meet its delivery obligations or the regulated milestone. Over the past eight months, this situation has improved and the project team has implemented changes to the way it is delivering and reporting on the work. Access has been secured and contractors are now in place to deliver. In addition, complex works to bridges and infrastructure, necessary to ensure electrified equipment is safe, have been designed and are now being delivered. In May this year, Network Rail achieved authorisation of the new section of electrified line between Greenhill, Polmont and Grangemouth junctions. This is a critical section of track for enabling the EGIP journey time output and represents a major achievement for the project.
- 5.9 Whilst the schedule is practicable, meeting the regulated milestone is viewed as being a challenge. We will continue to scrutinise Stirling Dunblane Alloa closely to ensure that Network Rail is doing everything reasonably practicable to deliver for its customers and funders.

Highland Mainline Journey Time Improvements Phase 2

5.10 Contracts with key suppliers have been let and site setup and physical works are now underway. The project team continues to report a low-cost, efficient solution for delivering the outputs, based around timetable changes, new rolling stock and re-signalling together with works at Aviemore and Pitlochry stations. There are no concerns regarding the regulated milestone although we note that development of the scope has taken longer than expected. There are some outstanding issues concerning timetabling and opportunities for freight and it is vital Network Rail is able to demonstrate that the project will deliver the full set of outputs and has buy-in from customers. We will expect to see evidence of this in the coming months.

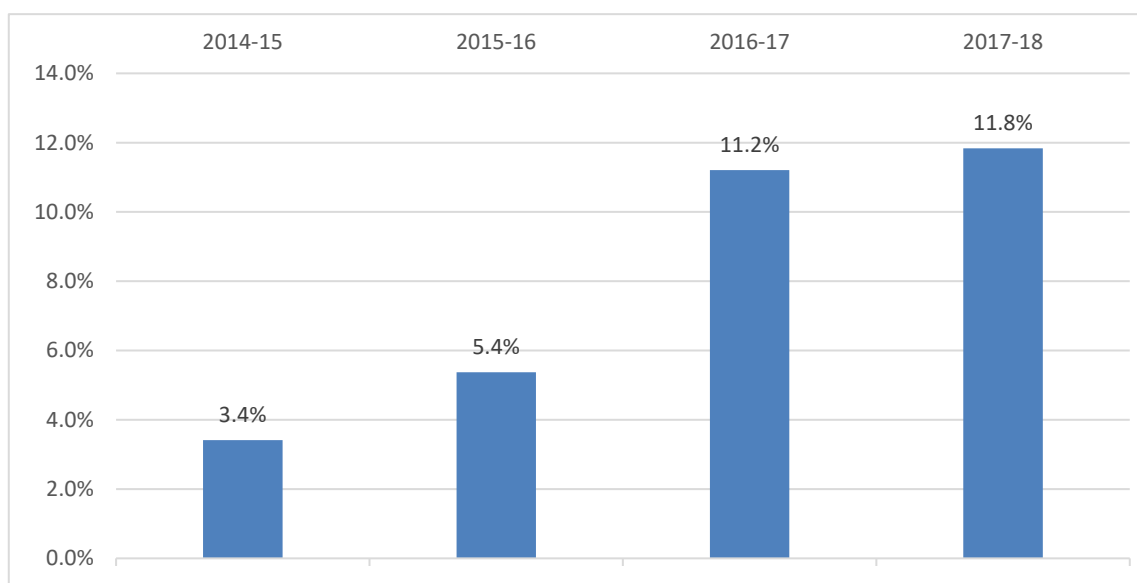
6. Expenditure and finance

- 6.1 This section examines Network Rail Scotland's efficiency and wider financial performance in 2017-18, including an assessment of the associated debt and borrowing.
- 6.2 This analysis is based on draft financial information provided by Network Rail. We will report more fully on these matters in our *annual efficiency and finance assessment*¹.

Efficiency has improved

- 6.3 We monitor the efficiency of Network Rail Scotland's core business activities. These are operations, support, maintenance and renewals. Efficiency improved by £2m (0.7%) in 2017-18, on top of the £73m (11.2%) of efficiencies across the first three years of CP5.

Network Rail Scotland's efficiency compared to the start of CP5



- 6.4 Network Rail Scotland's efficiency across the first four years of CP5 was due to £52m (12.9%) of renewals efficiency and £23m (10.1%) of operations, support and maintenance efficiencies. Using the CP5 efficiency measure, Network Rail is forecasting that its efficiency will be 0.1% percent lower in 2018-19 compared to the start of CP5².

¹ See <http://orr.gov.uk/rail/economic-regulation/regulation-of-network-rail/monitoring-performance/efficiency-and-finance-assessment>.

² Network Rail has said that the decline in 2018-19 is partly because Network Rail has decided that to best prepare for CP6, it has chosen to spend more money on operations, support and maintenance activities (£77m). The effect of this decision will worsen reported efficiency because increases to operations, support and maintenance expenditure count as inefficiency.

- 6.5 Scotland deferred £27m (7.1%) of planned renewals in 2017-18³. It has built up a substantial backlog (£118m) of work across the first four years of CP5 that will now need to be caught up in CP6 and beyond.⁴
- 6.6 Earlier this year we consulted on the problems with Network Rail's renewals in CP5. These are explained in our GB Monitor. Some of the respondents to our consultation agreed with our analysis when applied to Scotland, for example with regard to poor planning, whereas others disagreed, especially regarding devolution which they felt had worked as it had improved the relationship between government and the industry.
- 6.7 Because poor planning for CP5 caused a number of the problems with Network Rail's renewals efficiency (across Great Britain as a whole), we appointed an independent reporter, Nichols to assess whether Network Rail was developing robust expenditure plans as part of its route-based strategic business plans for Control Period 6 (CP6). Nichols concluded that Network Rail was following a progressive planning process that should lead to robust efficiency plans for operations, maintenance and renewals expenditure in CP6.

Wider financial performance

- 6.8 The regulatory financial performance measure (FPM) provides a better understanding of Network Rail's financial performance than simple income and expenditure variances. FPM compares actual income and expenditure to Network Rail's annual budget, and then to the financial assumptions in our PR13 determination (which underpin Network Rail's level of funding)⁵. It ensures that Network Rail does not benefit from delaying work to a later date if that work will still need to be done. It also adjusts for the value of any outputs that Network Rail was funded to, but has not delivered, such as reliability of train performance.

³ Chapter 4 includes an analysis of some of the main renewals volumes. There are two important differences between that analysis and here. Firstly, this section includes all renewals expenditure, whereas Chapter 4 covers around only half of all renewals. Secondly, for financial purposes, work is recorded as a project progresses, whereas for asset management purposes it is only recorded when the asset is brought into operation.

⁴ Our GB Monitor is here http://orr.gov.uk/_data/assets/pdf_file/0020/28136/network-rail-monitor-2017-18-q3-4.pdf. The renewals consultation and responses are here <http://orr.gov.uk/rail/consultations/pr18-consultations/consultation-on-improving-network-rails-renewals-efficiency>.

⁵ It excludes some income and expenditure that is not as controllable by Network Rail. This includes network grant, fixed track access charges, traction electricity income and costs and business rates.

Network Rail Scotland financial performance in 2017-18

£m	Budget	Actual	Variance better/(worse)	Of which out / (under) performance
Turnover	109	102	4	(1)
Schedule 4	(27)	(15)	12	12
Schedule 8	(4)	(21)	(17)	(17)
Operations	(45)	(44)	1	1
Support	(54)	(47)	7	5
Maintenance	(125)	(127)	(2)	(4)
Capex – Renewals	(382)	(351)	31	4
Capex – Enhancements	(405)	(382)	23	37
Financial performance (internal) ⁶				37
Budget vs. PR13				(138)
Adjustments for missed regulatory outputs				(8)
Financial performance (regulatory)				(109)

6.9 Scotland outperformed against its internal measure by £37m in 2017-18⁷. This was largely because of lower than budgeted enhancements expenditure offset by higher than budgeted Schedule 8 payments for poor train performance. The level of performance has improved compared to the first three years of CP5 (average £50m annual underperformance against budget).

6.10 Scotland underperformed the regulatory financial performance measure by £109m largely because its internal budget was £138m higher than our PR13 financial assumptions for the year. This is largely because of higher capital expenditure for renewals and enhancements than anticipated at PR13.

Debt and borrowing – headroom in 2018-19

6.11 Network Rail's debt attributable to Scotland increased by £0.6bn to £4.7bn in 2017-18. This was £0.1bn lower than budget largely due to an in year underspend on renewals and enhancements projects.

6.12 Network Rail has fixed borrowing facilities with the Department for Transport for CP5⁸ for its activities in England & Wales, and in Scotland. Network Rail expects to use most of its available borrowing for its planned activities in Scotland. It has £0.1bn of 'headroom' which it intends to use in 2018-19.

⁶ Neutral timing differences including deferral of work represent the £22m difference between £59m of cumulative income and expenditure variances and the £37m of financial outperformance against budget.

⁷ This analysis includes a portion of Network Rail's central costs. These are shown separately in the assessment of Scotland's financial performance in our GB Monitor

⁸ There are separate limits for England & Wales and for Scotland.

Getting ready for CP6

Leading indicators of performance

- 6.13 Because poor planning for CP5 caused a number of the problems with Network Rail's renewals delivery and efficiency, we asked it to demonstrate that it is better prepared to deliver efficiently from the start of CP6.
- 6.14 Network Rail has undertaken an analysis of some of the key leading indicators of efficient delivery for each of its routes for 2019-20, the first year of CP6. We recognise that this is new management information (based on existing data sources). As such, there may be some inaccuracies and this analysis is likely to evolve. However, in our view, the currently available information is a good start for assessing how well prepared routes are for the start of CP6 – 1 April 2019. We expect the analysis to evolve over time, for example around target levels.
- 6.15 Given that it is around nine months before the start of CP6, we would not expect routes to have fully developed workbanks, contractual arrangements and resources. However, Network Rail's analysis shows that in Scotland it still has a substantial amount of work to do to get ready for the start of CP6:
- *Network access*: Scotland has booked less than 10% of the network access that it forecasts will be needed to undertake planned engineering work in 2019-20. Network Rail considers that this is adequate because the majority of planned work is routine and does not require access to be booked long in advance of the work⁹.
 - *Workbank planning*: Few renewals projects have been booked in Oracle Projects (Network Rail's project management system) and even fewer have received internal authorisation.
 - *Efficiency plans*: Network Rail has shared information on the progress of routes' efficiency plans. Scotland has not yet developed mature plans for how it will deliver efficiency improvements in CP6. We would have expected routes' efficiency plans to be further progressed at this stage. We are expecting to see substantial progress over the next few months.
 - *Renewals delivery contracts*: Network Rail is currently in the process of renewing some and extending some of its long-term framework contracts. This is important to avoid disruption to the supply chain. It is currently on target to implement the new contracts on time.
 - *Maintenance capacity*: Scotland intends to recruit around 60 additional staff in 2018-19 to ensure that it has adequate resources to deliver its planned

⁹ Disruptive possessions have a significantly greater impact on train services. These need to be agreed with train operators much longer in advance. Scotland has little planned engineering works that require more disruptive possessions.

maintenance activities for 2019-20. There is no clear data on progress with planned recruitment.

6.16 Network Rail believes it is difficult to draw firm conclusions from the current information on leading indicators. In our view, this information, provided by Network Rail, does not clearly demonstrate that Network Rail Scotland is well-prepared to deliver efficiently from the start of CP6. Network Rail needs to be clearer about its targets, and to improve its comparative analysis of the regional variations across its leading indicators. We will check Network Rail's progress at our regular director-level meetings and report on progress in our next Monitor publication.

Changes to our monitoring approach for CP6

6.17 We recently consulted on changes that we intend to make to the way that we assess Network Rail's efficiency and financial performance¹⁰. In CP6, we will provide more rounded assessments that draw out key messages about the drivers of performance, recognising that different audiences want different levels of technical detail. We will also make more informed forward-looking assessments of the efficiencies that Network Rail will likely deliver across the control period.

6.18 To support these changes, Network Rail will need to make changes to the information it provides to us. Network Rail has largely supported our intended changes and is working with us to agree how these should work in practice. It has committed to:

- improve its communication of the reasons for cost changes due to changes to routes' efficiencies, mix of work and external factors;
- provide a sharper focus on performance compared to delivery plans; and
- identify the most appropriate measures of routes' productivity and leading indicators of performance.

6.19 We will publish our finalised approach in regulatory accounting guidelines before the start of the control period.

¹⁰ See <http://orr.gov.uk/rail/economic-regulation/regulation-of-network-rail/price-controls/periodic-review-2018/pr18-consultations/our-approach-for-assessing-network-rails-efficiency-and-wider-financial-performance-in-control-period-6>.

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
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).
Civils	Civil engineering assets including bridges, structures and earthworks
Composite Reliability Index (CRI)	An index which provides an indication of the contribution of asset reliability to the safety and performance of the railway.

Term	Explanation
Control Period	<p>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.</p> <ul style="list-style-type: none"> • 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
Earthworks	<p>Natural earth slopes and earth-related structures such as cuttings and embankments</p>
Enhancements	<p>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).</p>
Fatalities and Weighted Injuries	<p>An index measuring relative risk from fatalities, major and minor injuries.</p>
Freight Delivery Metric (FDM)	<p>This measure tracks the punctuality of freight services at destination taking into account Network Rail caused delays.</p>
GSM-R	<p>Global system for mobile communications - railway. An international wireless communications standard for railway communication.</p>

Term	Explanation
Hand arm vibration syndrome	Symptoms caused by vibration damage that may occur in the fingers, hands and arms when working with vibrating tools or machinery.
Moving Annual Average (MAA)	Moving annual average - the average of the last 13 four-week time periods.
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.
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.
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

Term	Explanation
Respirable crystalline silica	Silica is a natural substance found in most rocks, sand and clay and in products such as bricks and concrete. In the workplace these materials create dust when they are cut, sanded down etc. Some of this dust may be fine enough to reach deep inside the lung, this is known as respirable crystalline silica (RCS) and can cause harm to health.
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.
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 trains and services on the network.

Term	Explanation
Track Geometry	The horizontal and vertical alignment of the track.
Underbridge	A bridge that allows passage under the railway.
User worked crossing	A level crossing where the barriers or gates are operated by the user.
Works Delivery	Part of Network Rail which delivers smaller schemes that are more complex than those delivered by the maintenance function but smaller than those falling to Infrastructure Projects
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.
Wrong side failure	A failure that causes a piece of equipment to cease functioning in such a way as to cause danger to the safety of the line.



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