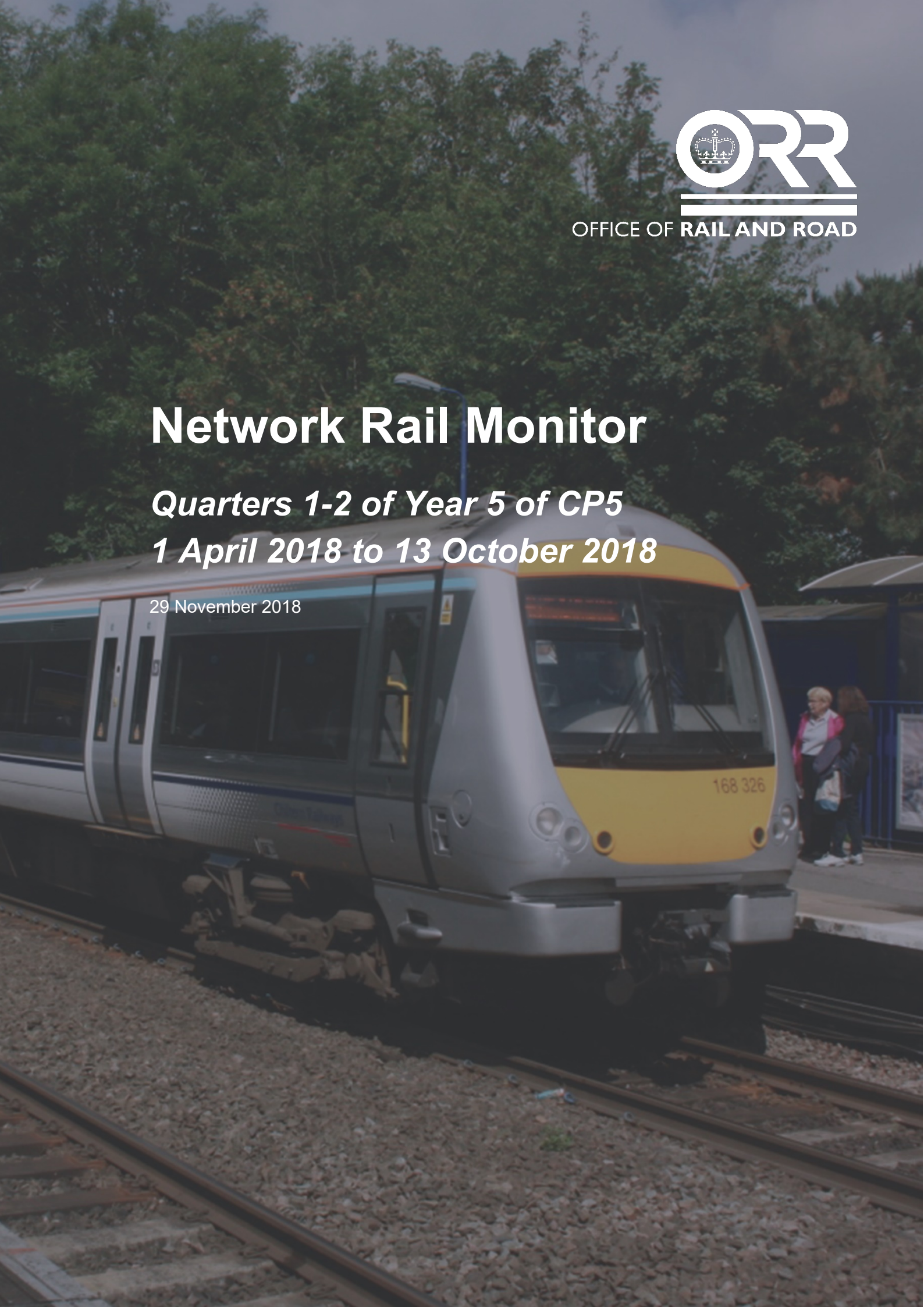


Network Rail Monitor

Quarters 1-2 of Year 5 of CP5
1 April 2018 to 13 October 2018

29 November 2018

Contents

Front cover "Chiltern Railways' units 168326 and 168325 call at Warwick with a Birmingham to London service" by Geof Sheppard (CC BY-SA 4.0), from Wikimedia Commons. Image cropped including colour overlay.

1. Overview

1.1. This edition of our Network Rail Monitor falls between the publication of our CP6 final determination for CP6 on 31 October 2018[1] and the findings from the second phase of our inquiry into the timetable disruption in May 2018, due to be published in December 2018. As a consequence this edition is shorter than usual, concentrating on just two areas: passenger train service performance and CP6 readiness.

Passenger train service performance

1.2. Passengers have suffered a decline in train service performance during CP5. They rely on both Network Rail and train operators working together to deliver punctual and reliable train services. ORR's remit is to ensure that Network Rail is doing all that is reasonably practicable to deliver its contribution.

1.3. The CP5 framework comprised national targets set in October 2013 and local targets agreed annually between Network Rail and each of its customers, the train operators. The local, annual targets have become our focus, reflecting the significant changes to Network Rail's structure and status during CP5. In the last two years we have singled out the worst performing route in each year for closer examination and published our findings.

1.4. Because these targets are system-wide they do not differentiate between Network Rail action and train operator action. So, if targets are not met we must investigate further to determine the extent of Network Rail's accountability. This is a complex task because the network is increasingly busy and train performance is affected by many different factors.

1.5. Currently passenger train performance is well adrift for around half of local targets. We know that adverse weather, serious problems implementing the May 2018 timetables (related to enhancement delays amongst other things) and industrial action have all contributed to this poor level of performance.

1.6. But with the winter months still ahead, it is too soon to conclude definitively whether each of Network Rail's routes is taking all reasonable steps to deliver its specific targets for this year. We will therefore continue to investigate and we will report our findings on 2018-19 as a whole in the Monitor we expect to publish next summer.

1.7. However, we also have seen evidence to suggest failings in Network Rail's underlying performance management capability from a series of industry reviews and

[1] Linked here http://orr.gov.uk/rail/economic-regulation/regulation-of-network-rail/price-controls/periodic-review-2018/publications/final-determination

our own “deep dives” into particular routes undertaken in the last two years. These concern Network Rail’s approach and commitment to performance planning and its capability to recover services following incidents on the network, working with train operators.

1.8. Therefore, in addition to our normal monitoring for this year, we have decided to take action now to ensure Network Rail is addressing these systemic failings ahead of the start of CP6.

1.9. Looking ahead, we have finalised a different framework for CP6 that should provide sharper incentives (for example around reputation) for Network Rail to deliver good performance to its customers and passengers that more closely reflects its route-based structure. This will become fully operational in April 2019.

CP6 Readiness

1.10. In the 5 months since we raised this issue publicly, Network Rail has made progress in establishing workbanks, securing access to the railway for planned disruptive engineering and building up its maintenance resources for the start of CP6. However, initiatives to deliver efficiency savings across CP6 are less well advanced.

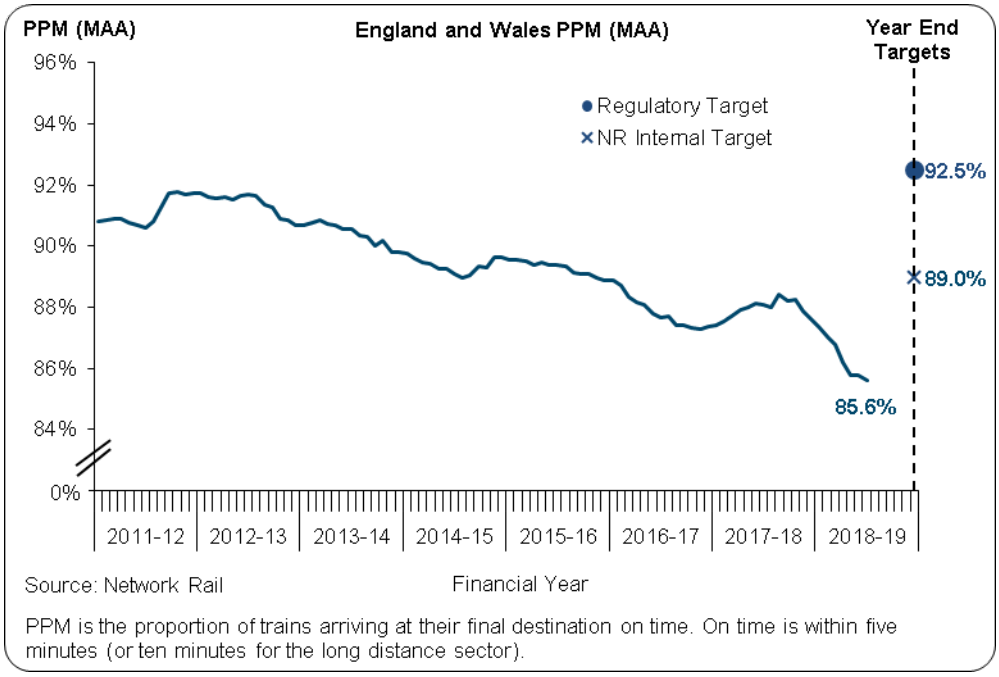
1.11. Overall, Network Rail is in a better state of readiness for CP6 than it was at the equivalent point before CP5 started. But there is more it needs to do in the remaining 4 months before CP6 starts. We will continue to monitor its readiness closely and we will report publicly again on this issue by the end of March 2019.

2. Passenger train service performance

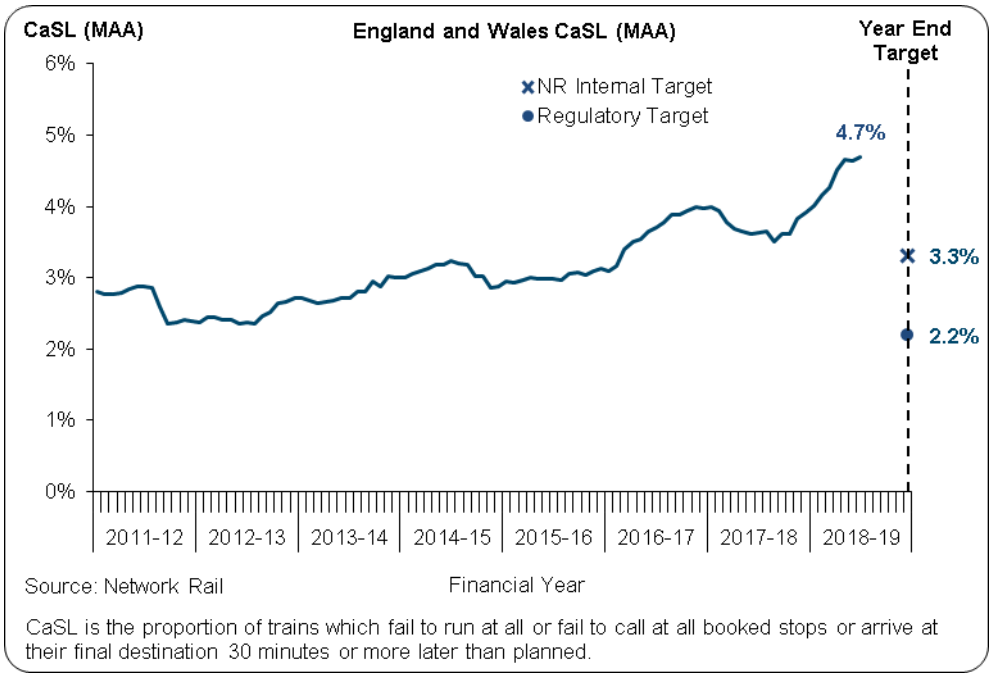
2.1. Passengers have suffered a decline in train service performance across CP5. Passengers rely on both Network Rail and train operators to work together to deliver punctual and reliable train services. ORR's remit is to ensure that Network Rail is doing all that is reasonably practicable to deliver its contribution. As a starting point, we examined the performance metrics that the industry currently uses. These are the Public Performance Measure (PPM) and Cancellations and Significant Lateness (CaSL).

2.2. The CP5 framework comprised national regulatory targets set in October 2013 and local targets agreed annually between Network Rail and each of its customers, the train operators. The local, annual targets have become our focus, reflecting significant changes to Network Rail's structure during CP5. The local annual targets make up the Network Rail internal target in the charts below.

2.3. In England and Wales, the PPM moving annual average (MAA) declined to 85.6% in the first 7 periods of 2018-19. This is 3.4 percentage points (pp) below Network Rail's year-end internal target and 6.9pp below its regulatory target set at the start of CP5.



2.4. The CaSL MAA increased (worsened) to 4.7%. It is now 1.4pp worse than Network Rail's year-end internal target and 2.5pp worse than the regulatory target set at the start of CP5.



2.5. At the level of individual passenger train operators, performance has also continued to decline this year and some operators are currently experiencing the lowest levels of punctuality and reliability in this control period. No passenger train operator's performance is currently ahead of the targets locally agreed with Network Rail at the start of 2018-19. At the end of period 7, Merseyrail recorded the highest absolute PPM MAA score (95.0%) and Chiltern Railways had the lowest (best) CaSL MAA of 1.9%.

2.6. Because these targets are system-wide they do not differentiate between Network Rail action and train operator action. So, when targets are not met we must investigate further to determine the extent of Network Rail's accountability. This is a complex task because the network is increasingly busy and train performance is affected by many (often interrelated) factors.

2.7. We work closely with Network Rail and train operating companies (TOCs) to understand performance trends. We analyse data that the industry routinely gathers about delays on the network and who they are attributable to. We also undertake regular site visits to see at first hand the challenges Network Rail faces and how it plans to tackle them.

2.8. At the end of period 7, the MAA of delay minutes in England and Wales showed 59% were attributable to Network Rail. 30% were "TOC on Self", that is delays to a passenger train operating company's services caused by that company.11% were "TOC on TOC", that is delays to a passenger train operator's services caused by another train company. Network Rail's share of total delays is broadly consistent with previous years.

2.9. However, the data also shows there is an increase in delay per incident (DPI). While the number of delay causing incidents remains relatively static, the level of delay attributed to Network Rail has increased across all categories (particularly infrastructure and fatalities/trespass in England). This is not an isolated trend. DPI for both track and non-track assets failures has increased in all routes in England and Scotland. Wales is the only route where DPI is decreasing.

2.10. Performance in 2018-19 to date has been affected by factors including:

- **Weather**: Although heavy snow fell in February and March (i.e. the previous performance year), these events remain in the Moving Annual Average (MAA)[2] figures. This summer also saw sustained periods of hot weather, most notably in Scotland[3]. The impact of these weather conditions caused additional signalling failures, track faults (and resulting speed restrictions) and buckled rails. The hot weather also prevented Network Rail from undertaking routine maintenance activities, such as tamping. This can disturb track and adversely affect its stability in vulnerable locations, resulting in more speed restrictions or an increased risk of track defects. The effect of the dry summer has also created a significant number of temporary speed restrictions in the autumn because moisture levels in embankments remains low leading to movement in the track bed and safety risks that must be managed;

- **Issues implementing the May 2018 timetable change –** This related to enhancement delays amongst other things and had a severe impact on many operators, notably GTR and Northern. Despite revised timetables subsequently bedding in, several operators have been unable to return to previous performance levels.

- There are ongoing **industrial relations** issues, mainly centred around the move to driver controlled operation. The first TOC to be heavily impacted, GTR, now seems to have largely recovered from this. However, other TOCs such as Northern and South Western Railway (SWR) are being affected. It is difficult to quantify this impact accurately, though it is clear the impacts are not limited to strike days; and

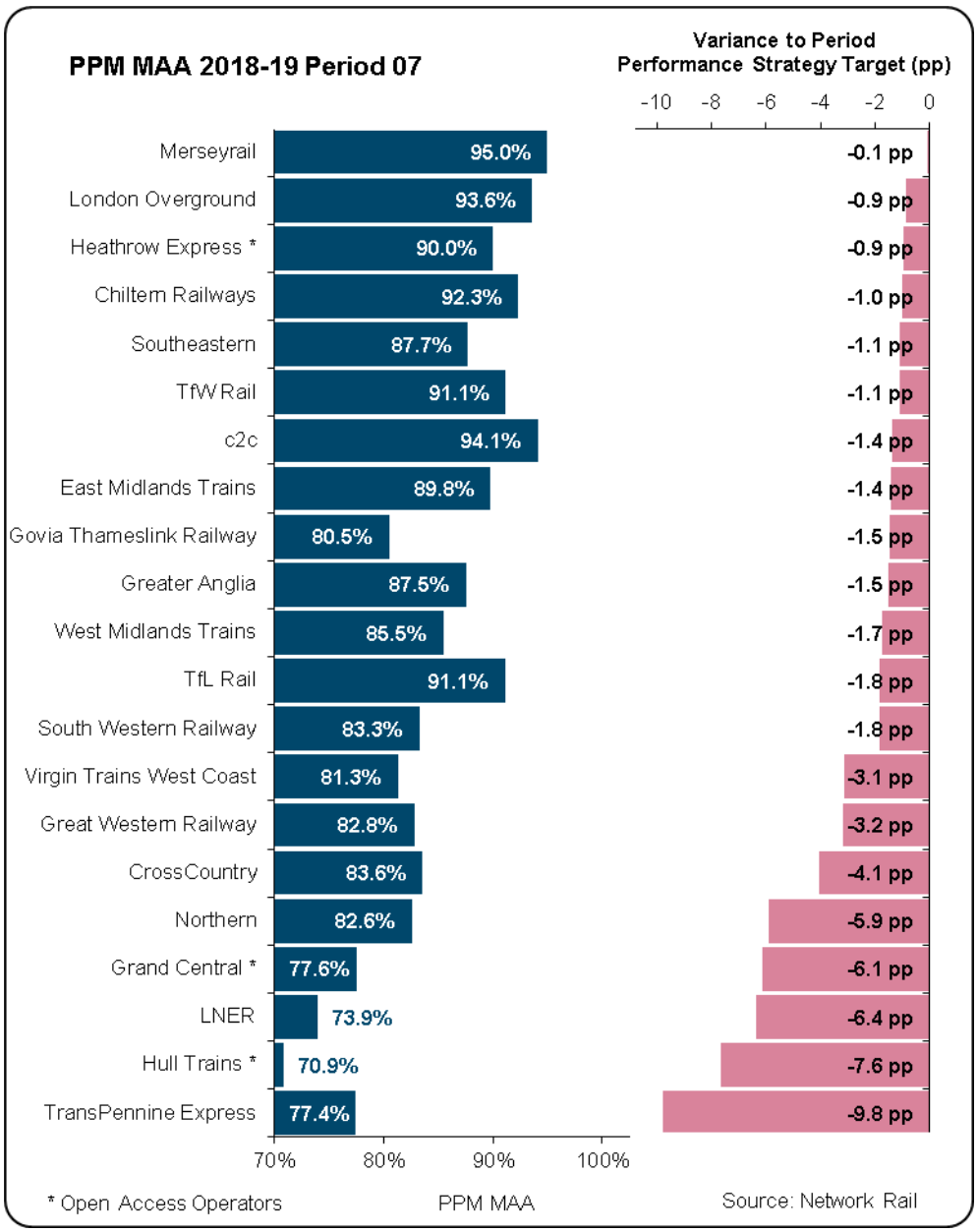
- **Traincrew resource** issues have also contributed to some poor performance, in particular, by making service recovery when things go wrong more difficult. Several reviews into different operators highlighted this issue, for example the

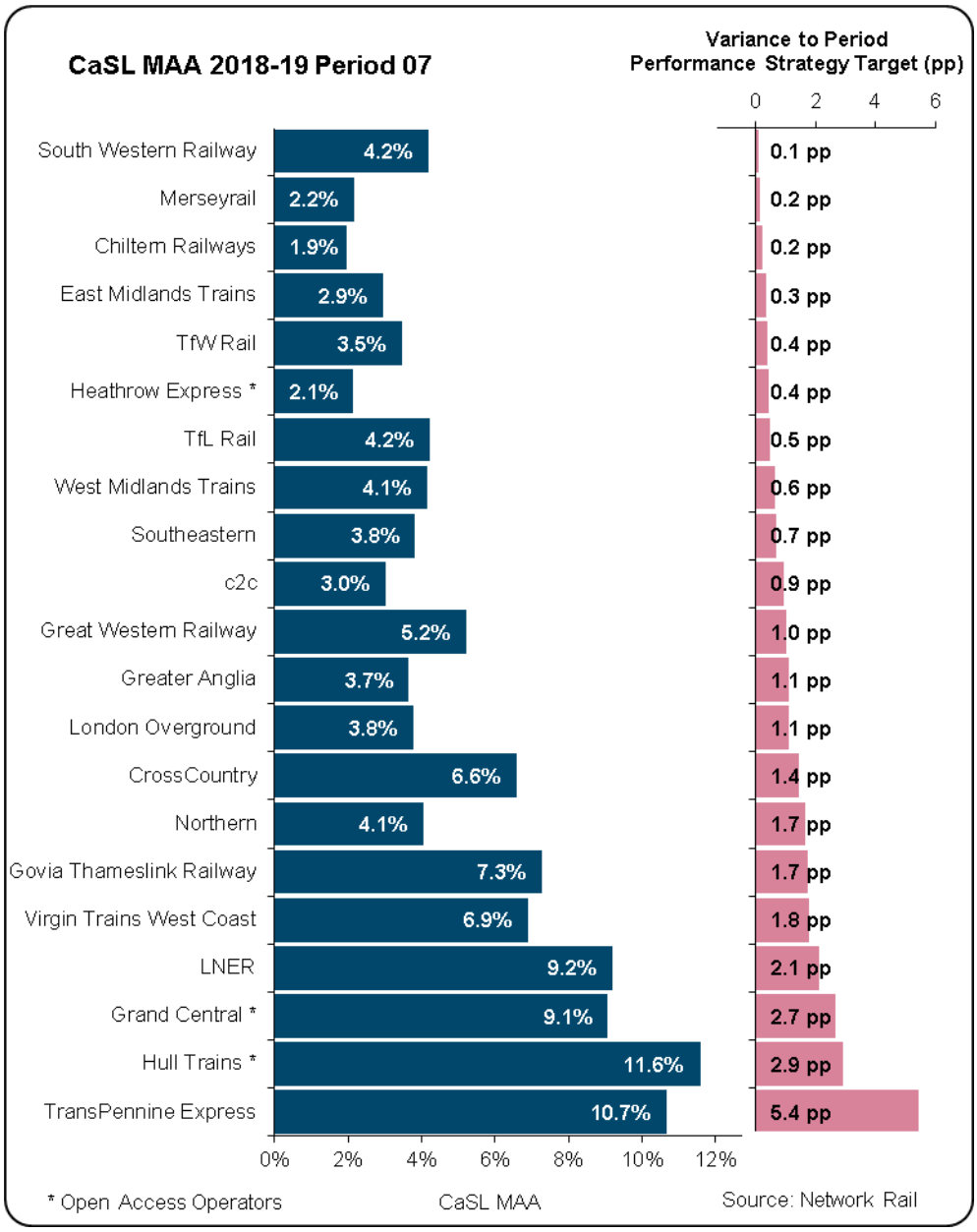
[2] The MAA reflects the proportion of trains cancelled or significantly late in the past 12 months.

[3] Hot weather caused emergency speed restrictions affecting Glasgow and Edinburgh and caused 11900 delay minutes to all operators in April to June 2018.

National Audit Office report into GTR published in January 2018 and the Holden report on SWR published in August 2018.

2.11. While it is Network Rail's responsibility to manage some of these factors, some are mainly issues for the train operators. Given the complexity and that the winter months of 2018-19 are still to come, it is too soon to conclude whether each of Network Rail's routes has taken all reasonable steps to deliver its specific targets for this year. We will therefore continue to monitor performance for the rest of the year and to investigate Network Rail's role. We will report our findings on 2018-19 as a whole in the Monitor next summer.





2.12. However, we also have seen evidence to suggest failings in Network Rail's underlying performance management capability from a series of industry reviews and our own "deep dives" into particular routes undertaken in the last two years. These concern Network Rail's approach and commitment to performance planning; and its capability to recover services following incidents on the network, working with train operators.

2.13. Therefore, in addition to our normal monitoring for this year, we have decided to take action now to ensure Network Rail is addressing these systemic failings ahead of the start of CP6.

2.14. Looking ahead, we have finalised a different framework for CP6 that should provide sharper incentives (for example around reputation) for Network Rail to deliver good

performance to its customers and passengers as it more closely reflects Network Rail's route based structure. This will become fully operational in April 2019.

2.15. An important element in the new approach are route scorecards. Network Rail first introduced these in 2016-17 to monitor its key performance indicators and to align its train performance more closely with its customers' requirements. Most TOCs have agreed a PPM and CaSL target for 2018-19, while some such as GTR have set out an On-Time metric. We use the data in the scorecards as evidence to help us determine whether Network Rail is doing everything reasonably practicable to meet its train service performance targets.

3. CP6 Readiness

3.1. Poor planning at the end of CP4 caused problems with Network Rail's renewals delivery and efficiency in CP5. Therefore, we required Network Rail to demonstrate that it is better prepared to deliver efficiently from the start of CP6.

3.2. We have reviewed Network Rail's leading indicators of efficient delivery for each of its routes for 2019-20, the first year of CP6. We first reported on these indicators in our Monitor published in July 2018[4]. At that time we recognised this was new management information (though based on existing data sources) and that we would expect Network Rail's analysis to evolve.

3.3. We reported that it was difficult to draw firm conclusions from the information available in July 2018. However, it did not clearly show that routes were well prepared to deliver efficiently from the start of CP6. We said that Network Rail needed to do more to demonstrate this.

3.4. We have subsequently reviewed routes' progress largely based on information up to the end of period 5 and subsequently updated for period 7[5]. Our review included in-depth interviews with directors of three routes about their preparations (Scotland, Wessex and London North East & East Midlands (LNE/EM))[6]. Most of our commentary below focuses on the output from these interviews.

3.5. In the 5 months since we raised this issue publicly, Network Rail has made progress establishing workbanks, securing access to the railway for planned disruptive engineering and building up maintenance resources for the start of CP6.

3.6. However, initiatives to deliver efficiency savings across CP6 are less well advanced. There are different levels of maturity and uncertainty about Network Rail's plans and there is more to do to set out what these plans will deliver, how it will deliver them, the delivery risks and how Network Rail will mitigate those risks.

3.7. Overall, our review has found that Network Rail is in a better state of readiness for CP6 than it was at the equivalent point before CP5 started. But there is more it needs to do in the remaining 4 months before CP6 starts.

3.8. Our review identified differences between the information collated and used by Network Rail's central team compared to the information that is being used by routes

[4] See http://orr.gov.uk/__data/assets/pdf_file/0020/28136/network-rail-monitor-2017-18-q3-4.pdf.

[5] Network Rail divides a financial year into 13 four-week periods for reporting purposes. Period 7 approximately represents the half-year.

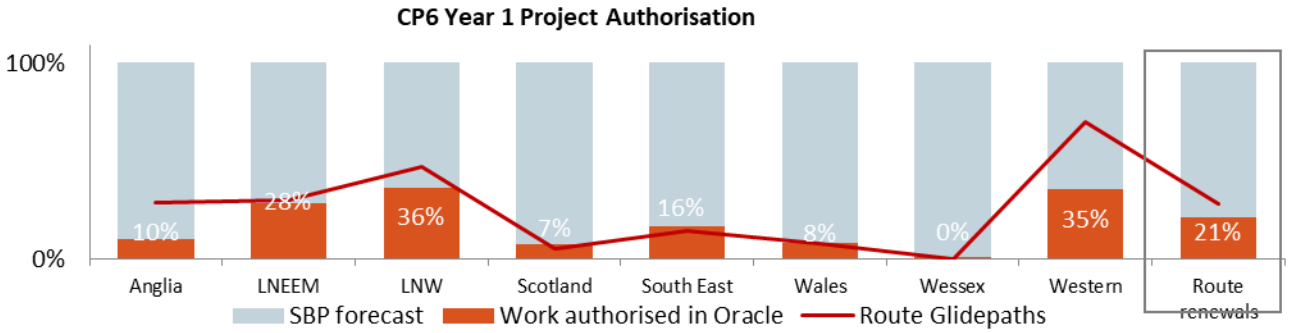
[6] These routes were selected due to their geographical diversity including the different mixes of rural, commuter and intercity lines.

themselves to monitor their own progress. Network Rail has made changes between period 5 and period 7, and is continuing to develop its leading indicators to improve their usefulness for assessing routes' preparations.

3.9. We will check Network Rail's progress on CP6 readiness at our regular director-level meetings and we will further report publicly on this issue by the end of March 2019.

Renewals planning

3.10. Effective renewals planning is important because it improves the robustness of the network and reduces costs. It provides a stable profile of work for Network Rail's supply chain, can avoid more critical work than necessary being planned for delivery in the final quarter of the year (when weather conditions are most challenging) and prevent slippage of work into the following year.



Source: Network Rail

3.11. Nationally, 21% of renewals projects for 2019-20 (by value) had completed detailed designs and had received financial authorisation for delivery by the end of period 7[7]. This represented a 4pp increase in work authorised compared to our last review and was 7pp behind Network Rail's internal 28% target[8]. Our review has found that additional information needed to be considered to assess routes' progress in planning their renewals programmes for 2019-20. Based exclusively on this key indicator we would be concerned at the progress made. However, drawing on this additional information, we consider the 3 routes we assessed have generally progressed further than suggested by the leading indicators:

[7] Specifically, 21% of forecast renewals work had achieved financial authorisation in Network Rail's project management system, Oracle Projects. This represents GRIP stage 5 ('detailed design'), meaning that the project is ready for construction. Governance for Railway Investment Projects (GRIP) is Network Rail's control process for delivering projects on the operational railway.

[8] Network Rail's internal target at period 5 was based on performance over the past two years. Targets have subsequently been revised to reflect routes own plans for the run up to CP6 to include route level authorisation plans.

- At period 5, information about 88% of planned track renewals projects in LNE/EM had been shared with the supply chain. LNE/EM considered that this provides a high degree of confidence for the supply chain to begin their own planning.

- At period 5, only 5% of renewals had received financial authorisation in Scotland. However, this was consistent with the route's target as financial authorisation is usually done in batches with the route expecting to obtain financial authorisation for a further 25% of planned renewals in November. Network Rail's Scotland route stated that all planned renewals projects for 2019-20 had been shared with the supply chain.

- Wessex route had no renewals projects authorised in Oracle Projects. Unlike other routes, Wessex intends to undertake these internal authorisations in the final quarter of the year when it has certainty over its renewals budget and a new renewals framework contract. Wessex considers that it has developed a mature renewals programme for 2019-20 including a fully specified workbank that has been shared with the supply chain for track (both plain line and switches and crossings) and for the major Feltham re-signalling project.

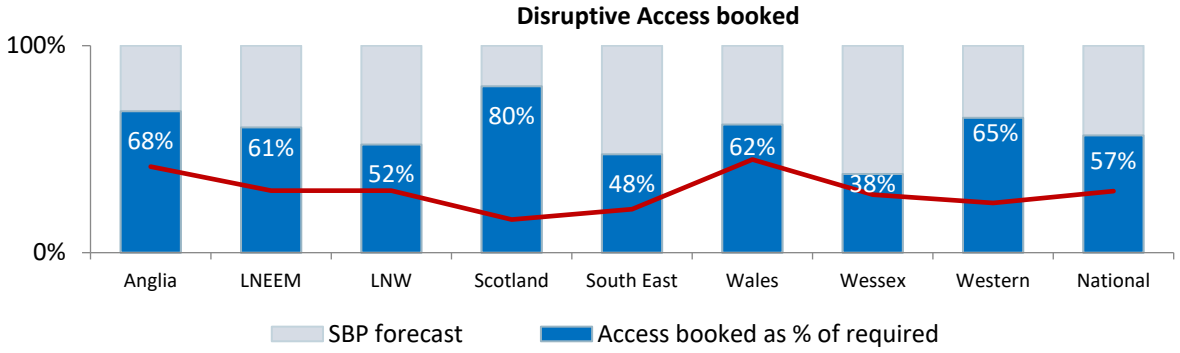
- Network Rail uses framework agreements with its supply chain for the majority of its renewals delivery contracts. There were problems with changes to framework agreements in late CP4 (in particular for track and civils) which disrupted planning and led to deferral of work. Network Rail is currently in the process of renewing and extending most of these framework agreements. This appears to be on schedule and we expect the majority of the new frameworks to be awarded before the start of CP6. Where necessary, Network Rail has plans in place to extend other framework agreements to cover the start of CP6.

3.12. We are currently discussing with Network Rail how additional information can be used to improve understanding of the development and subsequent stability of routes' renewal workbanks. This will include reviewing whether the metric is fit for purpose given the comments above about how routes plan their renewals.

Securing engineering access to the railway

3.13. All routes appear to be on track for booking disruptive access to the network for planned engineering work in 2019-20. Nationally, 57% of planned disruptive possessions in 2019-20 have been booked in Network Rail's possession planning system, compared to Network Rail's 30% internal target at period 7. We consider this understates the level of routes' planned network possessions.

Percentage of required network access in 2019-20 booked



Source: Network Rail

3.14. Network Rail's leading indicator for booking engineering access to the railway is currently being developed. Until period 5, this indicator did not distinguish between disruptive and non-disruptive possessions and there are important differences between these. Disruptive possessions require longer lead times because of their disruption to train services. On the other hand, non-disruptive possessions can be obtained more quickly and easily because they should have a more limited impact on users, so don't need to be booked as early. We consider the booking of disruptive possessions is the most important component to assess at this stage before the start of 2019-20 because of the different lead times.

3.15. Our period 5 review found that for the 3 routes we looked at in detail, over 90% of the disruptive possessions required to undertake planned renewals in 2019-20 had been booked in Network Rail's possession planning system. Each of these routes expects this to be 100% by the start of the year. This is significantly higher than suggested by the information presented above. The reason for this difference is that the forecast total access required includes an estimate of unplanned disruptive access that will be needed (for example, where Network Rail has to take a network possession to remedy damage caused by severe weather). We consider the data presented is confusing and we are discussing with Network Rail how the indicator can more clearly distinguish between planned and unplanned network possessions.

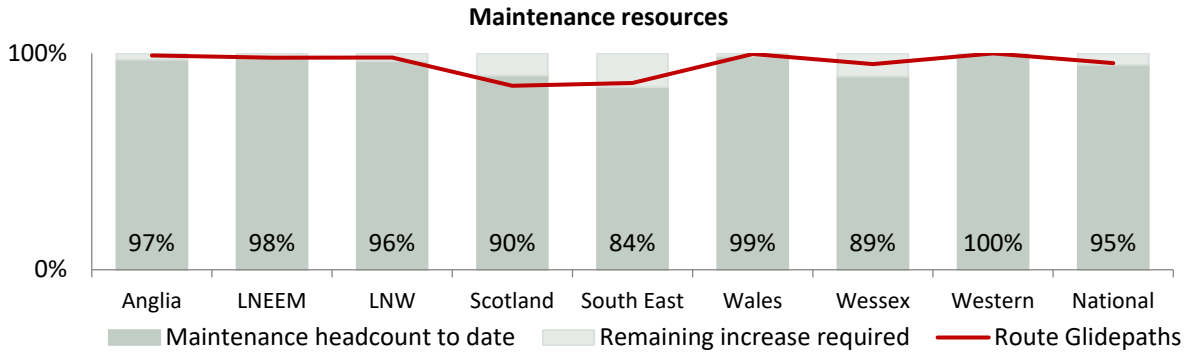
Maintenance resources

3.16. Network Rail intends to recruit around 630 additional full time employees in 2018-19 to ensure that it has adequate capacity to deliver a planned increase in maintenance activities for 2019-20[9]. Although it had recruited only 10% of these additional roles by the end of period 7, we consider that routes have adequate plans and capacity to

[9] In our previous Monitor, we reported that the required increase was 500 people and some additional indirect labour.

manage this. The routes we looked at were able to demonstrate plans to increase their maintenance headcount. The current position is set out below.

Maintenance headcount compared to 2019-20 requirement



Source: Network Rail

3.17. The Scotland route recently undertook a recruitment campaign that received over 1200 applications. Interviews have been completed and offers are currently being finalised. Wessex is currently undertaking a similar process which, if successful, should also meet its resource requirement. South East has the largest required increase to maintenance headcount. It has developed a new recruitment strategy, part of which is a separate recruitment team for the Thameslink Resilience Programme. The route is currently managing its increased maintenance resources with subcontractors and overtime.

Efficiency plans

3.18. This section summarises the efficiency improvements that we expect Network Rail to achieve in CP6, Network Rail's plans to deliver these improvements, its internal governance for this work, and our assessment of its progress to date.

3.19. Our PR18 draft determination challenged Network Rail to make further efficiency savings than were set out in its CP6 strategic business plans[10]. Network Rail responded positively to the additional efficiency challenge by including an extra £0.4bn of efficiencies in its updated plans that were agreed with the route managing directors. This means that unlike in previous control periods, there is more route ownership of the efficiency plans.

3.20. In our PR18 final determination, we accepted Network Rail's revised proposals on efficiency. However, we recognised that, in the context of Network Rail's current

[10] This is available at: http://orr.gov.uk/rail/consultations/pr18-consultations/pr18-draft-determination

efficiency levels at the end of CP5[11], achieving the target efficiencies at the start of CP6 and continued improvement during the control period, will be challenging. This is one of the reasons why it is important that we closely monitor Network Rail's plans for delivering efficiently in CP6.

3.21. Network Rail is developing plans to achieve our £2.6bn[12] CP6 net efficiency challenge. This net number included £3.1bn of gross efficiencies (£2.7bn of savings in CP6 and £0.4bn of savings in baseline costs[13]) offset by £0.5bn of headwinds[14]. The contribution of Network Rail's routes to the £2.7bn of savings in CP6 is summarised in the table below.

3.22. The £2.7bn of savings includes the £0.4bn of additional efficiencies that Network Rail has identified following our draft determination. However, Network Rail does not have well developed plans for delivering these additional efficiencies. In particular, it has not identified how £0.1bn will be delivered. We expect Network Rail to provide more detail on how it will deliver these additional efficiencies before the start of CP6.

Network Rail's expected savings in CP6

£m, 2017-18 prices	2019-20	2020-21	2021-22	2022-23	2023-24	CP6
Anglia	(26)	(50)	(69)	(82)	(61)	(287)
LNE&EM	(55)	(87)	(137)	(114)	(109)	(503)
LNW	(64)	(96)	(145)	(144)	(144)	(593)
South East	(39)	(75)	(110)	(97)	(102)	(422)
Wales	(13)	(25)	(37)	(32)	(27)	(136)
Wessex	(21)	(33)	(67)	(71)	(63)	(255)
Western	(18)	(48)	(69)	(74)	(53)	(262)

[11] As reported in our last Network Rail Monitor, the efficiency of Network Rail's core business activities (operations, support, maintenance and renewals) declined during each of the first four years of CP5.

[12] On an exit to exit basis, this would represent 10.2% efficiency over CP6. By exit to exit we mean, a measurement of efficiency that compares spending in the last year of CP6 with the last year of CP5. In the first year it is an efficiency improvement of 4.2%.

[13] Baseline expenditure is the level of expenditure at the start of CP6.

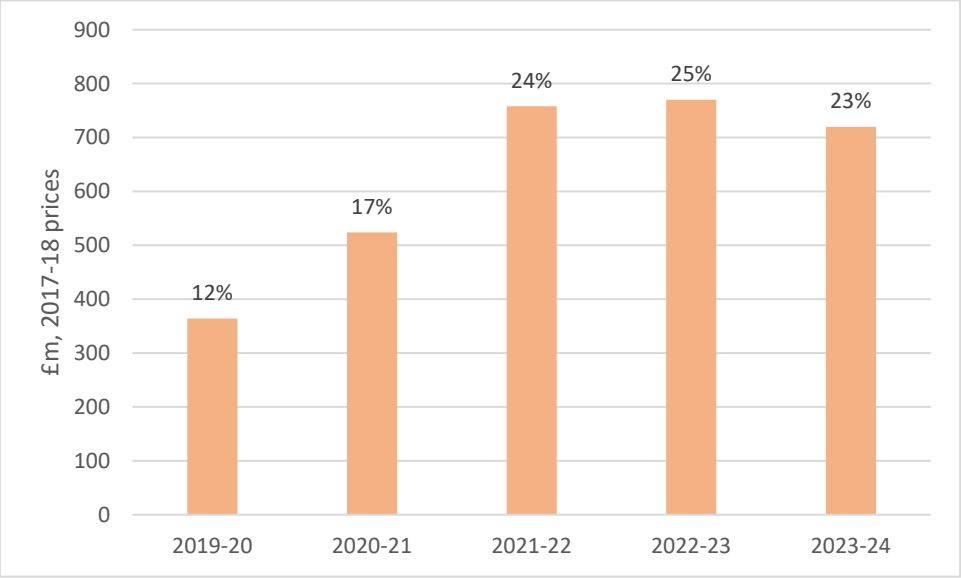
[14] Headwinds (as defined by Network Rail) are factors identified by Network Rail as being outside of its control that tend to increase costs. Further information about our review of Network Rail's proposed costs in CP6 is available at http://orr.gov.uk/__data/assets/pdf_file/0018/39312/pr18-final-determination-review-of-network-rails-proposed-costs.pdf

£m, 2017-18 prices	2019-20	2020-21	2021-22	2022-23	2023-24	CP6
Scotland (route)	(16)	(52)	(81)	(65)	(63)	(278)
FNPO	0	0	(0)	(0)	(0)	(1)
System Operator	(1)	(2)	(2)	(3)	(3)	(11)
GB total	**(253)**	**(468)**	**(718)**	**(682)**	**(626)**	**(2,748)**

Source: PR18 analysis

3.23. The data below shows Network Rail's intended phasing of efficiency improvements across CP6 based on the initiatives that it is pursuing as part of its CP6 business planning. This trajectory is broadly consistent with the efficiency trajectory assumed in our PR18 final determination. As shown below, Network Rail expects its initiatives to deliver efficiencies from the start of CP6, with over half of all CP6 efficiencies being delivered by the end of 2021-22 (year 3 of CP6).

Network Rail's expected gross efficiency improvements in CP6[15]



3.24. Network Rail has summarised how it intends to improve its efficiency in CP6 in an internal company-wide CP6 efficiencies portfolio overview that it has shared with us. This describes the efficiency initiatives that Network Rail is developing across 17 themes. This document is an important step in better explaining the business changes that routes and central functions are currently planning in order to achieve the CP6 efficiency improvements that they have committed to deliver.

[15] Each bar shows the share of the total CP6 efficiency improvements expected to be delivered in that year.

3.25. The £2.7bn of efficiencies that Network Rail is aiming to deliver in CP6 are through the following initiatives:

- improved contracting strategies (£0.6bn);
- LEAN (£0.3bn);
- new technologies reducing scope (£0.3bn);
- optimisation of access (£0.3bn);
- early contractor involvement (£0.3bn);
- improved workbank stability (£0.2bn); and
- other (£0.7bn).

3.26. We comment below on Network Rail's progress with these initiatives.

3.27. **Improved contracting strategies** encompasses a number of business-wide changes to improve procurement and reduce supply chain costs. These centre on taking a more strategic approach to procurement and improved collaboration between routes and Network Rail's central procurement team. We are discussing with Network Rail what these changes will mean in practice and how it can robustly measure the efficiency improvements (or otherwise) from these changes to procurement.

3.28. **LEAN** is a business approach that seeks to empower employees to continuously identify and eliminate waste in business processes[16]. Network Rail has established LEAN academies within each of its routes. By its nature, the specific changes to business processes resulting from LEAN techniques have not yet been identified by Network Rail and we are not clear how Network Rail intends to identify and record related efficiency improvements. This means that there is significant uncertainty around the amount of efficiency improvements that LEAN should deliver in CP6.

3.29. Anglia is leading the **new technologies reducing scope** initiative which includes projects to use new technologies that allow for less renewal to be required, or for renewal to be completed more efficiently. Network Rail's plans for achieving efficiencies in this area appear reasonable. For example, Network Rail is migrating telecommunications off its fixed telecommunications network (FTN) onto a next generation FTN platform and it is retiring sections of the existing FTN once they are

[16] See https://en.wikipedia.org/wiki/Lean_thinking for further information about the LEAN business methodology.

no longer required. We intend to work with Network Rail to better understand its approach for measuring these efficiency improvements and how these new technologies will deliver the expected efficiencies.

3.30. Network Rail is aiming to improve how it **optimises its own access** to the rail network to undertake engineering works. Network Rail has provided examples of the initiatives that routes have undertaken and are planning. For example, for multi-disciplined teams to undertake different types of work within a single network possession to increase productivity and reduce disruption to rail users. At this stage, it is difficult to assess the extent to which these represent real changes to current ways of working. We intend to work with Network Rail to better understand the routes' efficiency plans in this area.

3.31. Network Rail is seeking ways to **engage with its supply chain earlier** in the development of its workbanks. Through this, Network Rail hopes to improve delivery confidence and avoid overruns. We consider that renewals planning has improved compared to preparations for CP5. We are discussing with Network Rail how these efficiency improvements can be separately identified from the company's 'improved contracting strategy' and 'improved workbank stability' initiatives and whether there is a risk of double counting possible future benefits.

3.32. The **improved workbank stability** initiative is focused on giving Network Rail's supply chain a more predictable workbank, which should lead to reduced supply chain costs. Network Rail has stated it intends to optimise and stabilise its renewals workbanks by improving the packaging of work, and avoiding peaks and troughs in activity by improving collaboration across routes. We are discussing with Network Rail how these efficiency improvements can be separately identified from the other initiatives. We are also discussing if there is a risk of double counting future benefits.

Summary of efficiency plans

3.33. Network Rail is developing its capability around the development and delivery of routes' efficiency initiatives. This includes the recent creation of a benefits calculation working group that includes representatives from each of the routes, and an executive-led Efficiencies Assurance Board.

3.34. Network Rail has developed opex and capex (renewals) efficiency trackers to track routes' progress in developing their CP6 efficiency plans. These summarise the maturity of routes' plans across each of the efficiency themes noted above. The majority of routes' efficiency plans have defined owners and milestone plans. However, the current management information does not capture sufficient information to fully understand the progress and risks around routes' efficiency plans.

3.35. Overall, we consider that Network Rail has made substantial progress in its efficiency planning for CP6 compared to this point in the run up to CP5. There are different levels of maturity and uncertainty about these plans and there is more to do to set out what these plans will deliver, how Network Rail will deliver them, the delivery risks and how Network Rail will mitigate those risks.

3.36. Based on our discussions with routes and with Network Rail's central team, we are not yet clear as to how some of the most significant initiatives will generate genuine efficiencies that can be robustly measured.

3.37. Network Rail is engaging with us about this work and we expect to see further continuous progress over the next few months. We will check Network Rail's progress at our regular director-level meetings and will report on it publicly by the end of March 2019.

4. Glossary

Term	Explanation
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).
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
DfT	Department for Transport
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).
Independent Reporter	A consultant whose role is to provide ORR with independent, professional opinions and advice relating to Network Rail's (as the railway 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.
LNE/EM Route	London North Eastern / East Midlands Route
LNW Route	London North Western Route
Moving Annual Average (MAA)	Moving annual average - the average of the last 13 four-week time periods.

Term	Explanation
OPEX	Operating expense: as distinct from CAPEX (capital expenditure), OPEX refers to ongoing costs incurred by Network Rail to maintain the railway infrastructure. Examples of OPEX include routine safety checks on the railway tracks or repairing signalling when it fails.
Performance Strategy	Jointly prepared plans agreed between Network Rail and a train operator to improve performance.
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).
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
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.
Temporary Speed Restriction (TSR)	Temporary speed restriction imposed for safety reasons. This can arise from the poor condition of track, structures, earthworks, hot weather effects, or following track relaying until the track bed is stabilised.
TOC	Train operating companies: run the passenger trains and services on the network.

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