

Annual Assessment of Network Rail April 2020 to March 2021



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Foreword

Great Britain's railways are changing.

The coronavirus (COVID-19) pandemic has emphasised the vital role of the railway in supporting essential travel and keeping goods moving. However, it has also created huge challenges, including sharp declines in revenue, changes to working practices to keep workers and passengers safe, and a need to be more responsive to changing use. Many of the pandemic's impacts will be lasting.

Alongside this, the UK government has set out a clear direction for the future of the rail industry through the Williams-Shapps Plan for Rail.

Its reforms will bring rail infrastructure and train operations together under a new body, Great British Railways. ORR will bring its expertise in oversight and assurance to this new industry structure.

While we have one of the safest railways in the world, in August 2020, three people tragically lost their lives when a train derailed following stormy weather at Carmont, near Stonehaven. This is a stark reminder that there must be no let-up in the industry's focus on safety.

Throughout all this, the need remains for rail infrastructure to be managed safely and operated effectively, so that it delivers for passengers, the freight industry and taxpayers.

Both now, and under the future reformed railway, the fundamental requirements of railway infrastructure remain. The railway must be safe for its users and workers. It must support a reliable, punctual service for passengers and freight, meeting demand where possible. Railway assets (such as track and bridges) must be kept serviceable over the long-term and the costs of managing and enhancing the railway must be efficient.

Network Rail is currently responsible for managing the mainline railway infrastructure and delivering these fundamentals, and ORR holds Network Rail to account to deliver them. Our role in protecting the interests of rail users and taxpayers will continue to be essential during the implementation and end state of a reformed railway.

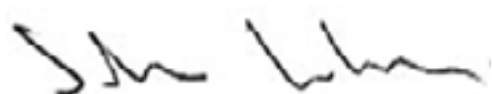
Our oversight already supports the direction of rail reform in many ways:

- we regulate health and safety for the entire mainline rail network, and that will not change;
- we place great emphasis on Network Rail collaborating effectively with passenger and freight train operators to deliver better customer outcomes such as more punctual, reliable trains;
- we apply a razor-sharp focus on Network Rail delivering efficiencies (including the £3.5 billion Network Rail committed to deliver between 2019 and 2024), a key focus of reform;



- we hold Network Rail to account for its vital national functions such as managing access to the network, timetabling and its role in monitoring and mitigating cross-industry risks such as those exposed by the failure of the May 2018 timetable change; and
- we continue to improve our regional oversight of rail infrastructure, ensuring that the railway is more aligned to local needs and is benefiting from sharing of best practice across its regions and functions.

This report, ORR's assessment of Network Rail's performance over the last financial year (2020-21), covers all of these areas, ensuring that we and Network Rail are well-placed to support the direction of rail reform and realise its benefits as soon as possible.



John Larkinson
Chief Executive

Executive summary

1. The Office of Rail and Road holds Network Rail to account for its management of the rail network. We monitor how it operates the network to keep trains running on time and how it keeps the network safe and in good condition.
2. This report is our 'Annual Assessment of Network Rail'. It sets out our views on Network Rail's performance in 2020-21, the second year of Control Period 6 (CP6) which runs from April 2019 to March 2024. Separate chapters provide greater detail on network wide performance, the performance of Network Rail's regions, its System Operator function and its Freight and National Passenger Operators function (FNPO). This document also compares performance, identifying best practice and areas for improvement.

The pandemic has affected all aspects of delivery

3. The coronavirus (COVID-19) pandemic has presented huge challenges to Network Rail and the wider rail industry throughout 2020-21. Despite this, Network Rail has played its part in continuing to run a safe railway, keeping those who need to travel and freight moving. Ways of working have adapted and Network Rail's staff have worked hard, often in very challenging environments, to continue to deliver necessary engineering works and maintain an operational railway.
4. The pandemic has impacted all parts of Network Rail's business: it has led to a reduction in train services and passengers across the network, which in turn has contributed to exceptional levels of performance; there have been fewer asset failures due to less wear and tear of infrastructure; Network Rail has had to be agile in successfully delivering more timetable changes; and there have been increased financial pressures due to the costs of protecting staff.
5. Network Rail has responded well to the pandemic. It is important that it now continues to plan effectively and implement its learning and good practice across all areas of delivery. A key part of this will be making better informed access and timetabling decisions, to retain improved train performance where possible, while ensuring efficient use of network capacity. We will continue to report on Network Rail's progress and delivery in our mid-year letters, due for publication in autumn.

Assessing performance throughout the year

6. In light of the challenges and impact of the pandemic, we have adopted a more qualitative approach to evaluating Network Rail's performance and service delivery over the year. As part of this approach, we have assessed Network Rail's response to the pandemic across its business units, scrutinised its tools, plans and initiatives in the different areas of delivery, and undertaken more focused engagement with its business units. We have also taken a forward look at future delivery and risk management.
7. Where appropriate we have assessed Network Rail's delivery of the key outcomes set out in our Periodic Review 2018 (PR18) Final Determination, which reflects governments' High Level Outputs Specifications (HLOSs) and the obligations set out in Network Rail's network licence.

In reviewing Network Rail's performance we assess:

- safety (this document provides an overview, our full review is in our Annual Health and Safety report);
 - train performance (both passenger and freight);
 - efficient delivery and financial performance; and
 - how it is maintaining, renewing and enhancing the network.
8. We also look at its System Operator function and how it plans network capacity over the long-term, manages access to its network and provides a working timetable.

Our key messages on Network Rail's performance during 2020-21

The train derailment at Carmont is a stark reminder of the need to manage safety risk and the impact of climate change

9. It is imperative that Network Rail runs a safe railway for passengers, freight customers and those who work on the network.
10. In August 2020, three people tragically lost their lives in the train derailment at Carmont, near Stonehaven, following a landslip, when the train struck material that had been washed onto the track during a severe rain storm. We are in the process of formally investigating this, jointly with Police Scotland and the British Transport Police. This incident is a stark reminder for Network Rail to ensure that its operations and asset management minimise safety risks as effectively as possible and mitigate the impact of climate change and extreme weather.
11. The reports from the two task forces launched by Network Rail in response to Carmont, and led by Dame Julia Slingo and Lord Robert Mair, highlight the impact of climate change, leading to more frequent and severe weather events. With this trend impacting the management of infrastructure, particularly earthworks and drainage systems, Network Rail needs to ensure it effectively addresses these challenges, integrating the management of the impacts of climate change into its day-to-day business activities.

12. The safety of all those who work on the railway continues to be an area where sustained focus and drive from Network Rail is needed. The tragic deaths of three workers this year clearly demonstrates that Network Rail needs to continue to improve its work force safety, embedding improved ways of planning and delivering work across the network. While Network Rail has made great strides in improving track worker safety, significant challenges remain to achieve the aims of our Improvement Notices issued in 2019.
13. Our more detailed reporting of health and safety on the rail network is in our separate publication, 'Annual Health and Safety report'.

Network Rail has delivered vital engineering works despite the pandemic, but has areas for improvement

14. Overall, asset performance has been good during the pandemic, with fewer failures impacting services. This is in part due to less wear and tear of assets as a result of fewer train services running. Therefore, asset reliability has generally been strong across Network Rail's regions. However, specific asset categories, such as points and structures in the North West and Central region and electrical power and structures in the Eastern region, require improvement.
15. Network Rail has largely delivered its planned maintenance, renewals and enhancements work despite the pandemic.
16. Delivery of asset renewals has been good and higher than expected in some regions. However, there have been changes to the renewals profile for some asset types, such as signalling and telecoms, with deferrals to later years of CP6. It is crucial that Network Rail understands the impact of any deferrals, including risks of deliverability. Based on this, we have enhanced our monitoring and during 2021-22 we will be undertaking focused reviews to confirm Network Rail's revised delivery programme.
17. On maintenance volumes reporting, some improvements have been made to the capture and reporting of data, following the concerns we raised to Network Rail in 2019-20. However, further work needs to be undertaken to improve the quality of data input. We continue to engage with Network Rail to help drive improvements in data quality to support future reporting.
18. As part of our ongoing assurance of Network Rail's performance and delivery, we undertook a series of Targeted Assurance Reviews (TARs) in 2020-21, focusing on key areas of asset management delivery, including earthworks, drainage, overhead lines, operational property and on-track machines. We have also worked with Network Rail on three independent reporter pieces on structures workbank, procurement and possession efficiency. These reviews identify where improvements can be made and provide a series of recommendations which Network Rail must now action.

19. An area of particular concern from our ongoing assurance activities is Network Rail's delivery of structures examinations. We previously issued an Improvement Notice to Network Rail on this and whilst there has been progress, the improvement has plateaued and a number of incomplete structures examinations remain across the regions. By way of mitigation, Network Rail undertakes risk assessments on site where there is non-compliance, to better understand whether there are any associated safety risks. However, Network Rail has not yet fully assured us that it has suitable plans in place or is making adequate progress towards eliminating the overall non-compliance across the network. Network Rail must respond to our concerns and recommendations, providing visibility of a clear resourced programme for each region. ORR is engaging with Network Rail on the progress of its regional plans towards overall compliance and we will closely monitor its delivery of these programmes. Additionally, an independent reporter will be commissioned to assess the full scale of any non-compliance across the regions.
20. Drainage asset knowledge also remains an area of concern. Network Rail is undertaking network-wide surveys to locate, inspect and record all its drainage assets and we will hold each region to account for completion of these surveys within their committed timelines, to feed into the planning milestones for Control Period 7 (CP7).
21. Network Rail's enhancement portfolio has performed well across the regions, with continued successful delivery of a number of projects, including significant works in the Eastern region. The pandemic has presented a number of challenges and it has delayed certain projects. For example, the Stevenage Turnback project required people to work in confined areas on site whilst social distancing, delaying the project completion from May to August 2020. Network Rail has worked well with its stakeholders to manage the uncertainty and reduce the impact on project delivery timescales.
22. Network Rail has made good progress over the last year in increasing its focus on the environment, namely decarbonisation and enhancing biodiversity, developing a suite of plans and strategies to deliver improvements. We are beginning to see the national strategies reflected in regional plans and look forward to seeing local delivery through CP6 and CP7.

Train performance has improved during the pandemic and Network Rail needs to work cross-industry to retain some of this uplift

23. The unique set of operating conditions created during the pandemic has helped Network Rail deliver exceptional levels of performance during 2020-21. Key drivers for this have been the reduction in the number of train services and passenger demand.
24. In 2020-21, 80% of trains arrived 'on time' (early or less than one minute after the scheduled arrival time), a 15 percentage point improvement on the previous year. Network Rail attributed delays per 100 train kilometres have improved across all regions, with four regions achieving their internal targets. Network Rail Scotland achieved the best (lowest) levels of Network Rail attributed delay per 100 kilometres of train travel. Southern, and North West and Central regions achieved the greatest improvement, having started the year at worse levels of performance compared to other regions.

25. Freight train performance across the regions was also very good last year, with more emphasis being placed on improving freight performance and strengthening engagement with the freight industry's stakeholders during the year.
26. While train performance has been improved during the pandemic, there is a clear risk that performance will drop as passengers and services return. Therefore, we have placed greater focus on a qualitative assessment of Network Rail's contribution to train performance, including assessing its performance management capability and actions it is taking to retain performance improvements in the long-term.
27. In 2020-21, Network Rail has played a key role in progressing the industry-wide Network Reliability Action Plan, which is targeted at improving train performance. This plan includes activities to deliver improved performance management capability across its regions, such as providing policies, tools, and guidance to improve performance modelling, planning and delivery, and ensuring industry-wide sharing of best practice in performance management. Network Rail needs to ensure the strong progress in embedding and implementing improved performance management capabilities across its regions continues and provide evidence that delivery of these whole industry activities is supporting performance improvements. This will become even more important as passenger numbers and train services increase.
28. Network Rail's regions have improved their engagement and collaboration with passenger and freight train operators to support the delivery of improved local performance strategies and improvement plans. It is important that this work continues and we will monitor the delivery and effectiveness of these strategies and plans over the coming year.
29. During the pandemic, Network Rail has also strengthened its analysis of performance, focusing on specific areas such as excess dwell times and small-scale timetable improvements. For example, Network Rail Scotland has worked collaboratively with stakeholders and Transport Scotland to deliver 30 timetable amendments to support performance improvements, such as increasing dwell time adherence and adjusting crew change times.
30. The System Operator and regions have analysed data from the pandemic to improve their understanding of the relationship between network usage, capacity and performance. However, we have not yet seen sufficient evidence that the timetable has been materially changed to retain some of the performance gains seen during the pandemic. The uncertainty on future passenger numbers and likely trade-off between demand and performance has increased the difficulty in producing Network Rail and operator performance forecasts. ORR will continue to seek evidence from Network Rail on how it is developing this and whether it is doing all it can to influence a high performing timetable. We expect Network Rail to develop appropriately challenging updated performance forecasts during the next six months, or as usage of the network stabilises.

31. In 2020, we investigated poor train performance in Network Rail's North West and Central region, reviewed its improvement plans and made additional recommendations. Although performance in the region has improved, we have continued to scrutinise its delivery of its improvement plans. In May 2021, we published our 12 month review. While the region has made good progress against the majority of the 25 recommendations and engaged well with ORR to deliver the anticipated outcomes, we were disappointed that six recommendations (two relating to operations and four to asset management) did not achieve the progress we expected. We will be extending our enhanced monitoring and assessment for a further six months to ensure the region delivers the expected outcomes.
32. In PR18 we established the £40 million Performance Innovation Fund (PIF) designed to support innovative ways to drive performance improvements. Following a slow rate of investment approvals in 2019-20, we welcome greater use of the fund in 2020-21 to support schemes to deliver future performance improvements.

Network Rail's delivery of efficiencies is on track but its financial risk needs careful management

33. The stark reduction in industry revenues placed greater emphasis on Network Rail reducing its costs and working with industry stakeholders and funders to attract passengers back to the railway.
34. Network Rail has reported £710 million of efficiency improvements in 2020-21, against a target of £570 million, and all five of its regions have met or exceeded their individual efficiency targets. While we have seen improvements in four of the regions' readiness to deliver future efficiencies, we remain concerned about Network Rail Scotland's plans. The region is working to address the concerns we have highlighted.
35. The pandemic has had a significant impact by increasing cost pressures on some asset types and impacting CP6 planning assumptions. However, Network Rail remains confident in its ability to deliver the £3.5 billion efficiency improvements we required in CP6. In addition to this, Network Rail has also committed to delivering £0.5 billion of further savings and is reviewing how it will deliver these.
36. Against £6.6 billion of total expenditure, Network Rail is forecasting £163 million (2.5%) of financial underperformance for 2020-21. This is predominantly the result of significant underperformance in renewals, due to increased costs and disruption due to the pandemic, and underperformance in operations expenditure, due to purchase of personal protective equipment, Information Technology costs and increased staff overtime costs. There has also been a decrease in property income due to rent payment breaks offered to tenants by Network Rail. This has been offset by £203 million outperformance in turnover, driven by Schedule 8 financial outperformance due to high levels of train performance during the pandemic.
37. Network Rail is performing well on its leading indicators of efficient delivery for 2021-22. Nationally, it is ahead of its expected trajectory for booking of disruptive access (with 98% booked), and it is in a good position in financial authorisation of spend. The supply chain has accepted 91% of work remits it has issued. These indicators suggest that Network Rail is in a strong position to continue to deliver efficiently in year three of CP6.

38. Network Rail's confidence in delivering its CP6 plans within its remaining funding has reduced from its position at the start of the control period. The financial risk position across the regions varies, but in all cases its risk funds are lower than would normally be expected at this point in the control period, in part due to the pandemic. Network Rail Scotland's position is the most challenging. Each region needs to ensure it clearly demonstrates how it will manage any future risks that materialise during CP6. We continue to monitor this area closely.
39. More detail on Network Rail's financials will be available in ORR's 'Annual Efficiency and Finance Assessment', due for publication later in July 2021.

Network Rail's System Operator has responded well to the pandemic and adopted a more agile approach

40. The System Operator has responded well to the pandemic, demonstrating a proactive and resilient approach to delivering its activities.
41. Timetable planners in Network Rail and across the industry have worked exceptionally hard and in extremely challenging times to deliver an unprecedented number of timetable changes. Through the pandemic, the System Operator has proactively developed a more frequent and agile approach to timetabling, allowing it to respond more effectively to the changing environment.
42. This change in approach meant that the timetable was planned to be finalised less than 12 weeks in advance. The impact of this was most keenly felt by freight operators whose rostering and train planning was negatively impacted. The System Operator could have engaged more successfully at an earlier stage with freight operators to help manage this impact.
43. As passengers return to the railway, Network Rail must continue to deliver robust and resilient timetables. Forthcoming timetable changes, particularly May 2022, are of much greater scale and complexity and Network Rail's management and mitigation of systemic risk will therefore be crucial. This will require timely and clear decision-making from those specifying train services.
44. We welcome the System Operator's creation of an Industry Timetable High Level Group. This demonstrates its commitment to continue to assess the industry's approach to timetable planning, review learnings from the pandemic and to deliver changes which meet the needs of its stakeholders.
45. As set out above, we have not yet seen evidence that the timetable has been materially changed to retain some of the performance gains seen during the pandemic. We will seek evidence of Network Rail's engagement with funders and wider stakeholders on this and whether it is doing all it can to influence timetable planning.

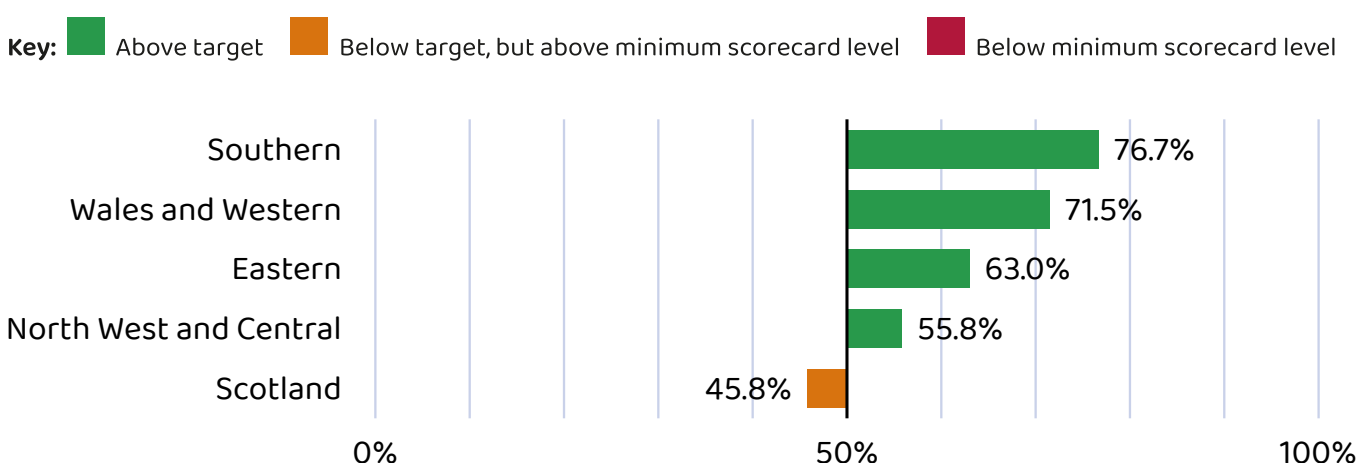
FNPO's engagement and co-ordination with Network Rail's regions and freight operators has strengthened

- 46. Network Rail's Freight and National Passenger Operators (FNPO) team has delivered good co-ordinated support to freight operators through the pandemic. This has ranged from operational to strategic support.
- 47. The FNPO has been more proactive in seeking to deliver sustained improvements in performance, including engaging with freight operators through different industry forums, such as the quarterly Freight Industry Performance Group, and strengthening engagement with the regions.
- 48. Freight performance at the start of the pandemic was exceptional and has continued to be good since. All regions, except Scotland, ended the year above target. Performance in Scotland was impacted by weather events through the year, including snow in December 2020 and flooding related to storm Darcy in February 2021.
- 49. The overall good freight performance reflects the broader network conditions, with less congestion due to fewer passenger services. It will be important for Network Rail to continue to deliver for freight as train service levels and passenger numbers increase.

Network Rail's regions generally performed well against a range of measures

- 50. Network Rail measures its company-wide and regional performance using scorecards. The scorecards help to align its priorities with those of its customers and incentivise its management teams to deliver those priorities.
- 51. Four of its regions exceeded their internal targets, performing above the 50% target. Southern was the highest performer at 76.7% and the Scotland region the lowest, ending the year just below target at 45.8%.

Figure 1 Region scorecard performance, 2020-21



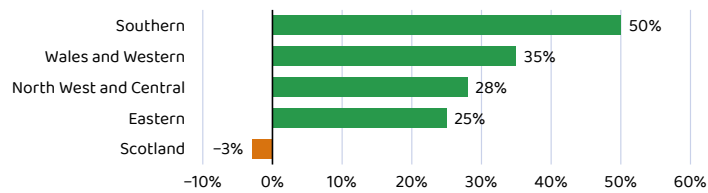
Source: ORR analysis of Network Rail data

Comparison of regional performance, 2020-21

52. Network Rail's regions measure their performance using a set of metrics and internal targets (some of which they seek to agree with their customers). These are reported in their scorecards. We consider these alongside other indicators of performance.

Key: ■ Better than scorecard target ■ Worse than target, but better than regulatory floor/scorecard target ■ Worse than regulatory floor/scorecard target

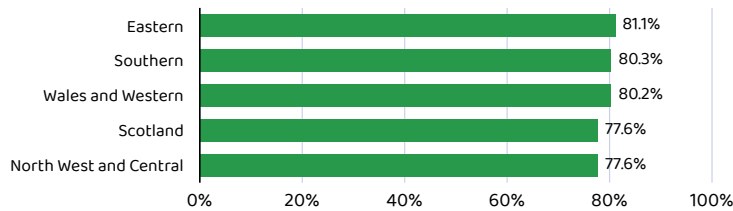
Passenger train performance (Network Rail caused delay minutes normalised, CRM-P) – % better/worse than target, 2020-21



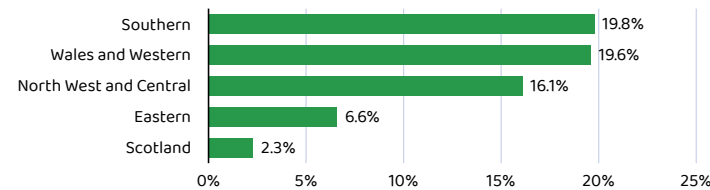
Freight performance (FDM-R) – percentage points better/worse than regional targets, 2020-21



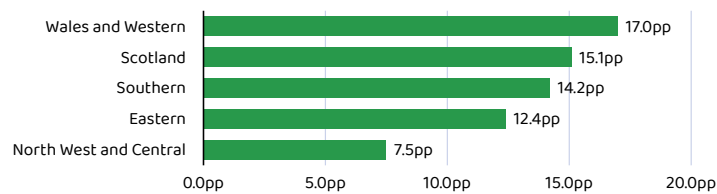
On Time (moving annual average), 2020-21



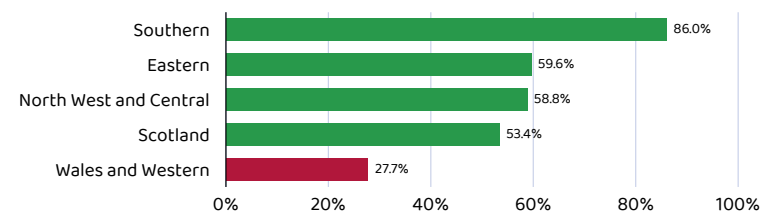
Efficiencies – variance of actual to plan, 2020-21



Composite Reliability Index (CRI) – variance to target, 2020-21



Environmental Sustainability Index (ESI) – scorecard outcome, 2020-21



53. Please refer to the individual region chapters for further details and commentary on each region's performance against metrics and internal targets.

Annual Assessment of Network Rail April 2020 to March 2021

Context



1. Context

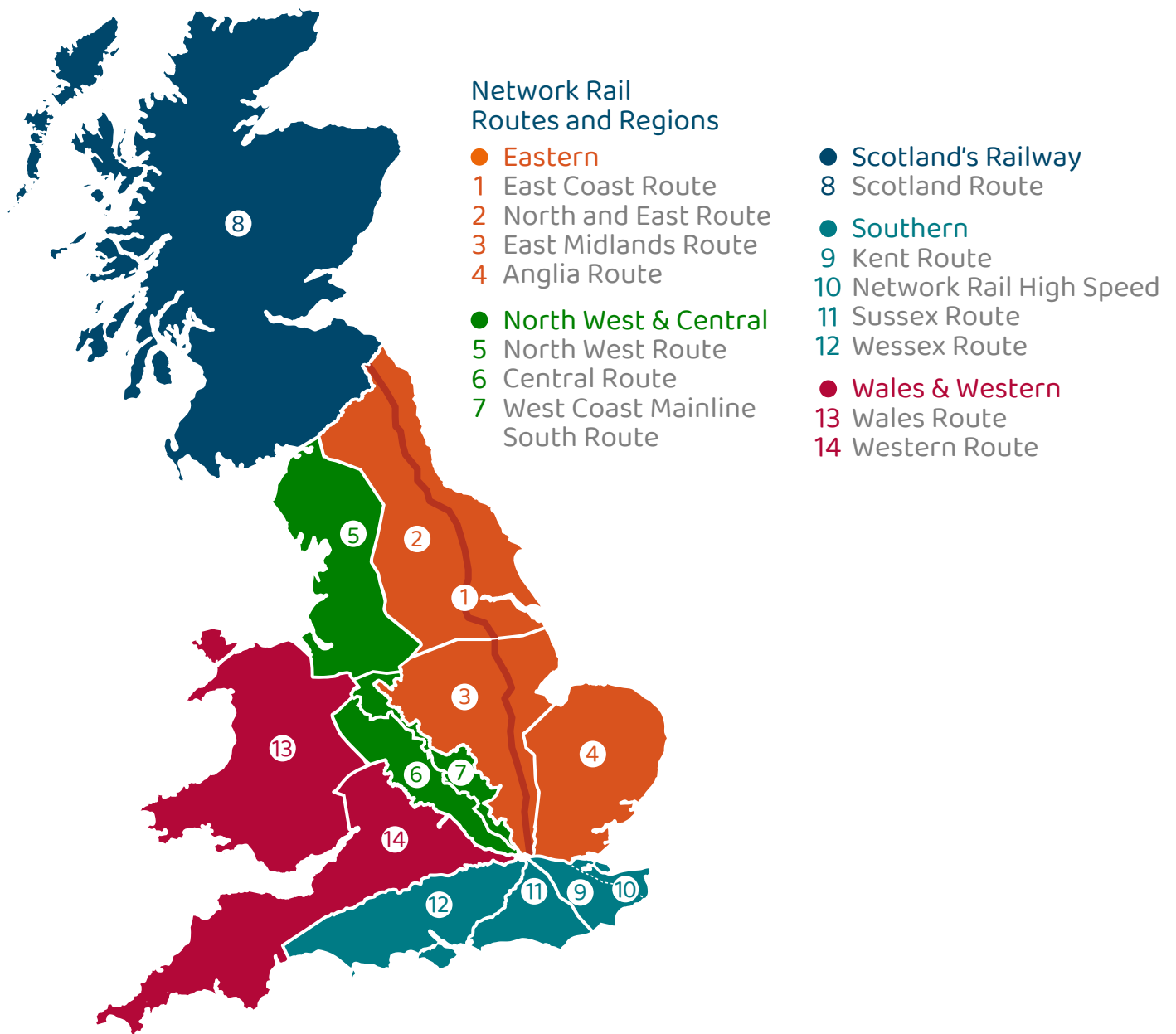
ORR's role

- 1.1 ORR's role is broad. Our functions in the rail sector include:
 - regulation of the rail industry's health and safety performance;
 - holding Network Rail and High Speed 1 railway (HS1) to account for delivery of performance and value for money;
 - protecting competition in the rail sector; and
 - protecting passengers from breaches in consumer law.
- 1.2 This report centres on our regulation of Network Rail, holding it to account for delivering high levels of performance and service, as well as good value for money for passengers, the freight industry and taxpayers.
- 1.3 We assess Network Rail's performance in delivering the outcomes that matter to rail users and governments. These are captured in our Periodic Review 2018 (PR18) Final Determination, which reflects governments' High Level Output Specifications (HLOSs), and the obligations set out in Network Rail's network licence.

Network Rail's role

- 1.4 Network Rail operates, maintains, renews and improves the rail infrastructure to deliver a safe and reliable railway for passengers and freight customers. This includes 20,000 miles of track, 30,000 bridges, tunnels and viaducts, signalling and electrical power assets, and 20 of the largest railway stations.
- 1.5 Network Rail has 14 routes, supported by five Network Rail regions and by network wide functions. The devolved regions are intended to be more responsive to the local needs of train operators, passengers and freight users. The five regions are: Eastern, North West and Central, Network Rail Scotland, Southern, and, Wales and Western. In addition to our monitoring of the regions, our network wide monitoring is focused on the System Operator and Freight and National Passenger Operators (FNPO).
- 1.6 Network Rail's routes are responsible for operations, maintenance, and renewals. This includes the day-to-day delivery of train performance and the relationships with their local train and freight operating companies. The regions are supported by Network Rail's Central Functions (Technical Authority, Route Services and corporate support functions) and the System Operator.

Figure 1.2 Network Rail's regions and routes



Source: Network Rail

Network Rail's scorecards and reporting

- 1.7 Network Rail measures its company-wide and regional performance in core areas of its business using sets of metrics and internal targets. It captures these in national and regional scorecards. We require Network Rail to include a set of consistent measures on all scorecards to allow comparison between regions and over time.
- 1.8 Network Rail's regions engage with their stakeholders to understand their priorities and determine the measures and targets to be included on scorecards for the coming year. Each region's scorecard is based on Network Rail's four strategic themes (on the side of passenger and freight users; easy to engage with, an efficient and dependable partner; proud to work for Network Rail; and instinctive industry leader) and it includes our consistent measures and locally driven customer measures and targets. Targets vary across regions, and some reflect the specific and stretching requirements of Network Rail's funders (most notably in Scotland).
- 1.9 Performance for each scorecard measure is expressed as a percentage achievement between zero and 100. For the majority of measures, on target performance is shown as 50%.
- 1.10 While scorecards are a key part of how Network Rail judges its own performance, we draw on a range of wider information and apply greater weight to certain metrics, such as our consistent measures. This approach is reflected throughout this report.

Document outline

- 1.11 This document is divided into chapters to reflect both our PR18 determination and Network Rail's regional structure. It covers:
 - Network Rail's network wide performance, including regional comparisons;
 - performance in each of Network Rail's five regions (including Network Rail Scotland);
 - performance of Network Rail's Freight and National Passenger Operators function (FNPO);
 - performance of Network Rail's System Operator function; and
 - performance of Network Rail's Wales route.

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Network wide performance
and regional comparison



2. Network wide performance and regional comparison

2.1 This chapter reviews performance across Network Rail's five regions and cross-cutting functions, but it excludes its System Operator and Freight and National Passenger Operators (FNPO) functions, which are reviewed in separate chapters. This section assesses performance across Network Rail as a whole and compares performance across regions.

The coronavirus (COVID-19) pandemic has impacted all aspects of delivery

- 2.2 The coronavirus (COVID-19) pandemic has continued to impact Network Rail throughout 2020-21, presenting many challenges to Network Rail and the wider rail industry. Despite this, Network Rail has played an essential role in continuing to run a safe and operational railway. Its staff have worked hard and in challenging conditions to deliver vital engineering works and ensure passenger and freight train services keep running.
- 2.3 Over the last year, lower passenger numbers and fewer services have impacted Network Rail in different ways; we have seen exceptional levels of performance, reductions in property income and fewer asset failures with less impact on train performance.
- 2.4 The pandemic has led to changes across Network Rail, such as a greater focus on cost efficiency following a stark reduction in industry revenues. Ways of working have had to adapt, as seen in timetable planning, to become more responsive and resilient to the changing environment. There has also been a focus on the management of remaining CP6 risk funds that have been impacted by the pandemic. We explore the impact of the pandemic on Network Rail and its response to it throughout this report.
- 2.5 In response to the impact of the pandemic and through proactively seeking opportunities for efficiencies and to optimise delivery of services, Network Rail announced further changes to its structure in January 2021 (after its Putting Passengers First (PPF) programme). These new changes, many of which were effective from 1 April 2021, include the consolidation or transfer of centrally-managed functions within Network Rail, such as Network Services and Technical Services.
- 2.6 We worked closely with Network Rail on its implementation of these changes and to understand any impact on stakeholders as well as customer and funder commitments.
- 2.7 While Network Rail's response to the pandemic has remained strong over the last year, the pandemic will continue to have an impact on performance and delivery beyond 2020-21. Therefore, it is crucial that Network Rail continues to maintain its focus on implementing its learning and good practice from the pandemic, and engages with stakeholders and funders to help deliver change and maintain levels of performance where possible. We will continue to monitor Network Rail's response and report on this again as part of our mid-year letters in autumn.

The train derailment at Carmont is a stark reminder of the need to manage safety risk and the impact of climate change

Mitigating the impact of extreme weather events and climate change needs sustained focus from Network Rail. While some progress has been made, further drive and commitment is needed to ensure its plans are effectively implemented and that asset resilience is improved. Network Rail also needs to enhance its focus on track worker safety, embedding improved ways of planning and delivering work across the network.

2.8 Our full reporting of health and safety on the rail network is in our separate publication: 'Annual Health and Safety report' published in July 2021.

Network Rail must continue to improve its weather resilience

2.9 Network Rail needs to ensure it runs a safe railway for its passengers, freight customers and those that work on the rail network.

2.10 In August 2020, a train derailed at Carmont following a landslip, striking material that had been washed onto the track during a severe rain storm. Tragically, three people on the train lost their lives. We are in the process of formally investigating this, jointly with Police Scotland and the British Transport Police. This incident highlights the need for Network Rail to manage its safety risks as effectively as it can and mitigate the impact of climate change and extreme weather.

2.11 In response to Carmont, Network Rail launched two new task forces in August 2020. One task force, chaired by Dame Julia Slingo, was aimed at highlighting improvements to Network Rail's response to severe weather and the other, chaired by Lord Robert Mair was tasked with identifying improvements to the management of earthworks. Both task forces reviewed the current risk control framework, compared best practice, and explored how effectively Network Rail has used technology to manage risks. The findings and recommendations from both [reports](#) were published in February 2021.

2.12 These reports describe the impact of climate change, leading to increasingly frequent and severe weather events. This trend affects management of the infrastructure, particularly earthworks and drainage systems. Addressing the challenges will require both short and long-term interventions. Network Rail's initial response to the findings from the task forces has been good, including establishing a Weather Risk Management Steering Group to oversee its activities in this area and closer working with the Met Office to develop tools to deploy within the regions.

2.13 In response to our PR18 Final Determination requirements, Network Rail updated and published its CP6 Weather Resilience and Climate Change Adaption (WRCCA) plans for eight routes during the year. These local level plans assess the impact of weather on asset performance, safety and functionality, with action plans outlining short, medium and long-term changes required to the management of assets to improve safety and reliability in response to current and future weather events.

- 2.14 To support our review of these plans, we commissioned work to assess the maturity of the plans and compare them against best practice guidance. The assessment was positive and we consider Network Rail is adopting best practice when compared to other infrastructure managers.
- 2.15 However, two areas for improvement were identified: developing broader scope plans that consider cross-cutting risks and interdependencies; and reviewing metrics, processes for monitoring and governance for WRCCA plans and strategy documents. We will continue to work closely with Network Rail on reviewing the recommendations and integrating them into their CP7 regional WRCCA plans and strategy documents.
- 2.16 Our PR18 Final Determination sets out the importance of weather resilience and managing the impact of climate change. We recognise the range of good work Network Rail has undertaken in these areas to date and its initial response to the recommendations from the task forces. However, Network Rail needs to ensure it continues to review its weather resilience metrics and indicators, and monitoring of improvements to help develop clear outputs, supporting the implementation of CP6 and CP7 plans to enhance weather resilience across the network. Additionally, Network Rail needs to support the integration of managing the impacts of climate change within its day-to-day business activities.

Greater improvements to track worker safety are required

- 2.17 Regrettably, this year has seen the deaths of track workers struck by trains at Roade and Surbiton. These events illustrate why we took enforcement action in 2019, to improve track worker safety. Progress has been made in response to our Improvement Notices, but it will be some time before the desired changes are fully realised. A member of Network Rail staff was also killed in a machinery accident at Eastleigh depot. As a result of this incident, Network Rail has begun a review of machinery guarding across the network.
- 2.18 Track worker safety continues to be an area of focus across all of Network Rail's regions and sustained drive and commitment are needed to continue to embed better ways of planning and delivering work.
- 2.19 We have seen improvements in this area, such as a very significant reduction in the amount of trackside work done using lookout warning, helped in part by the response to the Surbiton fatality when Network Rail took the decision to accelerate its drive to eliminate lookout warning ahead of the notices' compliance date of July 2022. The regions have also taken on the challenge of taking a fresh look at how they undertake access to the track. Conversations with train companies around track access have started, possessions are being more fully utilised and timetablers and signallers' workloads have been assessed for potential line blockages. The regions have also started making better use of technology such as remote track circuit operating devices and semi-automatic train warning devices.
- 2.20 This acceleration is not without risks: moving to safer ways of working needs to be sustainable and allow enough access to maintain a safe and reliable railway. There remain significant challenges to overcome to achieve the aims of our Improvement Notices, in particular around securing line blockages and learning how best to deploy warning technology. Nevertheless, Network Rail has made great strides in the right direction.

- 2.21 Nationally, both measures of worker safety, Lost Time Injury Frequency Rate (LTIFR), and Fatalities and Weighted Injuries (FWI), ended the year below internal targets, however LTIFR showed an improvement on the previous year. All regions performed poorly against their internal FWI targets and Network Rail Scotland was the only region to perform better than target for LTIFR.
- 2.22 This performance is disappointing and shows that more needs to be done to secure further improvements. With the industry entering a period of significant change there is the risk that occupational safety performance could deteriorate if attention is focused elsewhere.

Safety data reporting and risk assurance needs to improve

- 2.23 In 2016, we raised our ongoing concerns with Network Rail regarding the effectiveness of its assurance regime and its ability to support delivery of repeatable consistent compliance with safety critical elements of its standards and processes.
- 2.24 Between April and October 2019, we carried out a series of inspections across Network Rail's routes aiming to test delivery of the improvements in compliance with company standards. The results showed a degree of consistency across all routes, but one key action was identified recommending Network Rail significantly improve the effectiveness of its health and safety assurance, with particular focus on specific areas, including the quality of data and risk-based targeting of its assurance activities.
- 2.25 Across its regions, Network Rail also needs to continue improving its knowledge and record of assets. Ensuring up to date and accurate information is held on its assets, in particular track, earthworks and boundaries, is essential and will help address the underlying causes of failures. The most concerning deficiencies relate to the accuracy and completeness of drainage asset records. While improvements have been made across the regions, further work is required in asset safety management.
- 2.26 We assess Network Rail's health and safety management maturity using the Risk Management Maturity Model (RM3). Our assessment this year shows Network Rail is becoming more consistent in its approach, and its assurance (monitoring, audit and review) has improved compared to last year. Progress is being made across the regions, but Eastern region's adoption is at a slower pace, which may be a result of the impact of the pandemic.

Network Rail has delivered vital engineering works despite the pandemic but has areas for improvement

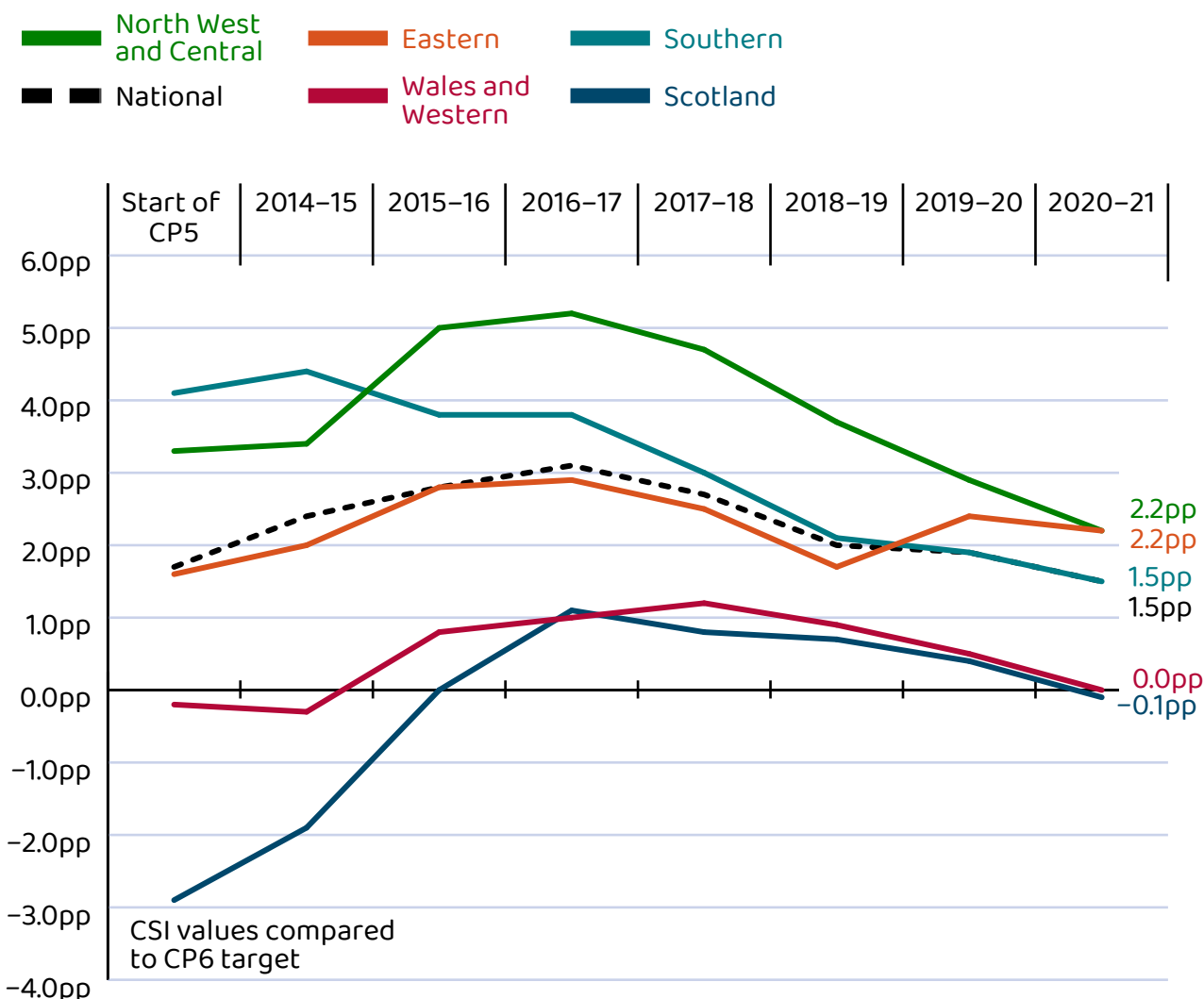
During the pandemic Network Rail has still largely delivered on its maintenance, renewals and enhancements work. Overall asset performance has been good, with fewer service affecting failures. This is in part due to less wear and tear of assets as a result of fewer train services operating on the network.

Asset sustainability is better than the end of CP6 target

2.27 Network Rail needs to ensure there is a sustainable rail network. Assets need to be maintained and renewed efficiently, while ensuring there is a safe and operational railway.

2.28 In CP6 we measure asset sustainability through the Composite Sustainability Index (CSI). This consistent measure has a target for each region for the end of the control period.

Figure 2.1 Composite Sustainability Index (CSI) by region, 2014-15 to 2020-21



Source: ORR analysis of Network Rail data

- 2.29 The National CSI for 2020-21 was -0.1% , which represents a 0.1% decline in overall asset sustainability since the end of CP4. The end of CP6 target is -1.6% . All regions are performing broadly in line with their expected end of CP6 CSI target. This shows Network Rail is currently maintaining and renewing the network in line with the PR18 Final Determination expectations and is currently on track to deliver its plans for the end of the control period.
- 2.30 While CSI is the best available measure of network sustainability, we recognise it has limitations, namely that it is based on a representative sample of assets rather than all asset types. In response to this, in 2020 we commissioned work to review CSI against other comparable methodologies. The assessment concluded that while improvements could be made, the measure represented best in class. The report also identified a series of recommendations to strengthen the measure and Network Rail agreed to develop a programme to implement these improvements over the remainder of this control period. We will monitor Network Rail's progress on this delivery over 2021-22 and report on this at the end of the year.

Delivery of renewals volumes has been very good

- 2.31 We scrutinise whether Network Rail is delivering vital asset renewals work, for example renewing its track, and if this is in line with planned volumes for each year of the control period.
- 2.32 As part of our assessment, we look at Network Rail's delivery of effective volumes. This refers to the volume of work undertaken in seven key areas, attributing weightings based on the life added to the asset by each type of work. For example, in the area of plain line track, a full renewal would be given a higher weighting than replacing one individual element.
- 2.33 Overall delivery of effective asset renewals volumes has been good. The lower than planned renewals volumes for overhead line equipment (OLE) is the result of an error in the volumes reporting in 2019-20 and deferral of King's Cross re-modelling work in the Eastern region to 2021-22. Given previous poor performance of this asset, it is important that planned renewals are undertaken and we will monitor this area closely during the remainder of the control period.

Table 2.1 Effective volumes (renewals), Great Britain, 2020-21

Percentage completion is based on actual volumes delivered against planned volumes.
A percentage completion in excess of 100% indicates delivering more than the planned volumes.

Asset	Actual	Plan	% complete
Conductor Rail Renewal (km)	25	23	▲ 107%
Earthworks	653	468	▲ 139%
OLE re-wire and mid-life refurb (km)	21	24	▼ 88%
Track – Plain Line	1,437	1,290	▲ 111%
Track – Switches and Crossings	373	326	▲ 114%
Signalling	652	574	▲ 114%
Structures – Bridges	18,829	17,315	▲ 109%
All assets (weighted total)			▲ 112%

Source: ORR analysis of Network Rail data.

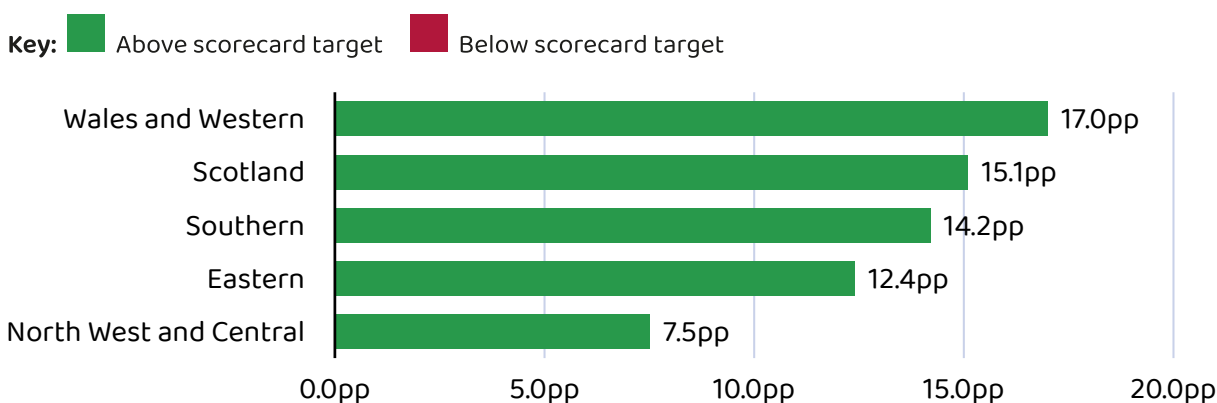
* In the data supplied by Network Rail an adjustment of -29 has been provided to this number for the overstatement of work in 2019-20. We have excluded the number in the table to show the performance in 2020-21. The plan for the year has also been adjusted.

- 2.34 Across its regions, Network Rail's overall delivery of wider asset renewals work has been good and higher than expected in some regions. However, this should not always be seen as a positive, such as in the case of earthworks where the delivery of additional volumes has been in response to asset failure caused by weather driven events, rather than planned investment. In addition, there have been changes to renewals profiles made this year in all five regions, such as elements of the signalling renewals programme now to be delivered later in CP6 than was originally planned at the start of the control period. This causes some uncertainty around their completion in CP6.
- 2.35 While Network Rail remains confident in its delivery programme for re-phased renewals volumes, we require further assurance. It is important that Network Rail fully understands the impact of any changes to renewals profiles and deferrals, including risks of delivery. Over the next year we will be enhancing our monitoring and undertaking focused reviews to confirm deliverability across the regions.

Asset reliability has been strong due to the pandemic

- 2.36 We measure asset reliability using the Composite Reliability Index (CRI). This measures the percentage change in reliability since the last year of Control Period 5 (CP5).
- 2.37 The National CRI score for 2020-21 was 13.6%, against a target of 1.1%. This means asset reliability last year was 13.6% better than it was in the final year of CP5. Asset reliability in the regions has generally been strong. This is largely due to the impact of the pandemic with a reduction in train services leading to fewer service affecting failures across the network, with the infrastructure as a whole being under less stress. In 2020-21, service affecting failures (excluding telecoms) reduced by 13% compared to the previous year and Network Rail ended the year 12.5% better than target.
- 2.38 All regions are currently exceeding their asset reliability targets set at the start of CP6, with Wales and Western achieving the highest variance to target. The signalling faults on newly opened and upgraded lines in Scotland in the final year of CP5 have now been resolved, resulting in strong asset reliability in Network Rail Scotland's region during 2020-21.

Figure 2.2 Composite Reliability Index (CRI) by region – variance to target, 2020-21



Source: ORR analysis of Network Rail data

- 2.39 However, there are specific asset categories that require a greater focus in some regions. Points and structures in the North West and Central region and electrical power and structures in the Eastern region all ended the year below target and need improvement.

Network Rail's data quality and assurance needs to improve

- 2.40 As part of our ongoing assurance of Network Rail's performance and delivery, we undertook a series of Targeted Assurance Reviews (TARs) in 2020-21, focusing on key areas of asset management delivery, including earthworks, drainage, overhead lines, operational property and on-track machines. We have also worked with Network Rail on three independent reporter pieces on structures workbank, procurement and possession efficiency.
- 2.41 The findings from our reviews were positive in some areas, such as identifying robust project management and clear accountability for the safer faster isolations programme, which focuses on switching off sections of electrical track to minimise safety risks when essential engineering work on the network is being undertaken. However, our reviews also highlighted areas for improvement.

- 2.42 An area of concern, which we have been seeking continuous progress on since 2011, is compliance with structures examinations. If all three elements (site examination, report submission and evaluation) of examination of structures such as tunnels, bridges and culverts are not carried out, the condition of the asset is not fully known and faults may be undetected or not competently assessed, posing a potential safety risk.
- 2.43 We previously issued an Improvement Notice to Network Rail on this area. Whilst there has been progress, our ongoing assurance activities have identified that the improvement has plateaued and a number of incomplete structures examinations remain. By way of mitigation, Network Rail undertakes risk assessments on site where there is non-compliance, to better understand whether there are any associated safety risks. The level of non-compliance across the three stages of the examination process varies across the regions and we require visibility of a clear resourced programme designed to address the overall examination process in each region. We are taking action to ensure this is rectified and we will closely monitor Network Rail's progress and delivery to ensure that Network Rail's regions have suitable improvement plans in place or are making adequate progress towards eliminating the overall non-compliance. We are also commissioning an independent reporter to assess the non-compliance across the regions in more detail, including reviewing the actions being taken, the quality of any plans that have been developed and the likelihood of each region being able to provide a sustainable and compliant outcome. We expect to publish a report on the findings at the end of this year.
- 2.44 We also identified a backlog of examinations of tenanted arches. We have agreed a recovery plan with Network Rail, with the backlog due to be cleared by spring 2022. The delivery plan continues to be managed at national level, with representatives of the most affected regions being engaged. The detailed recovery programme has been shared with us and we are monitoring its delivery.
- 2.45 Drainage asset knowledge also remains an area of concern. Network Rail is undertaking network wide surveys to locate, inspect and record all of its drainage assets and ORR will hold each region to account to complete these surveys within their committed timelines, to feed into planning milestones for CP7.
- 2.46 Our recent TAR on the processes, people and behaviours involved in drainage maintenance found that local Maintenance Delivery Units (MDUs) have all been undergoing significant changes over several years. MDUs had implemented these changes to different levels and overall there is a lack of stability. Greater alignment is needed between the MDUs, regional teams and national teams to enable future changes to be implemented in a timely and effective manner. This will include the implementation of Network Rail's new drainage strategy that is currently being compiled.
- 2.47 For all of the reviews and independent reporter pieces carried out, we expect Network Rail to respond to our concerns and recommendations and to engage with us on its improvement plans. These reviews will be published on our [website](#) once complete.
- 2.48 Key to Network Rail's development of robust plans for maintaining and renewing its assets is high quality asset data. In 2019-20, we highlighted our concerns to Network Rail on the accuracy, timeliness and quality assurance of its maintenance volumes data and its governance reporting arrangements.

- 2.49 Although we have seen some improvements, such as the introduction of changes to data validation checks and a new reporting template, further work is required regarding the capture and reporting of data. We also require better evidence of oversight at regional executive level, in particular on the maintenance outputs being achieved.
- 2.50 Having accurate maintenance data is critical to Network Rail managing its assets effectively and the planning of future work. This will become even more important as Network Rail develops plans for the next control period. Network Rail should consider the use of maintenance Performance Indicators (PIs) on its route and regional scorecards and developing clearer business plans for maintenance activity. This should be supported by benchmarking within and between routes and regions to highlight and share areas of best practice.
- 2.51 Network Rail must deliver improved maintenance reporting during 2021-22. We will monitor its progress in CP6 and its development of clearer plans for CP7.
- 2.52 Best practice for the effective management of assets is captured in the International Standards for Asset Management (ISO 55000). In our PR18 Final Determination, we asked Network Rail's routes to demonstrate how they would operate in accordance with ISO 55000 and develop their Asset Management Systems by an agreed date of 31 March 2021. While all routes committed to improving their capabilities and have made some progress, further work is required across all of the regions to ensure full alignment and compliance with the standard. Eastern and Wales and Western regions are of particular concern.

Delivery of enhancement projects has continued during the pandemic

- 2.53 Network Rail has continued to deliver enhancement projects well across the regions despite the pandemic. These projects include significant works in the Eastern region, such as electrification of the Midland Mainline and capacity improvement projects on the East Coast Mainline. The pandemic has presented a number of challenges to project delivery. For example, the Stevenage Turnback project required people to work in confined areas on site whilst social distancing, delaying the project completion from May to August 2020. Network Rail has worked well with its stakeholders to manage the uncertainty and reduce the impact on project delivery timescales.
- 2.54 In January 2020, we completed our first review of Network Rail's region's capital project delivery capability using a new assessment tool (the Capital Investment Capability Framework (CICF)). ORR and Network Rail developed this approach with the independent reporter Nichols. Our review assesses Network Rail's role in the early stages of projects, which is critical to their success.

2.55 The assessment concluded all regions have similar levels of capability in delivering both renewals and enhancements. There are some gaps in each region's processes for the early stages of projects and project teams have an inconsistent approach to some activities during these early phases. This is a typical outcome for an organisation's first capability maturity assessment, which aims to evaluate the degree to which an organisation's processes are deterministic and repeatable. Network Rail has developed an improvement plan in response to the findings of the assessment and we are monitoring its progress. This plan is aligned to current industry initiatives, such as Project SPEED (Swift Pragmatic Efficient Enhancement Delivery) which focuses on a set of improvements to reduce the costs and time it takes to deliver rail projects.

Environmental sustainability

2.56 While rail continues to be one of the more environmentally sustainable modes of transport, Network Rail is developing plans for further improvements, including reducing carbon emissions and enhancing biodiversity across the network.

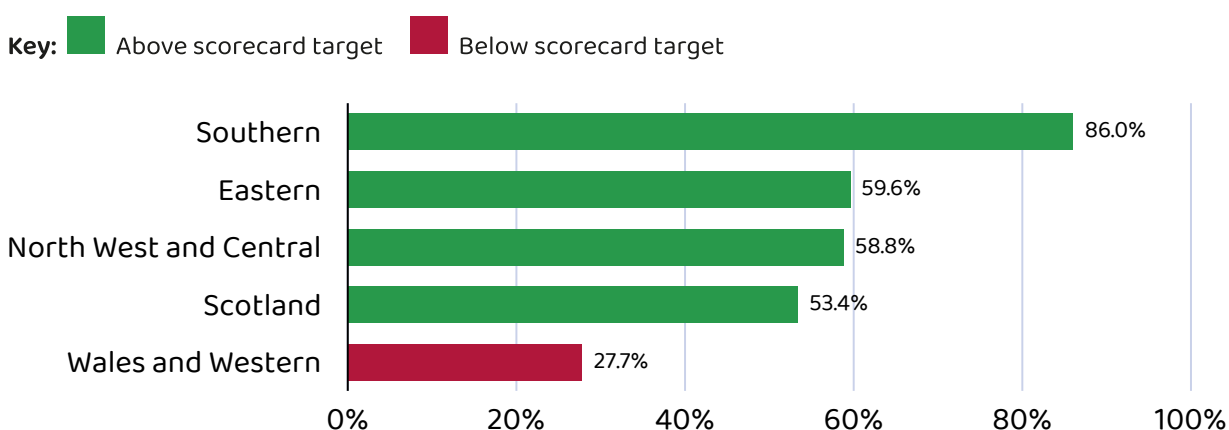
2.57 Network Rail introduced a new measure for Environmental Sustainability in 2020-21, the Environmental Sustainability Index (ESI). This composite measure is comprised of key environmental measures on waste, carbon emissions and non-traction energy usage.

2.58 Nationally Network Rail has achieved its internal target for ESI and all regions except Wales and Western have met their individual targets. The Southern region has performed exceptionally well against this measure.

2.59 The temporary closure of retail units at stations and, to a lesser extent, offices has led to a reduction in carbon and energy usage, helping Network Rail to overachieve in this area. However, the Wales and Western region's smaller station estate and increased activity at Sudbrook pumping station meant it missed its target.

2.60 As ESI is a new measure, we are working with Network Rail to undertake an independent reporter study to assess the reliability and accuracy of the data. The review is due for completion in summer 2021 and the findings and recommendations will be published on our [website](#).

Figure 2.3 Environmental Sustainability Index (ESI) by region – scorecard outcome, 2020-21



Source: ORR analysis of Network Rail data

- 2.61 Over the last year, Network Rail has made significant progress in relation to its approach to the environment and is taking a leadership role in the industry.
- 2.62 In September 2020 Network Rail launched its [Environmental Sustainability Strategy](#). This strategy focuses on four key areas: greener trains and assets; running a reliable railway service that is resilient to climate change; improved biodiversity of plants and wildlife; and minimal waste and re-use of materials. Each priority area is supported by a national roadmap to 2050, which includes key milestones, goals, local strategies and investment plans.
- 2.63 The production of the national strategy is a very positive step, alongside its adoption by the regions within England and Wales where funding has been transferred or reprioritised to provide greater emphasis on this area. Network Rail Scotland has worked with Abellio ScotRail and Transport Scotland to develop a plan to deliver a sustainable railway for Scotland, which goes beyond the requirements of the UK strategy and conforms with the Scottish Government's targets for reducing greenhouse gas emissions to net zero by 2045. We will continue to work closely with Network Rail's central and regional teams to identify how these strategies will be implemented in CP6 and CP7.
- 2.64 To address Government policy on biodiversity, Network Rail's [Biodiversity Action Plan](#), published in December 2020, sets out its strategy for enhancing biodiversity and wildlife on the lineside by 2024. This plan focuses on protecting, managing and enhancing the condition of biodiversity assets through partnerships with stakeholders. Network Rail has set itself a series of key performance measures to achieve in the period from 2019 to 2024, including no net loss of biodiversity in its lineside estate by 2024, following best practice in habitat management and publishing annual reports on its activities and progress. Network Rail's first biodiversity action plan is a positive development. We will continue to monitor progress on its commitments and implementation and will report on this in more detail in our future annual assessment reports.
- 2.65 Network Rail's System Operator has also worked with stakeholders across the wider industry to develop the [Traction Decarbonisation Network Strategy \(TDNS\)](#). This strategy is aimed at supporting decision-making on activities and technology to reduce carbon emissions from passenger travel and freight trains between now and 2050.
- 2.66 Network Rail has made good progress over the last year, increasing its focus on the environment and developing a suite of plans and strategies to deliver improvements with a range of stakeholders. We are beginning to see the national strategies being reflected in regional plans and look forward to seeing the continued commitment and local delivery through CP6 and CP7.

Train performance has improved during the pandemic and Network Rail needs to work cross-industry to retain some of this uplift

Train performance during the pandemic has been exceptional as a result of fewer passengers and trains on the network. Network Rail needs to sustain its focus on improving its performance management capabilities and implementing its learning from the pandemic, to retain the higher levels of performance seen in 2020-21 where possible.

2.67 The pandemic has helped create a unique set of operating conditions resulting in Network Rail delivering record levels of train performance in 2020-21. A reduction in the number of train services and lower passenger demand have been key contributing factors.

Network wide train performance

2.68 We measure passenger train performance using a range of indicators, but overall train performance is based primarily on two measures; one for punctuality and one for reliability:

- Punctuality: 'On Time': the percentage of recorded station stops arrived at early or less than one minute after the scheduled arrival time (as per timetable). Early trains are classified as 'On Time'. A higher On Time score indicates better punctuality.
- Reliability: 'Cancellations': the amount of trains that are cancelled as a percentage of trains planned. This measure is a score which weights full cancellations as one and part cancellations as half. A lower cancellations score indicates better reliability.

Table 2.2 Punctuality and reliability (moving annual average), Great Britain, 2020-21

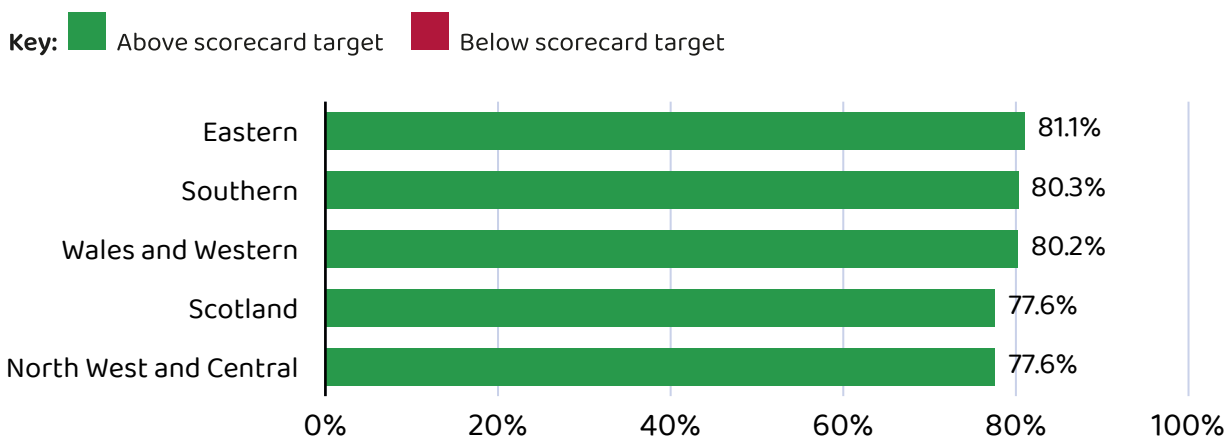
Measure	2020-21 MAA	Compared with 2019-20 MAA
On Time	79.7%	▲ 14.9 pp
Cancellations	2.1%	▼ -1.3 pp

Source: ORR analysis of Network Rail data

2.69 During 2020-21, both measures have improved compared to last year. On Time performance increased by almost 15 percentage points and is the highest On Time moving annual average (MAA) percentage since the time series began in 2014-15.

2.70 On Time performance across regions has also been very high in 2020-21, with all regions performing better than their internal targets. The Eastern region ended the year with the highest On Time performance. All regions saw an improvement in out-turn compared to 2019-20, with the North West and Central region showing the greatest improvement at almost 20 percentage points.

Figure 2.4 On Time (moving annual average) by region, 2020-21



Source: ORR analysis of Network Rail data

Network Rail's regional train performance

2.71 We use a range of metrics to assess overall performance within the regions but focus on two consistent measures to compare performance across regions:

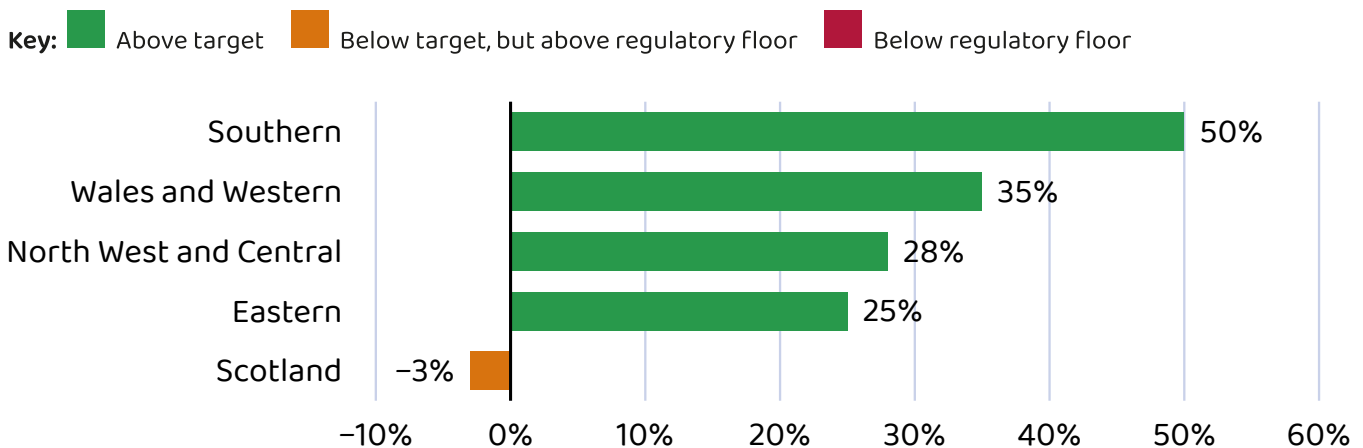
- a consistent region measure for passenger services known as CRM-P. This is the delay minutes to passenger services attributed to Network Rail from incidents occurring in each Network Rail Region, per 100 train kilometres. A lower score reflects better performance; and
- a freight delivery metric for each region known as FDM-R. This is the percentage of commercial freight services that arrive at planned destination within 15 minutes of their booked arrival time, or with less than 15 minutes of delay caused by Network Rail or another operator that is not a commercial freight operator.

2.72 We monitor delivery of these measures for each region against an annual target and a regulatory minimum level of performance, referred to as the regulatory floor. This minimum level of performance signals the point at which we are highly likely to consider formal investigation.

Network Rail's passenger train performance has improved compared to last year

2.73 Performance across the Southern, Wales and Western, North West and Central, and Eastern regions was better than their internal targets in 2020-21. The Southern region achieved the highest level of performance against its target and also showed the greatest percentage improvement compared to the previous year. Although Network Rail Scotland did not meet its internal target, it has shown an improvement on its 2019-20 out-turn.

Figure 2.5 Passenger train performance (Network Rail caused delay minutes normalised, CRM-P) – % better/worse than regional targets, 2020-21



Source: ORR analysis of Network Rail data

2.74 Both passenger and freight train performance in the Network Rail Scotland region in 2020-21 was impacted by several weather related incidents. While the region was the most affected by the weather during the year, it remains a challenge across all Network Rail regions.

2.75 Strategies and plans are being developed or implemented to help mitigate the impact of weather events in CP6 and CP7 and we have seen evidence of progress across the regions during 2020-21.

2.76 The North West and Central region is investing in multiple variable rate sanders for parts of its fleet to improve driver control when operating on slippery rails. The Wessex route has installed remote condition monitoring of its signalling assets to improve its response to issues caused by severe leaf fall. This has contributed to a 97% decline in associated delays. In our last Annual Assessment, we noted that Network Rail Scotland had improved its autumn preparedness and this has continued in 2020-21. Throughout autumn, it used a range of activities to improve performance, including the use of specialist trains to clear leaves from the track and setting up daily autumn conference calls and autumn reporting to monitor performance.

Our 12 month review of North West and Central region performance

2.77 In 2020, we investigated poor train performance in Network Rail's North West and Central region, reviewed its improvement plans and made additional recommendations. In May 2020, we published the conclusions of our investigation. We found that the region had identified the main causes of poor performance and started to develop remedial action plans, but at the time the report was published, these were not supported by time bound milestones. We consolidated our conclusions into a series of 25 recommendations that we would monitor for 12 months.

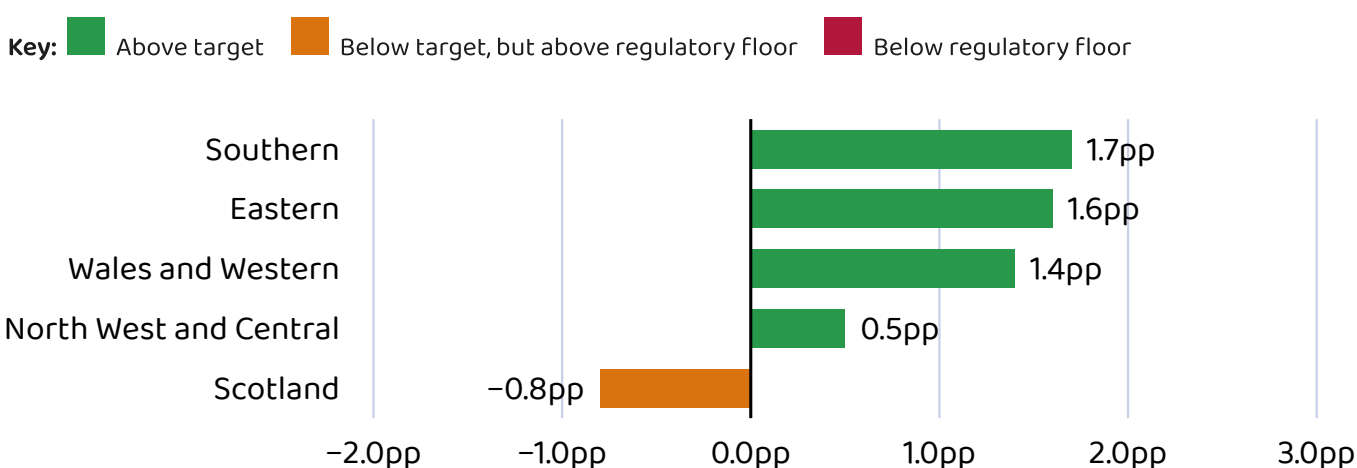
2.78 In May 2021, we published our [12 month review](#). While performance in the region has improved, we have continued to scrutinise its delivery of its improvement plans. The region has made good progress against the majority of our recommendations and engaged well with us to deliver the anticipated outcomes. However, we were disappointed that the remaining six recommendations (two relating to operations and four to asset management) did not achieve the progress we expected and remain outstanding. We will therefore be extending our enhanced monitoring and assessment for six months to ensure the region delivers the expected outcomes. Further details of our review are provided in the North West and Central chapter and on our website.

Network Rail's freight performance was very good

2.79 Freight performance improved in 2020-21 and all regions except Network Rail Scotland ended the year better than their internal targets.

2.80 Freight performance in Scotland decreased towards the end of 2020-21 and it is the only region to have experienced a decline in freight performance during the year. This was largely due to severe weather events such as flooding and snow. Passenger and freight train performance in 2020-21 highlights the need for Network Rail Scotland to improve its operational response to severe weather events. The region is working on addressing this.

Figure 2.6 Freight performance (FDM-R) – percentage points better/worse than regional targets, 2020-21



Source: ORR analysis of Network Rail data

- 2.81 While the pandemic has impacted freight performance levels, during the year there has also been a greater focus from Network Rail's regions and routes on improving freight train performance. For example, the Southern region has developed a new freight train management policy and the Western route has assessed options to help maintain right time departures at Merehead quarry.
- 2.82 Additionally, Network Rail's central and regional teams are taking a more proactive role in maintaining its relationship with the freight operating companies. A number of activities to strengthen engagement with the freight community have been undertaken over the last year, including holding a quarterly forum known as the Freight Industry Performance Group, to share good practice across the industry.
- 2.83 Further information on these activities and freight performance is covered in the Freight and National Passenger Operators (FNPO) chapter.

Assessing train performance in 2020-21

- 2.84 While train performance has been improved during the pandemic, there is a clear risk that performance will drop as passengers and services return. Therefore, we have placed greater focus on a qualitative assessment of Network Rail's contribution to train performance, including assessing its performance management capability and actions it is taking to retain performance improvements in the long-term.

Network Rail is strengthening its performance management capabilities across the regions

- 2.85 During 2020-21, Network Rail has played a key role in progressing the industry wide Network Reliability Action Plan (NRAP), aimed at improving train service performance. This plan is based on seven priority areas (such as fleet performance and service recovery) and includes 28 different workstreams (for example, new fleet introduction and responding to fatalities).
- 2.86 In the last year, Network Rail has worked to embed improved performance management capabilities across its business. One NRAP programme is the Performance Improvement Management System (PIMS), a whole industry programme looking at the capability of the industry to improve train performance. It sets out activities to deliver improved performance management capability across the regions, such as providing policies, tools, and guidance to improve performance modelling, planning and delivery, and ensuring industry wide sharing of best practice in performance management. Network Rail has taken a leading role in this area, producing and sharing a range of materials and processes for the industry to follow to support delivery of improved train performance.
- 2.87 A core part of this framework is the suite of joint Network Rail and passenger and freight train operator performance strategies. Creating and implementing these strategies is central to the delivery of Network Rail's continuous improvement of train service performance. The pandemic has impacted performance planning and the production of performance strategies, due to uncertainty of future performance modelling and passenger demand, but we are encouraged by the joint working and engagement between Network Rail and the passenger and freight train operators.

- 2.88 Over the last two years there have been substantial improvements in the quality of performance strategies. Network Rail has improved its collaboration with operators in producing them and engaged in annual peer reviews, identifying strengths and weaknesses of the documents. It is important that this work continues to enhance the quality of performance strategies.
- 2.89 While significant improvements have been made, some areas still require further focus. One area of weakness is risk management. Local performance strategies should accurately reflect known risks and be supported by clear processes and plans to mitigate or eliminate such risks. For example, our review of the performance strategies for Merseyrail and Avanti West Coast train operators found that they did not provide evidence of the potential risks of the introduction of their new fleets across the North West and Central region. Network Rail's central PIMS team has been providing guidance to the regions on how to improve this element of performance planning. We will maintain our focus on this area as part of our ongoing review of the performance strategies.
- 2.90 In producing performance strategies, Network Rail needs to ensure that strategies (and their associated improvement plans) for previous years are reviewed to understand whether they have delivered the expected benefits. Our review of the 2020-21 performance strategies has identified limited evidence of this and we are engaging with Network Rail to seek improvements on this.
- 2.91 Another central part of PIMS is the Risk Management Maturity Model for Performance (RM3P). This is a self-assessment tool which measures train performance management capability. It looks at five areas: policy, governance and leadership, monitoring, audit and review.
- 2.92 We have seen strong evidence of Network Rail's central team driving the roll out of RM3P, and supporting this with training and best practice forums, but the delivery of RM3P across the regions has varied.
- 2.93 We have seen good progress in certain routes, such as the Wessex route within the Southern region. The route has appointed dedicated resources for this work and set out key policies, such as on governance and leadership. It is helping to develop industry best practice in areas such as learning from incidents. However, the pace and volume of change has been hampered as the route has, rightly, prioritised its response to the pandemic. Elsewhere, the North West and Central region has completed two rounds of RM3P assessments with its routes and operators and we look forward to the development of the improvement initiatives based on the findings from this work. In contrast, the Wales and Western region's progress in applying RM3P has been slower than expected.
- 2.94 It is important that local delivery of all areas of RM3P is supported by tangible actions that will improve performance. We will continue to monitor progress and delivery across the regions and report on this in due course.
- 2.95 Over the last year Network Rail has made strong progress in embedding and delivering improved performance management capabilities across its regions. Network Rail must now provide evidence that delivery of these whole industry activities is supporting performance improvements, which will become even more important as passenger numbers and train services increase. We expect Network Rail to develop stretching yet realistic updated performance forecasts during the next six months, or as usage of the network stabilises.

Case study – cross industry improvements in managing train performance

With fewer passengers and services, train performance is currently high. But it will come under increasing pressure as passengers and services return. So it is vital Network Rail and operators continue to work together to improve the management of train performance – including through the implementation of PIMS. The industry is now collating evidence to show how PIMS is driving better practices.

One example is in the North East route, where train operator Northern and the route, worked together to undertake a detailed assessment of the existing governance and performance management practices.

The North East route is a high performing route with performance for Northern train operator regularly above 90%. However, this review identified areas of improvement and as a result, several changes were made. The route introduced a new risk register to improve proactive risk management and provide a whole region record of risk. Alongside this, a new action tracker was also established, which has improved the overall rate of action completion and prevented the same performance incidents from recurring. A single point of contact for performance on each line of route was introduced to improve information flow and day-to-day delivery of performance and joint Network Rail and train operator performance calls were also set up to support better decision-making, joined up plans and action resolution.

Better train performance seen during the pandemic needs to be retained where possible

- 2.96 During the pandemic Network Rail has strengthened its analysis of performance, focusing on specific areas such as optimum capacity levels, excess station dwell times and services that disproportionately affect performance. Alongside this, Network Rail has been working closely with its stakeholders to develop a suite of plans and initiatives to help retain some of the performance benefits from the pandemic.
- 2.97 One key area of focus for Network Rail has been reviewing improvements to timetabling, particularly at a local level, and we have seen strong evidence of this work across Network Rail's business units. Network Rail Scotland worked collaboratively with train operators, Transport Scotland and Transport Focus to deliver 30 timetable changes to improve performance in August. This included increases to train turnaround and crew change times, and changes to improve train dwell times at stations. In the Southern region, work has been undertaken to re-time a poorly performing freight service without affecting surrounding services and updating Train Planning Rules (TPRs) in yards and sidings to improve the accuracy of train reporting.
- 2.98 Network Rail's central team is carrying out work on improving the flow of trains. The team is examining the speed of trains when approaching signals at peak times on the most congested parts of the network. This work is due for completion in September 2021.

- 2.99 During the pandemic, the industry was able to introduce additional, longer and heavier freight services into the timetable, delivering more efficient operations and moving more goods. Network Rail is seeking to embed these improvements and is working with freight operators to identify core freight routes where demand is currently suppressed by lack of capacity. Network Rail is working with the Department for Transport on the economic case and to understand what timetable changes would be needed to continue to run additional freight services on these corridors.
- 2.100 Network Rail's System Operator is also leading a range of work on timetabling, including whole industry monitoring of risks to future timetable changes. It has invested in new tools and resources to enhance its modelling of current and future timetables. For example, it has developed a new self-service performance hub allowing comparison between actual train performance and timetables, to help identify where delays are occurring. The System Operator has analysed the relationship between performance and network use seen during the pandemic and used this to develop a nationwide model that predicts On Time train performance based on service levels and passenger footfall. These are positive developments.
- 2.101 Work has also been undertaken to assess train dwell times at stations during the pandemic. Network Rail analysed cases where planned dwell times were being exceeded even at times when few passengers were using the network. It identified a range of operational factors. As a result of this work, it has developed a programme to revise its TPRs to support the development of more robust train plans and dwell time adherence.
- 2.102 While Network Rail has undertaken analysis during the pandemic to improve its understanding of the relationship between network usage, capacity and performance, we have not yet seen evidence that the timetable has been materially improved or changed to try to sustain some of the performance gains seen during the pandemic. The closer role foreseen for Network Rail in the development of train service specifications under new passenger service contracting arrangements may enhance its ability to ensure these lessons are reflected in decisions about train services. However, Network Rail has only limited influence on this, as decisions on train service levels are largely with funders.
- 2.103 As the uncertainty around passenger demand and train service levels begins to subside, we will continue to monitor Network Rail's response to this, including whether it is doing all it can to influence a high performing timetable.

Network Rail's Performance Innovation Fund has approved more performance improvement schemes

- 2.104 In PR18 we established the £40 million Performance Innovation Fund (PIF). This fund is designed to support innovative ways, such as new operational approaches or research, to drive improvements in passenger and freight performance. After a slow rate of investment in 2019-20, we have seen greater levels of investment in 2020-21 due to Network Rail's improved governance and greater emphasis on regional engagement.
- 2.105 Over the last year, a number of schemes have been identified across the network, with £22 million of the total £40 million fund being allocated to specific schemes. While the majority of the £22 million has been granted to central schemes, a variety of regional schemes have been authorised, ranging from £3.3 million for North West and Central region to £1.0 million for the Wales and Western region. The largest number of schemes relate to monitoring and analysing train performance and infrastructure. This includes schemes such as the fitment of a Global Positioning System (GPS) to the High Speed Trains fleet in the Network Rail Scotland region to improve data analysis, and a new tool to analyse speed restrictions on the West Coast Mainline South within the North West and Central region.
- 2.106 Following a slow rate of investment approvals in 2019-20, we welcome greater use of the PIF in 2020-21 to fund schemes to deliver future performance improvements. Over the coming year we will assess the implementation and delivery of these schemes.

Network Rail's delivery of efficiencies is on track with more cost savings planned

Across the regions and central functions, good progress has been made against individual efficiency targets but risks remain as this challenge increases through CP6. Risk funds are lower than planned at this point in the control period and Network Rail must demonstrate how future risks that materialise will be managed.

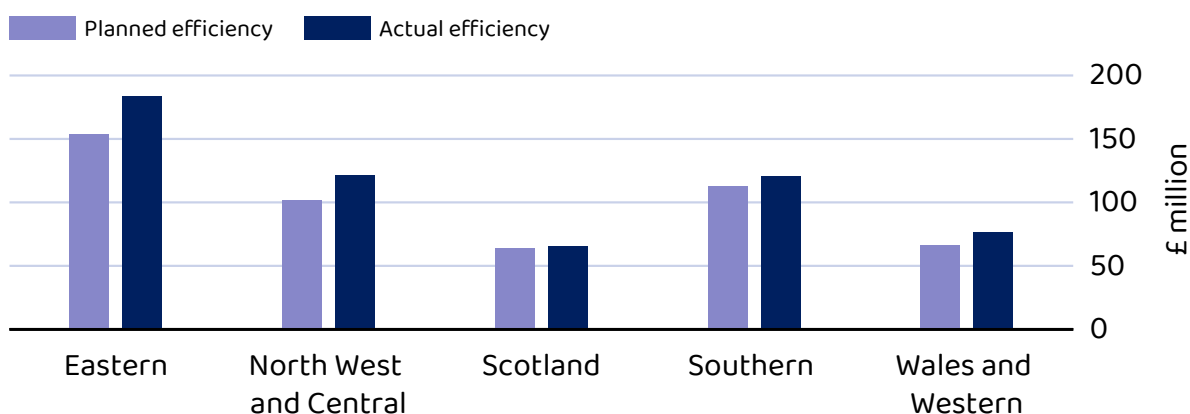
- 2.107 This analysis is based on draft financial information provided by Network Rail, comparing its financial performance against its annual budget. We will report more fully on Network Rail's financial performance against its CP6 Delivery Plan in our 'Annual Efficiency and Finance Assessment', due for publication in July 2021.
- 2.108 We are holding Network Rail to account for delivering the £3.5 billion of savings it has previously committed to delivering over the control period. The pandemic has led to changes in passenger demand and train service levels, resulting in a stark decline in industry revenues. This has placed greater emphasis on Network Rail to reduce its costs and work with industry stakeholders and funders to attract passengers back to the railway and it has more recently committed to delivering £4.0 billion of efficiency improvements in CP6.

All five regions met their efficiency targets

2.109 We hold Network Rail to account for delivering efficiencies across its core business activities: operations, support, maintenance and renewals. Network Rail is reporting it has delivered £710 million of efficiency improvements in 2020-21, against a target of £570 million, and all five regions have met or exceeded their individual efficiency targets.

2.110 Four regions (Eastern, Southern, North West and Central, and Wales and Western) have seen improvements in how prepared they are to deliver future efficiencies, with improvements having been made in the planning and assurance processes supporting their reported efficiencies. However, we remain concerned about Network Rail Scotland's plans and its readiness to deliver in the remaining years of CP6. The region is working to address the concerns we have highlighted and we have stepped up our ongoing monitoring in the region. This is discussed in more detail in the Network Rail Scotland chapter of this report.

Figure 2.7 Efficiency performance by region, 2020-21



Source: ORR analysis of Network Rail data

2.111 Network Rail's improvements in efficiency have been achieved through a combination of national, regional and local efficiencies, which it categorises into 22 different groupings. Significant improvements reported in 2020-21 include savings from use of the rail milling machine to renew track rather than undertaking full replacement, savings on signalling contracts in the Eastern region and savings relating to 2019-20 performance-related pay.

2.112 The pandemic has had a significant impact on Network Rail, increasing cost pressures on some asset types, but it has also offered opportunities to deliver work more efficiently on a quieter network.

2.113 Network Rail remains confident in its ability to deliver the £3.5 billion of efficiency improvements we challenged it to deliver in CP6. It has also committed to delivering £0.5 billion of additional savings across the control period and is reviewing how it will deliver these.

2.114 Overall, the regions and central functions have made good progress against their efficiency targets but significant risk remains as Network Rail's efficiency challenge increases through CP6. It must maintain its focus on delivering the efficiencies it has committed to deliver in the remainder of the control period.

Financial performance has been impacted by the pandemic

- 2.115 Whilst Network Rail has reported that it has exceeded its efficiency target in 2020-21, it has also reported financial underperformance using the financial performance measure (FPM). This means that Network Rail spent more for what it delivered in 2020-21 than we required in our PR18 Final Determination. This is due to a number of factors including unexpected cost increases relating to the pandemic which are reported separately to efficiency improvements.
- 2.116 We have concerns about the regions' classification of some cost increases between headwinds and inefficiencies (which net off against efficiency improvements) which means that in our view, Network Rail's net efficiency may be lower than it has reported. This is examined in more detail in our Annual Efficiency and Finance Assessment, due for publication later in July 2021.
- 2.117 The regulatory financial performance measure (FPM) provides a better understanding of Network Rail's financial performance than simple income and expenditure variances. FPM compares a region's actual income and expenditure to its CP6 delivery plan across most items of income and expenditure, ensuring that a region does not benefit from underspend by delaying work to a later date if that work will still need to be done.

Table 2.3 Network Rail's financial performance, 2020-21

£m	Full year budget	Full year forecast	Budget variance better/(worse)	FPM out/(under) performance
Turnover	2,843	2,546	(297)	(295)
Schedules 4 and 8	(421)	54	475	498
Operations and support	(1,629)	(1,698)	(69)	4
Maintenance	(1,876)	(1,993)	(117)	(86)
Profit and Loss	(1,083)	(1,091)	(8)	121
Renewals	(3,580)	(3,979)	(399)	(258)
Enhancements	(1,895)	(1,480)	415	(26)
Total				(163)




Source: Network Rail

- 2.118 Against £6.6 billion of total expenditure, Network Rail is forecasting £163 million (2.5%) of financial underperformance for 2020-21. Turnover has underperformed by £295 million as property income has reduced in 2020-21 due to rent payment breaks offered to tenants by Network Rail. There has also been £258 million of underperformance in renewals, due to increased costs and disruption as a result of the pandemic. Network Rail has spent £399 million more than budgeted on its renewals but some of this is due to earlier than anticipated delivery of planned works, which does not directly lead to underperformance.
- 2.119 Underperformance has been offset by significant (£498 million) outperformance in Schedules 4 and 8 income due to high levels of train performance, delivered predominantly because of the reduced timetable running on the network during the pandemic.

Leading indicators of future efficiency are mixed

- 2.120 We monitor whether Network Rail is prepared to deliver its remaining efficiency plans using a range of leading indicators. Effective renewals planning is important because it improves the robustness of the rail network and reduces costs. It provides a stable profile of work for Network Rail's supply chain, it can avoid more critical work than necessary being squeezed into the final quarter of the year (when weather conditions can be most challenging) and it can prevent slippage of work into the following year.

Table 2.4 Network Rail's leading indicators for efficient delivery, 2021-22

Area	Renewals Planning		Securing Engineering Access		Maintenance Requirement 2020-21	
	Work authorised in Oracle	Target	% of required access booked	Target	Current headcount	Target
National	75% 	81%	98% 	76%	97% 	99%

Source: Network Rail

- 2.121 Network Rail has had mixed performance against its leading indicators of efficient delivery for 2021-22. Its financial authorisations of renewals projects are at 75% authorised, lower than its target of 81% although this indicator is reporting higher than the previous year (69% in 2019-20). This has been particularly impacted by slow track authorisations which are usually of high value. We also consider the number of remits issued that have been accepted by the supply chain which shows progress made at an earlier stage of the planning lifecycle. 91% of remits issued have been accepted by the supply chain meaning further progress than suggested by using financial authorisations alone. However, authorisations will continue to be monitored heading into the next financial year.
- 2.122 Nationally, Network Rail is ahead of its internal target for booking of disruptive engineering possessions at 98% booked (target of 76%), demonstrating Network Rail is in a strong position to continue to deliver efficiently in year three of CP6.

- 2.123 Whilst Network Rail's maintenance headcount is currently at 97% of plan, it is below its target of 99%. This difference is not likely to be made up during the year as Network Rail has confirmed it is managing its maintenance workload well at this level. At this high level, the shortfall is not of significant concern.
- 2.124 Across its regions, Network Rail considers that 62% of its 2021-22 target efficiency will be achieved from projects that have already been delivered or have clear project plans. The remaining 38% have no clear project plans, or have plans in place but low confidence in delivery. This position is slightly worse than at the same point in the prior year, reflecting the additional stretch target Network Rail set itself during 2020-21. Given that all regions delivered on their 2020-21 targets at this level of confidence, this is not of significant concern.
- 2.125 Network Rail's Central Functions are reporting a higher confidence in efficiency plans, with 90% of their 2021-22 target efficiency to be achieved from projects that have already been delivered or have clear project plans, and only 10% with no clear project plans or plans in place but low confidence in delivery. This demonstrates improved confidence compared to the previous year, despite the additional efficiencies challenge Network Rail has set itself.

Risk funds are lower than planned

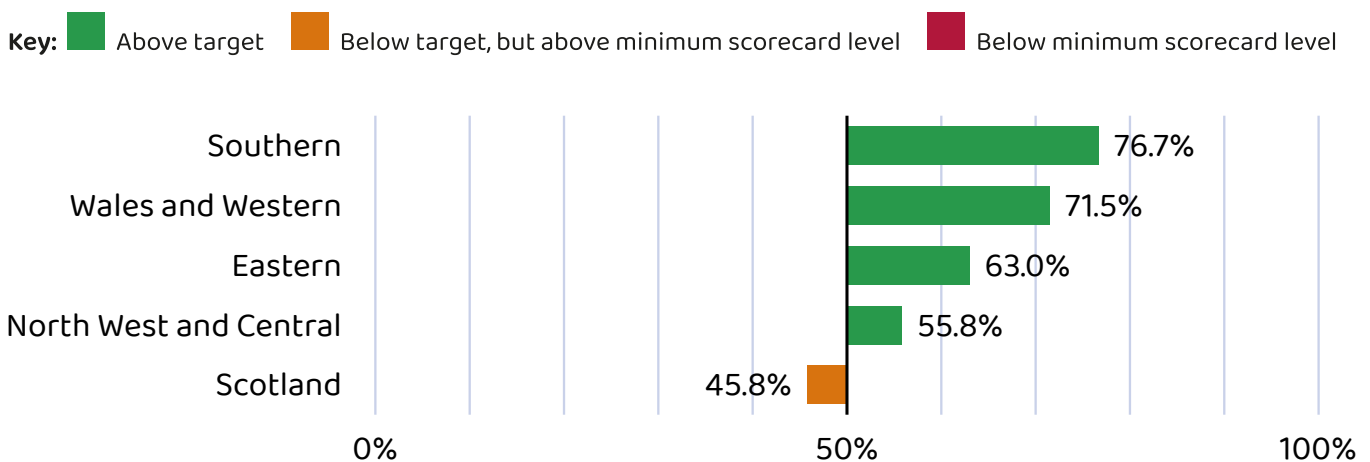
- 2.126 Network Rail's confidence in delivering its CP6 plans within its remaining funding has reduced from its position at the start of the control period. The financial risk position across the regions varies, but in all cases risk funds are lower than may be necessary to meet future financial risks, in part due to the pandemic. Network Rail Scotland's position is the most challenging.
- 2.127 A number of potential risks still remain in future years of the control period and greater clarity is required on whether these are currently included in Network Rail's financial risk modelling. Furthermore, while all of the regions have provided information on how future risks that materialise during CP6 will be managed, Network Rail should look to set this out in clear and transparent plans. We will continue to closely monitor and engage with Network Rail on this. This is covered in more detail in our 'Annual Efficiency and Finance Assessment'.

Network Rail's regions generally performed well against a range of measures

2.128 Network Rail measures its company-wide and regional performance using scorecards. Its scorecards help to align its priorities with those of its customers and incentivise its management teams to deliver those priorities.

2.129 Four of its regions exceeded their internal targets, with Southern being the highest performer at 76.7%. Network Rail Scotland ended the year just below target at 45.8%.

Figure 2.8 Region scorecard performance, 2020-21



Source: Network Rail regional comparison scorecard

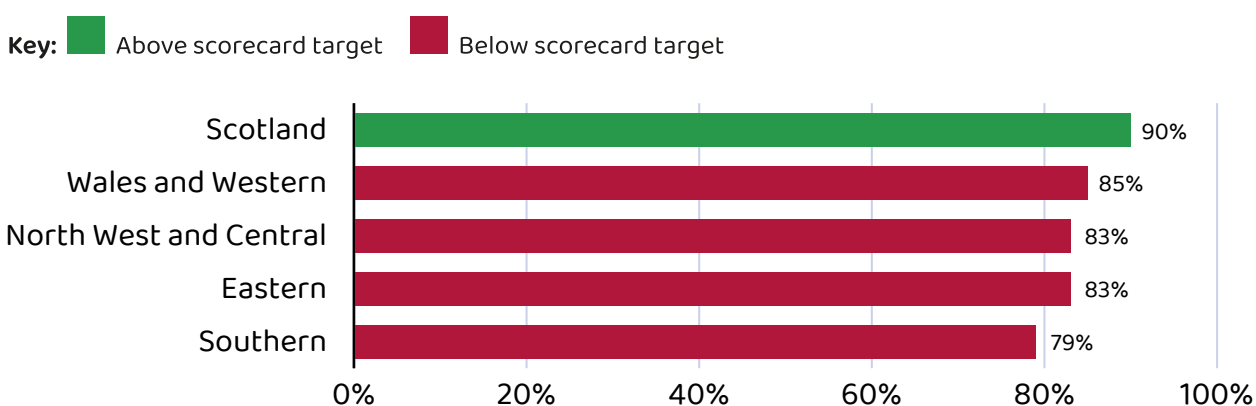
2.130 In 2019-20, we raised concerns with Network Rail regarding its quality assurance of scorecards data. We have since seen improvements in the quality and timeliness of data to support our assessment of its performance. In 2020 we also commissioned independent reporters to assess the data quality of the two regulatory measures that form part of the CP6 scorecards: CRM-P and FDM-R. Both metrics scored a confidence grading of B1, indicating that a reliable methodology and processes are in place but with minor shortcomings, and reported data is accurate within 1.0% of the actual value. We expect Network Rail to respond to the recommendations from the [report](#) and we will monitor its progress.

Passenger satisfaction was below target at the start of 2020-21

2.131 Passenger satisfaction, as measured by Transport Focus' National Rail Passenger Survey (NRPS), is featured on Network Rail's scorecards as a key way for understanding overall passenger satisfaction with journeys across the network and with Network Rail's managed stations. It should be noted that in previous years, scorecard results were based on two waves (Spring and Autumn). However, due to the pandemic, the survey was only run between January and March 2020 (for the Spring wave) and therefore may not be reflective of passenger satisfaction during the full 2020-21 year.

2.132 Passenger satisfaction with overall journey was worse than target nationally at 82%, and for all regions except Scotland. The Southern region showed the lowest level of satisfaction at 79%.

Figure 2.9 Passenger satisfaction (overall journey) by region, 2020-21



Source: Network Rail regional comparison scorecard (NRPS Spring 2020)

2.133 Passenger satisfaction with managed stations was also worse than target nationally at 85.9%, and for all regions except Southern. Scotland region had the highest level of satisfaction with their managed stations at 89.4% and North West and Central region had the lowest at 83.0%.

Eastern region's complaints handling needs to improve

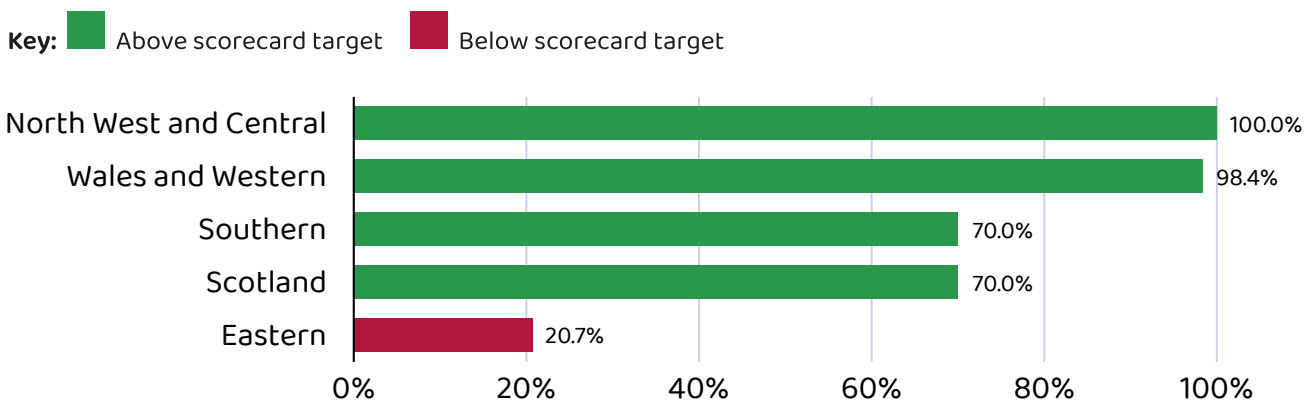
2.134 Network Rail needs to ensure it has a good complaints handling process that ensures complaints are resolved fairly, in a timely manner, and lead to continuous improvements in the services and facilities offered. We measure Network Rail's handling of all complaints received through the Complaints Handling Index measure. This metric is featured on Network Rail's scorecards.

2.135 Four of Network Rail's regions have outperformed their complaints handling targets, with North West and Central achieving 100%. Eastern region's performance was exceptionally poor at 20.7% and significantly below target this year.

2.136 Eastern region's overall index performance was lower than other regions due to resourcing issues resulting in delays in closing complaints. The region has advised that this has now been addressed with the assignment of dedicated resource and an improvement plan. Quality assurance and customer satisfaction checks on the process confirm good progress has been made to date.

2.137 Information on Network Rail's handling of its managed stations complaints is available in our separate publication: 'Annual Rail Consumer Report', published later in July 2021.

Figure 2.10 Complaints handling by region, 2020-21



Source: Network Rail regional comparison scorecard

The majority of stakeholders thought Network Rail's engagement with them in 2020-21 was good

2.138 Good stakeholder engagement is at the heart of running an effective business that listens to and delivers for its customers and stakeholders. In CP6 Network Rail has identified stakeholder engagement as a fundamental part of how it seeks to improve its performance. It committed to engaging with its stakeholders in a way that improves delivery for rail users and governments, and enhances value for money.

2.139 In our PR18 Final Determination, we placed emphasis on the importance of good stakeholder engagement. While we were not prescriptive about how Network Rail engages with its stakeholders over CP6, we set out in the Network Licence four broad principles of good stakeholder engagement: it should be inclusive, effective, well-governed, and transparent.

2.140 We hold Network Rail to account for good stakeholder engagement at both a regional and function level, and we support ongoing improvement over the course of CP6 and beyond. One of the ways in which we fulfil this role is through our annual assessment of Network Rail's stakeholder engagement.

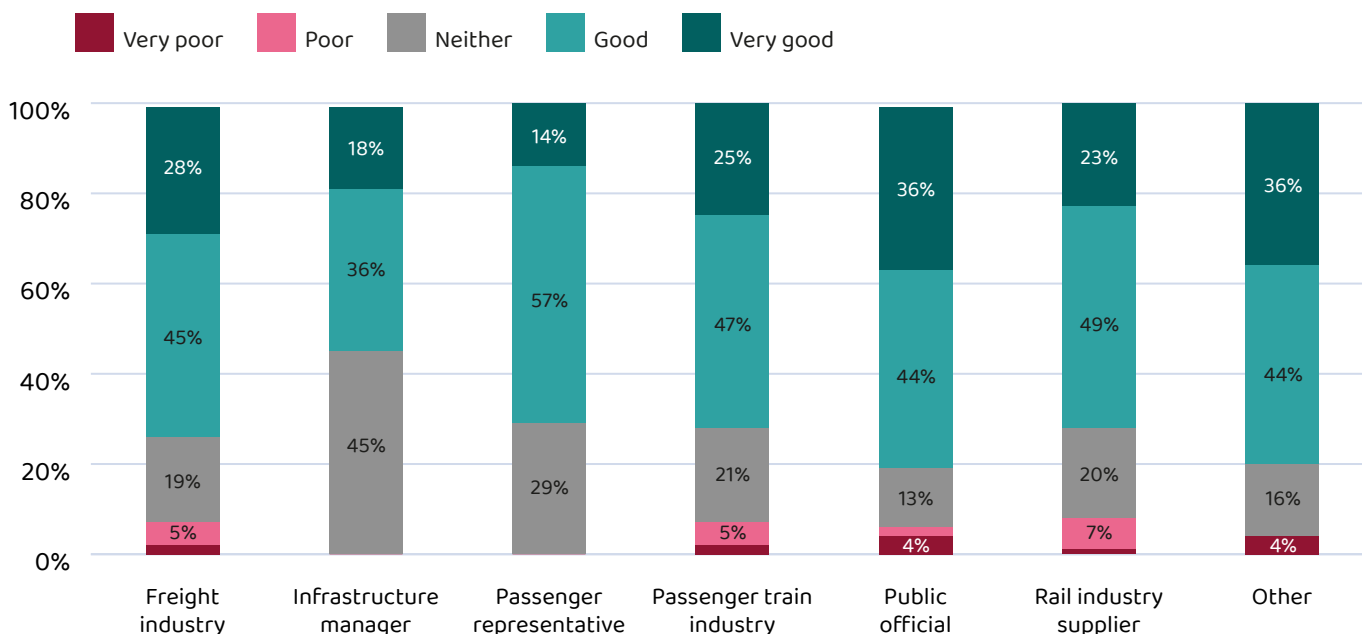
2.141 We are undertaking our second annual assessment in CP6 and are currently in the process of finalising our first wave of fieldwork covering Network Rail's engagement from April 2020 to March 2021. This year we are collecting evidence on how well Network Rail's regions and business functions, System Operator and FNPO, have engaged across all their activities. This includes conducting an independent survey of Network Rail's stakeholders on their experiences of engaging with Network Rail.

2.142 Preliminary findings from our survey show that 73% of the 234 respondents rated Network Rail's stakeholder engagement as good or very good, while 7% rated Network Rail's engagement to be poor or very poor, although this varied by stakeholder group. Figure 2.11 shows that those in the 'other' category (including charities and community rail partnerships) had the highest proportion, at 80%, rating it good or very good. Infrastructure managers (those operating rail networks interconnecting with Network Rail's network) had the highest proportion, at 45%, who did not rate it as good or better.

2.143 Our preliminary survey results also show that 51% of respondents thought that the quality of Network Rail's engagement had improved or somewhat improved, and 12% thought this had declined or somewhat declined. Figure 2.12 shows that those in the 'other' category had the highest proportion at 68%, stating it had improved or somewhat improved. Infrastructure managers had the highest proportion at 73%, stating it had stayed the same.

2.144 Further information, including more detailed results and analysis from across all our data sources and for all regions, will be available in our 'Annual Stakeholder Engagement Assessment' report, due to be published later in summer 2021. We will continue to report on the quality of Network Rail's stakeholder engagement throughout CP6.

Figure 2.11 Perceptions of overall quality of Network Rail's stakeholder engagement, by stakeholder group, 2020-21

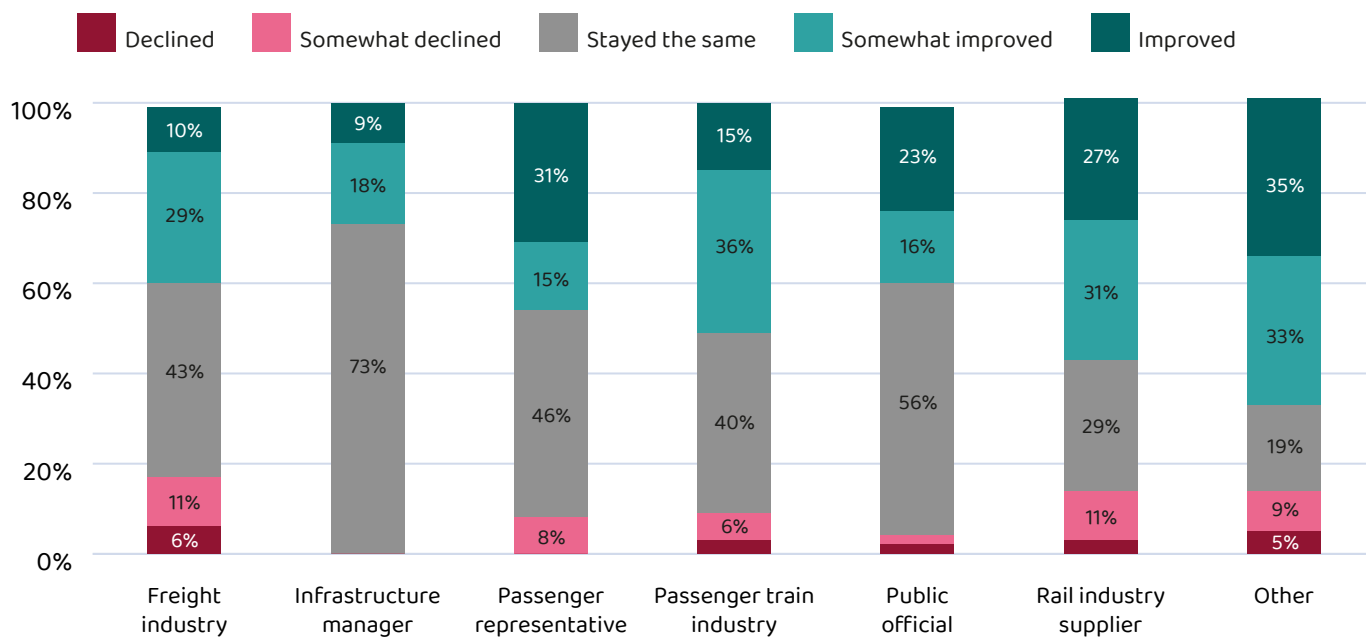


Survey question: 'Overall, how would you rate the quality of Network Rail's engagement with you during the last year (April 2020-April 2021)?'

Base = 631 responses from 234 respondents, excludes 'Don't know' responses

Source: Provisional results of ORR's stakeholder survey

Figure 2.12 Perceptions of how the quality of Network Rail's stakeholder engagement has changed by stakeholder group, 2020-21



Survey question: 'Overall, and in your opinion, has the quality of Network Rail's engagement with you changed?'

Base = 602 responses from 234 respondents, excludes 'Don't know' responses

Source: Provisional results of ORR's stakeholder survey

Annual Assessment of Network Rail April 2020 to March 2021

Eastern Region



3. Network Rail's Eastern region

Overview

- 3.1 Network Rail's Eastern region manages the East Coast Main Line, Midland Main Line and the Great Eastern Main Line. The region links towns, cities, ports and freight terminals across the East of England. The region comprises four routes: Anglia, East Coast, East Midlands, and North and East.

Overall performance in 2020-21

- 3.2 Network Rail measures its company-wide and regional performance in core areas of its business using sets of metrics and internal targets.
- 3.3 It captures these in national and regional scorecards. Each region's scorecard is based on Network Rail's four strategic themes (on the side of passenger and freight users; easy to engage with, an efficient and dependable partner; proud to work for Network Rail; and instinctive industry leader) and it includes our consistent measures and locally driven customer measures and targets. We use scorecards as one way to hold Network Rail to account for its performance.
- 3.4 Performance for each scorecard measure is expressed as a percentage achievement between zero and 100, with 50% being on target for the majority of measures. As shown in Figure 3.1, in 2020-21, the Eastern region achieved 63% on its scorecard.

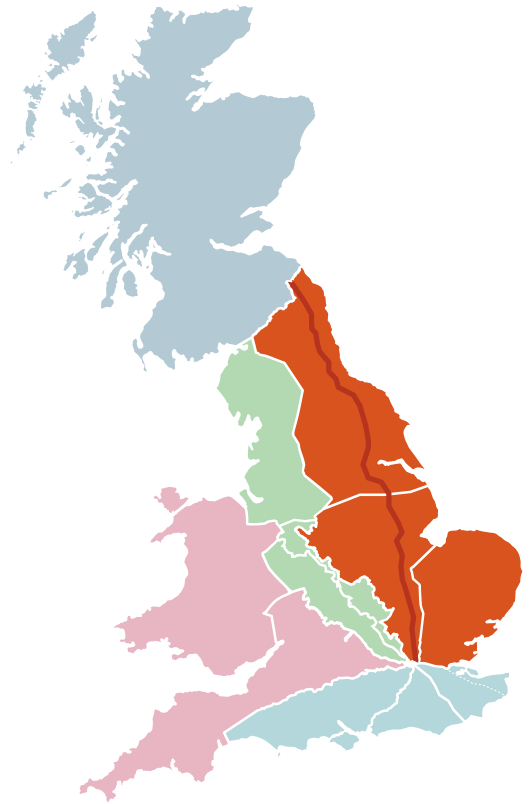
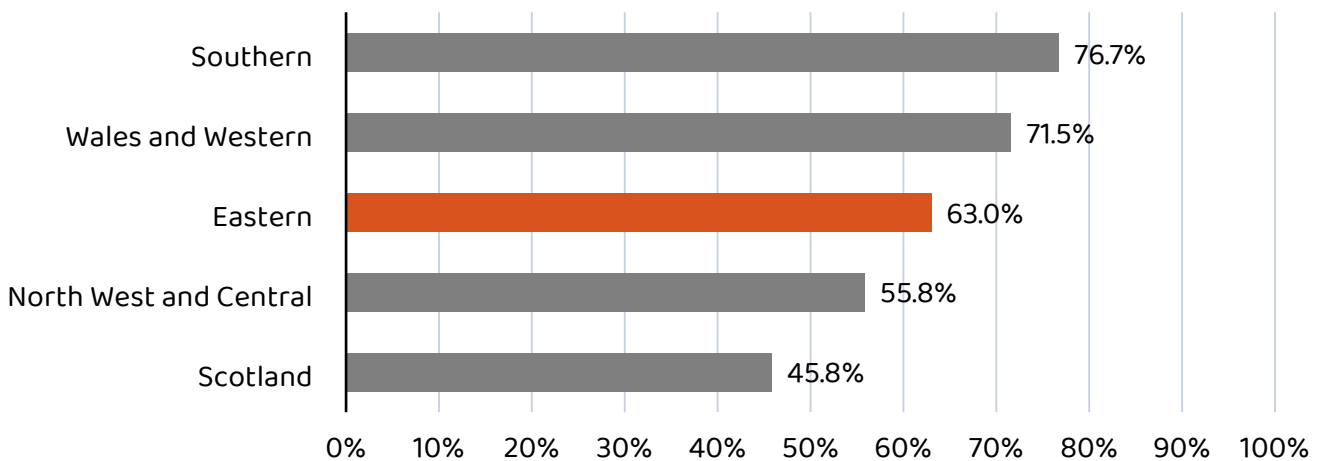


Figure 3.1 Overall scorecard performance by region, 2020-21

Source: Network Rail regional comparison scorecards

3.5 As with other regions, Eastern's performance in 2020-21 must be viewed in the context of the coronavirus (COVID-19) pandemic. The region worked hard to ensure passengers and staff were kept safe, with frontline staff keeping those who needed to travel and freight moving during national lockdowns.

- Passenger and freight train performance has been strong throughout the year. Scorecard measures relating directly to operational performance and delivery were almost all achieved. The Eastern region has been able to successfully deliver improvements throughout the pandemic, using the learning gained from a reduced number of train services operating and a lower number of passengers travelling. This will help to provide improvements in railway service performance for passengers when they return to the railway in greater numbers.
- The Eastern region has managed its assets well, with fewer failures of the infrastructure this year. We have identified how the region can improve its compliance with examination of structural assets.
- Safety performance has been good. The region identified the driving factors behind some of its missed scorecard targets in this area and continues to work towards improving the safety of its workforce.
- The Eastern region missed its financial performance target due to several factors, particularly the impact of the pandemic. The region has delivered its efficiency target.
- The region's Complaints Handling Index scorecard measure was not achieved. The region performed poorly compared with other regions, as resourcing issues resulted in delays to closing complaints received from passengers and lineside neighbours. Network Rail needs to ensure it has a good complaints handling process so that complaints are resolved fairly, in a timely manner, and lead to continuous improvements in the services and facilities offered. The region has advised that this has now been addressed with the assignment of dedicated resource and an improvement plan. Quality assurance and customer satisfaction checks on the process confirm good progress has been made.

Network Rail's delivery of train service performance in 2020-21

- 3.6 We use a range of metrics to assess overall train performance within the regions but focus on two consistent measures to compare performance across regions:
- a consistent region measure for passenger services known as CRM-P. This is the delay minutes to passenger services attributed to Network Rail from incidents occurring in each Network Rail Region, per 100 train kilometres. A lower score reflects better performance; and
 - a freight delivery metric for each region, known as FDM-R. This is the percentage of commercial freight services that arrive at their planned destination within 15 minutes of their booked arrival time, or with less than 15 minutes of delay caused by Network Rail or another operator that is not a commercial freight operator.
- 3.7 We monitor delivery of these measures for each region against an annual target and a regulatory minimum level of performance, referred to as the regulatory floor. This minimum level of performance signals the point at which we are highly likely to consider a formal investigation.

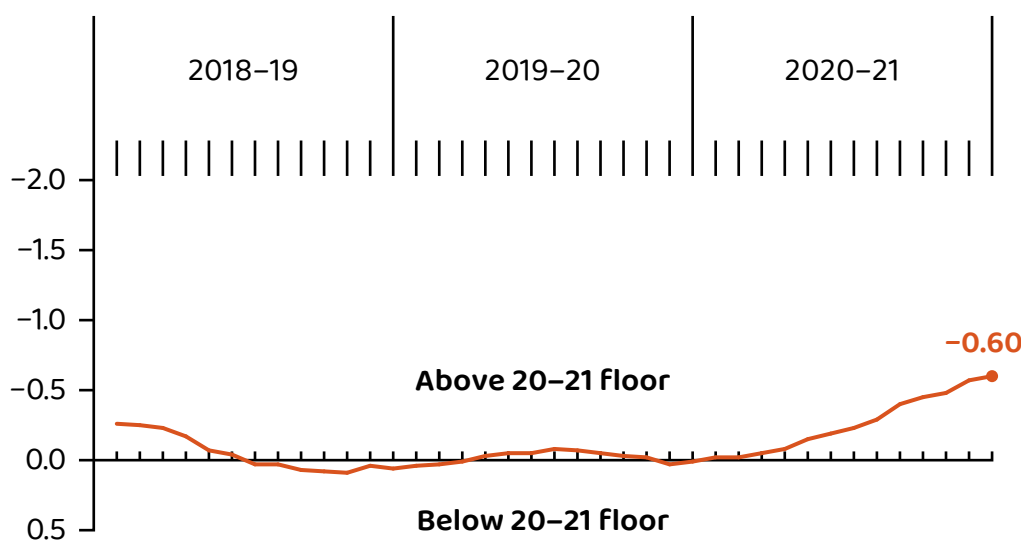
Passenger train performance has improved during 2020-21

Train service performance on the Eastern region has been significantly better than target. Network Rail's delivery in the region has been good. Improvements have been implemented throughout the pandemic by using the learning gained from a reduced number of train services operating and a lower number of passengers travelling.

3.8 In 2020-21, the Eastern region's target for CRM-P was based on it achieving 1.34 minutes of delay per 100 kilometres of train travel. It finished the year 25% better than target, at 1.00 minutes of delay. A decreased level of train services and lower passenger numbers due to the pandemic were contributing factors to good performance in the Eastern region and across the whole network.

3.9 The region has shown sustained improved performance over the last three years, and CRM-P performance was 0.60 minutes above the regulatory floor at the end of 2020-21.

Figure 3.2 Passenger train performance (Network Rail – caused delay minutes normalised, CRM-P), variance to 2020-21 regulatory floor for Eastern region, 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

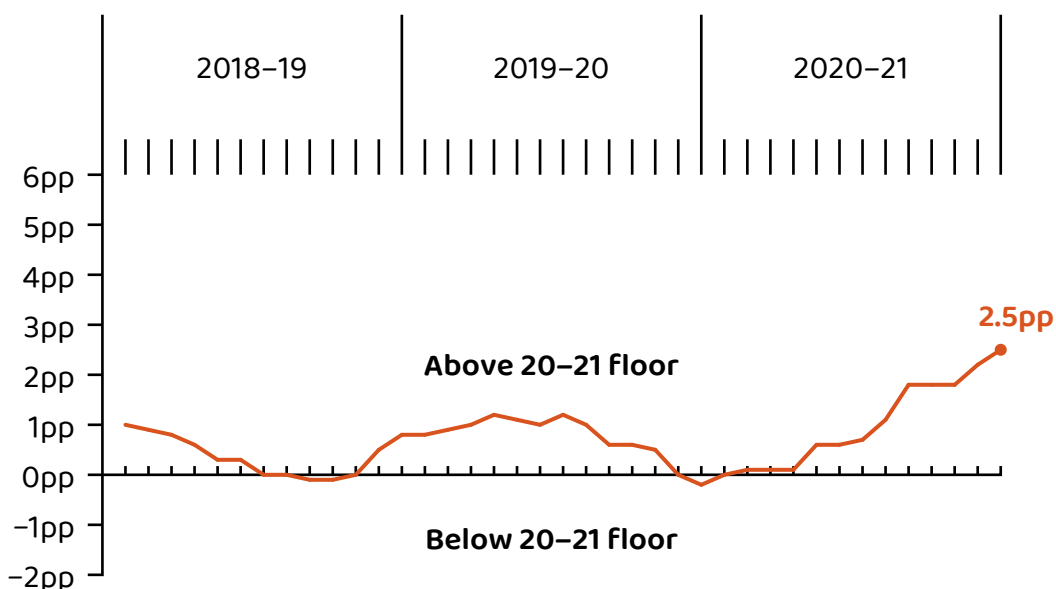
3.10 Fewer train services and fewer passengers due to the pandemic were major contributing factors to good performance across the whole network. Passenger performance began to improve during the first national lockdown, and it has remained strong throughout the year.

3.11 Fewer infrastructure issues, particularly Overhead Line Equipment (OLE) failures, alongside the impact of the pandemic, saw regional performance significantly improve compared to the previous year. However, severe weather incidents have continued to adversely impact on performance.

Freight train performance exceeded target

3.12 The Eastern region exceeded its 2020-21 target for FDM-R, finishing the year with an FDM-R of 95.1%, against a target of 93.5%.

Figure 3.3 Freight performance (FDM-R), variance to 2020-21 regulatory floor for Eastern region, 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

3.13 The Eastern region has improved its engagement with freight train operators and committed to delivering freight-specific performance improvement initiatives. One of these is the funding of a mobile freight fitter to respond to freight train failures on the North London line (further detail in case study below). Greater focus has been placed on freight performance jointly by Network Rail and freight train operator performance teams working together.

Case Study: North London line mobile freight fitter

The North London Line is a busy, mixed traffic line between Richmond in south-west London and Stratford in east London, heavily used by freight trains serving London area ports and freight movements to and from the continent. The failure of a locomotive can mean significant disruption to services until the train can be moved, and this has a knock-on effect on all operators' services. Train fitters often need to travel longer distances to repair failed trains than those for passenger trains, due to the national nature of freight operating companies, meaning disruption can last for longer. The Anglia route funded a trial for a multi-operator freight specialist fitter to attend any freight train failures arising on the North London Line for an eight-week period. This innovative trial aimed to accelerate the recovery of a failed train. The Anglia route reported good support from freight train operators, and during the trial period, the fitter was able to provide technical assistance to passenger train failures that occurred too. This successful trial has concluded with further funding being sought to continue the initiative.

Eastern region is improving its performance management capability

- 3.14 Train service performance, as measured by quantitative metrics, has been exceptional since the start of the pandemic. To understand how Network Rail is delivering continuous improvement in performance, we have placed greater focus on a qualitative assessment. This includes its performance management capability, and its plans to sustain good performance once passengers return to the rail network.
- 3.15 During 2020-21, Network Rail has worked actively to embed improved performance management capabilities across its business. The Performance Improvement Management System (PIMS) is a whole-industry programme looking at the capability of the industry to improve train performance. Network Rail has taken a leading role in this area, producing and sharing a range of materials and processes for the industry to follow to support delivery of improved train performance. The East Midlands and the East Coast routes in the Eastern region continue to benefit from performance teams which are resourced jointly with train operators.
- 3.16 The region has demonstrated its improved performance management capability using the Risk Management Maturity Model for Performance (RM3P) framework, a self-assessment tool focusing on the processes supporting train performance improvements. This tool looks at five areas: policy, governance and leadership, monitoring, audit, and review.
- 3.17 Several areas of good practice have been seen, particularly on the East Coast route. The route has strengthened its governance structure around performance, with a new Performance Improvement Board having been established. This is aligned to the periodic Alliance Board meeting between the route and operators, a forward looking session, which focuses on progress of RM3P and PIMS implementation and the delivery of performance improvement plans. Best practice in RM3P has been shared between operators London North Eastern Railway (LNER) and Great Western Railway (GWR), with this interchange of knowledge benefiting operators and routes across Network Rail's regions.
- 3.18 Dedicated resource to implement PIMS within the routes was delayed, but faster progress is expected now resourcing is in place. However, more could be done to implement stronger regional governance of performance as each route has structured its teams differently, making it harder to create a regional picture of PIMS and to assess its progress. We will continue to monitor the Eastern region's progress in this area.
- 3.19 The region has used funding from the Performance Innovation Fund (PIF) for several performance improvement schemes, such as novel axle counter testing equipment and the mobile freight fitter on the North London Line within the Anglia route, anti-trespass measures at Cross Gates station near Leeds and cryogenic railhead treatment on the North and East route. However, there have been fewer successful applications for use of the PIF in the Eastern region compared with other regions, in terms of value. The region should continue to generate ideas and applications for PIF funding, identifying schemes which will consolidate performance improvements seen during the pandemic.

Case study – Timetable analysis on North and East route

The North and East route performance analysts examined the timetable operated during the first national lockdown period to better understand the relationship between the number of trains operated and the impact this has on performance. This analysis contributed to the route's understanding of the point at which the network cannot provide robust train performance when extra services are added. This analysis has helped to inform discussions between the route and train operators when timetables have been revised to meet increases in passenger demand created by the easing of pandemic restrictions, ensuring the number of trains in the timetable is balanced with the need for punctuality and reliability.

Capacity and access to the network

- 3.20 We make sure that passenger and freight train operating companies have fair access to the rail network to make best use of capacity. Where operators and Network Rail cannot reach agreement on a track access contract, they can appeal to us to use our statutory powers to direct a decision on access. Operators and Network Rail need to plan these contracts in sufficient time to produce robust timetables and ensure other operators can plan their own use of capacity.
- 3.21 During 2020-21, we highlighted that the Eastern region needed to improve the evidence it provided to us in support of its access decisions, where it could not reach agreement with operators. This followed two freight train operator applications where, despite the complexity of capacity on the East Coast Main Line (ECML), our review found that capacity was available for Network Rail to award more access rights than it had offered to operators.
- 3.22 The Eastern region is running an Event Steering Group (ESG) programme to resolve capacity issues on the ECML. It is important that the ESG reaches its conclusion in time for the May 2022 timetable change, and we expect Network Rail to deliver a high performing timetable which can accommodate the access rights of train operators. On completion, the region must also be able to provide greater clarity and transparency for operators through its access policy, allowing operators to plan their services with more certainty.

Asset management in Eastern region is good

The Eastern region has improved the reliability and sustainability of its infrastructure assets and delivered renewals well. There have been fewer failures of the infrastructure this year due to less wear and tear. The region must improve its delivery of structures examinations and approach to weather resilience.

Sustainability and reliability of most assets is positive

- 3.23 Network Rail needs to secure the maintenance, renewal and replacement of the network so it is safe and operable and do so in a way that is sustainable and efficient over the long-term. In Control Period 6 (CP6), we test this using a measure of asset sustainability, the Composite Sustainability Index (CSI). We have agreed Network Rail's target for the end of CP6, based on a defined level of change since the end of Control Period 4 (CP4).
- 3.24 The Eastern region finished 2020-21 with a CSI of 0.5%. This represents an improvement in overall asset sustainability of 0.5% since the end of CP4. The region is in line with the agreed trajectory for CP6, which is to end the control period with a CSI of -1.7%.
- 3.25 However, as this measure of sustainability is slow-moving because of the very long operational life of railway assets, we also monitor a region's asset failure rates and their impact, volumes of maintenance and renewals delivery, and other asset specific measures, which can be used as a proxy for longer-term sustainability. We assess a number of these against a region's internal scorecard targets including asset failure data and asset reliability measures, such as the Composite Reliability Index (CRI), which measures the short-term condition and performance of assets. CRI measures the percentage change in reliability since the last year of Control Period 5 (CP5).

Figure 3.4 Composite Reliability Index (CRI) and contribution by asset type, Eastern region, Period 1 to 13 2020-21

Key: ■ Above target ■ Below target, but above baseline ■ Below target and baseline

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13
CRI	-7.3%	-5.8%	-5.3%	-2.9%	-3.6%	-2.2%	0.1%	0.8%	2.1%	3.1%	4.6%	6.2%	7.1%
Track	-3.8%	-3.5%	-3.6%	-2.5%	-2.4%	-2.2%	-1.3%	-0.5%	0.9%	1.9%	2.8%	4.2%	4.8%
Points	0.2%	0.3%	0.0%	0.4%	0.4%	0.6%	0.8%	1.0%	1.2%	1.1%	1.0%	0.8%	1.0%
Signalling	0.5%	0.9%	1.0%	1.9%	1.7%	2.1%	3.0%	3.5%	3.5%	3.5%	3.8%	3.9%	3.7%
Buildings	0.1%	0.3%	0.4%	0.4%	0.4%	0.5%	0.5%	0.7%	0.8%	0.9%	0.8%	1.0%	1.2%
Electrical Power	-4.8%	-4.2%	-3.4%	-3.4%	-4.0%	-3.2%	-3.2%	-4.1%	-4.5%	-4.5%	-4.1%	-4.0%	-4.0%
Structures	0.2%	0.1%	0.0%	0.0%	-0.1%	-0.3%	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	0.0%	0.2%
Telecoms	0.2%	0.2%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%

Source: ORR analysis of Network Rail data

- 3.26 The reliability of assets in the Eastern region has significantly improved this year, performing above target to finish the year at 7.1 % against a target of -5.3% for CRI. This means asset reliability in 2020-21 was 7.1% better than it was in the final year of CP5, with fewer service affecting failures supporting good train performance. The performance of track, points and signalling were raised as issues last year and these have seen significant improvements this year.
- 3.27 However, the reliability of electrical power assets continues to be a concern as they finished below target again this year. The performance of these assets has been significantly impacted by the failures of non-traction operational power, the power supply to the signalling system. This type of failure is heavily weighted in the CRI measure, due to the disruption it can cause to operations. Signalling power cable failures on the East Midlands route had a significant impact on reliability, with a number of these caused by rodent damage. The performance of structures assets also needs to improve.
- 3.28 Performance of OLE was above target in 2020-21 and there were fewer OLE failures compared to the previous year. The continued maintenance and renewal of electrical equipment remains a priority in order to sustain strong train service performance.

Renewals volumes largely delivered despite the pandemic

- 3.29 We scrutinise whether Network Rail is delivering vital asset renewals work, for example renewing its track, and if this is in line with planned volumes for each year of the control period.
- 3.30 As part of our assessment we look at Network Rail's delivery of effective volumes. This refers to the volume of work undertaken in seven key areas, attributing weightings based on the life added to the asset by each type of work. For example, in the area of plain line track, a full renewal would be given a higher weighting than replacing one individual element.
- 3.31 Despite the challenges of the pandemic, the delivery of renewals by the Eastern region has been good. It achieved or outperformed its target in six of the seven key effective volumes. The only area that did not achieve target was OLE rewiring and refurbishment. The lower than planned renewals volumes for OLE is the result of an error in the volumes reporting in 2019-20 and deferral of King's Cross re-modelling work in the Eastern region to 2021-22. Given previous poor performance of this asset, it is important that planned renewals are undertaken and we will monitor this area closely during the remainder of the control period.

Table 3.1 Effective volumes (renewals), Eastern region, 2020-21

Percentage completion is based on actual volumes delivered against planned volumes.
A percentage completion in excess of 100% indicates delivering more than the planned volumes.

Asset	Actual	Plan	% complete
Conductor Rail Renewal (km)	n/a	n/a	n/a
Earthworks	121	55	▲ 221%
OLE re-wire and mid-life refurb (km)	10*	22	▼ 45%
Track – Plain Line	529	424	▲ 125%
Track – Switches and Crossings	144	110	▲ 131%
Signalling	364	321	▲ 114%
Structures – Bridges	6,110	4,507	▲ 136%
All assets (weighted total)			▲ 122%

Source: ORR analysis of Network Rail data.

* In the data supplied by Network Rail an adjustment of –29 has been provided to this number for the overstatement of work in year one. We have excluded the number in the table to show the performance in 2020-21. The plan for the year has also been adjusted.

- 3.32 Some renewals work is not captured through the effective volumes measure, so we also look at wider delivery. The Eastern region's wider renewals performance was also good with only buildings, and electrification and fixed plant volumes not being achieved.
- 3.33 For buildings, the underperformance was mainly driven by the deferral of a significant amount of electrical works in light maintenance depots. This is due to the impact of the pandemic as well as funding requirements for electrical works of Maintenance Delivery Units (MDUs) in the East Coast route.
- 3.34 Electrification and plant volumes were also impacted by a correction to the planned data and a deferral of functional supply point works to 2021-22 due to a delay in materials.

Structures examinations compliance

- 3.35 One area of concern, which we have been seeking continuous progress on since 2011, is compliance with structures examinations. If examinations of structures, such as tunnels, bridges and culverts are not carried out, the condition of the asset is not fully known and faults may be undetected or not competently assessed.
- 3.36 As part of our ongoing assurance activities, we identified a large number of incomplete structures examinations across the network. By way of mitigation, Network Rail undertakes risk assessments on site where there is non-compliance, to better understand whether there are any associated safety risks.
- 3.37 In the Eastern region at the end of 2020-21, there were 7,211 structures non-compliances; 45.0% of the regional portfolio. We do not have sufficient assurance from Network Rail that it has suitable plans in place, or is making adequate progress towards eliminating the overall non-compliance of examinations. We are taking action to ensure this is rectified and we will closely monitor Network Rail's progress and delivery. We are also commissioning an independent reporter to assess the non-compliance across the regions in more detail.

Table 3.2 Structures examinations non-compliance, Eastern region, 2020-21

Exam type	Site Examination Non-Compliance	Report Submission Non-Compliance	Evaluation Non-Compliance	Total Non-Compliance
Detailed	326	57	715	1,098
Visual	612	3,170	1,395	5,177
Underwater	47	20	95	162
Total	985	3,773	2,453	7,211
			% of regional portfolio	45.0%

Source: ORR analysis of Network Rail data

- 3.38 The Eastern region has taken visual examination for structures in house (previously under contract with Amey). Examination compliance has been unsatisfactory for some time and we are seeking assurance that the region can demonstrate it can deliver the requirements within budget, and within the workforce skillset and organisational changes required under the new arrangements.

Case study – Manea Bridge

Emergency works to replace longitudinal bearers (bridge timbers) took place on Manea Bridge, between Peterborough and Ely, over Summer 2020. This is a busy freight route, also used by CrossCountry and Greater Anglia passenger train services, and speed restrictions placed over the bridge due to the deterioration of the bearers, caused a detrimental impact on train service performance. The reduction in the line speed capability of the bridge incurred over 24,000 delay minutes due to speed restrictions being imposed at this location from March 2020.

Network Rail has worked to modernise its longitudinal bearer standard with improved inspection and testing techniques. The compliance date for the new standard is June 2021. Through experience gained from high-profile incidents, such as the Wanstead Park derailment, and works associated with Manea Bridge, the Anglia route has improved its management of these assets and is working towards compliance.

In August 2020, the Anglia route team undertook a blockade of the network at Manea Bridge to complete the replacement of several longitudinal bearers that had recently been discovered to be life-expired. A longer blockade over several weeks was preferred for the necessary possession of the track to undertake these works, though this was refused following a timetable appeal by freight train operators, because of a lack of available paths for key freight services which use this route. The route proceeded with the required works through a series of renewals carried out at weekends, which allowed for the replacement of approximately eight to 14 bearers each weekend for 12 weeks and reduced the impact on freight services. A total of 96 bearers were renewed, with an additional plan required to renew the rest of the bearers requiring replacement during the remainder of 2021.

Experience from incidents such as this in CP6 and from better asset knowledge through enhanced inspection and maintenance carried out, puts the route in a better place for the next control period. However, the planning of these works highlights the need for better maintenance access planning and performance risk management within the route.



Manea Bridge, Anglia route.

Tenanted arches

- 3.39 In last year's Annual Assessment we discussed how, in 2018, Network Rail sold leases to commercial spaces under railway arches to a third party, Arch Co. A number of the arches sold under this agreement are within the Eastern region.
- 3.40 Last year Network Rail advised us that it was being denied access on some occasions to the arch space in order for it to carry out inspections and undertake repair work where required. We understand that access could be obtained if lease conditions were enforced and therefore it is unclear why such mechanisms were not being secured.
- 3.41 This continues to be a matter of concern for us. We have met with the Eastern region and Arch Co and begun to see more positive signs of engagement between both parties, with confirmation that the overall backlog of examinations for tenanted arches will be eliminated by April 2022.

Weather resilience

- 3.42 Our PR18 Final Determination sets out the importance of Network Rail managing weather resilience and the impact of climate change. We recognise the wide range of work Network Rail has undertaken in these areas to date.
- 3.43 The first two years of CP6 have seen an increased frequency and severity of severe weather events, leading to a sudden rise in the number of earthworks failures across all regions. In the Eastern region, a feature of the last two winters has been peaks in earthworks failures and flooding issues which extended over several months, whereas historically there had been only isolated spikes relating to severe weather events. This corresponds with a noticeable increase in the average monthly rainfall in the North East, over the last three to six years. The Eastern region must use the experience of severe weather events occurring over the past two years to implement further schemes to improve weather resilience, including through its Weather Resilience and Climate Change Adaptation (WRCCA) plans.
- 3.44 Targeted Assurance Reviews (TARs) are risk based assurance reviews used to provide insight into ongoing and emerging risks and issues within Network Rail. The TARs we have completed this year found positive examples of weather resilience schemes for earthworks and drainage. Our TARs also found that historically, the Eastern region MDUs have not treated drainage as a high priority. An increase in the frequency and severity of storms in CP6 has highlighted this issue, so the Eastern region's MDUs need to improve their knowledge of the asset and adopt data-based processes, which have been in use for several years in other regions.
- 3.45 Our TARs also found some positive examples of renewals projects which are improving weather resilience. The region has been collaborating with local partners to deliver efficient, sustainable solutions with wider environmental benefits (an example of this is given below).

Case study – Leeds flood alleviation scheme

Network Rail contributed around 10% of the total funding towards a Leeds City Council and Environment Agency project to install a flood barrier, which is a sheet piled and clay bund wall, between a river and the railway. The scheme included planting 300,000 new trees and restoring moorland to capture water further up the river catchment. This project is intended to reduce the risk of railway flooding from an 87% chance in any given year to 0.5%.

- 3.46 Vegetation management continues to be prioritised by the Eastern region and it has recognised the risks associated with ash dieback, a fungal disease of ash trees in Europe. Vegetation encroachment on overhead lines can also cause reliability issues. The Eastern region has the largest electrified track length on Network Rail's network. Therefore, we have received assurance that the region is proactively managing vegetation found near OLE assets as part of its vegetation compliance recovery programme. We will continue to monitor this.

Drainage assets

- 3.47 In 2020-21, we undertook a TAR into drainage asset knowledge across all regions. Following our review, the Eastern region has committed to locate, assess and record all drainage assets by the end of CP6. This exercise could identify many 'forgotten' assets which require maintenance, putting pressure on maintenance resources. We will continue to monitor progress as well as the impact on the region's maintenance resources.

Environmental Sustainability Index

- 3.48 Network Rail has introduced a new measure for environmental sustainability, the Environmental Sustainability Index (ESI). This composite measure is comprised of key environmental measures on waste, carbon emissions and non-traction energy. The Eastern region exceeded its target for this year, achieving 60% against a target of 50%.
- 3.49 The temporary closure of retail units at stations, and to a lesser extent offices, has led to a reduction in carbon and energy usage and helped Network Rail overachieve in this area.

Biodiversity Action Plan

- 3.50 In December 2020, Network Rail produced its Biodiversity Action Plan. This plan sets out its national strategy for enhancing biodiversity and wildlife on the lineside by 2024.
- 3.51 The plan focuses on protecting, managing and enhancing the condition of biodiversity assets through partnerships with stakeholders. Network Rail has set itself a series of key performance measures to achieve in CP6, including no net loss of biodiversity on its lineside estate, following best practice in habitat management and publishing annual reports on its activities and progress.
- 3.52 Network Rail's first Biodiversity Action Plan is a positive development. We will continue to monitor progress on its commitments and implementation within the regions and we will report on this in more detail in future Annual Assessments.

Asset Management Capability

- 3.53 We assess Network Rail's capability to manage its assets effectively by checking its compliance with an international standard which sets out best practice, ISO 55000. It is important that the assets are managed in line with this standard and deliver the best outcomes for passengers and freight users.
- 3.54 In our Periodic Review 2018 (PR18) Final Determination, we asked Network Rail's routes (now regions) to demonstrate how they would operate in accordance with ISO 55001 by the end of March 2021, a date set by Network Rail's Technical Authority.
- 3.55 In 2020-21, we undertook a TAR of Network Rail's compliance to ISO 55001. A recently commissioned gap analysis shows that the region meets the required standard in only six out of the 27 elements of ISO 55001. The Eastern region is still largely in the 'developing stage' of its asset management capability improvement process. The significant weaknesses we found were in the areas of competence, information requirements and non-conformity and corrective action. Therefore, the region was not able to demonstrate to our satisfaction that it was working in accordance with ISO 55001 by end of March 2021.
- 3.56 We therefore require the Eastern region to prepare and deliver on an improvement plan by the target milestone dates, to demonstrate that it will meet the requirements necessary to achieve ISO 55001 certification by the end of March 2022 at the latest.

Major enhancement projects are being delivered well

The Eastern region is working well to deliver enhancement projects despite the challenges of the pandemic, delivering benefits for passengers and freight such as reduced journey times.



Engineering work at King's Cross station

3.57 Network Rail has continued to deliver enhancement projects well across the regions, despite the challenges presented by the pandemic. These projects included significant works in the Eastern region, such as electrification of the Midland Main Line and capacity improvement projects on the ECML which includes Stevenage Turnback. The pandemic has presented a number of challenges to project delivery, limiting on-site work in confined areas and increasing timescales required for driver training. Network Rail has worked well with its stakeholders to manage the uncertainty and reduce the impact on project delivery timescales.

3.58 Progress is being made across the region on key schemes using Project SPEED (Swift Pragmatic Efficient Enhancement Delivery) principles to halve the time taken and reduce costs. The overall enhancements portfolio has been only moderately impacted by the pandemic. Several projects on the route are effectively complete and in the final stages of close-out. Third party funded and delivered projects on the Anglia route are being managed well by the region in its asset protection role.

- 3.59 The electrification of the Midland Main Line from Bedford to Kettering and Corby has been delivered. Operations began in May 2021, enabling a sixth timetable path for a long distance high speed train from London. The new timetable was originally scheduled to begin in December 2020, but delivery milestones had to be changed because of the pandemic. Although the physical infrastructure was delivered on time, issues were encountered during the testing of electric trains causing some milestones to be missed. Contingency plans were developed and tightly controlled, with the region delivering a smooth timetable change in May 2021.
- 3.60 The East Coast upgrade continues to progress well with the aim to reduce journey times between London and Edinburgh, and London and Leeds. Significant work was completed on time and without incident over the Christmas and New Year period at King's Cross. The region has managed the impact of working with a reduced number of platforms at the station. In January 2021, during a nine-day partial closure of the ECML, a new tunnel at Werrington, to the north of Peterborough, was constructed as an alternative route for freight trains to avoid the ECML. The new tunnel separates long-distance high-speed passenger trains from other traffic and helps to increase the capacity of the line.

Capital Investment Capability Framework

- 3.61 We completed our first review of Network Rail's regions' capability using the new Capital Investment Capability Framework (CICF) maturity assessment in July 2020. This is the first time a maturity framework has been developed that measures Network Rail's role in the early stages of projects in a complex cross-industry environment.
- 3.62 For the Eastern region, our assessment concluded that it is operating as expected and at a level consistent with other Network Rail regions. We are monitoring the region's response where it has developed an improvement plan that incorporates and is aligned to current industry initiatives, such as Project SPEED.

Health and safety performance was mixed on Eastern region

The Eastern region has missed its scorecard targets for safety-related measures, but it continues to drive safety improvements on track worker and level crossing safety.



Level crossing, Anglia route

- 3.63 Health and safety performance in the Eastern region has stayed largely consistent with the last reporting year, with Lost Time Injury Frequency Rate (LTIFR) and Fatalities and Weighted Injuries (FWI) measures broadly similar.
- 3.64 The scorecard Personal Accountability for Safety measure has worsened. The region has identified the causes of this underperformance and it is planning health and safety improvements with its workforce.
- 3.65 In 2018, we issued an Improvement Notice to the Anglia route in order to improve the safety of its level crossings. Good progress has been made to date, with work towards compliance completed on the majority of user-worked crossings and with positive engagement from the route.
- 3.66 A significant derailment of a cement train occurred at Sheffield station in November 2020. The Rail Accident Investigation Branch (RAIB) investigation is still underway and will consider the sequence of events which led to the incident, including maintenance arrangements for the track in the vicinity of the derailment. We are working with the region to understand the factors behind this failure and to ensure no repetition of the circumstances that contributed to this incident.
- 3.67 Network Rail has committed to adopt the Risk Management Maturity model (RM3) during CP6, an assessment tool to support management of safety risk on the railway. There has been clear progress in several areas measured by RM3, including a particularly high score for leadership.

- 3.68 However, effective adoption of the model has been slow across the region, with the impact of the pandemic a contributing factor. We hope that the recent appointment of a new regional Director of Health, Safety and Environment will help to increase the speed of implementation of the model across the region, and that RM3 will be used to drive continued sustainable improvement.
- 3.69 The effective leadership shown by the region has positively contributed to progress with the management of the track worker safety initiative, where the region continues to lead the way. Sustained drive and commitment are needed to continue to embed better ways of planning and delivering work.
- 3.70 Further information on our safety inspection activity, alongside a more detailed assessment of Network Rail's safety performance is reported in our 'Annual Health and Safety report', published July 2021.

Finance and efficiency were well managed in Eastern

The Eastern region has underperformed financially, largely due to the impact of the pandemic. It achieved its efficiency target, although delivery in future years remains challenging.

Eastern region has met its efficiency target

- 3.71 We monitor the efficiency of Network Rail's core business activities: operations, support, maintenance and renewals. Efficiency is being effectively managed in the Eastern region, which has delivered £183.8 million of efficiency improvements in 2020-21, ahead of the £153.4 million of efficiency improvements budgeted in its delivery plan for the year.
- 3.72 The Eastern region is forecasting to deliver between £838 million and £1,205 million of efficiency improvements in CP6, with a central forecast of £1,018 million. This is ahead of its £923 million efficiency target for CP6.
- 3.73 During the year, we conducted a review of a sample of the Eastern region's efficiency plans for CP6. The purpose of our review was to understand how the region is planning and reporting on its efficiencies, and the robustness of its assurance processes for assessing business changes and calculations. Although there are still some improvements to be made, based on the evidence that we have reviewed, we consider the Eastern region to be sufficiently prepared to deliver the remainder of its CP6 target efficiencies.
- 3.74 The Eastern region's largest group of efficiency initiatives in 2020-21 was through improved contracting strategies (£46.6 million). This included significant efficiencies delivered through large signalling contracts, such as at King's Cross and along the Durham Coast line, where successful supplier negotiations, as well as innovative delivery techniques and improved access planning have delivered significant efficiencies.

- 3.75 The region is prioritising technological efficiencies. New hydraulic buffer stops were used in the re-signalling at Clacton earlier this year. These use hydraulic energy to absorb the energy of incoming trains. This new technology can be implemented elsewhere in the region, making further efficiencies.
- 3.76 In addition to the £3.5 billion of efficiency improvements we challenged Network Rail to deliver in CP6 (£923 million of which are to be delivered in the Eastern region), Network Rail has committed to deliver an additional £0.5 billion of efficiencies in CP6, of which £95 million are to be delivered in the Eastern region. In 2020-21, the region exceeded the year's stretch target by £17.7 million. Whilst this demonstrates strong performance in the region, the efficiency challenge continues to increase across the remainder of CP6 and the region will need to work hard to deliver this.

The region underperformed financially

- 3.77 The regulatory Financial Performance Measure (FPM) provides a better understanding of Network Rail's financial performance than simple income and expenditure variances. FPM compares a region's actual income and expenditure to its CP6 delivery plan across most items of income and expenditure, and it ensures that a region does not benefit from underspend by delaying work to a later date if that work will still need to be done.

Table 3.3 Eastern's financial performance in 2020-21

£ million	Full year budget	Full year forecast	Budget variance better/(worse)	FPM out/(under) performance
Turnover	475	440	(35)	(35)
Schedules 4 and 8	(136)	(36)	100	106
Operations and support	(251)	(277)	(26)	(23)
Maintenance	(526)	(568)	(42)	(40)
Profit and Loss	(438)	(441)	(3)	6
Renewals	(986)	(1,010)	(24)	(87)
Enhancements	(831)	(865)	(34)	(8)
Total				(89)

Source: Network Rail







3.78 As shown in Table 3.3, FPM showed £89 million of financial underperformance. The region has had to adapt its working practices during the pandemic which has added cost pressures. Higher than expected maintenance costs and high renewals costs in the year have also contributed to underperformance, offset by significant outperformance in Schedule 8 income.

3.79 The pandemic has impacted on rental income underperformance, operations underperformance, and support costs underperformance due to costs such as enhanced cleaning and purchase of personal protective equipment. This has been offset by Schedule 8 income outperformance, delivered predominantly because of the reduced timetable running on the network during the pandemic. Whilst these have been mostly offset, there has been an additional impact in renewals underperformance.

Leading indicators of efficient delivery

3.80 Poor planning for CP5 caused a number of problems with Network Rail's renewals delivery and efficiency. To avoid a repeat of these issues, we have required Network Rail to demonstrate that it is better prepared to deliver efficiently in CP6. This section provides an update on the Eastern region's preparations to deliver efficiently in 2021-22.

Table 3.4 Leading indicators for efficient delivery in 2021-22, Eastern region

Region	Renewals Planning		Securing Engineering Access		Maintenance Requirement 2020-21	
	Work authorised in Oracle	Target	% of required access booked	Target	Current headcount	Target
Eastern	76% 	78%	89% 	60%	96% 	95%
National	75% 	81%	98% 	76%	97% 	99%

Source: Network Rail

3.81 For the Eastern region, 76% of its renewals projects for 2021-22 by value had completed detailed designs and had received financial authorisation for delivery. This was below the internal target of 78% but above the 75% national average. In particular, the Anglia route is behind in track authorisations. However as these are commonly approved quite late in the year this is not currently of significant concern.

3.82 Financial authorisation only provides a partial picture of renewals workbank planning. Remits issued and accepted by the supply chain show progress made at an earlier stage of the planning lifecycle. The Eastern region has issued, and its supply chain accepted, 97% of planned renewals in 2021-22.

3.83 Eastern region has achieved its internal target for booking disruptive access for planned engineering work in 2021-22, with 89% booked against a target of 60%. This is a notable improvement on the last reporting year when the Anglia route was significantly below target on this metric.

- 3.84 The region is currently operating with a maintenance staffing level of 96% of its overall headcount requirement, which is above target.
- 3.85 The Eastern region considers that 54% of its 2021-22 target efficiency will be achieved from projects that have already been delivered or have clear project plans. The remaining 46% of 2021-22 target efficiencies have no clear project plans or have plans in place but low confidence in delivery. This does not demonstrate the same level of confidence as in the last reporting year, but it follows two consecutive years of efficiencies outperformance so is not currently considered of significant concern.
- 3.86 As discussed in the Network Wide chapter, risk funds are lower than may be necessary to meet financial risks in future years of the control period in all regions, in part due to the pandemic. A number of potential risks still remain in the future and greater clarity is required on whether these are currently included in Network Rail's analysis. We will continue to closely monitor and engage with Network Rail on this.
- 3.87 This analysis is based on draft financial information provided by Network Rail, comparing its financial performance against its annual budget. We will report more fully on Network Rail's financial performance against its CP6 Delivery Plan in our 'Annual Efficiency and Finance Assessment', due for publication in July 2021.

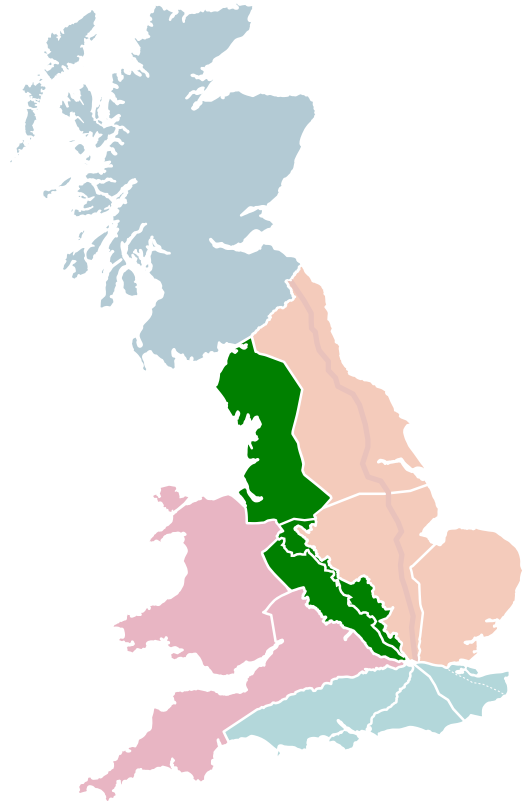
Annual Assessment of Network Rail April 2020 to March 2021 North West and Central Region



4. Network Rail's North West and Central region

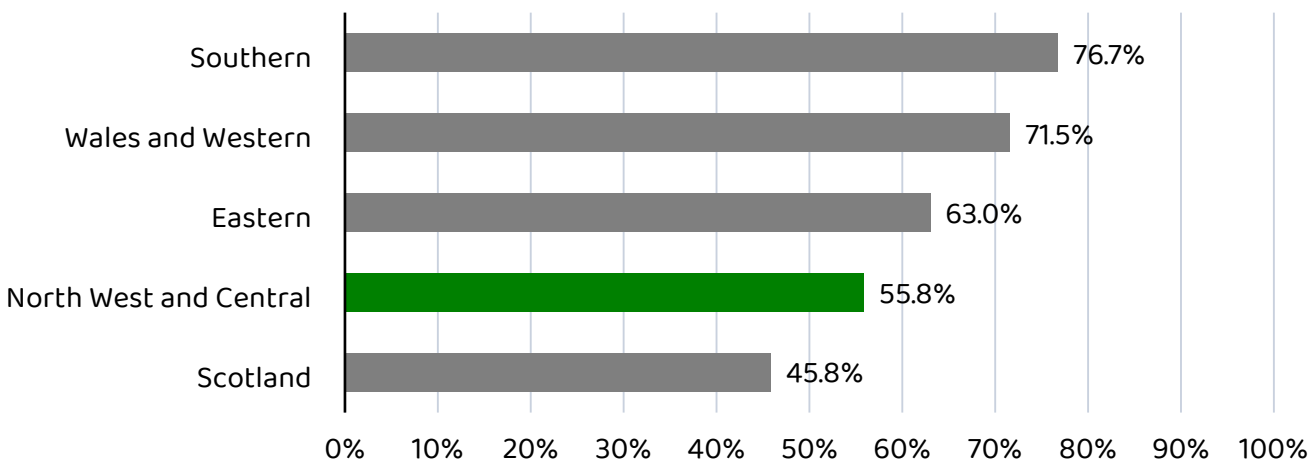
Overview

- 4.1 Network Rail's North West and Central region runs from London Euston and Marylebone in the south to Gretna near the Scotland and England border. This chapter focuses on Network Rail's delivery in the region's three routes of North West, Central, and West Coast Mainline South, which is the [busiest mixed use railway in Europe](#).



Overall performance in 2020-21

- 4.2 Network Rail measures its company-wide and regional performance in core areas of its business using sets of metrics and internal targets. It captures these in national and regional scorecards.
- 4.3 Each region's scorecard is based on Network Rail's four strategic themes (on the side of passenger and freight users; easy to engage with, an efficient and dependable partner; proud to work for Network Rail; and instinctive industry leader) and it includes our consistent measures and locally-driven customer measures and targets. We use scorecards as one way to hold Network Rail to account for its performance.
- 4.4 Performance for each scorecard measure is expressed as a percentage achievement between zero and 100, with 50% being on target for the majority of measures. As shown in Figure 4.1, in 2020-21 North West and Central achieved 55.8% on its scorecard.

Figure 4.1 Overall scorecard performance by region, 2020-21

Source: Network Rail regional comparison scorecard

4.5 As with other regions, North West and Central's performance in 2020-21 needs to be seen in the context of the coronavirus (COVID-19) pandemic. The region worked well to ensure passengers and staff were kept safe, with frontline staff keeping those who need to travel and freight moving during national lockdowns.

- Passenger and freight train performance was high in 2020-21, partly due to lower passenger numbers and service levels as a result of the pandemic. The region made good progress against the majority of the 25 recommendations outlined in our [May 2020 Performance Review](#), although six did not achieve the progress we expected, and remain outstanding.
- The number of asset failures decreased significantly in 2020-21 and the region delivered well against its scorecard target for renewals volumes, but the reliability of electrical power and points needs to improve. The region also needs to improve its structures examinations compliance.
- The region had mixed health and safety results during 2020-21, with only one of the four scorecard measures meeting its target. While good progress has been made with track worker safety and passive level crossing improvements, there was a tragic loss of a worker's life at Roade in April 2020.
- While North West and Central outperformed financially and exceeded its efficiency target in 2020-21, continued focus on efficiency delivery is needed to achieve its Control Period 6 (CP6) target.

Train performance improved during 2020-21

Passenger and freight train performance in North West and Central was high in 2020-21, partly due to the lower passenger numbers and train service levels. The region also focused on embedding improved performance management capabilities, delivering Project Alpha (its performance improvement programme) and the recommendations of our Performance Review.

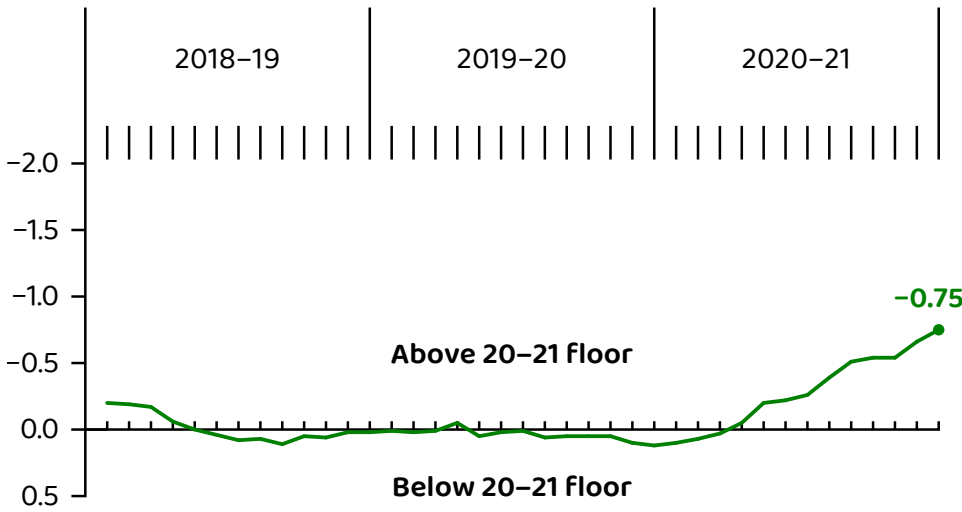
Network Rail's train performance in 2020-21

- 4.6 We use a range of metrics to assess overall train performance within the regions but focus on two consistent measures to compare performance across them:
- A consistent region measure for passenger services known as CRM-P. This is the delay minutes to passenger services attributed to Network Rail from incidents occurring in each Network Rail Region, per 100 train kilometres. A lower score reflects better performance; and
 - A freight delivery metric for each region known as FDM-R. This is the percentage of commercial freight services that arrive at planned destination within 15 minutes of their booked arrival time, or with less than 15 minutes of delay caused by Network Rail or another operator that is not a commercial freight operator.
- 4.7 We monitor delivery of these measures for each region against an annual target and a regulatory minimum level of performance, referred to as the regulatory floor. This minimum level of performance signals the point at which we are highly likely to consider a formal investigation.

Passenger train performance was good

- 4.8 In 2020-21, the North West and Central region's target for CRM-P was based on it achieving 1.57 minutes of delay per 100 kilometres of train travel. It finished the year 0.44 minutes better than target, at 1.13 minutes of delay. A decreased level of train services and lower passenger numbers due to the pandemic were contributing factors to good performance in the North West and Central region and across the whole network.
- 4.9 The region has shown sustained improved performance over the past year, and CRM-P performance was 0.75 minutes above the regulatory floor at the end of 2020-21.

Figure 4.2 Passenger train performance (Network Rail caused delay minutes normalised, CRM-P), variance to regulatory floor for North West and Central region, 2018-19 to 2020-21



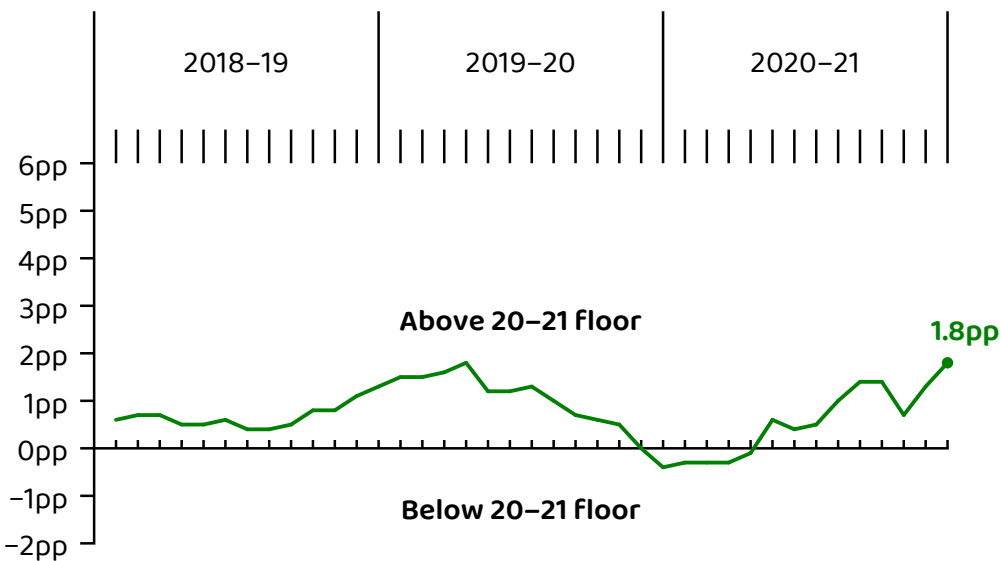
Source: ORR analysis of Network Rail data

Freight performance was variable through the year but finished above target

4.10 The North West and Central region exceeded its 2020-21 target for FDM-R finishing the year at 95.0%, higher than its target of 94.5%. This is a 2.2 percentage point improvement on the 2019-20 end of year result. This is commendable given the region experienced a number of disruptions from severe weather events through the year, including Storm Christoph which contributed to the sharp decline in FDM-R seen towards the end of the year.

4.11 As with CRM-P, the region has shown sustained improved performance over the last year, and FDM-R performance was 1.8 percentage points above the regulatory floor at the end of 2020-21.

Figure 4.3 Freight performance (FDM-R), variance to regulatory floor for North West and Central region, 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

Case Study – Senior Freight Engagement Forum

In year one of CP6, the region finished well below its FDM-R target, impacted by the implementation of the May 2019 timetable change which joined some poor and better performing services together, and severe weather events which caused multiple infrastructure failures. Recognising this poor performance, the region focused in 2020-21 on improving relationships with Freight Operating Companies (FOCs) as a means to improve performance in the region.

In September 2020, the region set up a quarterly North West and Central Senior Freight Engagement Forum to help better understand and deliver freight customers' priorities through a joint industry plan. Attendees include Network Rail, regional FOCs, and the National Freight Team. Feedback on the forum from FOCs has been extremely positive to date. The forum is also supported by a quarterly Freight Communications Engagement group to ensure a shared narrative is communicated to the freight industry and stakeholders.

ORR's 12-month assessment of North West and Central's May 2020 Performance Review

- 4.12 In May 2020, we published our conclusions of an investigation into Network Rail's impact on poor performance in the North West and Central region. In summary, we found that the region had identified the main causes of poor performance and had started to develop remedial action plans, but that these were not supported by time-bound milestones.
- 4.13 We consolidated our conclusions into a series of 25 recommendations that we would monitor for 12 months. The region accepted all of the recommendations and acknowledged they were within the scope of its daily operations. The review also considered the impact of external factors, such as the pandemic, Network Rail's Putting Passengers First (PPF) transformation programme and resourcing pressures.
- 4.14 Over the last year, we have worked closely with the region to monitor the action the region has taken to address our recommendations, and in May 2021 we published [our findings](#). Overall, North West and Central has made good progress against the majority of the recommendations and engaged well with us to deliver the anticipated outcomes. Of the 25 recommendations, 19 have been satisfactorily addressed to date. These recommendations and their benefits, have been incorporated into normal business, which we continue to monitor as part of our normal holding to account processes.
- 4.15 We were disappointed that the remaining six recommendations (two relating to operations and four to asset management) did not achieve the progress we expected and remain outstanding. To ensure the region delivers the expected outcomes on these remaining recommendations, we will extend our enhanced monitoring and assessment for a further six months.
- 4.16 Over the coming months we will also continue to monitor the region's performance as the impacts of the pandemic and recovery are realised. A further assessment of progress specific to the six outstanding recommendations will be undertaken in late 2021.

Performance management capability Improved during the year

- 4.17 We recognise that reduced passenger numbers and a lower number of train services will have contributed to improved train service performance. Given the impact of the pandemic on passenger and freight train performance levels, in 2020-21 we placed greater focus on a qualitative assessment of Network Rail's contribution to train performance, including assessing its performance management capability and the delivery of improvements.
- 4.18 During 2020-21 we have focused on the region's ability to embed improved performance management capabilities across its business. The Performance Improvement Management System (PIMS) is a whole-industry programme looking at the capability of the industry to improve train performance. Network Rail has taken a leading role in this area, producing and sharing a range of materials and processes for the industry to follow to support delivery of improved train performance.
- 4.19 A key component of PIMS is the Risk Management Maturity Model for Performance (RM3P). RM3P is a self-assessment tool focusing on the business processes supporting train performance improvements. This tool looks at five areas: policy, governance and leadership, monitoring, audit, and review.
- 4.20 During 2020-21, North West and Central demonstrated good progress with PIMS and RM3P, committing to deliver on performance improvements outlined in joint performance strategies with operators. A number of the recommendations outlined in our May 2020 Performance Review of North West and Central focused on the region's progress to embed improved practices into business as usual work, and we recognise that the region has delivered well on these.
- 4.21 We also commend the region's significant senior level support and engagement for performance improvement objectives, which is promoting a positive culture and behaviour change in North West and Central.
- 4.22 The region has made good use of the Performance Innovation Fund (PIF), which presents an opportunity for regions and Train Operating Companies (TOCs) to take forward innovative ideas to drive operational improvement, with 18 projects authorised for funding in North West and Central in 2020-21. Projects include a new CCTV system designed to deter, detect and track trespassers at Birmingham New Street, the development of a new reporting dashboard that monitors service recovery and produces a measure of service recovery performance, and a project which modifies Northern's Class 319 fleet with the aim of increasing reliability. These examples demonstrate to us that the region is committed to ongoing performance improvement.
- 4.23 Looking forward into 2021-22, the region is working closely with the System Operator, TOCs and FOCs to identify possible improvements to the timetable and to improve service robustness and delivery. The region also has a continued focus on delivering the performance improvements identified through our North West and Central Performance Review, and the PIMS and RM3P assessments. We consider this to be good progress.

Capacity and access to the network

- 4.24 We make sure that passenger and freight train operating companies have fair access to the rail network to make best use of capacity. If a train operator wants to access the national railway network, it needs to secure a track access contract with Network Rail. Where operators and Network Rail cannot reach agreement, the operators can appeal to us to use our statutory powers to direct a decision on access. Operators and Network Rail also need to plan these contracts in sufficient time in order to produce robust timetables and to ensure other operators can plan their own use of capacity.
- 4.25 In 2020-21, we highlighted that North West and Central needed to improve the evidence it provided to support its access decisions where it could not reach agreement with operators. This followed from a freight operator track access application where, despite the complexity of capacity use through the Castlefield Corridor, our review found Network Rail could award more access rights than it had offered.
- 4.26 During 2020, the region was delayed in producing the Capacity Enhancement Plan for the Castlefield Corridor, an important output to ensure transparency and clarity for industry (as well as required by access regulations). After significant engagement across industry with funders and stakeholders, the plan for this important section of congested infrastructure was published in February 2021.
- 4.27 Due to the plan's delay, we have taken a closer interest in the declaration of congested infrastructure on the West Coast Mainline South (WCML) route. While the region published its Capacity Enhancement Plan for this section of the network in May 2021 (within the regulated timescales), we are continuing to monitor the region's approach to access applications as there remain some outstanding contested applications on WCML.

Asset management results were mixed

The region delivered well against its internal target for renewal volumes, but the reliability of electrical power and points needs to improve. Improvements also need to be made to structures examination compliance.

Asset sustainability and reliability remain strong

- 4.28 Network Rail needs to secure the maintenance, renewal and replacement of assets on the network so it is safe and operable, and do so in a way that is sustainable and efficient over the long-term. In CP6, we test this using a measure of asset sustainability (the Composite Sustainability Index (CSI)). We have agreed Network Rail's target for the end of CP6, based on a defined level of change since the end of Control Period 4 (CP4).
- 4.29 The CSI measure is currently better than the end of CP6 target and in line with expectations. All regions are performing broadly in line with their expected end of CP6 target. North West and Central finished 2020-21 with a CSI of -1.1%. This represents a decline in overall asset sustainability of 1.1% since the end of CP4. The region's target for CP6 is to end the control period with a CSI of -3.3%.

- 4.30 However, as this measure of sustainability is slow-moving because of the very long operational life of railway assets, we also monitor a region's asset failure rates and their impact, volumes of maintenance and renewals delivery, and other asset specific measures, which can be used as a proxy for longer term sustainability. We assess a number of these against a region's internal scorecard targets including asset failure data and asset reliability measures, such as the Composite Reliability Index (CRI), which is a measure of the short-term condition and performance of assets.
- 4.31 In 2020-21, the North West and Central region experienced fewer service affecting failures than target, primarily driven by the pandemic's impacts, ending the year with a CRI score of 10.7% against a target of 3.2%. This means asset reliability in 2020-21 was 10.7% better than it was = in the final year of Control Period 5 (CP5). While this is a considerable improvement on the 2019-20 score (1.3% better than in the final year of CP5), this is likely due to fewer passengers travelling and services operating during the year. Figure 4.4 shows the CRI and individual asset scores in 2020-21.

Figure 4.4 Composite Reliability Index (CRI) (total and per asset), status to target per period, North West and Central region, Period 1 to 13 2020-21

Key: ■ Above target ■ Below target, but above baseline ■ Below target and baseline

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13
CRI	3.9%	4.1%	5.0%	6.9%	8.1%	8.2%	7.6%	8.1%	9.7%	8.8%	8.1%	10.0%	10.7%
Track	0.8%	1.0%	1.6%	1.6%	2.1%	2.4%	2.4%	2.5%	3.0%	3.1%	3.2%	3.7%	4.5%
Points	1.1%	1.3%	1.3%	1.5%	1.3%	0.9%	0.9%	0.7%	0.7%	0.1%	-0.2%	-0.2%	-0.3%
Signalling	3.8%	3.8%	3.9%	5.1%	5.3%	5.6%	5.7%	5.7%	5.7%	5.7%	5.8%	5.7%	5.4%
Buildings	0.4%	0.6%	0.5%	0.7%	0.9%	0.8%	1.0%	1.0%	1.2%	1.3%	1.2%	1.8%	2.0%
Electrical Power	-2.2%	-2.6%	-2.4%	-2.3%	-1.7%	-1.9%	-2.8%	-2.0%	-1.3%	-1.4%	-2.3%	-1.4%	-1.2%
Structures	-0.1%	-0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	-0.1%	0.0%	-0.1%	0.2%	0.2%	0.1%
Telecoms	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%

Source: ORR analysis of Network Rail data

- 4.32 Within this composite measure, the reliability of track, signalling and buildings performed well over 2020-21, with the asset types finishing significantly above target. Electrical power reliability, which was raised as a concern last year, recovered by the year end and finished above target. In delay minute terms, we are pleased to see that overall electrical power performance is showing a positive trend with fewer significant incidents such as dewirements.
- 4.33 Two asset types, points and structures, did not meet their internal targets in 2020-21. Points performance was significantly affected by a number of failures in the Euston area, and recognising this, the region has provided us with the actions it is taking to improve performance at this location. We will continue to monitor the region's progress on these actions over 2021-22 as part of our normal holding to account processes.

4.34 Structures performance fluctuated through the year before finishing the year just below target. A similar trend was noted at a national level and may be linked to a change in the elements that contribute to the CRI in this area in CP6.

Renewals volumes were largely delivered despite the pandemic

4.35 We scrutinise whether Network Rail is delivering vital asset renewals work, for example renewing its track, and if this is in line with planned volumes for each year of the control period. As part of our assessment we look at Network Rail's delivery of effective volumes. This refers to the volume of work undertaken in seven key areas, attributing weightings based on the life added to the asset by each type of work. For example, in the area of plain line track, a full renewal would be given a higher weighting than replacing one individual element.

4.36 Despite the challenges as a result of the pandemic, the delivery of renewals by the North West and Central region has been very good. The region significantly outperformed its scorecard target for effective volumes, with overdelivery in earthworks, signalling, overhead line equipment (OLE) and structures, offsetting slight underdelivery in conductor rail and plain line. Overdelivery was due in part to an acceleration of work in earthworks and increased volumes of OLE work to improve regional performance. Underdelivery in track plain line volumes however, was due to pandemic related cancellations.

Table 4.1 Effective volumes (renewals), North West and Central region, 2020-21

Percentage completion is based on actual volumes delivered against planned volumes.

A percentage completion in excess of 100% indicates delivering more than the planned volumes.

Asset	Actual	Plan	% complete
Conductor Rail Renewal (km)	2	2	▼ 77%
Earthworks	149	107	▲ 139%
OLE re-wire and mid-life refurb (km)	11	2	▲ 557%
Track – Plain Line	217	240	▼ 90%
Track – Switches and Crossings	44	44	▲ 100%
Signalling	50	44	▲ 115%
Structures – Bridges	3,646	2,610	▲ 140%
All assets (weighted total)			▲ 119%

Source: ORR analysis of Network Rail data

4.37 Some renewals work is not captured through the effective volumes measure, so we also look at wider delivery. The North West and Central region's wider asset renewals work is mixed, with overdelivery in signalling and earthworks but under-delivery in the other areas. In structures there was a slight underdelivery as a number of areas which did not meet their targets were offset by overdelivery of underbridges. The identification of additional works and the delivery of level crossings' work, which is not included in the effective volumes measure, contributed to an over delivery in signalling volumes.

Structures examinations compliance needs action

4.38 One area of concern, which we have been seeking continuous progress on since 2011, is compliance with structures examinations. If examinations of structures, such as tunnels, bridges and culverts are not carried out, the condition of the asset is not fully known and faults may be undetected or not competently assessed.

4.39 As part of our ongoing assurance activities, we identified that there are a large number of incomplete structures examinations across the network. By way of mitigation, Network Rail undertakes risk assessments on site where there is non-compliance, to better understand whether there are any associated safety risks.

4.40 In the North West and Central region at the end of 2020-21, there were 7,281 structure non-compliances; 44.0% of the regional portfolio. We do not have sufficient assurance from Network Rail that it has suitable plans in place, or is making adequate progress towards eliminating the overall non-compliance of examinations. We are taking action to ensure this is rectified and we will closely monitor Network Rail's progress and delivery. We are also commissioning an independent reporter to assess the non-compliance across the regions in more detail.

Table 4.2 Structures examinations non-compliance, North West and Central region, 2020-21

Exam type	Site Examination Non-Compliance	Report Submission Non-Compliance	Evaluation Non-Compliance	Total Non-Compliance
Detailed	235	790	108	1,133
Visual	407	5,500	144	6,051
Underwater	10	19	68	97
Total	652	6,309	320	7,281
			% of regional portfolio	44.40%

Source: ORR analysis of Network Rail data

Tenanted arches

- 4.41 In last year's Annual Assessment we discussed how in 2018, Network Rail sold leases to commercial spaces under railway arches to a third party, Arch Co. A number of the arches sold under this agreement are in the North West and Central region. Last year, Network Rail advised us that it was being denied access on some occasions to the arch space in order for it to carry out inspections and undertake repair work where required. We understand that access could be obtained if lease conditions were enforced and therefore it is unclear why such mechanisms were not being secured.
- 4.42 This continues to be a matter of concern for us. We have met with North West and Central, and Arch Co, and have begun to see more positive signs of engagement between both parties, with confirmation that the overall backlog of examinations for tenanted arches will be eliminated by April 2022.
- 4.43 The delivery plan will be managed at a national level and representatives from Network Rail, including from the North West and Central region, will be present at the regular meetings with ORR and Arch Co. A full detailed programme in a trackable format (plans vs actual close-out plan) will also be shared with us.

Good delivery of weather resilience projects

- 4.44 The first two years of CP6 have seen an increased frequency and severity of severe weather events across all regions. The number of delay minutes attributed to infrastructure failures decreased in the North West and Central region over 2020-21, compared to 2019-20, due to the decrease in train services. However, the number of severe weather related and structure failure incidents increased, reflecting the impact of severe weather on the region.
- 4.45 In January 2021, Storm Christoph brought strong winds and extensive rainfall to the United Kingdom causing severe flooding across the network, and substantially impacting North West and Central. The region experienced one of the wettest three-day periods on record, with 77% of the entire network's flooding failures occurring within the North West route alone. Similar strong winds and heavy rainfall had also been experienced throughout 2020, causing power outages and flooding, closing lines and contributing to line speed restrictions.
- 4.46 Events such as this highlight the importance of North West and Central's management of weather resilience, through its Weather Resilience and Climate Change Adaptation (WRCCA) plans. These plans deliver significant and long-term improvements in infrastructure resilience and service recovery in response to severe weather events and climate change. The region is also considering whether weather resilience should be incorporated into the remit of all projects being delivered.

Case Study – Cumbrian Coast Line

In April and May 2020, the region undertook significant works on the Cumbrian Coast line between Whitehaven and Workington, which had been damaged earlier in the year after three consecutive storms hit the area. Works took 11 weeks and included replacing the bridge and the damaged underpass beneath the railway, strengthening the sea wall and relaying the track. The region completed the repairs below budget, which is a great result. Strong working relationships with the community also assisted with progress and it is recognised that the works were carried out in challenging times, which required changes to normal working patterns.



Work on a railway bridge at Parton on the Cumbrian Coast Line following storm damage in early 2021.

Assessment of drainage assets is going well

- 4.47 In 2020-21, we undertook a Targeted Assurance Review (TAR) into drainage asset knowledge across all the regions. This is a risk-based review used to provide insight into ongoing and emerging risks and issues within Network Rail. The review identified that North West and Central is on course to complete a full survey (locate and assess) all of its drainage assets by the end of 2022-23. However, these surveys have identified many 'forgotten' assets which require maintenance, putting pressure on maintenance resources. We will continue to monitor the region's progress.
- 4.48 Our TAR also found positive examples of severe weather resilience schemes for earthworks and drainage. In particular the region has been collaborating with local partners to deliver efficient, sustainable solutions with wider environmental benefits, as demonstrated below:
- **Eden Rivers' scheme, Cumbria:** The region contributed funding towards a project by the Environment Agency and a local trust, returning the River Leith to its natural course where it had been straightened. This significantly reduced the risk of erosion and flooding of the railway, along the WCML, as well as providing new wildlife habitats and benefits for the landowner. The funding contribution was 90% less than what it would have cost to achieve the same reduction in flood and erosion risk, by re-engineering the railway.

Environmental Sustainability Index was above target

- 4.49 Network Rail has introduced a new measure for environmental sustainability this year, the Environmental Sustainability Index (ESI). This composite measure is comprised of key environmental measures on waste, carbon emissions and non-traction energy usage. During the pandemic, lockdowns across the region resulted in reductions in carbon and energy usage generated by the temporary retail closures at stations and to a lesser extent, offices.
- 4.50 The North West and Central region exceeded its target for 2020-21, achieving 58.8% against a target of 50%, which was a good result. Given that this is a new measure, Network Rail and ORR have commissioned an independent reporter study to assess the reliability and accuracy of the data. Once finalised the findings report will be published on [our website](#).

Regional improvements programme and assurance

- 4.51 In 2020-21, the North West and Central region initiated an improvement programme known as the 'Ten Point Plan', which is aimed at achieving excellence in engineering and asset management. We recognise this as a positive step for the region.
- 4.52 The plan, with 10 individual workstreams and nearly 30 specific projects, includes actions to address the recommendations outlined in our [May 2020 Performance Review](#). We have seen positive progress to date and we will continue to monitor the general progress of the plan through regular meetings with the region.

Asset management capability

- 4.53 We also assess Network Rail's capability to manage its assets effectively by checking its compliance with an international standard which sets out best practice, ISO 55001. In our Periodic Review 2018 (PR18) Final Determination, we asked Network Rail's routes (now regions) to demonstrate how they would operate in accordance with ISO 55001 by the end of March 2021, a date set by Network Rail's Technical Authority.
- 4.54 In 2020-21, we undertook a TAR of Network Rail's compliance to ISO 55001 and identified that the North West and Central region had demonstrated that its asset management approach is aligned to the standard. This met the PR18 requirement, however, some further improvement actions are required for full alignment or compliance to the standard. This is currently being progressed through an improvement plan and we will continue to monitor the region on its commitment to the delivery of the plan.

The region delivered well on enhancement projects in 2020-21

- 4.55 Network Rail continued to deliver enhancement projects across the regions despite the pandemic, with continued successful delivery of a number of projects in the North West and Central region. The pandemic presented challenges to project delivery, including limiting on-site work in confined areas and driver training timescales, which delayed some projects. However, the region has worked well with stakeholders, contractors and the supply chain to manage the uncertainty and reduce the impact on project delivery timescales.
- 4.56 In late 2020, the region carried out work to deliver a platform extension at Wigan North Western station. The extension, costing £4 million, enabled the train operator Northern to provide extra capacity for passengers and access the newly built Wigan depot.



Wigan North Western Platform extension

- 4.57 The work, as part of the Great North Rail Project (a large programme of improvement works in the North of England) was undertaken by the region to improve reliability and increase passenger train services.
- 4.58 North West and Central also successfully delivered the installation of axle counters, which detect the clear or occupied status of a section of track between two points, at Manchester Victoria Station and eastwards towards the limits of electrification, to enable the running of Class 323 rolling stock to and from the station. The project addressed an electromagnetic compatibility issue with the existing track circuits that prohibited Class 323s accessing and exiting the station. Northern required this for the December 2020 timetable change to coincide with their replacement of their Class 329 rolling stock by Class 323s. Without the axle counters there was no flexibility for Northern to run Class 323s in the Manchester Victoria area. This is a good example of the region working collaboratively with a TOC to improve train service performance.
- 4.59 During 2020-21, the region also delivered a number of station upgrades, funded by the Department for Transport's Access for All Programme, to make stations more accessible for passengers. The works at Tring, Mills Hill, Kidsgrove and Macclesfield stations included various upgrades to lifts, the installation of ramps and footbridges.

Case Study – Kilsby tunnel

In May 2020, Network Rail agreed a plan with its TOCs and FOCs to shut the WCML for two weeks at Kilsby Tunnel, near Daventry, Northamptonshire, to replace tracks and improve drainage at this known flooding hotspot. The improvement works were long overdue, although it is recognised that closure of this busy stretch of line had previously proved impossible due to train companies wanting to continue running services even at reduced speeds.

In undertaking the work, the region sought to improve journey times and performance through the removal of long-standing speed restrictions. The region also took advantage of the line closure to undertake approximately 250 additional maintenance jobs, including cutting back trackside shrubs and the maintenance of overhead electric wires. This case study demonstrates the region's commitment to strong working relationships with operators and it is a good outcome for passengers and freight customers.

- 4.60 We also recognise that the region is involved in major rail projects, including High Speed 2 railway (HS2), and supporting the Eastern region with the Trans Pennine Route Upgrade (TRU). During 2020-21, the region undertook significant works at Euston to improve the passenger experience and support HS2 expansion works, and, as part of TRU, delivered significant track and infrastructure work around Manchester Piccadilly (with more works proposed in summer 2021).
- 4.61 In 2020-21 significant works to support the development of East-West Rail, including the dismantling of Bletchley flyover and associated lowering of OLE on the WCML, were also undertaken. During the year the region led on work to strengthen the governance arrangements for the scheme, as well as successfully addressing a number of affordability challenges, which enabled full funding to be secured.
- 4.62 North West and Central was also successful in securing £137 million to improve the capacity and connectivity between Manchester and Sheffield. Under the Hope Valley capacity scheme, additional capacity will provide journey time improvements and increase the reliability of services, allowing more trains to operate on the line. This is a good outcome for passengers and freight customers.

Capability framework

- 4.63 We completed our first review of Network Rail's regions' capability using the new Capital Investment Capability Framework (CICF) maturity assessment in May 2020. This is the first time a maturity framework has been developed that measures Network Rail's role in the early stages of projects in a complex cross-industry environment.
- 4.64 For the North West and Central region, our assessment concluded that it is operating at a level consistent with other Network Rail regions. We are monitoring the region's response where it has developed an improvement plan that incorporates and is aligned to current industry initiatives, such as Project SPEED (Swift Pragmatic Efficient Enhancement Delivery). Examples of good practice undertaken in the region are shown in Table 4.3.

Table 4.3 Examples of good practice identified in the capability maturity assessment

Practice	Overview
Integrated Management System	This system provides an integrated geographical view of work within the region by engineer's line reference and provides a degree of business process automation for the management of renewals workbanks and renewals change control.
Holistic Access and Logistics Oversight (HALO)	The HALO team coordinates all disruptive possessions for both renewals and enhancements, with the objective of optimising the use of disruptive possessions. They indicated plans for the Network Rail team to co-locate with staff from their principal TOC in order to further improve planning.

Source: ORR capability maturity assessment, July 2020

North West and Central region health and safety performance was mixed

The region had mixed health and safety results during 2020-21. While it made good progress with track worker safety and passive level crossing improvements, there was a tragic loss of a worker's life at Roade in April 2020.

- 4.65 The North West and Central region did not meet three of its four internal scorecard safety measures in 2020-21. The Lost Time Injury Frequency Rate (LTIFR), which showed a reduction in the previous two years before rising at the end of 2019-20, has fluctuated, but has not significantly improved over 2020-21. It finished the year worse than target. In addition, the region was worse than target for Fatalities and Weighted Injuries (FWI).
- 4.66 Recognising that LTIFR and FWI targets become increasingly challenging as CP6 progresses, the region has implemented the 'Safety Revolution', an enhanced safety improvement programme, in order to address the causes of incidents. This is good news and we will monitor the programme's progress over the coming year.
- 4.67 On 8 April 2020, a track worker employed by AmCo Giffen, a contractor carrying out slope stabilisation works, was struck and tragically killed by a train at Ashton Cutting, Roade, in Northamptonshire. Network Rail's internal report has yet to be released but it will include consideration of the underlying causes of the incident. We are also currently undertaking an investigation into the event and will report on the outcome in due course.

- 4.68 At the end of last year, we had a number of concerns about the region's progress with track worker safety improvements in response to our 2019 Improvement Notices. Over 2020-21, the region carried out a substantial amount of improvement work. However, while the present emphasis is on moving away from 'Red Zone Unassisted Lookout' working arrangements, the region still has more to do, particularly in areas requiring longer term, significant changes, such as technology adoption and access arrangements. A summary report on the progress and concerns regarding the region's track worker safety will be produced by us in late 2021.
- 4.69 Although there has been an increase in the renewal and upgrade of passive level crossings within the region in 2020-21, they remain one of the highest risk areas in North West and Central. Despite recent changes, the region has yet to fully demonstrate that it is effectively managing its improvements. We will continue to monitor progress of these over 2021-22.
- 4.70 Safety inspections carried out in the region over the past two years have identified that while there have been some improvements in North West and Central in the area of asset safety management, the region needs to improve its knowledge of assets and ensure it is adequately addressing underlying causes of failures. We note that the region is currently working hard to produce a comprehensive survey of its drainage assets.
- 4.71 Further information on our health and safety inspection activity, alongside a more detailed assessment of Network Rail's health and safety performance is in our 'Annual Health and Safety Performance report'.

North West and Central region exceeded its efficiency and financial performance targets

While North West and Central region outperformed financially and exceeded its efficiency target in 2020-21, continued focus on efficiency delivery is needed to achieve its CP6 targets.

Efficiency target was exceeded

- 4.72 We monitor the efficiency of Network Rail's core business activities of operations, support, maintenance and renewals.
- 4.73 In 2020-21, North West and Central delivered £121.8 million of efficiency improvements, ahead of the £101.8 million of efficiency improvements assumed in its delivery plan for the year. This shows strong performance. However the efficiency challenge will increase in future years so continued focus on efficiency delivery is needed.
- 4.74 The region is forecasting to deliver between £557 million and £783 million of efficiency improvements in CP6, with a central forecast of £683 million. This is ahead of its £608 million efficiency target for CP6. North West and Central's central forecast includes £75 million of additional efficiencies that are the region's share of Network Rail's additional £0.5 billion efficiency challenge.

- 4.75 The region's largest efficiencies in 2020-21 were achieved through staff-related savings, such as performance-related pay savings and efficiencies from better management of staff sickness. Significant efficiencies were also generated through Supply Chain Organisation (SCO) initiatives totalling £13.6 million over the course of 2020-21, the largest portion of which related to improving possession services provided by the SCO function.
- 4.76 During 2020-21 we conducted a review of a sample of North West and Central's yearly efficiency plans. The purpose of our review was to understand how the region is planning and reporting on efficiencies, and the robustness of its assurance processes for assessing business changes and calculations of related efficiencies. Although there are still some improvements which could be made, based on the evidence that we have reviewed, we consider that North West and Central region appears to be sufficiently prepared to deliver the remainder of its CP6 target efficiencies.

Efficiencies case study – Rail milling

Passing trains and exposure to the elements can cause cracks in rails, and when a severe crack is not addressed in time, it can break the rail leading to potential derailments. A rail milling train renews the track by grinding away the rail's damaged top layer of steel. Rail milling defers the need for renewal of the full rail, which requires lengthy possessions, with significant cost and time implications and the need for materials which are expensive.

The efficiency is calculated by comparing the lower cost of rail milling to the high materials, labour and access costs for a full replacement of the rail, taking into account that rail milling only extends the life of a piece of rail for a few years and simply defers the full rail replacement works.

North West and Central has reported that the rail milling machine has delivered £2.2 million of efficiency improvements in 2020-21, and will deliver £14.1 million of efficiencies across CP6.

Financial outperformance against regional target

- 4.77 The regulatory Financial Performance Measure (FPM) provides a better understanding of Network Rail's financial performance than simple income and expenditure variances. FPM compares a region's actual income and expenditure to its CP6 delivery plan across most items of income and expenditure. The FPM measure ensures that a region does not benefit from underspend by delaying work to a later date if that work will still need to be done.
- 4.78 There was £19 million of financial outperformance in the North West and Central region in 2020-21, an improvement on 2019-20. The largest impact in the region was £108 million outperformance on Schedules 4 and 8 due to high levels of train performance, delivered predominantly because of the reduced timetable running on the network during the pandemic.

Table 4.4 Financial performance, North West and Central region, 2020-21







£ million	Full year budget	Full year forecast	Budget variance better/(worse)	FPM out/(under) performance
Turnover	565	547	(18)	(16)
Schedules 4 and 8	(89)	15	104	108
Operations and support	(184)	(215)	(31)	(26)
Maintenance	(460)	(463)	(3)	6
Profit and Loss	(168)	(116)	52	72
Renewals	(612)	(700)	(88)	(45)
Enhancements	(625)	(513)	112	(8)
Total				19

Source: Network Rail

Leading indicators of efficient delivery

- 4.79 Learning from declining efficiency in CP5, we required Network Rail to demonstrate that it was better prepared to deliver efficiently from the start of CP6, in part through developing and reporting on new leading indicators.
- 4.80 We have seen progress with these leading indicators of efficient delivery. Table 4.5 provides an update on North West and Central region's preparations to deliver efficiently in 2021-22.

Table 4.5 Leading indicators for efficient delivery in 2020-21, North West and Central region

Region	Renewals Planning		Securing Engineering Access		Maintenance Requirement 2020-21	
	Work authorised in Oracle	Target	% of required access booked	Target	Current headcount	Target
North West and Central	76% 	79%	109% 	86%	97% 	104%
National	75% 	81%	98% 	76%	97% 	99%

Source: Network Rail

- 4.81 The North West and Central region did not meet its target on renewals planning. Currently 76% of renewals projects for 2021-22 by value have completed detailed designs and had received financial authorisation for delivery. This was below the internal target of 79% but above the 75% national average. This is higher than at the same point last year, so it is showing some improvement.
- 4.82 The region is currently operating with a maintenance staffing level of 97% of its overall headcount requirement. Although this is below target, the difference is not likely to be made up during the year as the region has confirmed it is managing its workload well at this level.
- 4.83 North West and Central has reported that 67% of its 2021-22 target efficiency will be achieved from projects that have already been delivered or have clear project plans. The remaining 33% of 2021-22 target efficiencies have no clear project plans or have plans in place but low confidence in delivery. This is a significant improvement on the same time last year when this metric was at 47%, highlighting the region's confidence in continuing to outperform our efficiency challenge in CP6.
- 4.84 As discussed in the Network Wide chapter, risk funds are lower than may be necessary to meet financial risks in future years of the control period in all regions, in part due to the pandemic. A number of potential risks still remain in the future and greater clarity is required on whether these are currently included in Network Rail's analysis. We will continue to closely monitor and engage with Network Rail on this.
- 4.85 This analysis is based on draft financial information provided by Network Rail, comparing its financial performance against its annual budget. We will report more fully on Network Rail's financial performance against its CP6 delivery plan, in our 'Annual Efficiency and Finance Assessment' due for publication later in July 2021.

Annual Assessment of Network Rail April 2020 to March 2021

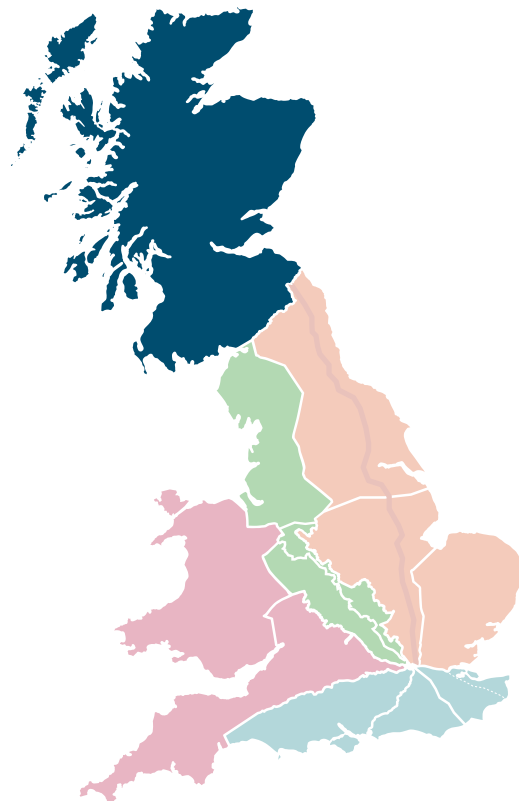
Network Rail Scotland



5. Network Rail Scotland

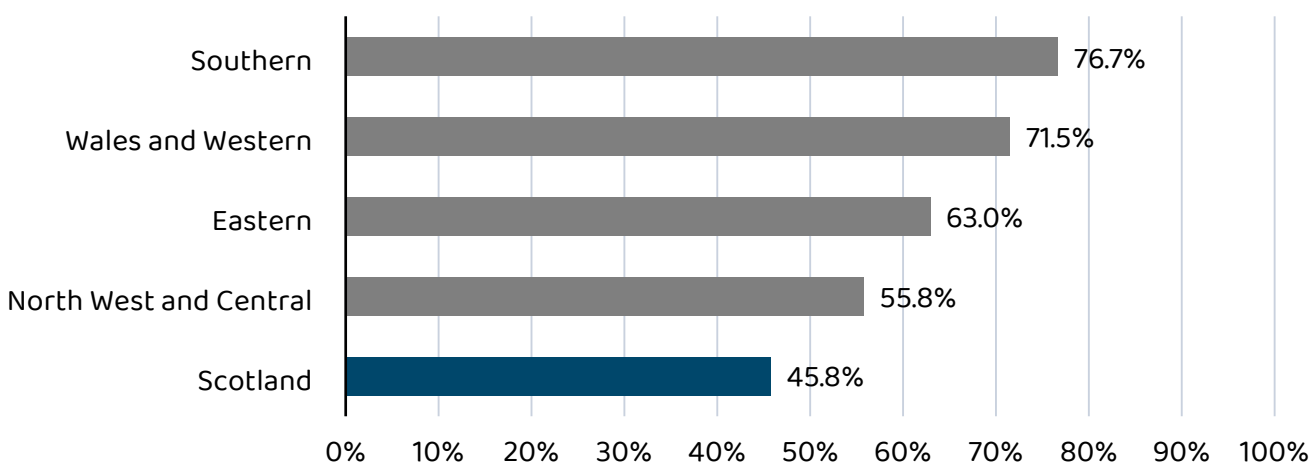
Overview

- 5.1 Network Rail Scotland manages Scotland's rail infrastructure covering a large area from the Borders to Wick and Thurso in the far North East of Scotland.
- 5.2 Most rail services in Scotland are operated by Abellio ScotRail (ScotRail). Serco Caledonian Sleeper, London North Eastern Railway (LNER), Avanti West Coast (AWC), CrossCountry, TransPennine Express (TPE) and freight operators operate rail services both within Scotland and between Scotland and England.



Network Rail Scotland's overall performance in 2020-21

- 5.3 Network Rail measures its company-wide and regional performance in core areas of its business using sets of metrics and internal targets. It captures these in national and regional scorecards.
- 5.4 Each region's scorecard is based on Network Rail's four strategic themes (on the side of passenger and freight users; easy to engage with, an efficient and dependable partner; proud to work for Network Rail; and instinctive industry leader) and it includes our consistent measures and locally driven customer measures and targets. Targets vary across regions, and Network Rail Scotland's scorecard reflects the specific and stretching requirements of its funder, Transport Scotland (for further information on Network Rail Scotland's requirements for Control Period 6 (CP6) see [Annex 1 of our PR18 Final Determination](#)). We use scorecards as one way to hold Network Rail to account for its performance.
- 5.5 Performance for each scorecard measure is expressed as a percentage achievement between zero and 100, with 50% being on target for the majority of measures. As shown in Figure 5.1, in 2020-21 Network Rail Scotland achieved 45.8% on its scorecard.

Figure 5.1 Overall scorecard performance by region, 2020-21

Source: Network Rail regional comparison scorecards

- 5.6 As with other regions, Network Rail Scotland's performance in 2020-21 needs to be seen in the context of the coronavirus (COVID-19) pandemic. The region worked well to ensure passengers and staff were kept safe, with frontline staff keeping those who need to travel and freight moving during national lockdowns.
- 5.7 While Network Rail Scotland's overall scorecard performance was the lowest of all regions, throughout 2020-21 improvements were made to the punctuality of passenger train services and passenger satisfaction is higher in Scotland when compared to other regions. However, Network Rail Scotland did not achieve its targets for freight performance and cancellations.
- 5.8 Network Rail Scotland largely delivered its renewal volumes and asset reliability remains strong. Network Rail Scotland has also delivered well on enhancement projects, with 90% of milestones being met.
- 5.9 On safety, achievement of targets for passenger safety were not achieved because of the tragic incident at Carmont, in Aberdeenshire. In 2020-21, there were also more workforce injuries than in the previous year. Conversely, Network Rail Scotland's performance on the scorecard metric for Lost Time Injury Frequency Rate (which represents time lost to injuries and fatalities among Network Rail Scotland staff and contractors employed by Network Rail) exceeded target in 2020-21 and is on an overall reducing trend when compared with 2019-20 performance.
- 5.10 Finally, Network Rail Scotland delivered £65.6m of efficiencies in 2020-21, which exceeded its target by £1.5m. Financial performance was behind target largely due to loss of income and increased costs as a result of COVID-19.
- 5.11 Overall, 2020-21 was a difficult year for Network Rail Scotland. On the morning of 12 August 2020, as noted above, a ScotRail service derailed at Carmont, near Stonehaven, Aberdeenshire. This resulted in the deaths of the train's driver, its conductor and one passenger. The other six people on board were injured. Our thoughts remain with the families and friends of everyone affected. We are in the process of formally investigating this, jointly with Police Scotland and the British Transport Police.

5.12 COVID-19 has also had a significant impact across all areas of Network Rail Scotland's performance in 2020-21. While passenger train performance has improved significantly, as highlighted above, financial performance has suffered. Network Rail Scotland has also had to manage the implications of COVID-19 and work out how to ensure safe working of its employees who continued to deliver maintenance and renewal activities. The rail industry in Scotland has responded well throughout COVID-19, delivering vital supplies and allowing those who needed travel to continue to do so. In Network Rail Scotland, we have seen evidence of strong collaboration, both with the supply chain and trade unions, to identify safe ways of working that complied with Scottish Government guidelines. This has allowed Network Rail Scotland to largely maintain delivery of maintenance work, renewals and enhancements over the past year. There has however, been some deferrals of renewals, particularly in structures volumes and we will closely monitor how Network Rail Scotland recovers these volumes over the next three years.



5.13 While there have been challenges with COVID-19, the pandemic has also provided the region with some unique opportunities, for example the chance to analyse performance of its timetable when fewer passengers are travelling and to assess and evaluate if there are areas that could be improved. Again, Network Rail Scotland has achieved this in strong collaboration with industry partners and its funder, Transport Scotland. This work should help ensure a higher performing railway in the future for when passengers return.

5.14 As discussed in the Network Wide chapter, risk funds are lower than may be necessary to meet financial risks in future years of the control period in all regions, in part due to the pandemic. A number of potential risks still remain in the future and greater clarity is required on whether these are currently included in Network Rail's analysis. Network Rail Scotland's risk position is of most concern as it is the worst of all regions. We will continue to closely monitor and engage with Network Rail Scotland on this.

5.15 Over the course of 2020-21, we undertook a review of each region's plans to deliver future efficiencies. Our review found that Network Rail Scotland's plans were not sufficient. We have therefore stepped up our monitoring of the region, requiring it to provide more frequent reporting on how it is implementing improvements. Network Rail Scotland's plans for the next two years include more stretching efficiency targets. It is therefore critical that it remains committed to delivering the improvements that we require.

Network Rail Scotland exceeded passenger performance targets but freight performance declined

Train service performance has improved significantly over the past year and both Caledonian Sleeper and ScotRail have exceeded their performance targets. However, freight performance declined as a result of severe weather.

5.16 Punctuality is a priority for passenger and freight operators and their customers. In our Periodic Review 2018 (PR18) Final Determination, we set specific targets for Network Rail's performance. These targets reflect the level of performance that the Scottish Ministers expect Network Rail Scotland to deliver. We hold Network Rail Scotland to account for its delivery of:

- Caledonian Sleeper Right Time Arrival (RTA) target of 80%. Right Time performance measures the percentage of trains arriving early or within 59 seconds of schedule;
- Abellio ScotRail Public Performance Measure (PPM) target of 92.5%. The PPM is the percentage of trains arriving at their final destination within five minutes of their scheduled arrival time; and
- a freight delivery metric known as FDM-R. This is the percentage of commercial freight services that arrive at planned destination within 15 minutes of their booked arrival time, or with less than 15 minutes of delay caused by Network Rail or another operator that is not a commercial freight operator. Network Rail Scotland should aim to deliver FDM-R of 94.5% in Scotland by the end of CP6. This reflects the requirements set out in the High Level Output Specification (HLOS). To achieve this, in its 2020-21 scorecard, Network Rail Scotland set itself a target of 94.5%.

5.17 We also use a consistent region measure for passenger services known as CRM-P. This is the delay minutes to passenger services attributed to Network Rail from incidents occurring in each Network Rail region, per 100 train kilometres. A lower score reflects better performance. This measure allows us to compare how much delay Network Rail Scotland causes in comparison to other Network Rail regions.

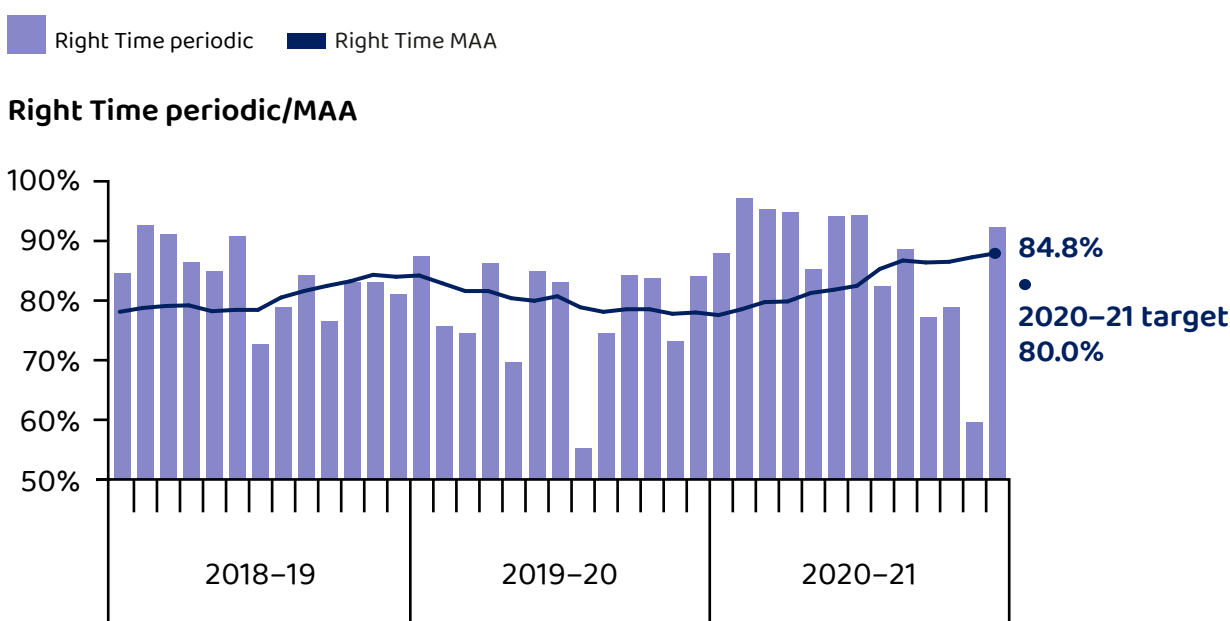
5.18 Reflecting that there are specific RTA and PPM targets for passenger performance in Scotland as required by Scottish Ministers, the role of CRM-P is different in Scotland to other Network Rail regions. Primarily, we hold Network Rail Scotland to account against its PPM and RTA targets. In the event of performance being below expectations, we would use CRM-P to provide further insight on the region's contribution to overall network performance. For consistency across our monitoring and reporting framework, we have also set a regulatory floor for both CRM-P and FDM-R measures.

Network Rail Scotland exceeded its passenger train performance targets

5.19 Immediately before the pandemic, passenger train performance in Scotland was improving but remained below both RTA and PPM targets at the end of 2019-20. In 2020-21, performance has improved significantly and both Caledonian Sleeper and ScotRail have exceeded their respective RTA and PPM performance targets.

5.20 As shown in Figure 5.2, Caledonian Sleeper performance improved significantly over 2020-21, achieving a year end RTA Moving Annual Average (MAA) of 84.8%, 4.8 percentage points above target. This strong performance shows good recovery from the rolling stock and locomotive issues of last year with Network Rail’s Freight and National Passenger Operators (FNPO) function providing good support.

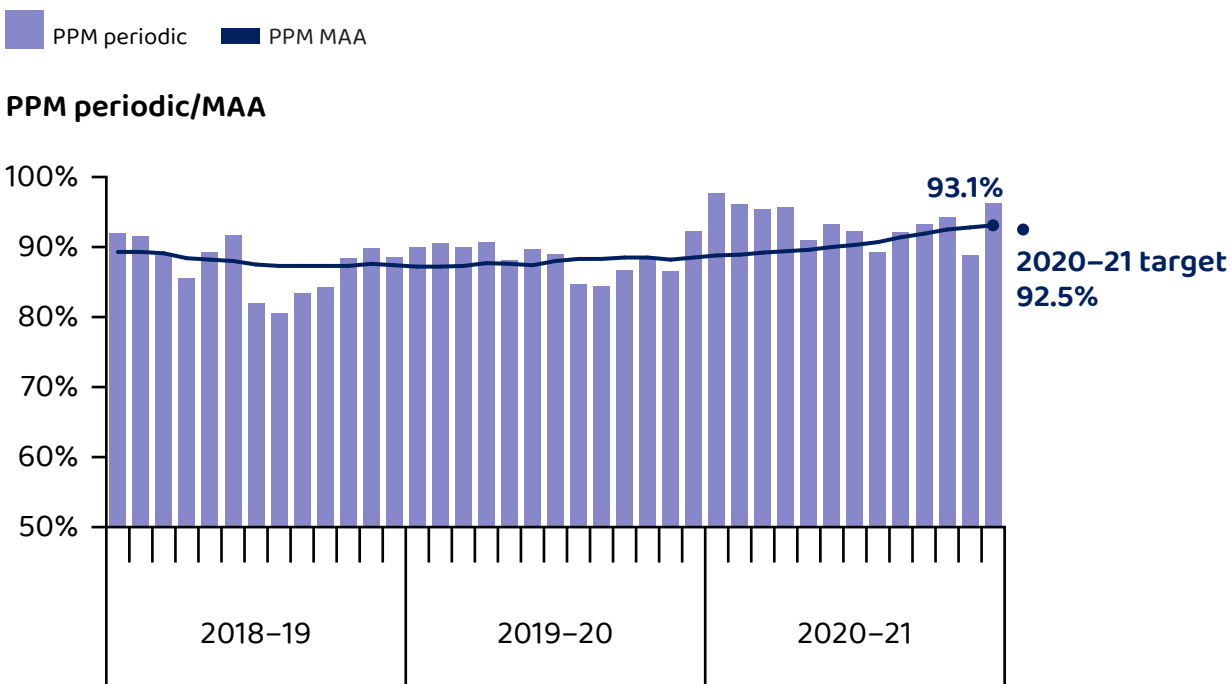
Figure 5.2 Caledonian Sleeper Right Time performance, Period 1 2018-19 to Period 13 2020-21



Source: ORR analysis of Network Rail data

5.21 As illustrated in Figure 5.3 below, ScotRail achieved a PPM MAA of 93.1%, 0.6 percentage points above target. ScotRail also improved its performance to the highest levels recorded in recent years.

Figure 5.3 ScotRail PPM, Period 1 2018-19 to Period 13 2020-21



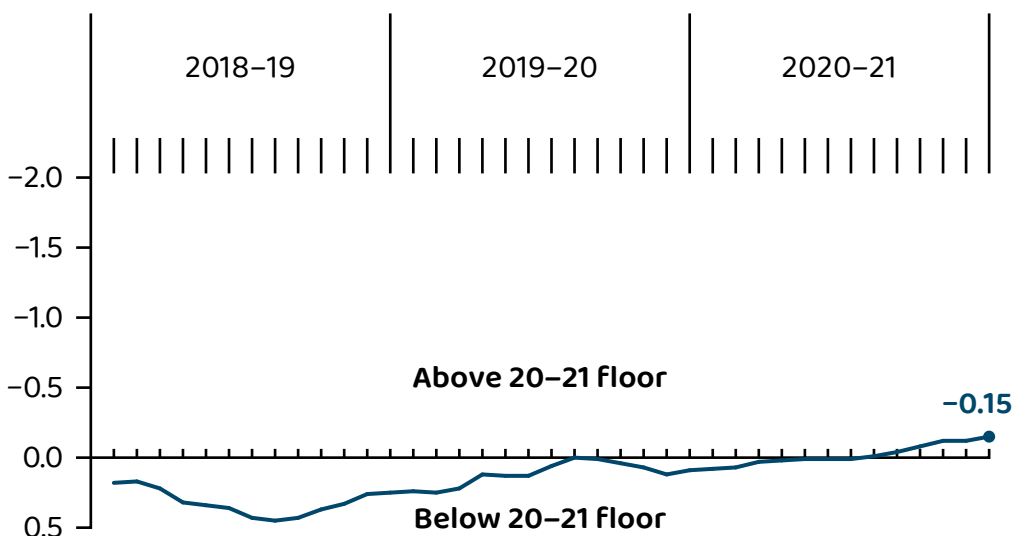
Source: ORR analysis of Network Rail data

5.22 As well as an overarching PPM, ScotRail performance is also monitored by its routes. This includes the Intercity Express route (i.e. Glasgow to Aberdeen); the Express Edinburgh to Glasgow route; the Rural route (i.e. the Highland Mainline); the Suburban East route (Edinburgh to Bathgate, Dunblane, Fife Circle, Tweedbank and North Berwick) and the Suburban West route (i.e. Kilmarnock to Ayr, Girvan and Stranraer).

5.23 ScotRail performance on these routes has also improved but both the Intercity Express and Rural service groups experienced lower levels of performance compared with the other routes. To address issues on the Intercity Express route, Network Rail Scotland progressed delivery of its Perth plan which delivers targeted investment and improvements across track, signalling and off-track assets at Perth Maintenance Delivery Unit (MDU). Network Rail Scotland continues to work with ScotRail and Transport Scotland to identify what improvements need to be made to enhance performance on the rural route.

5.24 In terms of CRM-P performance, Network Rail Scotland achieved a CRM-P MAA of 0.96 minutes delay per 100 kilometres of train travel in 2020-21, 0.03 minutes (3%) worse than [target](#). Despite being the only region to not achieve its CRM-P target, Network Rail Scotland has shown sustained improved performance over the past three years, and CRM-P performance was 0.15 minutes above the regulatory floor at the end of 2020-21, as shown in Figure 5.4.

Figure 5.4 Passenger train performance (Network Rail caused delay minutes normalised, CRM-P) – variance to regulatory floor for Network Rail Scotland, 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

Network Rail Scotland has capitalised on improvements identified during COVID-19

- 5.25 We recognise that reduced passenger numbers and a lower number of train services will have contributed to improved train service performance. Given the impact of the pandemic on passenger and freight train performance levels, in 2020-21 we placed greater focus on a qualitative assessment of Network Rail's contribution to train performance, including assessing its performance management capability and the delivery of improvements.
- 5.26 In preparation for an increase in services in August 2020, a performance subgroup was set up in Scotland. This subgroup comprised of Network Rail Scotland, ScotRail, Transport Scotland and Transport Focus, and was chaired by Network Rail Scotland's Head of Performance. The remit of this group was to review train service provision and introduce a more robust service when the timetable changed in August 2020 following an easing of lockdown restrictions. To do this the group embarked on a programme of improvements.
- 5.27 The year-end review of this work in April 2021 noted several positive developments. There were 30 timetable interventions in the August 2020 uplift, including extended turnarounds and minimum crew change times being increased from one minute to two. Network Rail Scotland has been able to evidence benefits from these changes. For example, a deep dive into poor dwell time adherence was undertaken, with multiple TRUST (Train Running System TOPS) berth offset errors revealed. TRUST is a computer system that compares actual train movement events with those planned, allowing delays to be recorded. Berth offset is the difference between the time a train actually occupies a track circuit and the time recorded in TRUST. One example of where an error could occur is when the length of a train running is longer than recorded in TRUST.

- 5.28 An example of where improvements were made in Scotland was at Dumbarton East, where right time starts from the station increased from 20% to 80% following a correction to the berth offset errors. On the Edinburgh and Glasgow route, TRUST berth offsets were also reviewed, as was Driver Advisory System data or DAS. This is a system which advises the driver at what speed to drive the train based on the timetable, for example DAS could tell the driver to drive at line speed or slower if the train was running early. Areas such as signal sighting, the method of operation of the train (for example Driver Only Operation), pedestrian flows, and TRUST berth offsets were all considered. This analysis identified only reporting issues.
- 5.29 Network Rail Scotland did not limit this work to ScotRail services as it also considered cross border services. This was achieved through close engagement with cross border operators through existing performance forums such as twice weekly calls including Anglo-Scot West Coast Main Line period forum, COVID-19 taskforce weekly meetings and period review meetings. These forums identified a number of potential initiatives, for example speed differentials on certain routes, improving right time departures from depots and adding greater resilience into the timetable, particularly around Edinburgh. Close collaboration with cross border operators also meant that they were kept abreast of changes to COVID-19 restrictions (i.e. easing of lockdown arrangements) which has allowed them to plan and predict issues.

Improved performance management capability

- 5.30 Throughout 2020-21, Network Rail worked to embed improved performance management capabilities across its business. The Performance Improvement Management System (PIMS) is a whole industry programme looking at the capability of the industry to improve train performance. Network Rail has taken a leading role in this area, producing and sharing materials and processes for the industry to follow to support delivery of improved train performance.
- 5.31 A key component of PIMS is the Risk Management Maturity Model for Performance (RM3P), based on the Risk Management Maturity Model (RM3) developed by ORR in collaboration with the rail industry. RM3P is the train performance adaptation of [RM3](#). RM3P is a self-assessment tool focusing on the business processes supporting train performance improvements. This tool looks at five areas: policy, governance and leadership, monitoring, audit, and review.
- 5.32 One of the core documents within this framework is the joint Network Rail and operator performance strategy. Network Rail Scotland's performance strategy for 2020-21 captured some good initiatives but it was finalised late in the year. While we understand that Network Rail Scotland is currently developing and delivering a range of initiatives to maintain performance levels during 2021-22, we are disappointed that plans to deliver a full performance strategy have not yet been finalised. We are pressing for this to be finalised shortly, so that all the benefits of the learning and collaboration obtained throughout COVID-19 can be effectively captured.

5.33 Despite the performance strategy for 2021-22 not yet being in place, there is evidence of good progress in other areas with the exception of unexplained delays, where a working group has been established. These are:

- Network Rail Scotland's Incident Learning Review (ILR) process has been strengthened, partly through having combined reviews for similar events (e.g. for multiple weather incidents). There is also a greater level of discipline around ILRs, which now must be held within seven days of the incident. We have seen evidence of Network Rail Scotland using the learning from an ILR and taking action to resolve issues. For example, in 2020-21 there was an axle counter failure at Muirhouse. It was found that there were not enough fault-finding laptops available which delayed diagnosis of the fault. Following an ILR of this incident, it was agreed to provide these laptops to all 17 of the similar associated relay rooms across Scotland;
- unexplained delay has been targeted as an area requiring further work. These delays have been principally associated with timetable delays or sub threshold delay relating to passenger loadings. While the latter has reduced during COVID-19, the network continues to experience some unexplained delays, so a working group has been established to identify specific locations of concern and generate appropriate action plans;
- services through Glasgow Central Low Level have also been targeted to improve performance. Network Rail Scotland has reviewed the section from there to Hyndland and as a result, there are now no driver changeovers at Glasgow Central, while minimum changeover times elsewhere have been increased from one minute to two. Network Rail Scotland is also reviewing other options, including installation of advanced banner repeater signals (which show a driver what aspect the next signal is before they can see it. It is used when a signal view is restricted by, for example a bridge or curve);
- the Class 380 fleet has been fitted with Double Variable Rate Sanders (DVRS) during autumn. DVRS disperse sand via train borne sanding equipment, to increase the friction between wheelsets and the railhead, allowing trains to accelerate and brake more effectively and in a more controlled manner. Having this fitted will improve the reliability of acceleration and braking in low adhesion conditions, it will also provide increased certainty that the timetable will be delivered and critically, maintain safety;
- Network Rail Scotland has been working with the Rail Systems Alliance to introduce a Temporary Speed Restriction (TSR) reporting tool, to allow TSRs to be removed earlier. This should improve its data-driven decisions;
- performance reporting is being automated. All data objects from Network Rail Scotland's Business Objects data warehouse are now exported to its Business Intelligence system, so both standard reports and bespoke requests can be undertaken more easily, with much of it automated. This will improve the effectiveness of the performance team as it will have more time to undertake analysis of delays and generate solutions, rather than just reporting on what has happened;

- signaller delays are being better scrutinised; the performance team is supporting Local Operations Managers (LOMs) to reduce signaller delays. Paper forms have been automated to save time and allow for improved analysis of trends. This has been instigated at LOM level. Finalising of the automated system is underway to better map signaller workstations to delays, and to allow the creation of performance improvement plans targeted at individual signallers; and
- the region continues to deliver on previous commitments, as illustrated in the example below of the Milngavie platform works.

Milngavie platform works

In addition to the above improvements, Network Rail Scotland continues to show that it is committed to delivering the recommendations from previous performance improvement plans.

In December 2017 the ScotRail Alliance (comprising of ScotRail and Network Rail) commissioned Nick Donovan, a former managing director of the Trans Pennine Express train operating company, to undertake a review and produce recommendations on how train performance in Scotland could be improved ([the Donovan Report](#)). The Donovan Report made several recommendations, one of which was to put in measures for right time departures from Milngavie station. In response, Network Rail identified that 26 metres of platform extensions and 37 metres of non-operational platform needed to be reinstated on both platforms.

Work to extend the platforms completed on time for the December 2020 timetable change. This work has improved performance significantly. In May 2019, Right Time departure performance from Milngavie was 74% compared with the December 2020 timetable performance of 94%.



5.34 Access to the Performance Innovation Fund (PIF) for improvement schemes has been variable between each of the regions. At the start of this year, Network Rail Scotland confirmed that it had secured £1.35 million of funding from the PIF for a laser train trial which would have helped clear leaves from the track, particularly during autumn. However, this was recently suspended because two projects were initiated in England that would deliver similar results (cryogenics and water track) and cost less.

5.35 Given the suspension of the laser train trial, Network Rail Scotland has decided to press ahead with the cryogenic trial using PIF funding and is currently discussing with ScotRail potential options around fitting equipment to certain trains, with a view to this unit being tested in traffic during Autumn 2021. Network Rail Scotland is also developing and progressing with a number of further schemes. Schemes being considered include improving operational response times while attending incidents, increasing awareness, and reducing the effects of railway crime, reducing Network Rail Scotland's carbon footprint, improving the prediction of extreme weather events and combating the effects of flooding on the operational railway.

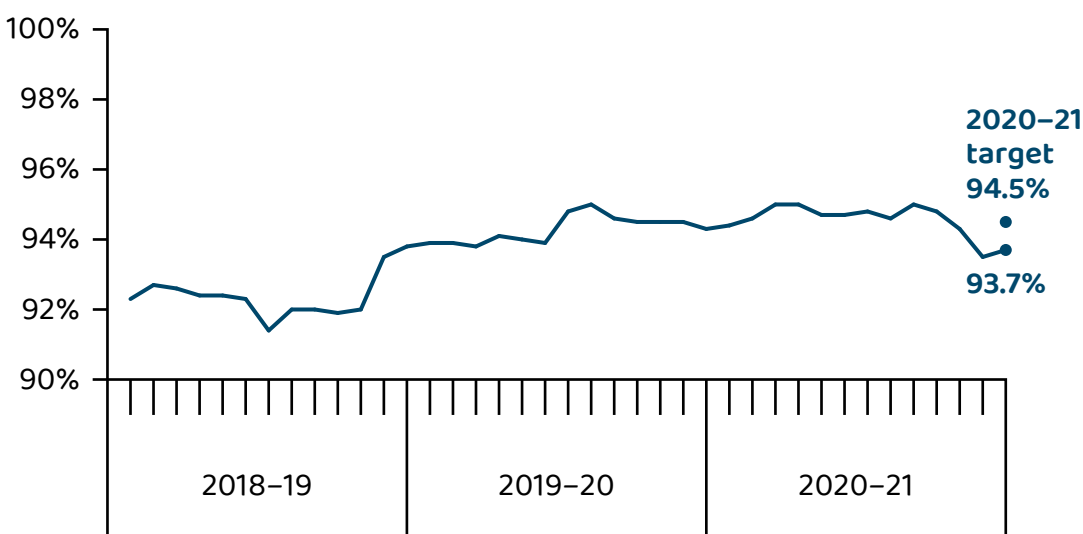
5.36 It is important to Transport Scotland that Network Rail Scotland secures and spends PIF within Scotland given the economic benefits and potential to support Scottish businesses.

Freight performance declined towards the end of 2020-21

5.37 Scottish Ministers required delivery of 93% FDM-R at the start of CP6, moving through staged improvements towards 94.5% at the end of the control period. Network Rail Scotland committed to a target of 94.5% for 2020-21 in its scorecard.

5.38 As illustrated in Figure 5.5 below, freight performance in Scotland declined towards the end of 2020-21. FDM-R fell below target, ending the year at 93.7%, which is 0.8 percentage points below target. Scotland is the only region to have experienced a fall in freight performance in 2020-21.

Figure 5.5 Freight performance (FDM-R) Network Rail Scotland, 2018-19 to 2020-21

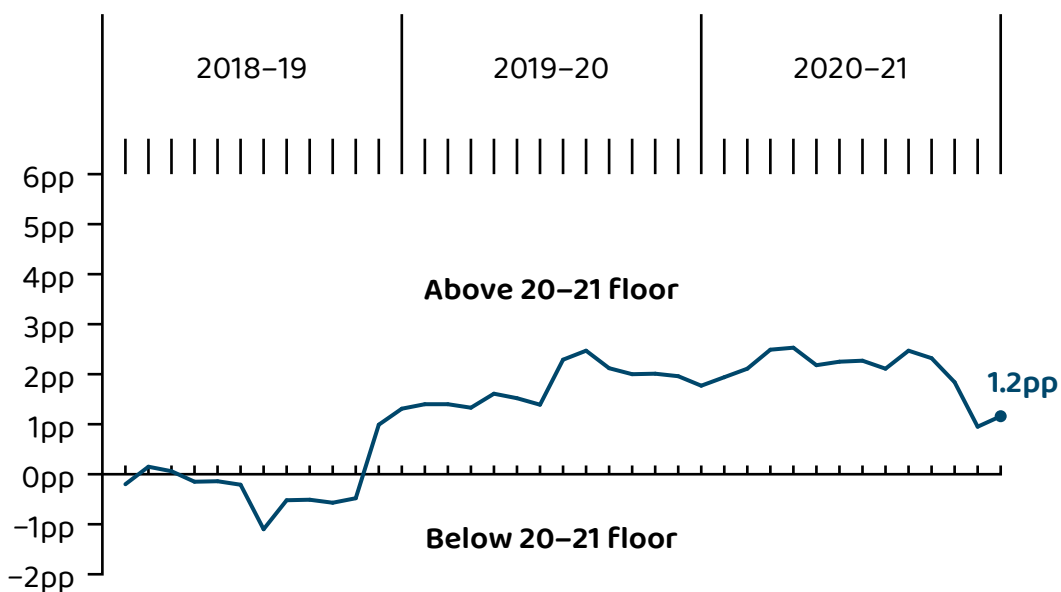


Source: ORR analysis of Network Rail data

5.39 FDM-R was performing well until towards the end of 2020-21 when Network Rail experienced three consecutive periods of significant incidents on the West Coast Mainline (WCML) including an Avanti train failure and weather related events. The WCML is key to freight performance as around 60% of freight trains run cross-border via the WCML.

5.40 We will continue to monitor freight performance closely. As shown in Figure 5.6 below, FDM-R is currently 1.2 percentage points above the regulatory floor. If FDM-R were to decline further and fall below 92.5%, then we will be highly likely to consider an investigation.

Figure 5.6 Freight performance (FDM-R) - variance to regulatory floor for Network Rail Scotland 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

Severe weather has had a significant impact on both passenger and freight performance

- 5.41 Over the past year weather has had a significant impact on both passenger and freight performance in Scotland. Severe weather resulted in a number of incidents across the network, many of which occurred following heavy rainfall. For example, incidents include the derailment at Carmont, severe flooding of the railway near Polmont (shown below) and landslips near Ardrossan, West Kilbride and Fairlie.
- 5.42 Two of the above incidents were third party events from other landowners or infrastructure owners that have impacted on the railway infrastructure. Polmont was a breach of the Union Canal and Fairlie was from land high above the railway owned by a private landowner.



- 5.43 Delay minutes experienced on the rail network in Scotland attributed to severe weather increased by 26% in 2020-21 when compared with 2019-20. This is in contrast with decreases in delay minutes for the vast majority of delay categories. Several weather related incidents highlighted the need for improvements in the region's operational response to severe weather. Network Rail Scotland is addressing this as shown by the increased number of blanket emergency speed restrictions applied in the second half of the year.

Capacity and access to the network

- 5.44 We ensure that passenger and freight operating companies have fair access to the rail network and that best use of capacity is made. If a train operator wants to access the national railway network, it needs a track access contract with Network Rail. Where operators and Network Rail cannot reach agreement, they can appeal to us to use our statutory powers to direct a decision on access. Operators and Network Rail also need to plan these contracts in sufficient time to produce robust timetables to ensure other operators can plan their own use of capacity.
- 5.45 There were no particularly contentious contested access applications in 2020-21 in Scotland. However, like other regions, Network Rail Scotland should look to reduce the number of applications submitted and approved less than 12 weeks before a timetable change. This will enable new services to be reflected in the public timetable at least 12 weeks before they are due to run and enable passengers to buy advance tickets.

Asset Management delivered despite COVID-19

Despite the challenges of COVID-19, Network Rail Scotland has renewed its assets largely in line with its plans but delivery of structures volumes is falling behind for the second year in a row. As lockdown was introduced, Network Rail Scotland paused delivery of renewals for around five weeks. During this time, it worked hard to ensure works could resume safely and comply with Scottish Ministers' safe working requirements. It did this through close engagement with its supply chain and trade unions.

Levels of asset sustainability and reliability remain aligned with CP6 targets

- 5.46 Network Rail needs to secure the maintenance, renewal and replacement of assets on the network so it is safe and operable, and do so in a way that is sustainable and efficient over the long-term. In CP6, we assess this using a measure of asset sustainability (the Composite Sustainability Index (CSI)). We have agreed Network Rail's target for the end of CP6, based on a defined level of change since the end of Control Period 4 (CP4).
- 5.47 Network Rail Scotland finished 2020-21 with a CSI of 2.8%. This represents an improvement in overall asset sustainability of 2.8% since the end of CP4. The region's trajectory for CP6 is to end the control period with a CSI of 2.9%.
- 5.48 However, as this measure of sustainability is slow-moving because of the very long operational life of railway assets, we also monitor a region's asset failure rates and their impact, volumes of maintenance and renewals delivery, and other asset specific measures, which can be used as a proxy for longer-term sustainability. We assess a number of these against a region's internal scorecard targets including asset failure data and asset reliability measures, such as the Composite Reliability Index (CRI), which is a measure of the short-term condition and performance of assets.
- 5.49 Network Rail Scotland experienced fewer service affecting failures than target, which contributed to it achieving a CRI score of 31.4%. This means asset reliability in 2020-21 was 31.4% better than it was in the final year of Control Period 5 (CP5). It was 15.1 percentage points better than its target of 16.4%. In particular, the reliability of track and signalling continues to be strong. Buildings was highlighted as an area of concern in last year's Annual Assessment (due to incorrect reporting of two hour and 24 hour faults), however this was not attributed to underperformance but instead to incorrect reporting of certain faults. This area has seen a significant improvement in reliability this year.

Renewal volumes largely delivered despite COVID-19

5.50 We scrutinise whether Network Rail is delivering vital asset renewals work, for example renewing its track, and if this is in line with planned volumes for each year of the control period. As part of our assessment we look at Network Rail's delivery of effective volumes. This refers to the volume of work undertaken in seven key areas, attributing weightings based on the life added to the asset by each type of work. For example, in the area of plain line track, a full renewal would be given a higher weighting than replacing one individual element.

5.51 Table 5.1 below shows that despite the challenges of maintaining and renewing the network during COVID-19, Network Rail Scotland has broadly maintained its planned delivery of effective volumes for signalling, track and switches, and crossings. Delivery of structures volumes continues to be an area of concern.

Table 5.1 Effective volumes (renewals), Network Rail Scotland, 2020-21

Percentage completion is based on actual volumes delivered against planned volumes.
A percentage completion in excess of 100% indicates delivering more than the planned volumes.

Asset	Actual	Plan	% complete
Conductor Rail Renewal (km)	n/a	n/a	n/a
Earthworks	174	137	▲ 127%
OLE re-wire and mid-life refurb (km)	n/a	n/a	n/a
Track – Plain Line	245	247	▼ 99%
Track – Switches and Crossings	31	39	▲ 78%
Signalling	14	15	▼ 94%
Structures – Bridges	3,693	4,796	▼ 77%
All assets (weighted total)			▼ 95.1%

Note: Conductor rails and OLE are not applicable in Scotland in CP6

Source: ORR analysis of Network Rail data

5.52 Network Rail Scotland over-delivered on earthworks due to additional scope identified for pre-existing sites (increased volumes) in the CP6 Netted Slopes project, following a site visit at Falls of Cruachan to make efficient use of the contractor mobilisation. There were also emergency works at Lochailort.

- 5.53 Network Rail under-delivered on its signalling volumes. The main cause of this was re-phasing of the Blair Atholl to Dalwhinnie track circuit renewals to later in CP6 to align with other level crossing and track schemes. This renewal had to be re-phased because of a significant increase in tender price unrelated to COVID-19. The loss of the Blair Atholl to Dalwhinnie track circuit renewal was however offset by acceleration of work relating to Plain Line Train Protection and Warning System, Edinburgh Control Centre and Carstairs rationalisation (the Carstairs and Motherwell South Recontrol Project and Portobello).
- 5.54 For Track Switch and Crossings, and plain line volumes, High Output track renewal work was the area most affected by COVID-19, as Network Rail Scotland could not secure the resource required to fulfil this work. The work required resource from Poland and travel restrictions meant that the work could not be completed as planned in 2020-21. This has now been deferred to future years of CP6. COVID-19 also impacted the timing of track work at other sites, including slippage of work at Gushetfaulds, Ayr Station and Wamphray. Network Rail Scotland was however able to accelerate Plain Line renewals (i.e. completion of 28.5 kilometres of rail milling at the start of the year) and works at Townhead, Garnqueen and Finnieston Junction.
- 5.55 As explained above, delivery of structures volumes was significantly under target due to deferral of work and carrying out more maintenance rather than renewing assets. Network Rail Scotland has reported COVID-19 restrictions as the main reason volumes have not been delivered in 2020-21. While we accept that COVID-19 has had an impact, our Annual Assessment of Network Rail Scotland's 2019-20 performance noted that it was behind on its delivery of planned underbridges volumes due to deferrals in scour works. We are concerned that two years of under delivery will result in the deferral of high volumes of work. We will continue to monitor this and seek assurances from the region that planned volumes are still deliverable.

Structures examinations compliance needs action

- 5.56 One area of concern, which we have been seeking continuous progress on since 2011, is compliance with structures examinations. If examinations of structures, such as tunnels, bridges and culverts are not carried out, the condition of the asset is not fully known and faults may be undetected or not competently assessed.
- 5.57 As part of our ongoing assurance activities, we identified that there are a large number of incomplete structures examinations across the network. By way of mitigation, Network Rail undertakes risk assessments on site where there is non-compliance, to better understand whether there are any associated safety risks.
- 5.58 At the end of 2020-21, Network Rail Scotland had 1,228 structures non compliances: 9.9% of the regional portfolio. We do not have sufficient assurance from Network Rail that it has suitable plans in place or is making adequate progress towards eliminating the overall non-compliance of examinations.
- 5.59 We are taking action to ensure this is rectified and we will closely monitor Network Rail's progress and delivery. We are also commissioning an independent reporter to assess the non-compliance across the regions in more detail.

Table 5.2 Structures examination non-compliance, Network Rail Scotland, 2020-21

Exam type	Site Examination Non-Compliance	Report Submission Non-Compliance	Evaluation Non-Compliance	Total Non-Compliance
Detailed	35	341	86	462
Visual	107	514	67	688
Underwater	16	40	22	78
Total	158	895	175	1,228
			% of regional portfolio	9.9%

Source: Network Rail

Network Rail Scotland's plans for asset resilience continue to be delivered

- 5.60 Our PR18 Final Determination sets out the importance of Network Rail managing weather resilience and the impact of climate change.
- 5.61 Network Rail's plans for CP6 continue to have a clear focus on weather resilience. Its plan includes significant capital investment to improve weather resilience. Throughout CP6, Network Rail Scotland plans to deliver interventions such as scour risk reduction, reducing the vulnerability of some earthworks to adverse weather, acceleration of vegetation clearance, and strengthened off track maintenance.
- 5.62 In our last annual assessment, we noted the importance of Network Rail Scotland delivering its plans for a railway resilient to extreme weather and climate change and we continue to hold it to account for the commitments it has made. In 2020-21, the derailment at Carmont, near Stonehaven, has demonstrated more than ever the sustained need for infrastructure resilience. Heavy rainfall from convection storms is a particular challenge for Network Rail Scotland. Prior to the derailment, there had been heavy rain across Scotland, particularly along its East coast. [It was reported that almost 75% of the monthly average rainfall for August for Aberdeenshire fell in the Carmont area in the early hours of 12 August.](#)
- 5.63 Throughout 2020-21, Network Rail Scotland has demonstrated sustained commitment to improving infrastructure resilience. One example of this is the completion of embankment and drainage work at Slochd, between Perth and Inverness on the Highland Mainline.

Slochd earthworks project

In 2020-21, Network Rail Scotland completed a £2.7 million earthworks project covering three separate sites over two miles at Slochd. This project included embankment repairs, soil cutting renewals and rockfall protection. It also included remediation of a repeat flood site, new track drainage and 840 yards of new off track drainage. This scheme is part of a wider £4.8 million plan to improve weather resilience of the Highland Main Line.



- 5.64 Where we have concerns with Network Rail's delivery, we carry out our own Targeted Assurance Reviews (TARs). These are risk based assurance reviews used to provide insight into ongoing and emerging risks and issues within Network Rail that could impact delivery of its CP6 plans.
- 5.65 One of our TARs in 2020-21 found that Network Rail Scotland is delivering earthworks renewals at a lower cost on average, than other regions. We found that this was partly because Network Rail Scotland was working closely with its supply chain and identifying positive efficiencies. However, it may also be because fewer of the renewals are being designed to full compliance with European structural design codes, than in other regions. Network Rail Scotland's approach is still compliant with Network Rail's policies, but we have requested additional transparency from all regions so ORR and funders can understand any differences in approach ahead of the next control period.
- 5.66 A TAR review into drainage maintenance found that Maintenance Delivery Units (MDUs) in the East of Scotland had, historically, treated drainage as a lower priority. However, this area has seen increases in average rainfall and extreme weather events over the last three to five years, which has put pressure on MDUs in the East to make drainage a priority and to adopt better use of asset condition information. MDUs in the West were somewhat more advanced because heavy rainfall has always been a major issue historically and therefore they have more developed plans.

Vegetation clearance concerns are being addressed

5.67 At the end of year one of CP6, we identified concerns about management of vegetation around overhead line equipment (OLE) in Scotland. In early year two, we held a workshop with Network Rail Scotland's Lineside and Electrification and Plant (Power) disciplines to review their vegetation management strategy. The region provided assurance that, as part of the prioritisation of vegetation management works, de-vegetation works and risks around OLE assets have been managed by an 'OLE Vegetation Defect Management Process with defined responsibilities.'

Environmental Sustainability Index targets achieved

- 5.68 Network Rail has introduced a new measure for environmental sustainability this year, the Environmental Sustainability Index (ESI). This composite measure is comprised of key environmental measures on waste, carbon emissions and non-traction energy usage. During the pandemic, lockdowns across the country resulted in reductions in carbon and energy usage generated by the temporary retail closures at stations and to a lesser extent, offices.
- 5.69 Network Rail Scotland exceeded its ESI target for 2020-21, achieving 53.4%. Given this is a new measure, Network Rail and ORR have undertaken an independent reporter study to assess the reliability and accuracy of the data. Once finalised the findings report will be published on [our website](#).
- 5.70 Network Rail Scotland has worked with ScotRail and Transport Scotland to develop a delivery plan to deliver a sustainable railway for Scotland. This delivery plan goes beyond the requirements of the GB strategy and aligns with the Scottish Government's targets for reducing greenhouse gas emissions to net zero by 2045.
- 5.71 The delivery plan has 10 strategic priorities across three pillars, which include: 'A low emission railway', 'A green and resilient railway' and 'A responsible railway'. Each pillar has its own detailed delivery plan which has been developed by a collaborative working group or series of topic-specific focus groups.

Alignment of Asset Management Capability with ISO 55001

- 5.72 We also assess Network Rail's capability to manage its assets effectively by checking its compliance with an international standard on Asset Management, ISO 55001. In our Periodic Review 2018 (PR18) Final Determination, we asked Network Rail's routes (now regions) to demonstrate how they would operate in accordance with ISO 55001 by the end of March 2021, a date set by Network Rail's Technical Authority.
- 5.73 We have undertaken a TAR in this area and Network Rail Scotland has demonstrated that its asset management approach is well aligned to ISO 55001. However, minor improvements are required for full alignment or compliance with the standard, which the region is aware of and plans to address. Therefore, we accepted that the region has attained the Final Determination requirement, but we have made recommendations to continue its improvement journey.

Carstairs renewal continues to be delivered

- 5.74 The CP6 settlement included significant funding for the Carstairs renewal (£103 million). The track layout at Carstairs dates from the 1970s and Network Rail Scotland considers that the infrastructure is now life expired, with a number of temporary speed restrictions in place to allow trains to run safely.
- 5.75 At the time of our PR18 Final Determination, the plans for Carstairs were at an early stage of development (where outputs were being defined) and there was no firm estimate of costs.
- 5.76 While Carstairs is not an enhancement, we considered that it was appropriate to require a review of costs associated with this renewal given the project was at such an early stage of development and it was of high value. A review would ensure that Network Rail Scotland's costs were justified and that a robust option process had been followed. We have recently undertaken our review of project costs and this will conclude shortly.
- 5.77 In our determination we also said that we would involve Transport Scotland in Network Rail Scotland's plans for Carstairs both ahead of and during the cost review to ensure the optimal solution is being delivered. We continue to closely monitor delivery of this renewal with Transport Scotland.
- 5.78 In 2020-21 Network Rail Scotland has continued to progress the Carstairs renewal. Towards the end of the year there was substantial engagement between Network Rail Scotland and the supply chain to ensure costs remained close to the original estimate. Overall, the project is progressing well and in 2020-21 Network Rail Scotland has further refined its blockade strategy and we expect that to be agreed with train and freight operators shortly.

Enhancement projects have performed well

In 2020-21 Network Rail Scotland delivered well on enhancement projects despite the challenges faced during the COVID-19 pandemic. Network Rail Scotland has also started delivering on the Scottish Ministers' Decarbonisation Action Plan.

5.79 Despite the challenges of delivering projects during COVID-19 and restrictions around non-essential work, Network Rail Scotland has delivered the following projects:

- **Cadder Yard (Phase 1)** – This project aims to deliver short-term servicing and stabling facilities for up to six High Speed Trains to support the growth of ScotRail's train fleet. Over the Christmas and New Year period, Network Rail engineers successfully replaced over one kilometre of track and renewed or refurbished 12 sets of points. Network Rail Scotland also renewed signalling and overhead power equipment and upgraded points heaters; and
- **Station works across Scotland** have also been a success with the following:
 - **Kintore Station:** Transport Scotland remitted Network Rail Scotland to deliver a new station at Kintore. This project followed on from the Aberdeen to Inverness phase one rail enhancement project, which doubled the track between Aberdeen and Inverurie, increasing capacity for new passenger and freight services on the route. The new station at Kintore opened in October 2020 and is served by up to 28 ScotRail trains each day; and
 - **Reston Station:** Network Rail Scotland has recently started work on a new station at Reston in the Scottish Borders. This will be a two platform station on the East Coast mainline. The station will be fully accessible with lifts and a footbridge connecting both platforms.

5.80 In July 2020, Transport Scotland published its [Rail Services Decarbonisation Action Plan](#) which includes decarbonising transport through modal shift to rail, and decarbonising rail traction energy through the removal of diesel passenger trains from the Scottish network by 2035.

Health and Safety

Network Rail Scotland has managed COVID-19 transmission risks well and is making good progress with track worker safety. However, in 2020-21, tragically three people lost their lives and six people were injured in the derailment at Carmont. This has had a profound impact on all those who work on Scotland's Railway.

The Carmont derailment

- 5.86 On the morning of 12 August 2020 a ScotRail train derailed at Carmont, near Stonehaven. Three people tragically lost their lives. Our formal joint investigation with Police Scotland and the British Transport Police continues.
- 5.87 Shortly after the derailment, Network Rail launched two task forces to help it better manage its earthworks portfolio (cuttings and embankments) and its understanding and response to severe weather events. The task forces were led by specialists Lord Robert Mair and Dame Julia Slingo. The task forces concluded their work and [published findings and recommendations](#) in February this year. We will closely monitor Network Rail's response to and implementation of the recommendations made.
- 5.88 Since August 2020, we have monitored the actions taken by Network Rail Scotland and train operators to manage operational risk during periods of severe weather, including more Extreme Weather Action Teleconferences, proactive line closures and blanket emergency speed restrictions. While severe weather, particularly rainfall and snowmelt, has led to several flood events, washouts and landslips, risk to trains and passengers have been successfully controlled by Network Rail Scotland.
- 5.89 We also reviewed a sample of the 161 earthwork site inspections that Network Rail Scotland undertook shortly after the incident at Carmont to verify the checks were done effectively and to provide suitable assurance that they are being adequately managed.

Network Rail Scotland has managed COVID-19 transmission risks well

- 5.90 In April and May 2020, shortly after the onset of COVID-19, we undertook an inspection to understand Network Rail Scotland's arrangements for maintaining safe operation of the railway and ensuring the health and safety of staff. We found that it had successfully implemented the measures developed at national level, with arrangements to introduce staged contingencies, triggered by certain levels of reduction of available staff, both on a general and specific functional basis.
- 5.91 A key part of delivering ongoing safe operation and maintenance through the year and controlling the risk of COVID-19 transmission among staff has been regular engagement with trade union safety representatives. It is noteworthy that we did not receive any health and safety complaints during the year relating to Network Rail Scotland's arrangements for controlling COVID-19 risk to staff.

Track worker safety in Scotland in a good position but scope for improvement

- 5.92 In 2019, we served Network Rail with two track worker safety Improvement Notices. The overall aim of these notices is to reduce risk to people working on the track through better planning of access away from 'Red Zone Unassisted Lookout' working arrangements, which is work that is either on or near the line, where the trains are still running.
- 5.93 Network Rail Scotland is already in a good position compared to the rest of the network because of the effective prohibition on 'Red Zone Unassisted Lookout' working. Improvements have been made by the Safety Task Force programme, but the programme is a work in progress and there are still key deliverables essential to the demonstration of compliance that are yet to be realised. These include ensuring that planned protection is as far up the risk control hierarchy as is reasonably practicable in every case and making sufficient use of technology to provide protection for track workers. The date for compliance with the Improvement Notices is July 2022.

Improvements in management of possessions needed

- 5.94 During 2019-20, our safety inspections identified shortcomings in the control of on-site risk arising from errors, omissions, or oversights in access and possession planning, or implementation of those plans.
- 5.95 In April 2020, we investigated an incident involving on-track plant (i.e. machinery designed to run on the railway) and movement of a road-rail vehicle outside the limits of a possession resulting in a Signal Passed at Danger (SPAD) between Slochd loop and Tomatin. The actual risk from the on-tracking and SPAD was controlled because the incident occurred in a period when there were no train movements on the open section of line. Our investigation found several errors in the planning process and documentation for the work.
- 5.96 The investigations into this issue have led to a good response from Network Rail Scotland, dealing with local and staff issues, and recognising the need for improvements to the planning system. We are seeking action with Network Rail Scotland's Head of Planning, recognising that some of the action requires changes to national processes, not within the gift of Network Rail Scotland.

Safety scorecard performance was mixed

- 5.97 Network Rail Scotland was the only region to perform well for Lost Time Injury Frequency Rate (LTIFR), exceeding its target. Network Rail Scotland's performance of this measure is on an overall reducing trend when compared with 2019-20.
- 5.98 In 2020-21, there were more workforce injuries than in the previous year. Many workforce incidents are in the slip, trip and fall category. Some of these are weather-related, but many have arisen from loss of situational awareness, poor underfoot worksite conditions, and poor site materials management. There has also been a considerable number of minor incidents involving vehicles, both on and off site, that are consistent with the increased number of vans in use because of COVID-19 precautions.
- 5.99 Further information on our health and safety inspection activity, alongside a more detailed assessment of Network Rail's health and safety performance is in our 'Annual Health and Safety Performance Report'.

Network Rail Scotland continues to make good progress in delivering Scottish Ministers' requirements

Network Rail Scotland has continued to make good progress in delivering the Scottish Ministers' CP6 requirements.

- 5.100 In our PR18 Final Determination ([see Annex 1](#)), we set a number of requirements for Network Rail Scotland to deliver throughout CP6. Many of these requirements are unique to Scotland, reflecting what Scottish Ministers wanted Network Rail Scotland to deliver in this control period as set out in its High Level Output Specification (HLOS).
- 5.101 To monitor progress against each of these requirements, Network Rail Scotland has an HLOS tracker which helps us to monitor its delivery of each of the HLOS requirements. We also engage closely with Transport Scotland to monitor how well Network Rail Scotland is delivering against the HLOS requirements.
- 5.102 COVID-19 has presented many challenges which have impacted Network Rail's ability to deliver on some requirements. Despite this, our monitoring in 2020-21 has shown that Network Rail has continued to make good progress with many of the requirements. Importantly, it continues to demonstrate strong collaborative engagement with the rail industry, in particular working closely with the freight industry to identify opportunities for freight growth.
- 5.103 Despite good progress on a number of the requirements, delivery of the passenger gauge strategy remains challenging for Network Rail Scotland. The main issue is that Transport Scotland and Network Rail Scotland have yet to agree the scope of the Passenger Gauge Requirement that Network Rail Scotland will be expected to deliver (i.e. the passenger vehicle types that should be included in a Scottish Gauge and the routes that should be gauge cleared to accommodate them). While discussions continue, as we are now over two years into the control period, it is becoming increasingly unlikely that the passenger gauge strategy will be delivered before the end of CP6. However, we understand that consideration is now being given to how the gauging and decarbonisation strategies can be aligned to realise efficiencies in their delivery.
- 5.104 Table 5.3 below sets out in more detail the steps that Network Rail Scotland has taken to progress each HLOS requirement.

Table 5.3 Network Rail's delivery of the Scottish HLOS requirementsKey: **G** On course **R** Not on course

Requirement	Progress made in year 2 of CP6	On course
<p>Passenger journey time improvements: develop a plan to deliver the passenger journey time requirements to deliver a mile per minute target of 1.587 by December 2019 and 1.576 by December 2024.</p>	<ul style="list-style-type: none"> COVID-19, the derailment at Stonehaven and delay of HST Global Positioning System (to help monitor movement of trains) have hindered some of the route surveys that Network Rail Scotland had planned. In 2020-21, given the challenges noted above and also multiple timetable changes throughout the year as restrictions changed, the journey time measure (ScotRail average timetabled minutes per mile travelled) was re-baselined. 	G
<p>Passenger satisfaction: contribute to ScotRail NRPS targets for 'Overall satisfaction and How well the Franchisee dealt with disruption'.</p>	<ul style="list-style-type: none"> Due to COVID-19, the National Rail Passenger Survey was only conducted in Spring 2020, the Autumn 2020 survey was cancelled. Based on the Spring 2020 NRPS overall journey satisfaction in Scotland was 90%. 	G
<p>Quality of station services: Maintain stations to the average asset condition in place at 31 March 2019.</p>	<p>Work undertaken in 2020-21 included:</p> <ul style="list-style-type: none"> Eight footbridge refurbishments / repairs; and Seven franchised station platform refurbishments. <p>Network Rail Scotland delivered less than planned high footfall train shed refurbishments because of COVID-19 restrictions.</p>	G
<p>Freight journey times: increase the average speed of freight trains by not less than 10%.</p>	<ul style="list-style-type: none"> Network Rail continue to look for opportunities to improve journey times (including, for example reviewing freight flows and paths to help identify how average freight speed could be improved). The baseline average speed for CP6 was 37.25 miles per hour. The baseline reflects the average scheduled speed of all commercial freight trains between period 6 and 13 of 2018-19. In 2020-21, average speed was 4.8% ahead of baseline. 	G

Requirement	Progress made in year 2 of CP6	On course
<p>Freight growth: Facilitate growth of 7.5% in rail freight traffic carried on the Scotland route by end of CP6 as measured by net tonne miles.</p>	<ul style="list-style-type: none"> • In 2020-21, rail freight in Scotland delivered 3.8 million tonnes of goods and saved 47 million vehicle miles which equates to 172 thousand lorries. Network Rail Scotland established 216 new services and trials which resulted in 5.3m net tonne miles. • At the end of 2020-21 Network Rail was 7.2% behind its growth target at 387,680 kilometres per net tonne miles. However Network Rail Scotland remains confident in its plans to achieve its end of CP6 target. • We have seen clear evidence of Network Rail Scotland engaging with the industry to encourage freight growth. The Victa Rail freight timber trial in 2020-21 is a good example of this. 	<div style="background-color: white; border-radius: 50%; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> G </div>

Growing rail freight in Scotland – Victa Rail freight timber trial

Throughout the year Network Rail Scotland has demonstrated collaborative engagement with the freight industry. One example of this is a trial last August by Victa Rail freight, a specialist freight train operator and industry support service provider.

Victa Rail freight successfully completed a six week timber trial between Georgemas and Inverness. This involved up to three trains a week transporting timber south. [It was reported that transporting the equivalent volume of timber by road would have needed around 250 lorries driving around 55,000 miles.](#)

Completion of the trial was viewed as a great success by the freight industry. It was the first time in over a decade that timber was moved by rail in Scotland, and it not only helped show that movement of timber in Scotland by rail is possible, but it also provided both the freight industry and Network Rail Scotland with many lessons to learn for future operations.



Requirement	Progress made in year 2 of CP6	On course
<p>Asset data quality: Consistently maintain data quality at an A2 standard as a minimum across all asset data categories.</p>	<ul style="list-style-type: none"> • A2 Data Quality year end closing position for 2020-21 is 97.79% overall compliance, this is a 2.26 percentage point improvement from 2019-20. All discipline categories show an increased improvement in compliance from 2019-20 to 2020-21. • Network Rail Scotland has maintained data quality at an A2 standard for the following disciplines: Drainage; Earthworks; Electrical Power; Signalling; and Structures. • Buildings (94.12%) and Track (90.91%) remain below the minimum of 95% compliance; however we note that the position on both has improved in 2020-21. • The region has assured that there is sufficient focus on this. Discussion around A2 Data Quality forms part of the four weekly discussions at the Asset Data Governance meeting between the Route Support Team in Asset Management and the Systems Support Managers in the Maintenance Delivery Units. Further focused discussions around A2 Data Quality are discussed with the wider audience (Asset Management and MDU) at the Route Asset Management Plan review meetings which are held on a quarterly basis. 	<div style="background-color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">G</div>
<p>Carbon emissions reduction and climate change: Develop and deliver a metric for continuous carbon emissions reductions which is normalised to cover passenger and freight volumes and monitor this throughout CP6.</p>	<ul style="list-style-type: none"> • Before the start of CP6, Network Rail Scotland developed metrics for continuous carbon emissions reductions and to reduce overall emissions and traction and non-traction energy use by the end of CP6. • Throughout 2020-21, Network Rail Scotland has continued to supply ORR and Transport Scotland with quarterly updates on these environmental metrics. • Network Rail Scotland has exceeded its energy consumption targets. Restrictions associated with COVID-19 have impacted Network Rail's energy and carbon use. This is largely down to closure of commercial units in stations and only essential staff using Network Rail's main offices and depots. 	<div style="background-color: white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">G</div>

Requirement	Progress made in year 2 of CP6	On course
<p>Network capability and capacity: Develop and implement a gauging strategy which seeks to deliver the Scottish Gauge Requirement. All Scottish routes are maintained to be capable of accommodating the gauge of all locomotives and passenger rolling stock.</p>	<ul style="list-style-type: none"> • Since publication of the HLOS Network Rail Scotland has taken a number of steps to improve gauging in Scotland. Examples include dedicated resource (Scotland Gauging Engineer position created and recruited), and new equipment for maintenance teams (i.e. laser sweeps for delivery unit platform surveys). • In terms of identifying the specific steps that Network Rail Scotland needed to deliver the Scottish gauge requirement, it commissioned the Safety, Technical and Engineering team to deliver the analysis that the Scottish Gauge requirement asks for within the HLOS. The analysis covered 26,571 structures and 53 vehicles and gauges. • We did not include funding for this requirement in our Final Determination, as the costs were not known. We said that once better cost estimates were available, Network Rail Scotland should present a funding case to Transport Scotland and it would have to decide whether to provide these funds. Network Rail Scotland wrote to Transport Scotland in September 2019 to request funding. • In October 2020 Transport Scotland asked Network Rail Scotland to revisit the scope of this requirement and to date this has not yet been agreed. 	<div style="border: 1px solid white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">R</div>
<p>Development of an efficient electrification specification</p>	<ul style="list-style-type: none"> • Submitted to ORR and Transport Scotland at the start of CP6. 	<div style="border: 1px solid white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">G</div>
<p>Depots and stabling strategy: Network Rail must develop and implement a depot and stabling capability plan for the 15 years from 2019 to 2034.</p>	<ul style="list-style-type: none"> • Plan in place for year one. Plan was developed with train and freight operators. • Network Rail intends to keep this strategy as a live document and it will continue to evolve. This is to capture future changes, for example from the whole system signalling strategy, future electrification schemes (linked to decisions that Transport Scotland will take to support carbon emission reduction targets) and Transport Scotland's rolling stock strategy. • Work on the strategy had paused to allow these other strategies to mature. Network Rail Scotland has recently restarted its depot and stabling working group and it intends to refresh the strategy to take account of what is now known about the decarbonisation action plan and future rolling stock plans. 	<div style="border: 1px solid white; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">G</div>

Requirement	Progress made in year 2 of CP6	On course
<p>Support for the rural economy and tourism: Network Rail Scotland must have appropriate processes in place to support requirements of charter, tourist and other special trains. It should also ensure vegetation on rural and scenic routes should be controlled and maintained.</p>	<ul style="list-style-type: none"> At the start of the control period, Network Rail Scotland worked with Charter train operators to review charter contracts and industry track access rights to investigate if there were options to protect a limited amount of capacity for charter train operation. Network Rail Scotland had agreed proposed changes with industry however it has since confirmed that there is currently no appetite in the wider industry to pursue those proposals further. In 2020-21, Network Rail Scotland completed 100% of its plans to clear vegetation on the areas that it had deemed to be scenic. 	G
<p>Creation of a Whole System Signalling Strategy: Network Rail Scotland is required to create a long-term, whole system signalling strategy for Scotland incorporating its existing signalling strategy, the elements of the Great Britain Digital Rail Strategy applicable to Scotland and rolling stock plans.</p>	<ul style="list-style-type: none"> In PR18 we said that in response to Transport Scotland's concerns around future implementation of Digital Rail, we required Network Rail Scotland to create a long-term, whole system signalling strategy for Scotland incorporating its existing signalling strategy, the elements of the Great Britain Digital Rail Strategy applicable to Scotland and rolling stock plans. Network Rail Scotland has demonstrated good progress against this requirement over the past year. Recognising the multiple drivers and outputs that the signalling system enables as part of the wider railway system, Network Rail Scotland has established a number of workstreams. These cover areas including: safety, performance, operations, efficiency, maintainability, and innovation and technology. Each workstream has a dedicated working group and Network Rail Scotland has shown that it continues to progress each of the workstreams and engage with industry. 	G

Network Rail Scotland has exceeded its efficiency target but financially underperformed

Network Rail Scotland has exceeded its 2020-21 efficiency target, but we remain concerned about the robustness of its plans to deliver future years' efficiencies. Network Rail Scotland has financially underperformed in 2020-21 by £54 million, largely due to the impact of COVID-19.

Planned efficiency targets have been exceeded

- 5.105 We monitor the efficiency of Network Rail's core business activities: operations, support, maintenance and renewals. Network Rail Scotland has delivered £65.6 million of efficiency improvements in 2020-21, ahead of the £64.1 million of efficiency improvements budgeted in its delivery plan for the year.
- 5.106 Network Rail Scotland is forecasting to deliver between £289 million and £474 million of efficiency improvements in CP6, with a central forecast of £396 million. This is ahead of its £358 million efficiency target for CP6.
- 5.107 During the year we conducted a review of a sample of Network Rail Scotland's efficiency plans. The purpose of our review was to understand how the region was planning and reporting on efficiencies, and the robustness of its assurance processes for assessing business changes and efficiency calculations.
- 5.108 While Network Rail Scotland was able to provide robust evidence to support some efficiencies, we did not receive all the evidence we requested. Also, some efficiencies were found to be based on insufficiently detailed calculations which were not adequately supported by explanations of the business changes being made. In response to our concerns, Network Rail Scotland has developed an efficiencies action plan, which it is progressing. We continue to engage with the region on this and are receiving periodic updates on its progress against our concerns.
- 5.109 Network Rail Scotland's largest efficiency grouping in 2020-21 was 'Improved contracting strategies' (£21.8 million). This included efficiencies generated from workbank planning to make best use of framework contractors to deliver work at the best rates.
- 5.110 Significant efficiencies were also generated through categorisation 'Other' (£15.6 million), which included significant performance related pay savings as well as efficiencies identified from changes to the region's property strategy.

Efficiencies case study – Edinburgh Control System Renewal

The signal control system at Edinburgh Signalling Centre requires renewal to avoid obsolescence. This project will deliver significant efficiencies across CP6, most notably through 'early contractor involvement', where early engagement with the contractors has allowed savings to be generated from earlier awarding of work, reducing time spent on preliminary works and better integration between the contractors and Network Rail Scotland.

Network Rail Scotland is projecting a total saving on this project of £34 million for the whole control period, with £9 million of this being recognised in 2020-21.

5.111 There can be no let-up in the focus that Network Rail Scotland needs to put on delivering efficiency improvements in CP6. In addition to the £3.5 billion of efficiency improvements we challenged Network Rail to deliver in CP6, of which £358 million are to be delivered in Scotland, Network Rail set itself a stretch target to deliver an additional £0.5 billion of efficiencies in CP6, of which £40 million are to be delivered in Scotland. In 2020-21, Scotland did not deliver on the year's stretch target.

Network Rail Scotland financially underperformed in 2020-21

5.112 Overall, Network Rail Scotland financially underperformed its CP6 delivery plan in 2020-21.

Table 5.4 Network Rail Scotland's financial performance in 2020-21

£ million	Full year budget	Full year forecast	Budget variance better/(worse)	FPM out/(under) performance
Turnover	380	371	(9)	(26)
Schedules 4 and 8	(27)	(21)	6	7
Operations and support	(156)	(157)	(1)	(1)
Maintenance	(181)	(186)	(5)	(1)
Profit and Loss	16	7	(9)	(21)
Renewals	(467)	(477)	(10)	(30)
Enhancements	(215)	(162)	53	(3)
Total				(54)







Source: Network Rail

5.113 As shown in Figure 5.4 above, FPM was £54 million behind delivery plan due to turnover underperformance, partly offset by [Schedule 8](#) outperformance, both attributable to COVID-19 and its impact on rental leases and train performance. There was additional underperformance in renewals, most notably in track where the pandemic caused significant disruption to high output track renewals in the early part of the financial year, driving up costs.

Mixed performance of leading indicators

5.114 Poor planning for CP5 caused a number of the problems with Network Rail's renewals delivery and efficiency. To avoid a repeat of these issues, we have required Network Rail to demonstrate that it is better prepared to deliver efficiently in CP6. This section provides an update on Network Rail Scotland's preparations to deliver efficiently in 2021-22.

Table 5.5 Leading indicators of efficient delivery in 2021-22, Network Rail Scotland

Region	Renewals Planning		Securing Engineering Access		Maintenance Requirement 2020-21	
	Work authorised in Oracle	Target	% of required access booked	Target	Current headcount	Target
Scotland	56% 	77%	96% 	100%	101% 	107%
National	75% 	81%	98% 	76%	97% 	99%

Source: Network Rail

5.115 For Network Rail Scotland, 56% of renewals projects for 2021-22 (by value) had completed detailed designs and had received financial authorisation for delivery. This was below the internal target of 77% and below the 75% national average. Network Rail Scotland is behind target in the authorisations of all asset types, although track authorisations approved since the year end reporting was produced have improved this position to 69% overall. A large portion of the outstanding authorisations relate to the Carstairs renewal project, which is of particularly high value, so we will monitor approval of this going into 2021-22.

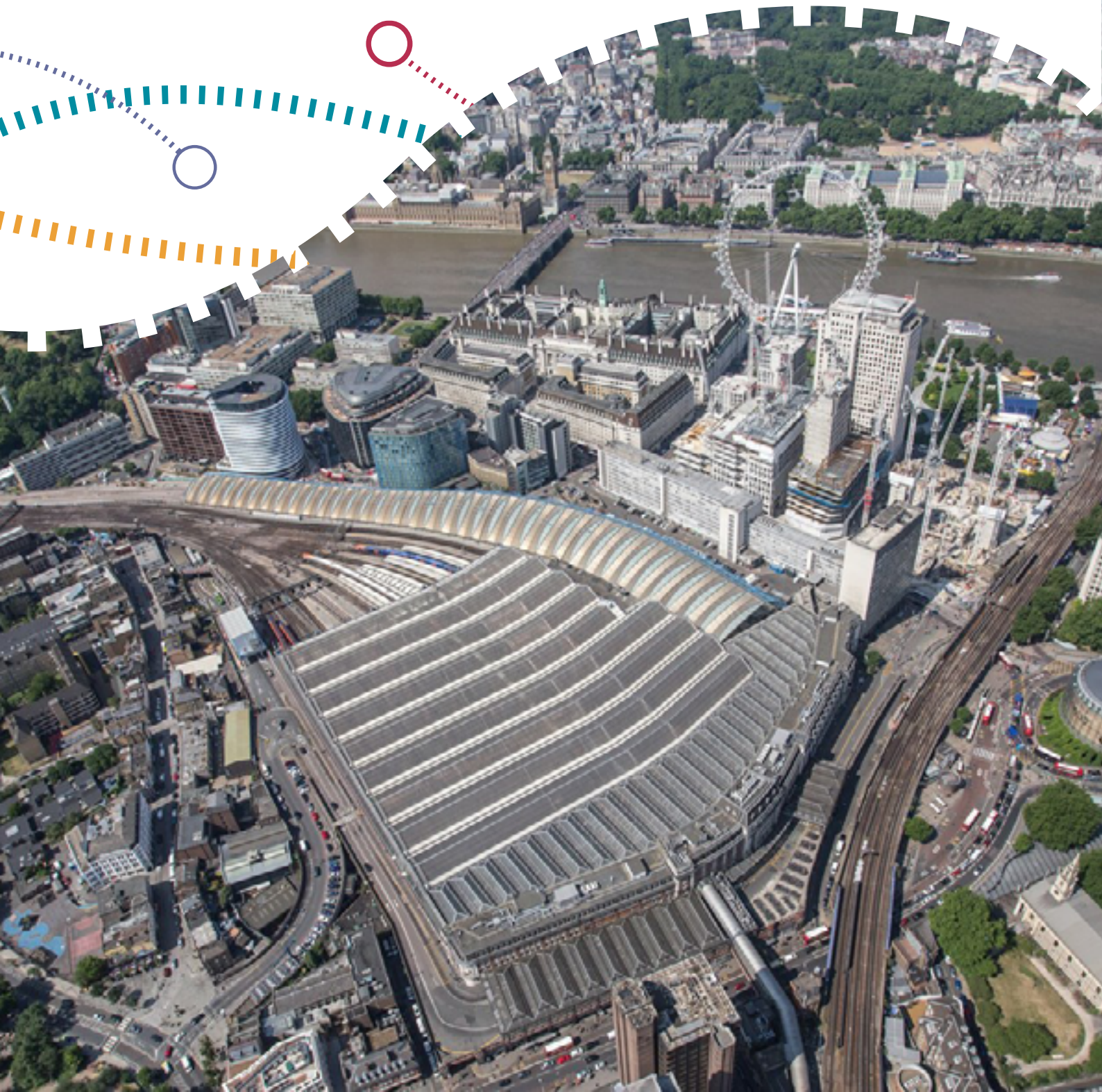
5.116 Financial authorisation only provides a partial picture of renewals workbank planning. Remits issued and accepted by the supply chain shows progress made at an earlier stage of the planning lifecycle. Network Rail Scotland has issued and its supply chain accepted, 98% of planned renewals in 2021-22, providing more confidence in its readiness to deliver renewals.

5.117 Network Rail Scotland has missed its internal target for booking disruptive access for planned engineering work in 2021-22, with 96% booked against a target of 100%. While Network Rail Scotland was outperforming against this metric during the year, recent decisions to cancel or rearrange year three work to keep the railway open for leisure travel have been disruptive.

- 5.118 Network Rail Scotland is currently operating with a maintenance staffing level of 101% of its overall headcount requirement. There are no concerns around this metric.
- 5.119 Network Rail Scotland considers that only 32% of its 2021-22 target efficiency will be achieved from projects that have already been delivered or have clear project plans. The remaining 68% of 2021-22 target efficiencies have no clear project plans or have plans in place but low confidence in delivery. This contrasts starkly with the same time last year when this metric was at nearly 60%. Part of this shortfall relates to the additional stretch target for 2021-22, discussed above, but it reaffirms our concern with Network Rail Scotland's ability to deliver on its efficiency target in the later years of CP6. In response to this concern, we have stepped up our monitoring of the region and are requiring more frequent reporting on how the region is implementing improvements.
- 5.120 This analysis is based on draft financial information provided by Network Rail, comparing its financial performance against its annual budget. We will report more fully on Network Rail's financial performance against its CP6 Delivery Plan in our 'Annual Efficiency and Finance Assessment', due for publication in July 2021.

Annual Assessment of Network Rail April 2020 to March 2021

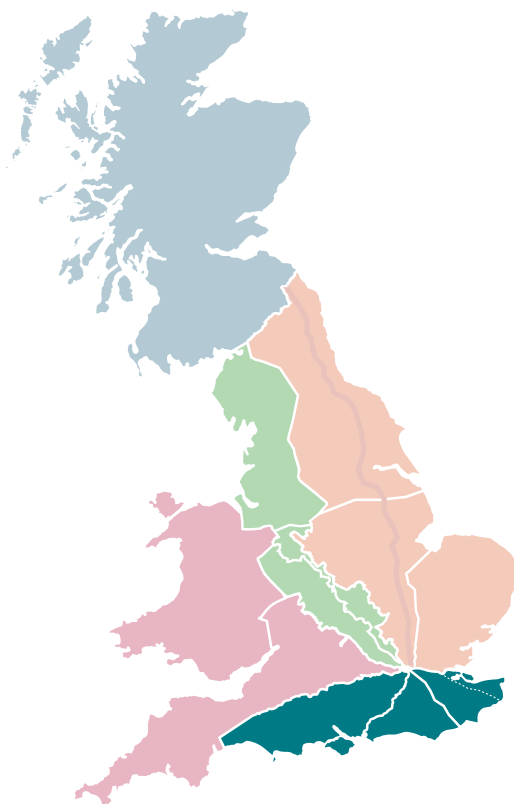
Southern Region



6. Network Rail’s Southern region

Overview

6.1 Network Rail’s Southern region links major towns, cities, ports and freight terminals in the South of England. This chapter focuses on Network Rail’s delivery in the region’s three routes, Sussex, Kent and Wessex, but it does not cover Network Rail High Speed.



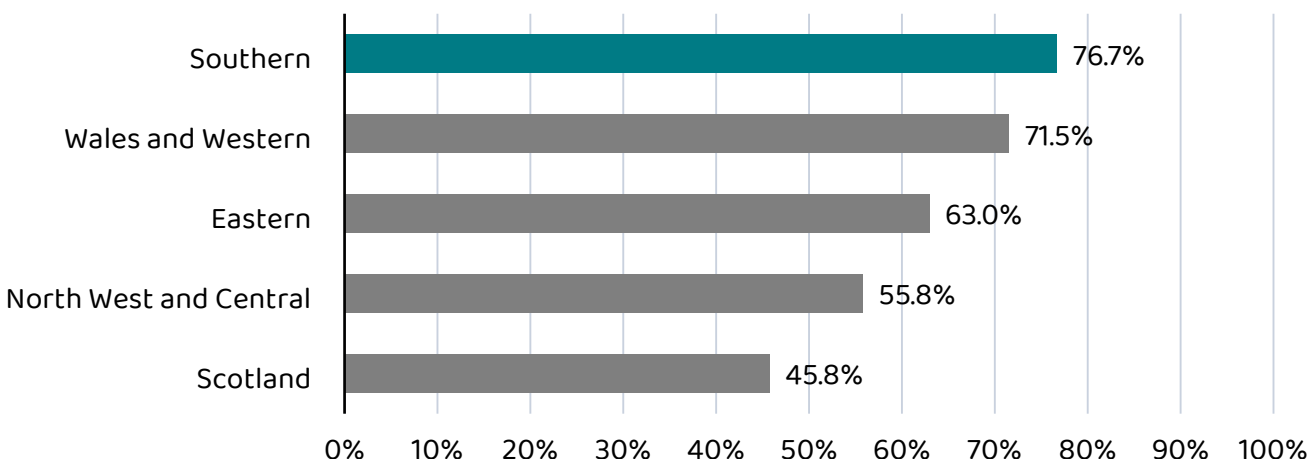
Overall performance in 2020-21

6.2 Network Rail measures its company-wide and regional performance in core areas of its business using sets of metrics and internal targets.

6.3 It captures these in national and regional scorecards. Each region’s scorecard is based on Network Rail’s four strategic themes (on the side of passenger and freight users; easy to engage with, an efficient and dependable partner; proud to work for Network Rail; and instinctive industry leader) and it includes our consistent measures and locally-driven customer measures and targets. We use scorecards as one way to hold Network Rail to account for its performance.

6.4 Performance for each scorecard measure is expressed as a percentage achievement between zero and 100, with 50% being on target for the majority of measures. As shown in Figure 6.1, in 2020-21, the Southern region achieved 76.7% on its scorecard, the highest score of the five regions.

Figure 6.1 Overall scorecard performance by region, 2020-21



Source: Network Rail regional comparison scorecard

- 6.5 As with other regions, Southern's performance in 2020-21 must be viewed in the context of the coronavirus (COVID-19) pandemic. The region and its staff worked hard to keep those who need to travel and freight moving during periods of lockdown.
- Passenger and freight train performance has been strong throughout the year. The Southern region has delivered robust performance improvement plans to help sustain this once passengers return to the railway in greater numbers.
 - The region managed its assets well, with fewer infrastructure failures in 2020-21 than the previous year. We have identified how the region can improve its compliance with the examination of structural assets.
 - Sadly, two members of Network Rail's workforce suffered fatal accidents during the year: a machine operator at a depot in Eastleigh and a track worker at Surbiton. The region has responded to our Track Worker Safety Improvement Notices, with Route Services colleagues also understanding improvement opportunities at sites they operate. This drive towards safer working must continue.
 - The Southern region has met its financial performance target despite the impact of the pandemic. It has also achieved its efficiency target.

Network Rail's train performance in 2020-21

Passenger train service performance in the Southern region has been significantly better than target. Freight train service performance has also improved over the past year. The region has made good use of the Performance Innovation Fund (PIF) to secure ongoing improvements and it has demonstrated a greater level of maturity to manage performance risks.

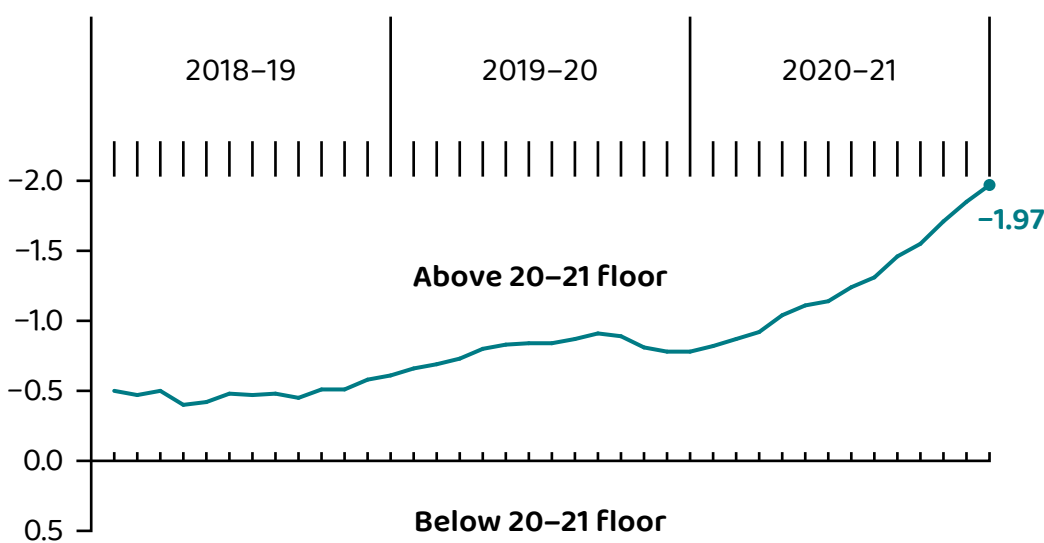
- 6.6 We use a range of metrics to assess overall train performance within the regions but focus on two consistent measures to compare performance across regions:
- a consistent region measure for passenger services known as CRM-P. This is the delay minutes to passenger services attributed to Network Rail from incidents occurring in each Network Rail Region, per 100 train kilometres. A lower score reflects better performance; and
 - a freight delivery metric for each region, known as FDM-R. This is the percentage of commercial freight services that arrive at their planned destination within 15 minutes of their booked arrival time, or with less than 15 minutes of delay caused by Network Rail or another operator that is not a commercial freight operator.
- 6.7 We monitor delivery of these measures for each region against an annual target and a regulatory minimum level of performance, referred to as the regulatory floor. This minimum level of performance signals the point at which we are highly likely to consider a formal investigation.

Passenger train performance has exceeded target

6.8 In 2020-21, the Southern region's target for CRM-P was based on it achieving 2.82 minutes of delay per 100 kilometres of train travel. It finished the year 50% better than target, at 1.40 minutes of delay. A decreased level of train services and lower passenger numbers due to the pandemic were contributing factors to good performance in the Southern region and across the whole network.

6.9 The region has shown sustained improved performance over the last three years, and CRM-P performance was 1.97 minutes above the regulatory floor at the end of 2020-21.

Figure 6.2 Passenger train performance (Network Rail caused delay minutes normalised, CRM-P) – variance to regulatory floor for Southern region, 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

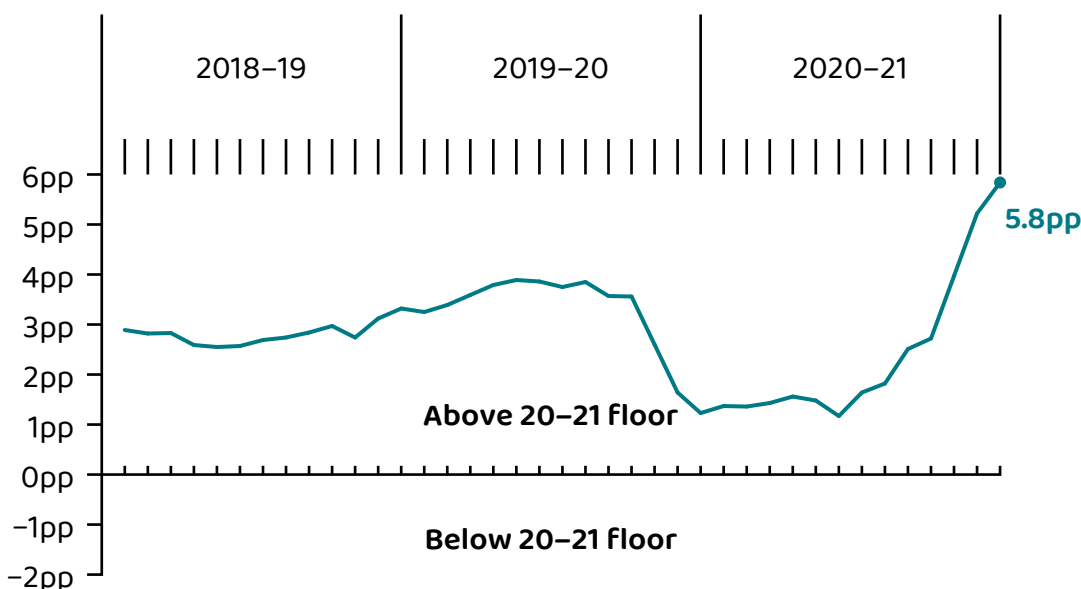
6.10 The reduced number of train services operating and lower numbers of passengers travelling due to the pandemic were major factors that contributed to high performance across the whole network. Passenger performance began to improve during the first national lockdown, and has remained strong throughout the year, including periods between national and local lockdowns.

6.11 Passenger train operators in the Southern region continued to operate a high proportion of their pre-pandemic timetables to meet passenger demand in the London area once the pandemic restrictions were eased, maintaining good levels of performance.

Freight train performance has improved

6.12 The Southern region exceeded its 2020-21 target for FDM-R, finishing the year at 95.1%, against a target of 93.4%.

Figure 6.3 Freight performance (FDM-R), variance to regulatory floor for Southern region, 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

6.13 Following our concerns about poor freight train performance, we engaged with the region in early 2020, requiring it to take steps to improve. Improvement plans were developed and implemented by the region, particularly in the Wessex route. Improvements in freight train service performance were delivered, including the reduction of Temporary Speed Restrictions (TSRs) by more than half during 2020. Additional controller posts were introduced to implement Managing Freight Services During Disruption protocols, providing dedicated train service performance recovery plans for freight trains. This increased focus has dramatically improved freight performance within the region.

Southern region has excellent performance management capability

6.14 Train service performance, as measured by quantitative metrics, has been exceptional since the start of the pandemic. To understand how Network Rail is delivering continuous improvement in performance, we have placed greater focus on a qualitative assessment. This includes its performance management capability and its plans to sustain good performance once passengers return to the rail network.

6.15 During 2020-21, Network Rail has actively worked to embed improved performance management capabilities across its business. The Performance Improvement Management System (PIMS) is a whole-industry programme looking at the capability of the industry to improve train performance. Network Rail has taken a leading role in this area, producing and sharing a range of materials and processes for the industry to follow to support delivery of improved train performance. The routes within the Southern region continue to benefit from performance teams resourced jointly with train operating companies.

- 6.16 The region has demonstrated that it has improved its performance management capability using the Risk Management Maturity Model for Performance (RM3P) framework, a self-assessment tool focusing on the processes supporting train performance improvements. This tool looks at five areas: policy, governance and leadership, monitoring, audit, and review.
- 6.17 The region has worked to ensure timetables are optimised for performance, and that learning from the timetables implemented during the pandemic lockdown periods is applied. For example, on the Wessex route, Network Rail and South Western Railway shared train running information such as Global Positioning System data acquired from the train fleets. This helped to identify locations where the timetable should be amended in order to support performance improvements. The effect of changes made to the timetable will become clearer when passengers return in greater numbers.
- 6.18 The Southern region has provided strong regional leadership and governance to its routes and with train operators. Policies produced by the region are cascaded to the routes to prevent duplication whilst at the same time they allow for local variances to be made. The region must continue its good work on PIMS and avoid a return to reactive management of performance.
- 6.19 The Southern region has provided strong regional leadership and governance to its routes and with train operators. Policies produced by the region are cascaded to the routes to prevent duplication whilst at the same time they allow for local variances to be made. The region must continue its good work on PIMS and avoid a return to reactive management of performance.
- 6.20 The quality of applications being made for the Performance Innovation Fund (PIF) has varied between the routes. Several schemes approved for funding include using train-borne cameras to monitor the conductor rail and Overhead Line Equipment (OLE) within the Sussex route. The cameras help to detect the deterioration of the infrastructure or overheating of the electrification equipment, which can lead to failure and disruption. In addition, within the Sussex route, an application has been devised to help notify station staff when a train is taking longer than its booked time in platforms, which will help reduce station dwell times.

Case study – PIMS on the Sussex route

The Sussex route, jointly with the passenger train operator Govia Thameslink Railway (GTR), has progressed PIMS consistently in 2020-21. A move away from the reactive management of performance, to a more standardised and predictable form of risk management, has been facilitated by fewer trains operating and lower passenger numbers travelling throughout the continuing pandemic. Golden corridor weeks have been instigated on the Sydenham corridor and through the Thameslink core, where maintenance teams are given more access to the railway in longer blocks of time which are agreed in advance with train operators. This greater access means issues with the infrastructure can be resolved at pace, enabling longstanding performance issues such as Temporary Speed Restrictions (TSRs) in place due to the condition of the infrastructure, to be removed. This demonstrates a whole system approach to performance.

Capacity and access to the network

- 6.21 We ensure that passenger and freight train operating companies have fair access to the rail network to make best use of capacity. If a train operator wants to access the national railway network, it needs to secure a track access contract with Network Rail. Where operators and Network Rail cannot reach agreement, they can appeal to us to use our statutory powers to direct a decision on track access. Train operators and Network Rail need to plan these contracts in sufficient time so they can produce robust timetables to ensure other operators can plan their own use of capacity.
- 6.22 Freight operators have been particularly concerned this year by Network Rail's approach to selling access to the network for some of the heaviest freight trains. Generally, Network Rail sells access rights for up to 10 years. This is not consistent with Network Rail's process for agreeing use of the network by trains which are heavier than would usually be permitted. Under this process dispensations are granted for up to two years. In some cases, Network Rail has curtailed its sale of access rights for these heavy trains in line with the dispensations that engineers were willing to grant. This has been a particular issue in the Southern region where there are a large number of ageing metallic bridges. Network Rail has convened a number of industry working groups, and we are engaging with Network Rail and the industry on this issue. More detail can be found in the Freight and National Passenger Operators chapter.
- 6.23 In line with Network Rail's other regions, Southern needs to reduce the number of applications submitted and approved less than 12 weeks before a timetable change to support robust industry planning.

Asset management results were good

The Southern region has managed its assets well, with all asset categories exceeding their reliability targets and providing improved sustainability. All renewals volumes exceeded plan this year. More work is required to improve the management of the region's structures assets and to improve the region's resilience to cases of severe weather.

Asset sustainability and reliability is positive

- 6.24 Network Rail needs to secure the maintenance, renewal and replacement of the network so it is safe and operable and to do so in a way that is sustainable and efficient over the long-term. In Control Period 6 (CP6), we test this using a measure of asset sustainability, the Composite Sustainability Index (CSI). We have agreed Network Rail's target for the end of CP6, based on a defined level of change since the end of Control Period 4 (CP4).
- 6.25 The Southern region finished 2020-21 with a CSI score of -2.6%. This represents a decrease in overall asset sustainability of 2.6% since the end of CP4. The region is in line with the agreed trajectory for CP6, which is to end the control period with a CSI of -4.1%.

6.26 However, as this measure of sustainability is slow-moving, because of the very long operational life of railway assets, we also monitor a region's asset failure rates and their impact, volumes of maintenance and renewals delivery, and other asset specific measures, which can be used as a proxy for longer-term sustainability. We assess a number of these against a region's internal scorecard targets including asset failure data and asset reliability measures, such as Composite Reliability Index (CRI), which is a measure of the short-term condition and performance of assets. CRI measures the percentage change in reliability since the last year of Control Period 5 (CP5).

Figure 6.4 Composite Reliability Index (CRI) and contribution by asset type, Southern region, Period 1 to 13 2020-21

Key: ■ Above target ■ Below target, but above baseline ■ Below target and baseline

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13
CRI	11.1%	12.7%	13.6%	15.4%	15.2%	15.2%	15.5%	16.7%	18.3%	17.9%	18.7%	20.7%	22.6%
Track	6.2%	6.6%	6.2%	6.4%	5.7%	5.6%	5.5%	4.9%	4.8%	4.3%	4.4%	5.1%	6.0%
Points	0.0%	-0.1%	-0.1%	0.1%	0.4%	0.4%	0.2%	0.1%	0.3%	0.1%	0.3%	0.1%	0.2%
Signalling	3.1%	3.6%	4.0%	4.7%	5.0%	5.4%	5.7%	6.3%	6.6%	6.1%	6.8%	7.4%	7.7%
Buildings	3.3%	3.8%	4.2%	4.4%	4.6%	4.7%	4.7%	4.8%	5.2%	5.5%	5.7%	6.3%	6.4%
Electrical Power	-1.1%	-1.0%	-0.7%	-0.3%	-0.6%	-0.8%	-0.7%	0.3%	1.0%	1.6%	1.2%	1.3%	1.8%
Structures	0.2%	0.2%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	0.3%	0.2%
Telecoms	-0.5%	-0.5%	-0.4%	-0.3%	-0.3%	-0.2%	-0.1%	0.0%	0.2%	0.2%	0.2%	0.3%	0.3%

Source: ORR analysis of Network Rail data

6.27 In 2020-21, the Southern region experienced fewer service affecting failures than in the previous year, driven by the impact of the pandemic. The region has managed the reliability of its assets well, performing significantly better than target and finishing the year at 22.6% against a target of 8.4% for CRI. This means asset reliability in 2020-21 was 22.6% better than it was in the final year of CP5.

6.28 In particular, the reliability of signalling and buildings assets was very strong. There has been a progressive improvement in signalling reliability since the start of CP6, and a reduction in general wear and tear of the asset during periods where fewer trains were running due to the pandemic.

Renewals volumes largely delivered despite COVID-19

- 6.29 We scrutinise whether Network Rail is delivering vital asset renewals work, for example renewing its track, and if this is in line with planned volumes for each year of the control period.
- 6.30 As part of our assessment we look at Network Rail's delivery of effective volumes. This refers to the volume of work undertaken in seven key areas, attributing weightings based on the life added to the asset by each type of work. For example, in the area of plain line track, a full renewal would be given a higher weighting than replacing one individual element.
- 6.31 Despite the challenges of the pandemic, the delivery of renewals by the Southern region has been very good. The region outperformed its target in all seven key effective volumes renewals categories. More earthworks renewals were completed than planned, due to a large amount of reactive works.

Table 6.1 Effective volumes (renewals), Southern region, 2020-21

Percentage completion is based on actual volumes delivered against planned volumes. A percentage completion in excess of 100% indicates delivering more than the planned volumes.

Asset	Actual	Plan	% complete
Conductor Rail Renewal (km)	23	21	▲ 110%
Earthworks	107	77	▲ 138%
OLE re-wire and mid-life refurb (km)	n/a	n/a	n/a
Track – Plain Line	246	221	▲ 111%
Track – Switches and Crossings	112	100	▲ 112%
Signalling	208	187	▲ 111%
Structures – Bridges	2,066	1,867	▲ 94%
All assets (weighted total)			▲ 115%

Source: ORR analysis of Network Rail data

- 6.32 Some renewals work is not captured through the effective volumes measure, so we also look at wider delivery. The region's wider renewals performance was also good, although electrification and fixed plant ended the year under target. This was due to underperformance on negative short circuit devices and track feeder switches. We will continue to monitor renewals volumes through our regular reviews of Network Rail's delivery plan updates.

Structures examinations compliance

- 6.33 One area of concern, which we have been seeking continuous progress on since 2011, is compliance with structures examinations. If examinations of structures, such as tunnels, bridges and culverts are not carried out, the condition of the asset is not fully known and faults may be undetected or not competently assessed.
- 6.34 As part of our ongoing assurance activities, we identified a large number of non-compliant structures examinations across the network. By way of mitigation, Network Rail undertakes risk assessments on site where there is non-compliance, to better understand whether there are any associated safety risks.
- 6.35 In the Southern region at the end of 2020-21, there were 4,101 structures non-compliances; 34.6% of the regional portfolio. We do not have sufficient assurance from Network Rail that it has suitable plans in place, or is making adequate progress towards eliminating the overall non-compliance of examinations. We are taking action to ensure this is rectified and we will closely monitor Network Rail's progress and delivery. We are also commissioning an independent reporter to assess the non-compliance across the regions in more detail.

Table 6.2 Structures examination non-compliance, Southern region, 2020-21

Exam type	Site Examination Non-Compliance	Report Submission Non-Compliance	Evaluation Non-Compliance	Total Non-Compliance
Detailed	92	220	103	415
Visual	73	1,347	2,206	3,626
Underwater	7	47	6	60
Total	172	1,614	2,315	4,101
			% of regional portfolio	34.6%

Source: ORR analysis of Network Rail data

Metallic structures

6.36 [In our review of Network Rail's delivery plan updates](#) during 2020-21, we challenged the company on its management of the deterioration of its metallic structures. We have seen some signs that Network Rail is looking at this area in more detail. In the Southern region, to ensure its agreed budget and related efficiencies are delivered, a review is being undertaken on the project costs, particularly on the reconstruction of metallic underbridges. We hope this will enable the region to understand the key drivers of project costs, and in turn determine whether changes in scope or its delivery mechanisms are required for similar work in future years. However, this remains an area of concern and will be the focus of a Targeted Assurance Review (TAR) in the coming year. TARs are risk based assurance reviews used to provide insight into ongoing and emerging risks and issues within Network Rail.

Tenanted arches



Retail units in arch spaces, London Bridge.

- 6.37 In last year's Annual Assessment we discussed how, in 2018, Network Rail sold leases to commercial spaces under railway arches to a third party, Arch Co. Many of the arches sold under this agreement are within the Southern region.
- 6.38 Last year, Network Rail advised us that it was being denied access on some occasions to the arch space in order for it to carry out inspections and undertake repair work where required. We understand that access could be obtained if lease conditions were enforced and therefore it is unclear why such mechanisms were not being secured.
- 6.39 This continues to be a matter of concern for us. We have met with the Southern region and Arch Co and begun to see more positive signs of engagement between both parties, with confirmation that the overall backlog of examinations for tenanted arches will be eliminated by April 2022.
- 6.40 The delivery plan will be managed at a national level and representatives from the Southern region will be present at the regular meetings with ORR and Arch Co. A full detailed programme in a trackable format will also be shared with us.

Weather resilience

- 6.41 Our PR18 Final Determination sets out the importance of Network Rail managing weather resilience and the impact of climate change. We recognise the wide range of work Network Rail has undertaken in this area to date.
- 6.42 The first two years of CP6 have seen an increased frequency and severity of severe weather events, leading to a sudden rise in the number of earthworks failures across all of Network Rail's regions.
- 6.43 The Southern region experienced a large number of earthworks failures in winter 2019-20 due to significant wet weather and high monthly rainfall totals that resulted in saturated ground. Similar severe weather events occurred during winter 2020-21, leading to high numbers of earthworks failures for two consecutive years.
- 6.44 The TARs we have completed this year found positive examples of weather resilience schemes for earthworks and drainage. In particular, the Southern region is investing in high specification renewals at some very challenging sites, which may have been considered too expensive to renew in previous control periods. For example, the soil cutting at Barnehurst, over 1.5 kilometres along a busy London commuter line, was renewed. Since it was originally constructed in 1895, there have been 14 major landslips. The final cost of the project is expected to be more than double the national average for cutting renewals but this work will provide greater resilience for the railway during severe weather events.
- 6.45 However, the Southern region has also had to deliver a large number of reactive projects in the first two years of CP6, to repair landslips. Because of this, the region is projecting to spend more than double its planned earthworks funding for CP6. We have raised concerns with Network Rail that there will be insufficient risk funding to cover this and we will continue to monitor this issue during our regular reviews of the region's delivery plans.
- 6.46 The Southern region must use the experience of severe weather events over the past two years to implement further schemes to improve its weather resilience, including through its Weather Resilience and Climate Change Adaptation (WRCCA) plans.

Drainage assets

- 6.47 In 2020-21, we undertook a TAR into drainage asset knowledge across all regions. The Southern region has committed to locate and assess all of its drainage assets by the end of CP6. These surveys could identify many 'forgotten' assets which require maintenance, putting pressure on maintenance resources. We will continue to monitor the survey's progress as well as the impact on the region's maintenance resources.

Environmental Sustainability Index

- 6.48 Network Rail has introduced a new measure for environmental sustainability this year, the Environmental Sustainability Index (ESI). This composite measure is comprised of key environmental measures on waste, carbon emissions and non-traction energy use. The region met its ESI target for this year, achieving 86.0% against a target of 50%.
- 6.49 The temporary closure of retail units at stations, and to a lesser extent offices, has led to a reduction in carbon and energy usage, helping Network Rail to over achieve in this area.
- 6.50 Given this is a new measure, we are working with Network Rail to undertake an independent reporter study to assess the reliability and accuracy of the data. Once finalised the findings report will be published on [our website](#).

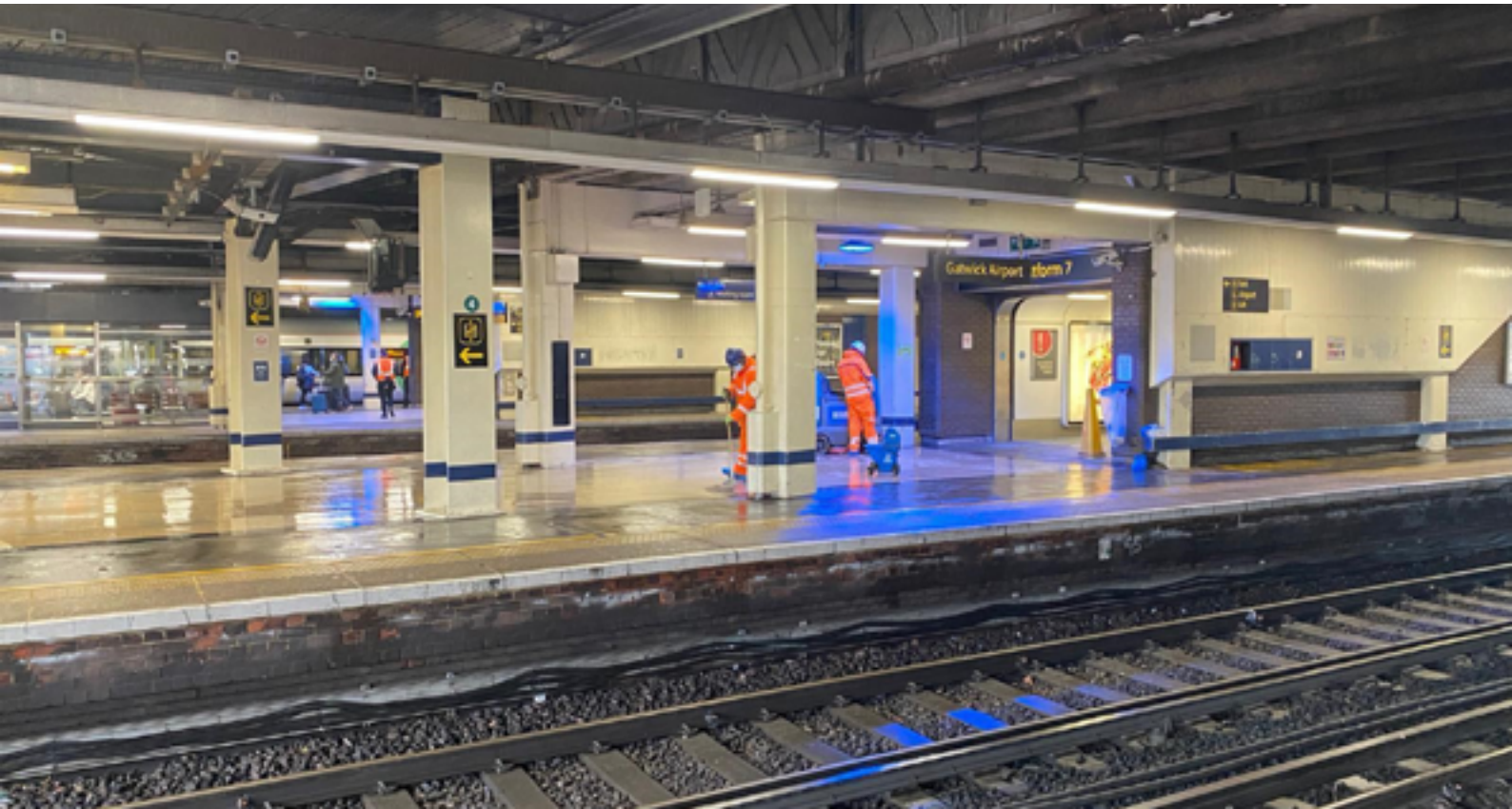
Biodiversity Action Plan

- 6.51 In December 2020 Network Rail published its Biodiversity Action Plan. This plan sets out its national strategy for enhancing biodiversity and wildlife on the lineside by 2024.
- 6.52 The plan focuses on protecting, managing and enhancing the condition of biodiversity assets through partnerships with stakeholders. Network Rail has set itself a series of key performance measures to achieve in CP6, including no net loss of biodiversity on its lineside estate, following best practice in habitat management and publishing annual reports on its activities and progress.
- 6.53 Last year, the Southern region worked closely with Natural England during the rebuilding of embankments at Cookspond, Sussex, and Edenbridge, Kent, to ensure the engineering work was completed successfully but sympathetically to animal habitats.
- 6.54 Network Rail's first Biodiversity Action Plan is a positive development. We will continue to monitor progress on its commitments and implementation within the regions and we will report on this in more detail in future Annual Assessments.

Asset management capability

- 6.55 We assess Network Rail's capability to manage its assets effectively by checking its compliance with an international standard which sets out best practice, ISO55000. It is important that the assets are managed in line with this standard and deliver the best outcomes for passengers and freight users.
- 6.56 In our PR18 Final Determination, we asked Network Rail's routes (now regions) to demonstrate they are operating in accordance with ISO 55001 by the end of March 2021, a date set by Network Rail's Technical Authority.
- 6.57 In 2020-21, we undertook a TAR of Network Rail's compliance to ISO 55001 and identified that the Southern region has implemented an asset management system in alignment to the standard. This met the PR18 requirement, and the region plans to obtain certification by November 2021.

Major enhancement projects are being delivered well



Gatwick Airport station

- 6.58 Network Rail has continued to deliver enhancement projects well across the regions, despite the pandemic, which presented a number of challenges to project delivery, for example limiting on-site work in confined areas and extending timescales required for driver training. Network Rail has worked well with its stakeholders to manage the uncertainty and reduce the impact on project delivery timescales.
- 6.59 There have been no material impacts on Network Rail's core operations, maintenance, and renewals plans and outputs, due to the delivery or changes to enhancement projects. There were no changes to the Enhancement Delivery Plan (EDP) milestones in 2020-21. The upcoming milestones in the EDP for the Gatwick Airport and Denmark Hill projects are on track for delivery.
- 6.60 The Brighton Main Line Upgrade aims to improve performance and increase peak trains per hour north of East Croydon station. A key project forming part of the programme is the Croydon Area Remodelling Scheme (CARS), which will remove a major bottleneck in South London. Development of this project continues.
- 6.61 Gatwick Airport station will be redeveloped to reduce pedestrian congestion at both platform and concourse levels. A new concourse will be built above the existing platforms five, six and seven, with five lifts and eight escalators that will connect to the existing passenger transport interchange and overbridges. The project is working through changes to scope due to increased security requirements but remains on schedule, with an entry into service date of March 2023. Phase one works were completed in November 2020.

Capital Investment Capability Framework

- 6.62 We completed our first review of Network Rail's regions' capability using the new Capital Investment Capability Framework (CICF) maturity assessment in July 2020. This is the first time a maturity framework has been developed that measures Network Rail's role in the early stages of projects in a complex cross-industry environment.
- 6.63 For the Southern region, our assessment concluded that it is operating as expected and at a level consistent with other Network Rail regions. We are monitoring the region's response where it has developed an improvement plan that incorporates and is aligned to current industry initiatives, such as Project SPEED (Swift Pragmatic Efficient Enhancement Delivery).

Greater focus on some areas of health and safety is required

Two Network Rail workers sadly lost their lives on the Southern region this year. The Southern region is committed to managing its safety risks effectively and strengthening its assurance.

- 6.64 Sadly, two Network Rail employees lost their lives in the region. Both accidents are still under investigation.
- One employee was killed in a machinery accident at the Eastleigh long welded rail facility (located in Network Rail's Wessex route, owned by the Southern region and operated by the Supply Chain Operations function in Route Services). As a result of this, Network Rail has begun a review of machinery guarding across the network.
 - A track worker was struck by a train at Surbiton station in February 2021. As a result of this the Southern region took the decision to accelerate its drive to eliminate lookout warning ahead of the date specified for compliance with earlier national Improvement Notices covering this practice July 2022.
- 6.65 The region has made great strides in track worker protection, prompted in part by the fatal accident at Surbiton. For example, there has been a very significant reduction in the amount of trackside work done using lookout warning. This acceleration is not without risks; moving to safer ways of working needs to be sustainable and ensure sufficient access opportunities are available to maintain a safe and reliable railway.
- 6.66 There remain significant challenges to overcome to achieve the aims of our Improvement Notices, in particular around securing line blockages and learning how best to deploy protection technology. The Southern region needs to ensure that there is sustained drive and commitment to continue to embed better ways of planning and delivering work.
- 6.67 Overall, health and safety performance is adequate with a mixed Lost Time Injury Frequency Rate (LTIFR) picture across Network Rail's Kent, Sussex and Wessex routes. The Southern region is also putting considerable effort into strengthening its arrangements for delivering consistent and effective assurance. We found evidence of generally effective asset management according to national standards.

- 6.68 Level crossing risks have remained unchanged from previous years and near misses also continue at similar levels. Overall, modelled risks have declined in line with the national trend, with fewer trains, Signals Passed At Danger and benign weather as possible contributory factors.
- 6.69 We have evaluated the Southern region's compliance against the Risk Management Maturity Model (RM3), an assessment tool to support management of safety risk on the railway. The region's management maturity is 'standardised' but with a significant element at 'managed' and some at 'predictable'. This suggests a broadly positive safety performance, but the region needs to be more consistent and avoid the weaknesses that can produce serious accidents.
- 6.70 Further information on our safety inspection activity, alongside a more detailed assessment of Network Rail's safety performance, is reported in our 'Annual Health and Safety report' published July 2021.

Finance and efficiencies were well managed

The Southern region has performed well financially, despite the impact of the pandemic. It achieved its efficiency target, although delivery in future years remains challenging.

The Southern region has met its efficiency targets

- 6.71 We monitor the efficiency of Network Rail's core business activities: operations, support, maintenance, and renewals. The Southern region delivered £120.3 million of efficiency improvements in 2020-21. This was ahead of the £112.9 million of efficiency improvements assumed in its delivery plan for the year. The Southern region is forecasting to deliver between £701 million and £1,064 million of efficiency improvements in CP6, with a central forecast of £918 million which is ahead of its efficiency target for CP6. Network Rail must continue to focus on delivering efficiencies in the region in CP6.
- 6.72 During the year, we conducted a review of a sample of the Southern region's year two efficiency plans. The purpose of our review was to understand how the region is planning and reporting on its efficiencies, and the robustness of its assurance processes for assessing business changes and calculations. Although there are still some improvements to be made, based on the evidence that we have reviewed, we consider the Southern region to be sufficiently prepared to deliver the remainder of its CP6 target efficiencies.
- 6.73 The region's largest efficiency initiative in 2020-21 was through 'Improved contracting strategies', such as packaging and negotiation of framework contract rates. This made up £24.4 million of total efficiency for the year, compared to a delivery plan target of £11.6 million. Significant efficiencies were also generated through early contractor involvement, totalling £15.4 million over the course of 2020-21.

Financial performance has been good, with risk funding a concern

6.74 The regulatory Financial Performance Measure (FPM) provides a better understanding of Network Rail's financial performance than simple income and expenditure variances. FPM compares a region's actual income and expenditure to its CP6 delivery plan across most items of income and expenditure. The FPM measure ensures that a region does not benefit from underspend by delaying work to a later date if that work will still need to be done.

Table 6.3 Financial performance, Southern region, 2020-21

£ million	Full year budget	Full year forecast	Budget variance better/(worse)	FPM out/(under) performance
Turnover	704	694	(10)	(10)
Schedules 4 and 8	(72)	59	131	144
Operations and support	(235)	(267)	(32)	(30)
Maintenance	(409)	(432)	(23)	(25)
Profit and Loss	(12)	54	66	79
Renewals	(718)	(878)	(160)	(81)
Enhancements	(264)	(210)	54	2
Total				0







Source: Network Rail

6.75 As shown in Table 6.3, FPM was in line with delivery plan. The pandemic has impacted on rental income underperformance and maintenance underperformance. This has been offset by Schedule 8 income outperformance, delivered predominantly because of the reduced timetable running on the network during the pandemic.

Leading indicators of efficient delivery

6.76 Poor planning for CP5 caused a number of problems with Network Rail's renewals delivery and efficiency. To avoid a repeat of these issues, we have required Network Rail to demonstrate that it is better prepared to deliver efficiently in CP6. This section provides an update on the Southern region's preparations to deliver efficiently in 2021-22.

Table 6.4 Leading indicators for efficient delivery in 2021-22, Southern region

Region	Renewals Planning		Securing Engineering Access		Maintenance Requirement 2020-21	
	Work authorised in Oracle	Target	% of required access booked	Target	Current headcount	Target
Southern	89% 	80%	109% 	80%	93% 	98%
National	75% 	81%	98% 	76%	97% 	99%

Source: Network Rail

6.77 For the Southern region, 89% of renewals projects for 2021-22 by value had completed detailed designs and had received financial authorisation for delivery. This was ahead of the 75% national average (14 percentage points). The region exceeded its internal target by nine percentage points.

6.78 Financial authorisation only provides a partial picture of renewals workbank planning. Remits issued and accepted by the supply chain shows progress made at an earlier stage of the planning lifecycle. The Southern region has issued and its supply chain has accepted 88% of planned renewals in 2021-22.

6.79 The Southern region has far exceeded its internal target for booking access for planned engineering work in 2021-22, with 109% booked against a target of 80%.

6.80 The region is currently operating with a maintenance staffing level of 93% of its overall headcount requirement and internal target of 98%.

6.81 Network Rail considers that for the Southern region, 72% of its 2021-22 target for efficiency will be achieved from projects that have already been delivered or have clear project plans. The remaining 28% of 2021-22 target efficiencies have no clear project plans or have plans in place but lower confidence in delivery.

6.82 As discussed in the Network Wide chapter, risk funds are lower than may be necessary to meet financial risks in future years of the control period in all regions, in part due to the pandemic. A number of potential risks still remain in the future and greater clarity is required on whether these are currently included in Network Rail's analysis. We will continue to closely monitor and engage with Network Rail on this.

- 6.83 In the Southern region, the Feltham re-signalling project has been a major contributor, drawing £93 million of risk funding in CP6. New technology was introduced, intended to increase the variety of the supply chain, and the associated teething problems delayed the initial phase of the project. The final phase of the project has now been deferred to Control Period 7 (CP7). We will continue to closely monitor and engage with Network Rail on the risk funding available.
- 6.84 This analysis is based on draft financial information provided by Network Rail, comparing its financial performance against its annual budget. We will report more fully on Network Rail's financial performance against its CP6 Delivery Plan in our 'Annual Efficiency and Finance Assessment', due for publication in July 2021.

Annual Assessment of Network Rail April 2020 to March 2021

Wales and Western Region



7. Network Rail's Wales and Western region

Overview

- 7.1 Network Rail's Wales and Western region extends from London Paddington to Penzance via Reading, Swindon, Bristol, Exeter and Plymouth in the Western route and transports commuters to key locations such as Cardiff and Swansea in the Wales route.
- 7.2 Most passenger rail services in the Wales and Western region are operated by Great Western Railway, Transport for Wales and CrossCountry. Rail freight services are also critical, moving various commodities within the region and beyond.

Overall performance in 2020-21

- 7.3 Network Rail measures its company-wide and regional performance in core areas of its business using sets of metrics and internal targets. It captures these in national and regional scorecards.
- 7.4 Each region's scorecard is based on Network Rail's four strategic themes (on the side of passenger and freight users; easy to engage with, an efficient and dependable partner; proud to work for Network Rail; and instinctive industry leader) and it includes our consistent measures and locally driven customer measures and targets. We use scorecards as one way to hold Network Rail to account for its performance.
- 7.5 Performance for each scorecard measure is expressed as a percentage achievement between zero and 100, with 50% being on target for the majority of measures. As shown in Figure 7.1, Wales and Western achieved 71.5% on the scorecard in 2020-21.

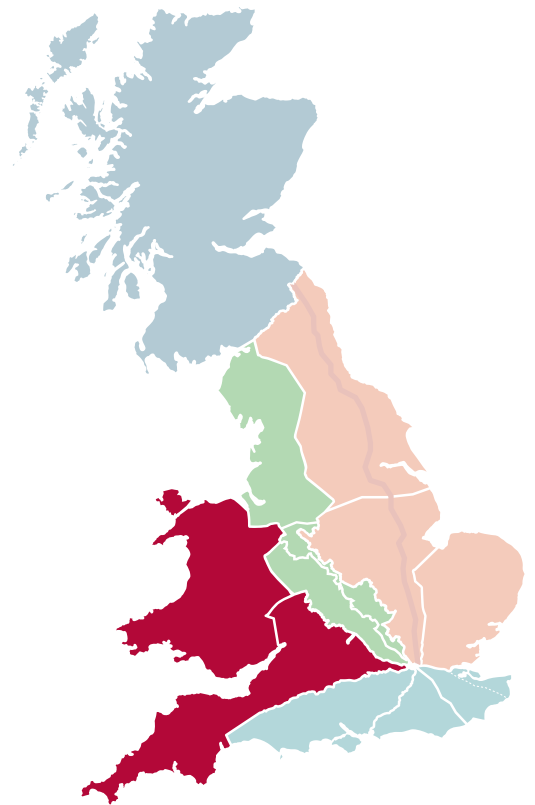
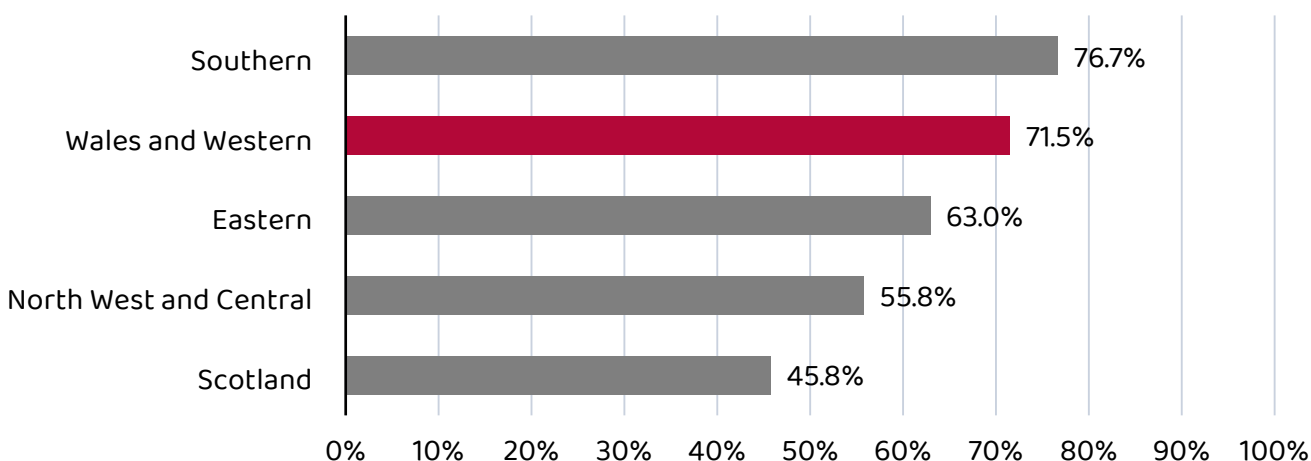


Figure 7.1 Overall scorecard performance by region, 2020-21

Source: Network Rail regional comparison scorecards

7.6 As with other regions, Wales and Western's performance needs to be seen in the context of the coronavirus (COVID-19) pandemic. The region worked well to ensure passengers and staff were kept safe, with frontline staff keeping those who need to travel and freight moving during national lockdowns.

- The region delivered good passenger and freight performance over 2020-21, although the Wales route did not see the same scale of improvement made elsewhere on the network. This was due partly to the region experiencing a number of disruptions caused by severe weather events throughout the year.
- The number of asset failures decreased significantly in 2020-21 and the region delivered well against its scorecard target for renewal of assets. However, the region needs to improve its structures examination compliance.
- The region had mixed health and safety results during 2020-21, with only one of the four scorecard measures meeting its target. While it made good progress with track worker safety and passive level crossing improvements, there were still too many near miss incidents occurring.
- In 2020-21, the Wales and Western region exceeded its efficiency target for the second year in a row but did not meet its regional financial performance target due to underperformance in enhancements, renewals and maintenance costs.

Train performance improved during 2020-21

Regional passenger and freight train performance continued to improve over 2020-21, partly due to lower passenger numbers and train service levels. However, passenger train performance on the Wales route has not seen the scale of improvement experienced elsewhere on the network. Network Rail needs to understand why this is and work to deliver further improvement.

Network Rail's train performance in 2020-21

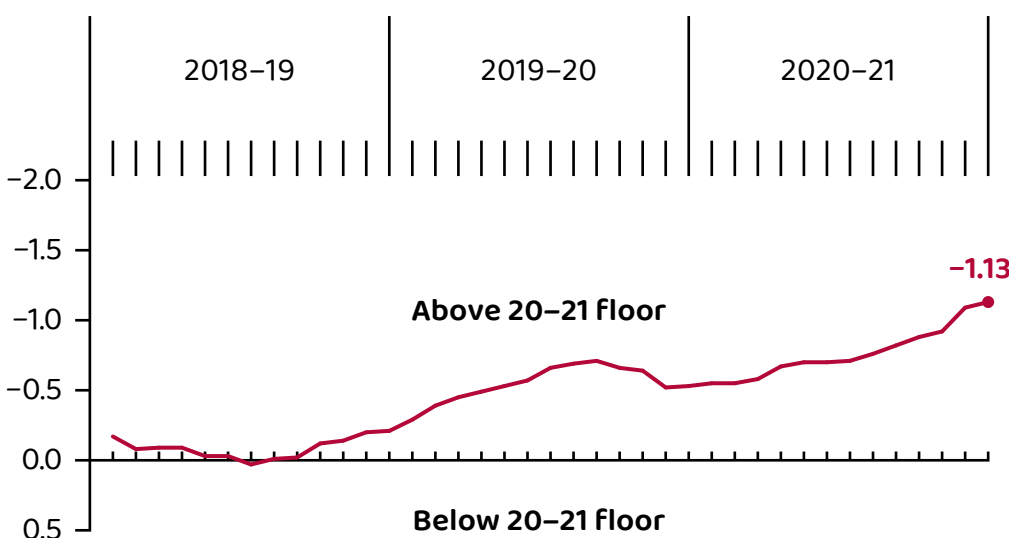
- 7.7 We use a range of metrics to assess overall train performance within the regions but focus on two consistent measures to compare performance across them:
- A consistent region measure for passenger services known as CRM-P. This is the delay minutes to passenger services attributed to Network Rail from incidents occurring in each Network Rail Region, per 100 train kilometres. A lower score reflects better performance; and
 - A freight delivery metric for each region known as FDM-R. This is the percentage of commercial freight services that arrive at their planned destination within 15 minutes of their booked arrival time, or with less than 15 minutes of delay caused by Network Rail or another operator that is not a commercial freight operator.
- 7.8 We monitor delivery of these measures for each region against an annual target and a regulatory minimum level of performance, referred to as the regulatory floor. This minimum level of performance signals the point at which we are highly likely to consider a formal investigation.

Passenger train performance was good and continued to improve

7.9 In 2020-21, the Wales and Western region’s target for CRM-P was based on it achieving 1.53 minutes of delay per 100 kilometres of train travel. It finished the year 0.54 minutes better than target, at 0.99 minutes of delay. A decreased level of train services and lower passenger numbers due to the pandemic were contributing factors to good performance in the Wales and Western region and across the whole network.

7.10 The region has shown sustained improved performance over the last three years, and CRM-P performance was 1.13 minutes above the regulatory floor at the end of 2020-21.

Figure 7.2 Passenger train performance (Network Rail caused delay minutes normalised, CRM-P), variance to regulatory floor for Wales and Western region, 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

7.11 Similar positive results were seen in the Western route, with passenger train service performance finishing better than its CRM-P target. This was based on it achieving 1.63 minutes of delay per 100 kilometres of train travel and the route finished with 0.87 minutes of delay.

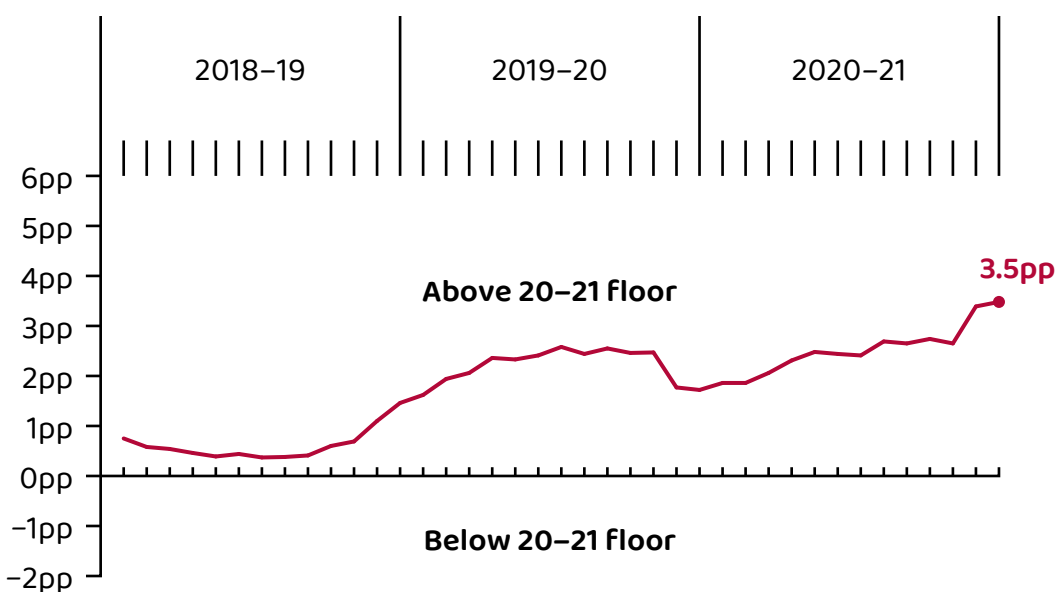
7.12 In contrast, passenger train performance in the Wales route has not seen the same levels of improvement as seen in other routes on the network. The CRM-P target was based on it achieving 1.29 minutes of delay per 100 kilometres of train travel and the route finished on target. The Wales route has more work to do to improve train performance and decrease the level of delay caused to passenger train operators. We recognise however, that a number of severe weather events over the year caused disruption, including widespread flooding forcing the temporary closure of a number of lines, and this impacted on the Wales route’s performance.

Freight performance was strong and continued to improve

7.13 The Wales and Western region exceeded its 2020-21 target for FDM-R. Consistently good performance through the year meant that the region finished the year at 96.0%, higher than its target of 94.6%. It was the best performing region in 2020-21. This result is commendable, given the number of disruptions from severe weather events, and the occurrence of a major derailment at Llangennech.

7.14 As with passenger performance, the region has shown sustained improved freight performance over the last three years. FDM-R performance was 3.5 percentage points above the regulatory floor at the end of 2020-21.

Figure 7.3 Freight performance (FDM-R), variance to regulatory floor for Wales and Western region, 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

Llangennech derailment

On 26 August 2020, a 25 wagon freight train derailed near Llangennech, Wales, causing a major fire and spilling 330,000 litres of fuel. Working in partnership with Natural Resources Wales and specialist environmental contractors, Network Rail's frontline teams worked around the clock on one of the biggest environmental recovery projects Network Rail has ever been involved with, described by Natural Resources Wales as the most challenging since the Sea Empress disaster in 1996.

The derailment resulted in the temporary closure of the Swansea District Line and the southern section of the Heart of Wales Line for seven months, impacting on the Wales route's freight performance as freight and passenger services were diverted to other lines.

The Wales route demonstrated strong engagement with stakeholders in the immediate aftermath of the derailment, during the environmental recovery, and through the restoration of the railway. The route provided regular and targeted updates to a diverse group of stakeholders, including local authorities, community councils, emergency services, other agencies and other rail organisations. This is commendable, particularly in light of the pandemic's challenges.

The line was reopened to traffic in early March 2021.



Derailed freight train near Llangennech

More focus is required on performance management capability

- 7.15 We recognise that lower passenger numbers and a reduced number of train services contributed to improved train service performance. Given the impact of the pandemic on passenger and freight train performance levels, in 2020-21 we placed greater focus on a qualitative assessment of Network Rail's contribution to train performance, including assessing its performance management capability and delivery of improvements.
- 7.16 The Performance Improvement Management System (PIMS), is a whole industry programme looking at the capability of the industry to improve train performance. Network Rail has taken a leading role in this area, producing and sharing a range of materials and processes for the industry to follow to support delivery of improved train performance.
- 7.17 A key component of PIMS is the Risk Management Maturity Model for Performance (RM3P). This is a self-assessment tool focussing on the business processes supporting train performance improvements. This tool looks at five areas: policy, governance and leadership, monitoring, audit, and review.
- 7.18 During 2020-21, Wales and Western has shown some progress with PIMS and RM3P, committing to deliver on performance improvements outlined in joint performance strategies with operators. Wales and Western's performance strategy managers have been active participants in a recent peer review of joint performance strategies. This has provided them with greater insight to best practice around the network, which should now be integrated into their strategies.
- 7.19 The Western route is progressing this work well and the feedback received will enable it to build on already strong strategies. Whilst the Wales route is similar to the Western route in that it undertook some PIMS activity during 2020-21, it needs to do more work to ensure the strategy is up to date, documented formally, and relevant to the route and Transport for Wales. This should improve the quality of supporting improvement plans and ensure they are embedded better in both organisations.
- 7.20 The region has not made full use of the Performance Innovation Fund (PIF), which presents an opportunity for regions and the Train Operating Companies (TOCs) to take forward innovative ideas to drive operational improvement. Only four projects were authorised for funding in 2020-21. Other regions, apart from Scotland, are significantly ahead of the Wales and Western region. This is largely due to the rotation of personnel and their capacity to allocate time to undertaking the necessary work involved. We expect to see the region make more use of the PIF in 2021-22.

Capacity and access to the network

- 7.21 We make sure that passenger and freight train operating companies have fair access to the rail network to make best use of capacity. If a train operator wants to access the national railway network, it needs a track access contract with Network Rail. Where operators and Network Rail cannot reach agreement, they can appeal to us to use our statutory powers to direct a decision on access. Operators and Network Rail also need to plan these contracts in sufficient time to produce robust timetables to ensure other operators can plan their own use of capacity.

- 7.22 In September 2020, we highlighted that the Wales and Western region needed to improve its coordination and timeliness of response, with the System Operator, on the evidence it provided to support its track access decisions where it could not reach agreement with operators. This followed an open access application on the Great Western Main Line where the capacity and performance information provided by the region and the System Operator (which models capacity and performance) had not been produced in a timely enough manner.
- 7.23 Although our assessment of this case was concluded in early 2021, we will continue to monitor the region's approach to access applications closely as there are currently other 'live' freight and passenger applications where the region has not yet reached agreement with operators.

Asset management results were good

Asset failures decreased significantly during 2020-21 and the region delivered its asset renewals well.

Asset sustainability and reliability remain strong

- 7.24 Network Rail needs to secure the maintenance, renewal and replacement of assets on the network so it is safe and operable, and do so in a way that is sustainable and efficient over the long-term. In Control Period 6 (CP6), we test this using a measure of asset sustainability (the Composite Sustainability Index (CSI)). We have agreed Network Rail's target for the end of CP6, based on a defined level of change since the end of Control Period 4 (CP4).
- 7.25 All regions are performing broadly in line with their expected end of CP6 target. Wales and Western finished 2020-21 with a CSI of 0.2%. This represents an improvement in overall asset sustainability of 0.2% since the end of CP4. The region's trajectory for CP6 is to end the control period with a CSI of 0.2%.
- 7.26 However, as this measure of sustainability is slow-moving because of the very long operational life of railway assets, we also monitor a region's asset failure rates and their impact, volumes of maintenance and renewals delivery and other asset specific measures, which can be used as a proxy for longer term sustainability. We assess a number of these against a region's internal scorecard targets including asset failure data and asset reliability measures, such as the Composite Reliability Index (CRI), which is a measure of the short term condition and performance of assets.
- 7.27 In 2020-21, the Wales and Western region experienced fewer service affecting failures than target, primarily driven by the impact of the pandemic, and ended the year with a CRI score of 18.8% against a target of 1.8%. This means asset reliability in 2020-21 was 18.8% better than it was in the final year of Control Period 5 (CP5). While this is a considerable improvement on the 2019-20 score (2.7% better than in the final year of CP5), it is likely due to fewer passengers travelling and services operating during the year. Figure 7.4 shows the CRI and individual asset scores in 2020-21.

Figure 7.4 Composite Reliability Index (CRI) (total and per asset), status to target per period, Wales and Western region, Period 1 to 13 2020-21

Key: ■ Above target ■ Below target, but above baseline ■ Below target and baseline

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13
CRI	6.9%	8.6%	8.7%	12.1%	12.8%	13.6%	13.2%	14.7%	17.2%	16.6%	17.1%	18.3%	18.8%
Track	-2.6%	-2.1%	-1.9%	-1.5%	-1.6%	-2.0%	-1.6%	-1.2%	-0.2%	-0.1%	-0.8%	-0.8%	-1.2%
Points	3.3%	3.5%	3.6%	4.2%	3.8%	3.9%	4.1%	4.3%	4.8%	4.4%	4.2%	3.8%	3.8%
Signalling	6.2%	6.9%	7.1%	8.7%	9.2%	9.6%	9.4%	9.5%	9.3%	9.3%	9.7%	10.9%	11.1%
Buildings	-1.8%	-1.9%	-1.9%	-1.9%	-1.7%	-1.6%	-1.3%	-1.0%	-0.7%	-0.7%	-0.4%	-0.3%	-0.1%
Electrical Power	2.4%	2.6%	2.2%	2.7%	3.3%	3.6%	2.4%	2.7%	2.9%	2.5%	2.6%	3.0%	3.6%
Structures	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.3%	0.3%	0.6%	0.5%	0.6%	0.6%	0.5%
Telecoms	-1.0%	-0.9%	-0.8%	-0.6%	-0.5%	-0.3%	-0.1%	0.0%	0.5%	0.8%	1.1%	1.2%	1.2%

Source: ORR analysis of Network Rail data

7.28 All Wales and Western's internal targets for asset reliability were exceeded in 2020-21, with the reliability of signalling particularly strong. Again, the lower number of failures is probably due to the reduced number of trains on the network. Track, telecoms and buildings were highlighted last year due to a decline in their reliability, however all three asset types improved during 2020-21 and finished above target.

Renewals volumes were largely delivered despite the pandemic

7.29 We scrutinise whether Network Rail is delivering vital asset renewals work, for example renewing its track, and if this is in line with planned volumes for each year of the control period. As part of our assessment we look at Network Rail's delivery of effective volumes. This refers to the volume of work undertaken in seven key areas, attributing weightings based on the life added to the asset by each type of work. For example, in the area of plain line track, a full renewal would be given a higher weighting than replacing one individual element.

7.30 Despite the challenges of the pandemic, the Wales and Western region worked hard to maintain renewals delivery during 2020-21, exceeding its internal effective volumes scorecard target in four of the five relevant effective volumes. As shown in the table below, structures bridge volumes were under-delivered due to the deferral of works at Cefn viaduct caused by third party issues, and at Kidwelly viaduct as a result of access issues.

Table 7.1 Effective volumes (renewals), Wales and Western region, 2020-21

Percentage completion is based on actual volumes delivered against planned volumes.
A percentage completion in excess of 100% indicates delivering more than the planned volumes.

Asset	Actual	Plan	% complete
Conductor Rail Renewal (km)	n/a	n/a	n/a
Earthworks	101	91	▲ 110%
OLE re-wire and mid-life refurb (km)	n/a	n/a	n/a
Track – Plain Line	199	158	▲ 126%
Track – Switches and Crossings	42	33	▲ 128%
Signalling	16	8	▲ 190%
Structures – Bridges	3,313	3,536	▼ 94%
All assets (weighted total)			▲ 135%

Note: Conductor rails and OLE are not applicable in the Wales and Western region
Source: ORR analysis of Network Rail data

7.31 Some renewals work is not captured through the effective volumes measure, so we also look at wider delivery. The Wales and Western region's wider asset renewals work performance is mixed. Track, electrical power, earthworks and drainage all finished above internal targets, however the region under-delivered on its planned structures, buildings and signalling works.

Structures examination compliance needs action

7.32 One area of concern, which we have been seeking continuous progress on since 2011, is compliance with structures examinations. If examinations of structures, such as tunnels, bridges and culverts are not carried out, the condition of the asset is not fully known and faults may be undetected or not competently assessed.

7.33 As part of our ongoing assurance activities, we identified that there are a large number of incomplete structures examinations across the network. By way of mitigation, Network Rail undertakes risk assessments on site where there is non-compliance, to better understand whether there are any associated safety risks.

7.34 In the Wales and Western region, at the end of 2020-21, there were 2,069 structure non-compliances; 15.3% of the regional portfolio. We do not have sufficient assurance from Network Rail that it has suitable plans in place, or is making adequate progress towards eliminating the overall non-compliance of examinations. We are taking action to ensure this is rectified and we will closely monitor Network Rail's progress and delivery. We are also commissioning an independent reporter to assess the non-compliance across the regions in more detail.

Table 7.2 Structures examination non-compliance, Wales and Western region, 2020-21

Exam type	Site Examination Non-Compliance	Report Submission Non-Compliance	Evaluation Non-Compliance	Total Non-Compliance
Detailed	18	289	52	359
Visual	95	1,215	193	1,503
Underwater	3	197	7	207
Total	116	1,701	252	2,069
			% of regional portfolio	15.3%

Source: ORR analysis of Network Rail data

Hidden Critical Elements

7.35 Towards the end of 2019-20, we identified that the Western route had fallen behind on its delivery schedule for Hidden Critical Elements (HCE) examinations, due to delays in the commercial evaluation of tenders and the impact of the pandemic. As part of our investigation into this issue, we looked at the route's assurance of a recovery programme, risk management and mitigation measures. The Western route recovered full compliance in HCE examinations by the end of 2020-21.

7.36 The Western route has responded well to our challenges providing more proactive progress in its reporting to Network Rail's Technical Authority. We will continue to monitor this issue.

Good delivery of weather resilience projects

7.37 The first two years of CP6 have seen an increased frequency and severity of severe weather events across all regions. The number of delay minutes attributed to infrastructure failures decreased in the Wales and Western region during 2020-21 compared to 2019-20, due to the decrease in train services. However, the number of severe weather related and structure failure incidents increased, reflecting the impact of severe weather on the region.

7.38 The highest delay incident in the Wales and Western region in 2020-21 was a non-traction power supply failure that occurred in Bangor, Wales. The incident, in autumn 2020, resulted in a delay of 5,398 minutes, causing 47 trains to be cancelled and 462 to be trains delayed. The cable that failed had been identified for replacement by the Wales route and work was due to take place within days of the failure. The cable failed during very wet weather and, due to its length of approximately two miles, it took a comparatively long time to repair.

7.39 Incidents such as this highlight the importance of Wales and Western's management of weather resilience through its Weather Resilience and Climate Change Adaptation (WRCCA) plans. These plans deliver significant and long-term improvements in infrastructure resilience and service recovery in response to severe weather events and climate change. One example of this is the region's South West Rail Resilience Programme, which is delivering resilience works at and near Dawlish, in response to the severe weather events of 2014. The region is also considering whether weather resilience should be incorporated into the remit of all projects being delivered.

Case Study – South West Resilience Programme

The South West Rail Resilience Programme, established by Network Rail to improve rail resilience between Dawlish and Teignmouth on the Western route, delivered the first phase of the new Dawlish sea wall (a 360 metre stretch) in July 2020. Phase two (a further 415 metre section) is underway and additional phases of the programme will include construction of a 209 metre rockfall shelter on the mainline between Dawlish and Holcombe, and more resilience work on the line between the new shelter and Teignmouth. The programme demonstrates an ongoing commitment to improve the resilience of the railway for passengers.



The completed first phase of the 360 metre section of the Dawlish sea wall in early July 2020

Assessment of drainage assets

7.40 In 2020-21, we undertook a Targeted Assurance Review (TAR) into drainage asset knowledge across all the regions. This is a risk-based review used to provide insight into ongoing and emerging risks and issues within Network Rail. The review identified that Wales and Western was the leading region for best practice in terms of drainage asset knowledge, although at the time, it had not committed to a date by which it would locate and assess all of its drainage assets. The Wales and Western region has now formally committed to locate and assess these by the end of CP6. We will monitor its progress.

- 7.41 Our TAR found many positive examples of projects using higher specification components to improve weather resilience and save on future maintenance costs. In Wales and Western two specific examples of good practice are:
- **Somerton (tunnel) drainage renewal:** The replacement of 30 metre lengths of standard drainage pipe with 60 metre lengths of thick walled, smooth bore pipe strong enough to be maintained by jetting machines from the ends, reduced the need for staff working in the tunnel; and
 - **Gaerwen drainage renewal:** The installation of a wider than standard pipe and extra deep catch pits to provide greater spare capacity, has built resilience to deal with more severe weather events (e.g. one in 100 or one in 200 years), rather than just a one in 50 year event. While the larger pipe cost 50 to 100% more per metre, it was a small part of the overall project cost, and other efficiency savings contributed to the final project cost being roughly 10% less than the national average for this type of work.

Environmental Sustainability Index was below target

- 7.42 Network Rail has introduced a new measure for environmental sustainability this year, the Environmental Sustainability Index (ESI). This composite measure is comprised of key environmental measures on waste, carbon emissions and non-traction energy usage. During the pandemic, lockdowns across the region resulted in reductions in carbon and energy usage generated by the temporary retail closures at stations and to a lesser extent, offices.
- 7.43 The Wales and Western region did not meet its internal ESI scorecard target, achieving 27.7% against a target of 50%. This is due in part to the ESI measure being adversely impacted by increased activity at the Sudbrook pumping station, near the Severn Tunnel, due to exceptionally high levels of groundwater.
- 7.44 Given that this is a new measure, Network Rail and ORR have commissioned an independent reporter study to assess the reliability and accuracy of the data. Once finalised, the findings report will be published on [our website](#).

Asset management capability

- 7.45 We also assess Network Rail's capability to manage its assets effectively by checking its compliance with an international standard which sets out best practice, ISO 55001. In our Periodic Review 2018 (PR18) Final Determination, we asked Network Rail's routes (now regions) to demonstrate how they would operate in accordance with ISO 55001 by the end of March 2021, a date set by Network Rail's Technical Authority.
- 7.46 In 2020-21, we undertook a TAR of Network Rail's compliance to ISO 55001 and identified that the Wales and Western region was still largely in the 'developing stage' of its asset management capability improvement. This meant that the region was not able to demonstrate to our satisfaction that it was working in accordance with ISO 55001 by the end of March 2021.
- 7.47 To ensure the region's continued commitment to the delivery of the improvement plan by the target milestone dates, we require it to provide us with an update in late 2021, and it will need to demonstrate to us that it has met the requirements necessary to achieve certification to ISO 55001 by the end of March 2022.

The region delivered well on enhancement projects in 2020-21

7.48 Network Rail continued to deliver enhancement projects across the regions despite the pandemic, with continued successful delivery of a number of projects in the Wales and Western region. The pandemic presented challenges to project delivery, including limiting on-site work in confined areas and driver training timescales, which delayed some projects. However, the region has worked well with stakeholders, contractors and the supply chain to manage the uncertainty and reduce the impact on project delivery timescales.

7.49 In June 2020, the last section of the electrified railway between London and Cardiff was delivered when electrification through the Severn Tunnel finally went live, following extensive works to resolve conductor beam corrosion issues. This provided a fully electrified route, enabling faster and more frequent electric rail services to run between London and Cardiff. This is a great result for train operators and passengers.

7.50 The region also carried out work on a number of other projects in 2020-21. These were undertaken in challenging circumstances due to pandemic restrictions and the region's progress on these projects is commended:

- On the Cambrian Line in Mid Wales, the restoration of timber beams and metallic elements on the 160 year old, Grade Two listed Barmouth viaduct (final stage to be completed in 2023), and the restoration of Traeth Mawr Viaduct to improve resilience;
- Construction of a new, single platform station, car park, bus interchange and cycle storage at Bow Street, near Aberystwyth in February 2021;
- Delivery of the biggest track investment on the St. Ives Bay line in Cornwall in over 60 years, renewing the track between Carbis Bay and St. Ives;
- A £2.2 million investment in the Conwy Valley Line to help protect it from severe weather and flooding; and a £5 million upgrade of the River Ebbw railway bridge in Crumlin, Wales on the Ebbw Vale Line to support additional train services; and
- Construction of a new, longer platform four at Swansea station, to enable Great Western Railway's new Intercity Express Trains to arrive and depart from it.



Work on Stage 1 of the Barmouth viaduct in late 2020, was undertaken with pandemic restrictions in place

7.51 We also recognise that the region is undertaking further enhancement and renewal projects in 2021-22 to improve performance of the railway and support future passenger growth. This work includes:

- The upgrade and reopening of the Dartmoor Line in Autumn 2021 between Okehampton and Exeter to provide regular passenger services, as part of the Government's Restoring Your Railway initiative;
- Significant renewal works around Bristol in summer 2021, including the upgrade of Bristol East Junction track layout to deliver fewer delays and improved journey times, and Bristol Temple Meads station upgrade work, which will include a station roof restoration, rewiring, and platform and station enhancements;
- Construction of new stations within the region, at Reading Green Park which opens in 2021, Portway in Bristol, Edginswell in Torquay, St. Clears in Carmarthen, Wales, and Deeside Parkway near Chester; and
- Improvements to the Oxford Station area to expand station capacity and support increased services, including East West Rail, on which the region is working closely with North West and Central region to deliver.

Capability framework

7.52 We completed our first review of Network Rail's regions' capability using the new Capital Investment Capability Framework (CICF) maturity assessment in July 2020. This is the first time a maturity framework has been developed that measures Network Rail's role in the early stages of projects in a complex cross-industry environment.

7.53 For the Wales and Western region, our assessment concluded that it is operating as expected and at a level consistent with other Network Rail regions. We are monitoring the region's response where it has developed an improvement plan that incorporates and is aligned to current industry initiatives, such as Project SPEED (Swift Pragmatic Efficient Enhancement Delivery). Examples of good practice in the region are shown in Table 7.3.

Table 7.3 Examples of good practice identified in the capability maturity assessment

Practice	Overview
Western route Sponsorship Management Plan	This document describes the accountabilities of the sponsor, what they need to do and how to navigate the organisation's governance. The plan provides an individually-focused view of what to do and when, in order to follow process.
Industry Systems Integration (ISI)	The ISI process and team provide an overarching framework that links strategy through to demonstration of benefits, including accountabilities for delivery of timetable, rolling stock, infrastructure, franchising and operations outputs, and release of benefits. Whilst the approach is only applied in a limited way on the Western route, it appears to have significant potential to address capability gaps.

Source: ORR capability maturity assessment, July 2020

Wales and Western region has mixed health and safety performance

The region had mixed health and safety results during 2020-21. While it made good progress with track worker safety and passive level crossing improvements, there were still too many near miss incidents.

- 7.54 In 2020-21, the Wales and Western region did not meet three of its four scorecard safety measures. Employee Engagement finished better than target however Fatalities and Weighted Injuries (FWI) and Personal Accountability for Safety were both worse than target. Although the Lost Time Injury Frequency Rate (LTIFR) showed an improvement over the previous year, the region finished just below its 2020-21 target.
- 7.55 The region made substantial improvements to the management of track worker safety during 2020-21. The Western route eliminated all unassisted lookout warning work on site, which is a great achievement, and the Wales route is on track to do the same by July 2021. In addition, both routes are actively working towards sustained lower risk lineside work by increasing the availability of track possessions, and improving line blockage availability, planning and security.
- 7.56 However, more improvements need to be made to decrease the number of incidents. Near misses to staff highlight our ongoing concerns regarding track worker safety, including planning, assurance and behavioural safety. Despite a continued effort to make safety improvements, the level of incidents emphasises the importance of effective and ongoing assurance. We noted a large number of irregularities (issues which should not occur, specifically relating to track worker safety management) across both routes throughout the year, and we are engaging with the Western route to look at how these common factors are identified from each local investigation and how the learning is disseminated.
- 7.57 Both the Wales and Western routes are implementing the new national passive level crossings strategy, building on the improvements made during 2020-21. In addition, the routes each have dedicated budgets and programmes of work through CP6 which are reducing risk significantly at some of the most problematic level crossings. The challenge for the routes will be to sustain the current delivery progress of its route improvement programmes, at the same time as implementing the strategy's additional changes.
- 7.58 We have concerns around the region's control of contractor risk when undertaking clearances of vegetation. A number of incidents within Wales and Western region indicated that Network Rail does not have sufficient control over contractors to ensure management of risk, and that the use of multiple levels of subcontractors appears to have resulted in a dilution of control. We are following this up with the region.
- 7.59 Inspections during the past two years have identified that while there have been some improvements in the Wales route in asset safety management, some of our work (following track faults and in relation to risk decisions at earthworks, for example), has uncovered weaknesses in document control and the management of records relating to asset condition which need attention. We are working with the region to ensure these are acted upon.

7.60 Further information on our health and safety inspection activity, alongside a more detailed assessment of Network Rail's health and safety performance is in our 'Annual Health and Safety report'.

Wales and Western exceeded its efficiency target but underperformed financially

In 2020-21, Wales and Western exceeded its efficiency target for the second year in a row but did not meet its regional financial performance target due to underperformance in renewals and maintenance costs.

Efficiency target was exceeded for the second year

- 7.61 We monitor the efficiency of Network Rail's core business activities of operations, support, maintenance and renewals. Wales and Western demonstrated strong performance on efficiency in 2020-21, but its efficiency challenge continues to increase across the next three years.
- 7.62 In 2020-21, Wales and Western delivered £76.6 million of efficiency improvements, ahead of the £66 million of efficiency improvements assumed in its delivery plan for the year. This level of efficiency is good news. The region is also forecasting to deliver between £432 million and £626 million of efficiency improvements in CP6, with a central forecast of £534 million, which is in line with its efficiency target. Wales and Western's central forecast includes £62 million of additional efficiencies that are the region's share of Network Rail's additional £0.5 billion efficiency challenge.
- 7.63 During 2020-21, we conducted a review of a sample of the Wales and Western region's efficiency plans. The purpose of our review was to understand how the region is planning and reporting on efficiencies, and the robustness of its assurance processes for assessing business changes and calculations of related efficiencies. Although there are still some improvements which could be made, based on the evidence that we have reviewed, we consider that the Wales and Western region appears to be sufficiently prepared to deliver the remainder of its CP6 target efficiencies.
- 7.64 The region's largest efficiency initiative in 2020-21 was from improved contract strategies. This made up £17.2 million of total in-year efficiency compared to a delivery plan target of £13 million. Significant efficiencies were also generated through improved multidisciplinary planning of track access bookings and possessions, totalling £7.3 million during the course of 2020-21.

Financial underperformance against regional target

- 7.65 The regulatory Financial Performance Measure (FPM) provides a better understanding of Network Rail's financial performance than simple income and expenditure variances. FPM compares a region's actual income and expenditure to its CP6 delivery plan across most items of income and expenditure. The FPM measure ensures that a region does not benefit from underspend by delaying work to a later date if that work still needs to be done.

7.66 In the Wales and Western region, FPM was £10 million behind delivery plan, as shown in Table 7.4. This is predominantly the result of an underperformance in renewals and higher than expected maintenance costs. This was offset by an outperformance in Schedules 4 and 8 income due to high levels of train performance, delivered predominantly because of the reduced timetable running on the network during the pandemic.

Table 7.4 Financial performance, Wales and Western region, 2020-21

£ million	Full year budget	Full year forecast	Budget variance better/(worse)	FPM out/(under) performance
Turnover	360	350	(10)	(9)
Schedules 4 and 8	(31)	17	48	47
Operations and support	(117)	(128)	(11)	(3)
Maintenance	(268)	(282)	(14)	(14)
Profit and Loss	(57)	(43)	13	21
Renewals	(525)	(496)	29	(33)
Enhancements	(385)	(290)	95	2
Total				(10)







Source: Network Rail

Leading indicators of efficient delivery

7.67 Learning from declining efficiency in CP5, we required Network Rail to demonstrate that it was better prepared to deliver efficiently from the start of CP6, in part through developing and reporting on new leading indicators.

7.68 We have seen progress with these leading indicators of efficient delivery. Table 7.5 provides an update on Wales and Western's preparations to deliver efficiently in 2021-22.

Table 7.5 Leading indicators for efficient delivery in 2020-21, Wales and Western region

Region	Renewals Planning		Securing Engineering Access		Maintenance Requirement 2020-21	
	Work authorised in Oracle	Target	% of required access booked	Target	Current headcount	Target
Wales and Western	72% 	91%	87% 	80%	100% 	100%
National	75% 	81%	98% 	76%	97% 	99%

Source: Network Rail

- 7.69 The Wales and Western region did not meet its target on renewals planning. Currently 72% of renewals projects for 2021-22 by value have completed detailed designs and had received financial authorisation for delivery. This was slightly below the 75% national average and fell short of the region's internal target by 19 percentage points.
- 7.70 This level of financial authorisation is concerning. However, financial authorisation only provides a partial picture of renewals workbank planning. We can also consider earlier stages of the planning lifecycle, such as remits issued and accepted by the supply chain. Under this measure, Wales and Western has issued, and its supply chain accepted, 96% of planned renewals in 2021-22, providing more confidence in its readiness to deliver renewals.
- 7.71 The Wales and Western region has reported that 72% of 2021-22 target efficiency will be achieved from projects that have already been delivered or have clear project plans. The remaining 28% of 2021-22 target efficiencies have no clear project plans, or have plans in place but low confidence in delivery. This is a significant improvement on the same time last year when this metric was at 47%, highlighting the region's confidence in continuing to outperform our efficiency challenge in CP6.
- 7.72 As discussed in the Network Wide chapter, risk funds are lower than may be necessary to meet financial risks in future years of the control period in all regions, in part due to the pandemic. A number of potential risks still remain in the future and greater clarity is required on whether these are currently included in Network Rail's analysis. We will continue to closely monitor and engage with Network Rail on this.
- 7.73 This analysis is based on draft financial information provided by Network Rail, comparing its financial performance against its annual budget. We will report more fully on Network Rail's financial performance against its CP6 delivery plan in our 'Annual Efficiency and Finance Assessment', due for publication in July 2021.

Annual Assessment of Network Rail April 2020 to March 2021

Freight and National Passenger
Operators (FNPO)



8. Freight and National Passenger Operators

Introduction

- 8.1 The Freight and National Passenger Operators (FNPO) function was established to support freight operators, national passenger operators, charter operators and potential future open access operators. The FNPO represents their needs in their interactions with Network Rail. This is an important role which supports the delivery of freight and passenger services across Great Britain. This was reflected in our decision to produce a settlement document for the FNPO as part of ORR's Periodic Review 2018 (PR18) Final Determination of Control Period 6 (CP6).
- 8.2 The FNPO was a standalone function at the time of the PR18 settlement. In the first year of Control Period 6 (CP6), the FNPO moved to Network Services as part of Network Rail's Putting Passengers First transformation programme. The work of the FNPO was subsequently split into two separate functions: freight (also supporting Caledonian Sleeper and Charter operators) and CrossCountry and aspirant open access operators which joined a new team within Network Services, National Passenger and Customer Experience. At the end of the second year of CP6, Network Services was dissolved and these functions were all moved to the System Operator.
- 8.3 We will continue to hold Network Rail to account for delivery of the FNPO PR18 settlement commitments now that the FNPO has moved to the System Operator.

FNPO requirements

- 8.4 Our PR18 determination required the FNPO to deliver:
- Performance for freight operators as measured by the Freight Delivery Metric (FDM) nationally and FDM-R in the regions. FDM and FDM-R measure the percentage of commercial freight services that arrive at their planned destination within 15 minutes of their booked arrival time, or with less than 15 minutes of delay caused by Network Rail or another operator that is not a commercial freight operator. The target for each year of the control period is FDM performance of 94%;
 - Specific actions to improve governance and stakeholder engagement; and
 - £22 million of renewals expenditure to address and mitigate safety risks for the FNPO's customers through the FNPO Safety Improvement Programme.

FNPO requirements in Scotland

8.5 Our PR18 determination also reflected the requirements specified by the Scottish Government in its High Level Output Specification (HLOS). For the FNPO this included:

- performance for freight operators as measured by the FDM. A target of 93% FDM-R at the start of CP6, moving through staged improvements towards 94.5% at the end of the control period. Network Rail Scotland committed to a more stretching target of 94.5% for 2020-21;
- a requirement to develop a freight journey time metric to support an increase in average speeds;
- a requirement to facilitate growth of rail freight traffic of 7.5% by the end of CP6. At least 7.5% of this growth should be from flows which had not previously moved by rail.
- Caledonian Sleeper services to have a right-time target of 80% for every year of CP6; and
- a requirement to support charter, tourist and other special trains.

8.6 Our assessment of Network Rail's delivery of these requirements is provided below and in the Network Rail Scotland chapter.

FNPO supported good passenger and freight train performance

8.7 Network Rail's regions are responsible for the day-to-day delivery of train performance. The FNPO plays an important role in developing performance strategies, supporting communications with customers and within Network Rail, and facilitating improvements and problem solving. This is why the FNPO is accountable for national freight performance.

FNPO delivered well for freight operators during the coronavirus (COVID-19) pandemic

The freight team delivered good coordinated support to freight operators throughout the coronavirus (COVID-19) pandemic. This ranged from tactical operational support, such as identifying accommodation for drivers, to strategic initiatives such as getting longer and heavier freight trains onto some key routes.

- 8.8 The FNPO was at the forefront of supporting freight operators during the pandemic. Network Rail supported freight through its development of contingency timetables to prioritise freight (along with passenger services to support those that need to travel). Network Rail also worked with operators to deliver more efficient freight services by running some longer and heavier freight trains. For example, some services were temporarily lengthened to allow them to carry an additional 12 to 14 containers. In some cases, this was delivered using train paths usually used by passenger services which had been scaled back in response to instructions for people to work from home where it was possible to do so.
- 8.9 The FNPO also established a daily call with freight operators to ensure that any operational issues could be effectively identified and resolved. For example, the freight team assisted in finding suitable accommodation for freight workers who needed to stay overnight. Network Rail also supported freight operator cash flow by moving to immediate payment terms for invoices while extending payment terms for track access contracts. Over the course of the year, the freight team also supported freight operators in developing proposals for an extension to their access contracts.
- 8.10 The FNPO's safety and operations teams provided considerable support to operators throughout the pandemic in order to assist the freight sector in managing the health and safety risks associated with COVID-19. This included working with the National Freight Safety Group (NFSG) to share best practice on risk control throughout the freight sector, as well as co-ordinating with individual operators and the British Transport Police to identify operational sites where incidents of trespass could potentially increase during lockdown.

Freight performance was strong

Freight performance significantly improved at the start of the pandemic, particularly from April to July. This good performance reflects the reduced congestion on the network, due to the decrease in the number of passenger services operating. These good performance levels dropped off a little as passenger train numbers increased. It will be important for Network Rail to maintain good freight performance as passenger and service levels increase again.

8.11 Freight performance is measured by the Freight Delivery Metric (FDM) nationally and the Freight Delivery Metric for the regions (FDM-R).

Table 8.1 Freight performance, 2020-21

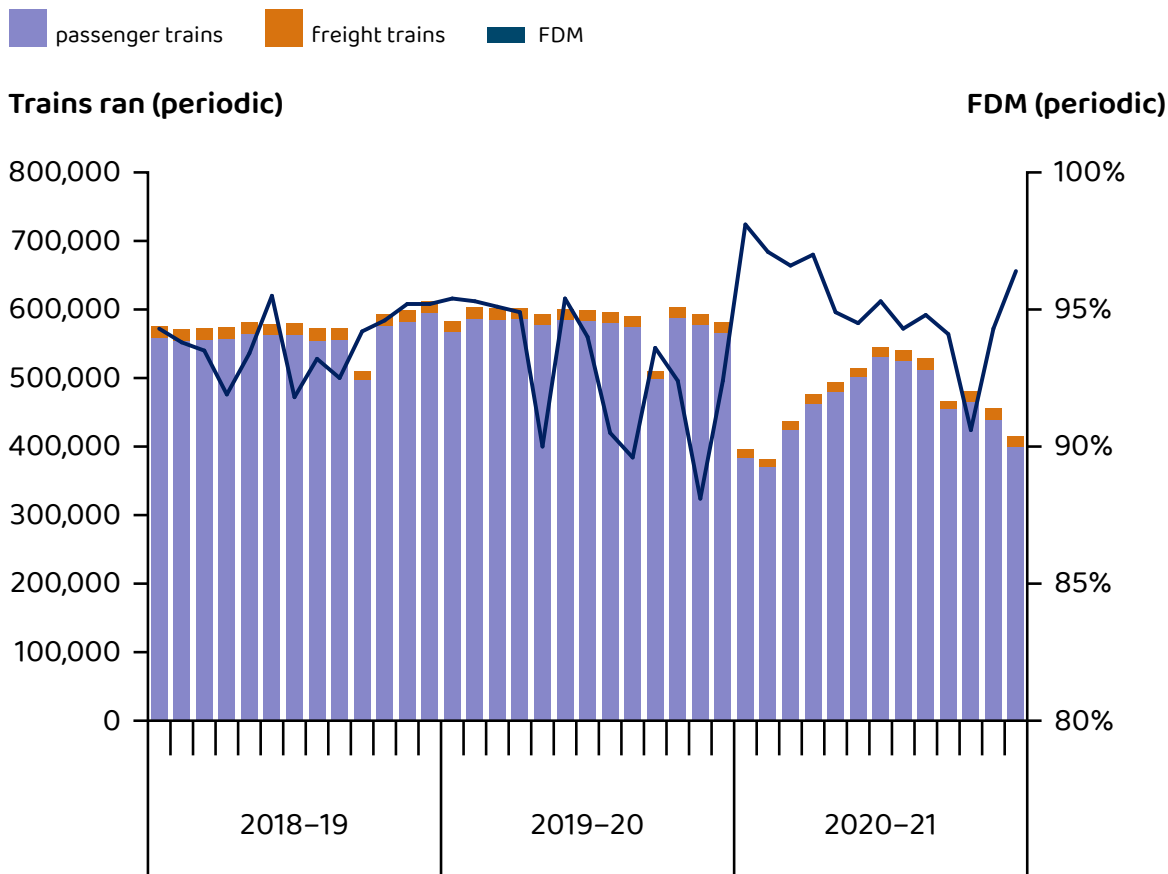
Measure	Scorecard target %	2020-21 Performance %	Commentary
National FDM	94.0	95.2	G Performance above target, and better than previous year
Eastern FDM-R	93.5	95.1	G Performance above target, and better than previous year
North West and Central FDM-R	94.5	95.0	G Performance above target, and better than previous year
Scotland FDM-R	94.5	93.7	A Performance below scorecard target and worse than previous year, but above the floor (the point we would consider regulatory intervention)
Southern FDM-R	93.4	95.1	G Performance above target, and better than previous year
Wales and Western FDM-R	94.6	96.0	G Performance above target, and better than previous year

Source: ORR analysis of Network Rail data

8.12 Freight performance was above Network Rail's scorecard targets nationally and in all regions except Scotland. Performance in Scotland was below Network Rail's scorecard target of 94.5%, but above the floor (92.5%) which is the point at which ORR is likely to consider regulatory action. Performance in Scotland was negatively impacted by severe weather, in particular by snow in December 2020 and flooding associated with storm Darcy in February 2021. Further commentary on freight delivery in Scotland is included in the Scotland chapter.

8.13 The high levels of freight performance are partly due to the network being less busy. The reduced number of passenger services meant there was less reactionary delay across the network and this has benefitted freight performance. This year has been very unusual, and Network Rail will need to consider how it can continue to deliver good performance to freight customers as the network becomes busier again. The FNPO is working with operators to develop and deliver joint performance strategies to support freight performance in 2021-22. We expect to review the success of these strategies later this year.

Figure 8.1 Passenger and freight trains run and FDM performance, Great Britain, Period 1 2018-19 to Period 13 2020-21



Source: ORR analysis of Network Rail data

8.14 The FNPO supported freight performance by working directly with Network Rail's regions, with operators to resolve specific issues, and with the freight industry collectively. A number of the Network Rail regions have developed Freight Boards to support their engagement with freight operators. These have been well-received by stakeholders. The FNPO also uses the Freight Industry Performance Group to facilitate the sharing of good practice within the rail freight industry.

Cross Country performance was strong



Cross Country performance has been good this year and the FNPO's scorecard targets for delivery to Cross Country have all been exceeded. This is a significant improvement on last year's performance when all scorecard measures were missed.

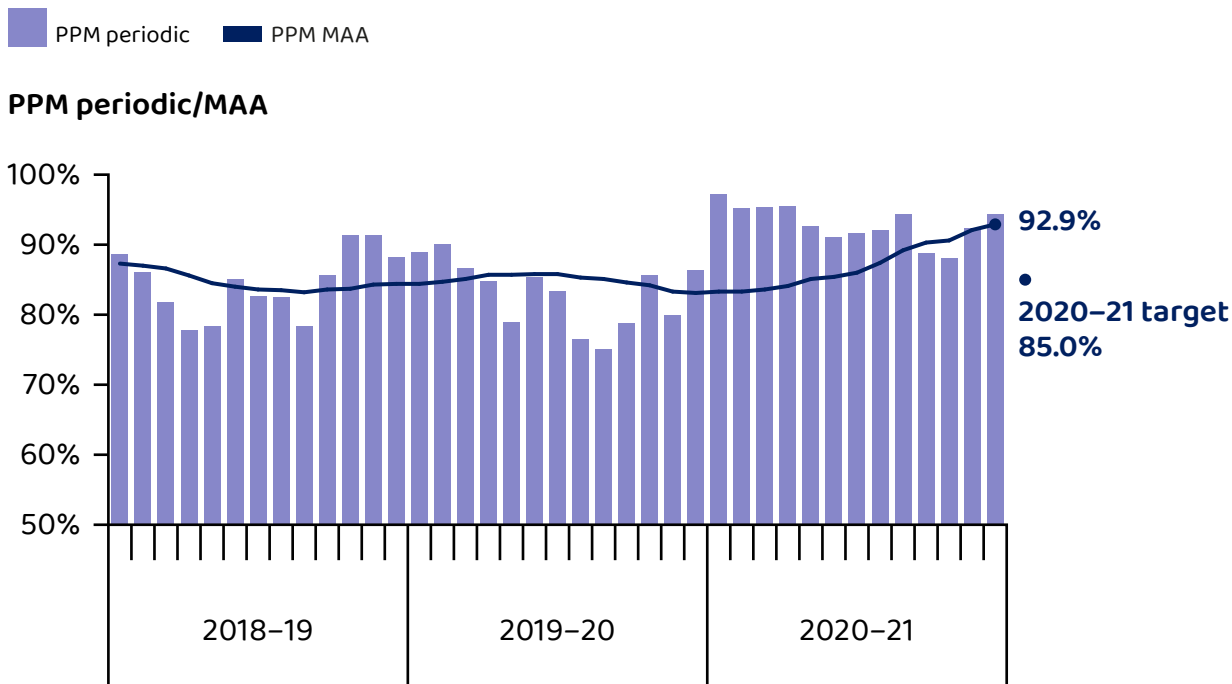
Table 8.2 Cross Country performance against scorecard targets, 2020-21

Measure	Scorecard target %	2020-21 Performance %	Commentary	
Public Performance Measure (PPM)	85.0	92.9	G	Performance above target, and better than previous year
Cancellations	3.1	1.6	G	Performance above target, and better than previous year
Time to 3 minutes	70.7	86.3	G	Performance above target, and better than previous year
Time to 15 minutes	95.2	98.0	G	Performance above target, and better than previous year

Source: ORR analysis of Network Rail data

8.15 In spring 2020, CrossCountry and Network Rail launched a new joint working approach, "Back on Track". This has focused on strengthening communication between CrossCountry and Network Rail, and within Network Rail. Work on this strategy was initially put on hold due to the pandemic but it has restarted. It has been supported by a member of Network Rail staff seconded to the CrossCountry Customer Experience team. CrossCountry has also moved to a regional structure which has supported improvements in engagement between CrossCountry and Network Rail's regions.

Figure 8.2 Cross Country PPM, Period 1 2018-19 to Period 13 2020-21



Caledonian Sleeper performance was strong



Caledonian Sleeper performed well this year; and 84.9% of Caledonian Sleeper trains met their right time measure, against a scorecard target of 80%. This strong performance shows a good recovery from rolling stock and locomotive issues of last year which the FNPO provided good support in resolving.

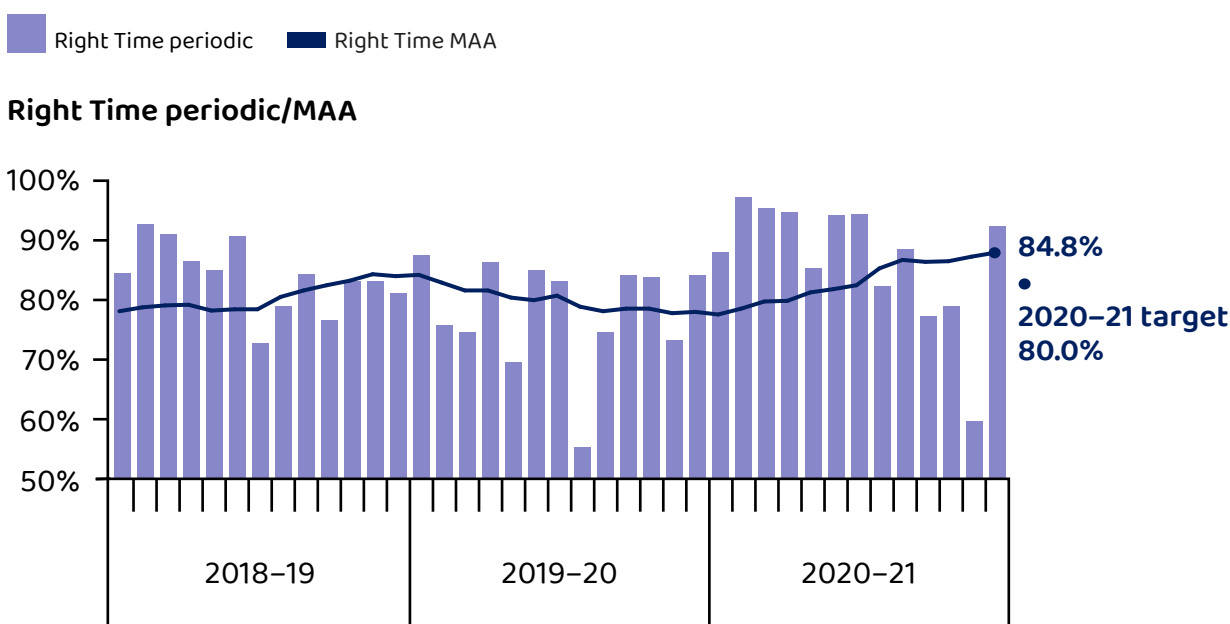
Table 8.3 Caledonian Sleeper performance against scorecard target, 2020-21

Measure	Scorecard target %	2020-21 Performance %	Commentary
Right Time Arrivals (RTA)	80.0	84.9	G Performance above target, and better than previous year

Source: ORR analysis of Network Rail data

8.16 Performance was generally very good this year. The chart shows a dip in performance towards the end of the year, as a result of severe weather impact, including Storm Christopher in January and Storm Darcy in February 2021.

Figure 8.3 Caledonian Sleeper Right Time performance, Period 1 2018-19 to Period 13 2020-21



Source: ORR analysis of Network Rail data

8.17 This year the FNPO have has also supported improved communications across Network Rail about night time engineering access which is potentially disruptive to Caledonian Sleeper. It has also improved understanding of Caledonian Sleeper’s operational needs and improved communications about these needs within Network Rail. This has been supported by a new quarterly forum with Scotland and North West and Central regions which brings operational staff together.

FNPO supported aspirant open access operators and charter operators

FNPO continued its support to aspirant open access operators and charter operators this year.

8.18 The FNPO also provided support to charter services and aspirant open access operators. The pandemic meant this was a very difficult year for charter operators whose operations were very limited. The FNPO has continued to engage with these operators, and secured provision for charter operators in the May 2020 and May 2021 timetables. The team also supported the development of plans for the installation of new toilets in charter trains. This is necessary to prevent waste from being discharged onto the tracks. The FNPO is tracking the progress of these works.

8.19 This year the freight team has supported a number of aspirant open access operators in engaging with Network Rail and making their access applications. The Wales and Western and System Operator chapters highlight our concerns about Network Rail’s timely provision of evidence on performance and capacity to support decision-making, particularly in cases where it could not reach agreement with operators. The move of the teams dealing with aspirant open access operators to the System Operator in March 2021 may result in more streamlined communications which will support the processing of their applications.

Governance, stakeholder engagement and transparency has improved

FNPO built on its strong operational engagement with its customers and delivered improvements to its governance, stakeholder engagement and transparency this year. It has documented its customer priorities to enable it to engage more effectively on these areas and track progress.

- 8.20 The FNPO represents the interests of its freight, national operator, charter, and aspirant open access customers within Network Rail. It is important that these customers know how to influence the priorities of the FNPO and have sight of how their views have influenced decision making.
- 8.21 Last year our annual assessment included our concerns that our PR18 determination requirements relating to the FNPO's governance, stakeholder and transparency had not yet been met. The FNPO has built on its strong operational engagement with its customers and has delivered the improvements we asked for, including:
- Publishing its [governance framework](#);
 - Being more transparent about its activities, plans and achievements (including producing an annual report for the first year of CP6);
 - Documenting customer priorities and reviewing progress against them; and
 - Working with freight end users to develop a summary of work to support them.
- 8.22 We are satisfied that the FNPO has now either met these requirements or developed appropriate alternative approaches. Further details are published in [Network Rail's letter](#) to us, and in [our response](#).
- 8.23 Our last annual assessment noted stakeholder concerns that the influence of the FNPO could be adversely affected by the move to Network Services. However, this move did not appear to diminish the FNPO's voice for its customers. The FNPO has worked hard to adjust its structures and processes to ensure that it can influence routes and regions. As devolution has developed, the regions have diversified their approaches. This makes the role of the FNPO even more important, and it has risen to the challenge of adapting its approach to reflect the issues and structures within each region.
- 8.24 The Network Services directorate was disbanded in April 2021 and the FNPO teams were moved to the System Operator. We will continue to use our engagement with the FNPO's stakeholders, Network Rail's regions and the FNPO to monitor the influence of the FNPO on behalf of its stakeholders.

FNPO is delivering safety schemes to support industry

FNPO has been supporting safety improvements through its delivery of the Freight and National Passenger Operators Safety Improvement Fund (FSIP). It has also worked with the freight industry through its engagement with the National Freight Safety Group and with freight end users.

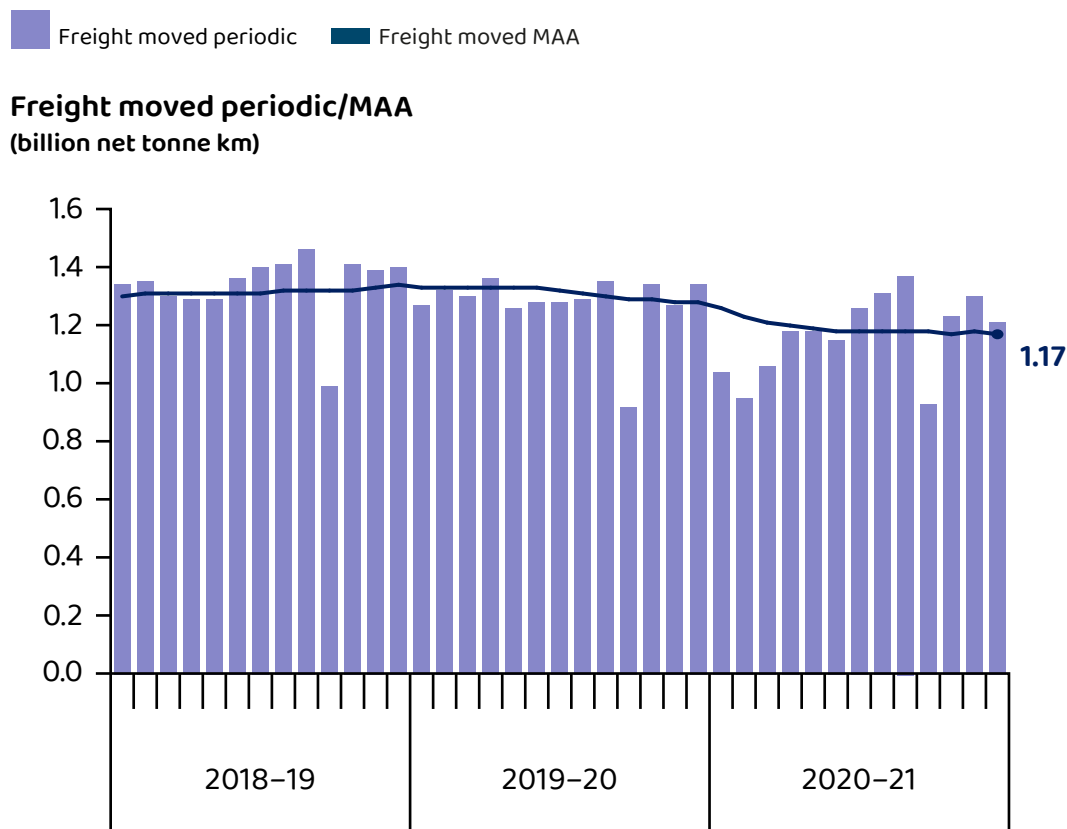
- 8.25 In PR18, £22 million was allocated to the FNPO Safety Improvement Programme (FSIP) to drive safety improvements across the network and to ensure that Network Rail fulfils its duties to its employees and rail users. Despite some short term issues due to staff availability during the initial stages of the pandemic, the FSIP continues to deliver improvements at a site level, as well as contributing to efforts to reduce risks across the industry. For example, FSIP was used to fund a dedicated project manager for the National Freight Safety Group's Condition of Freight Vehicles workstream. Furthermore, to accelerate the delivery of FSIP projects, the FNPO has obtained additional resource and implemented several different methods of project delivery, including providing funding to operators and to third parties to deliver work.
- 8.26 Derailments are a serious safety risk for freight and the operation of the wider network. The FNPO continues to implement several of the key outcomes from the Cross Industry Freight Derailment Working Group. The work to procure and distribute Radio Frequency Identification (RFID) to operators of freight rolling stock, as well as automate the analysis of Wheel Impact Load Detector (WILD) data will ensure that operators are provided with the key information needed to reduce the risk of freight train derailment. Given the importance of the WILD system to mitigate derailment risk, it is essential that Network Rail ensures that these sites remain operational, as well as continue to review the location of current and future WILD sites, so that the system remains effective.
- 8.27 Industry engagement with Freight End User customers (FEUs) on safety matters has been developed further by the FNPO. The FNPO now meets regularly with key FEUs to share relevant safety and operations data and to exchange best practice. These meetings are also attended by representatives of the National Freight Safety Group and provide an opportunity for FEUs to obtain information on developments in wider industry working groups. It is hoped that this group will continue to develop and incorporate representation from all rail freight sectors.

FNPO is supporting freight growth

Rail freight is important in supporting the broader economy and decarbonisation. The FNPO delivered interventions to temporarily increase freight train length and weight, and to reduce journey times while the network was less busy. Work has started to develop these approaches to supporting freight growth.

8.28 The amount of freight moved initially declined at the start of the year due to the pandemic, but started to recover in the summer and had returned to pre-pandemic levels by spring 2021.

Figure 8.4 Freight moved on the rail network (billion net tonne kilometres), Great Britain, Period 1 2018-19 to Period 13 2020-21



Source: ORR analysis of Network Rail data

8.29 Network Rail has delivered a number of schemes to support freight growth this year, including the completion of the Southampton Freight Train Lengthening project, refurbishment of the Newhaven Marine aggregate terminal and the use of new “jumbo” freight trains on the West Coast mainline.

8.30 This year also saw the successful start of rail freight traffic to support High Speed 2 (HS2) railway construction. This followed several years of planning by Network Rail, HS2 Ltd and freight operators. The FNPO worked with the System Operator, Network Rail’s regions and operators to ensure that appropriate freight paths were included in the timetables. Over 100 freight trains have already delivered 150,000 tonnes of aggregate to support construction.

8.31 As part of its pandemic response, Network Rail worked with freight operators to deliver longer and heavier freight trains by using capacity created by reduced passenger services. Several container trains were temporarily lengthened to 775 metres which allowed an additional 12 to 14 containers to be carried on each train. Eight aggregate trains were also lengthened to allow them to carry up to 2200 tonnes, up from 2000 tonnes usually. A temporary one hour journey time reduction was also delivered for a Mossend to Daventry service.



8.32 Network Rail has been working with freight operators to identify further priorities for train lengthening and journey time improvements. Recently Network Rail trialled a "jumbo service" of 3,600 tonnes of aggregate in a 590 metres long train on the West Coast Mainline. This lengthening delivered the equivalent of two freight trains in a single train path.



- 8.33 Effective use of capacity is an important tool in supporting rail freight, decarbonisation objectives and the wider economy. This was reflected in the Department for Transport's, [Decarbonising Transport – Setting the Challenge](#) report, published in March 2020, [Network Rail's Traction Decarbonisation Network Strategy Interim Business Case](#), published in July 2020, and [Transport Scotland's Rail Services Decarbonisation Action Plan](#).
- 8.34 Network Rail is currently looking at ways to build on its work to deliver longer, heavier and quicker freight services in the pandemic. It is focusing on 10 freight routes where demand for freight services is currently constrained by the availability of capacity. We will be monitoring the effectiveness of these initiatives over the remainder of CP6.
- 8.35 The Scottish Government set specific requirements for Network Rail to deliver increased rail freight in Scotland. This year Network Rail supported a six week timber train trial between Georgemas and Inverness. Further details are included in the Scotland region chapter.
- 8.36 Some freight operators have been concerned about their ability to secure firm access rights to the network this year. This was reflected in disputed applications on the East Coast Mainline (Eastern), where industry processes to redesign the timetable were incomplete, and through the Castlefield Corridor (North West and Central region), which was declared congested. As a result, the operators appealed to ORR to consider the evidence and direct a decision. In both cases, ORR recognised the importance of the work Network Rail was developing to support planning for future timetables, but our analysis concluded that Network Rail had not provided sufficient evidence that it had considered each case on its merits. We concluded that Network Rail was able to accommodate freight to a greater extent than had previously offered, and instructed Network Rail to ensure that in future, cases are considered on their merits. This issue is also discussed in the System Operator and Eastern region chapters.
- 8.37 Freight operators have also been concerned this year by Network Rail's changed approach to selling access to the network for some of the heaviest freight trains. Network Rail sells access rights for up to 10 years. This is not aligned to Network Rail's process for agreeing use of the network by trains which are heavier than would usually be permitted, in which dispensations are granted for up to two years. In some cases, Network Rail has curtailed its sale of access rights for these heavy trains in line with the dispensations that engineers were willing to grant. This has particularly been an issue in Southern region where there are a large number of ageing metallic bridges. Network Rail has convened a number of industry working groups, and we are engaging with Network Rail and industry on this issue.
- 8.38 Rail freight services are an important enabler to the wider economy, and some of the heaviest freight trains support supply chains including construction, petrol, iron and steel. Freight operators have been concerned that these changes reduce certainty for their businesses and this limits the case for further investment. Restricting access for some of these heaviest trains may also impact Network Rail's ability to make the best use of network capacity and to support efficient freight services. It could also be detrimental to wider policy goals such as decarbonisation, air quality improvements and reducing congestion by risking the competitiveness and longer term certainty of some rail services, particularly when compared to road transport. We will continue to engage with Network Rail and the industry on these issues, and monitor Network Rail's approach.

Annual Assessment of Network Rail April 2020 to March 2021 System Operator



9. System Operator

Introduction

- 9.1 Network Rail's System Operator carries out a range of vital network functions including:
- strategic planning, the System Operator is accountable for Network Rail's long-term planning process;
 - managing changes to what the network delivers, such as working with industry to prepare for major timetable changes;
 - providing information about capacity;
 - managing operator access to the network; and
 - producing the timetable.
- 9.2 The nature of the System Operator's responsibilities requires it to collaborate extensively with Network Rail's regions and the broader rail industry.
- 9.3 We adapted our monitoring this year to focus on Network Rail's response to the Coronavirus (COVID-19) pandemic. For the System Operator, this has meant that we have focused on its delivery of exceptional timetable changes in response to changing passenger demand, funder requirements and operational needs.

The System Operator's performance was good

- 9.4 The System Operator performed particularly well in respect of delivering timetabling during the pandemic. There were improvements this year in the aspects of information provided on access and capacity. We are continuing to engage with the System Operator to ensure that this is sustained.
- 9.5 Network Rail uses scorecards to monitor its performance and to help align its priorities with its customers. The System Operator's scorecard includes measures relating to its delivery of all its key functions. Overall, the System Operator achieved a 68.7% weighted score for this year. This is a strong result but lower than last year's weighted score of 85.4%.
- 9.6 The System Operator's 2020-21 customer advocacy survey showed a significant improvement in how favourably it is viewed by its stakeholders, a net positive rating of 60%, up from 34% in 2019-20.

The role of the System Operator is evolving

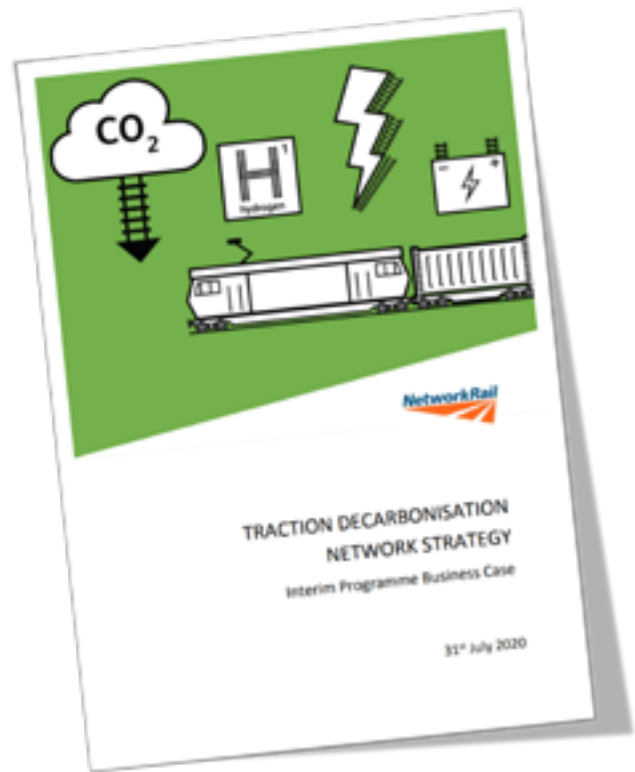
The System Operator delivered a transformation programme in October 2020 to create an operating model intended to be easier for its customers to understand. Regional strategic planning was devolved to the regions to ensure that the regions could be accountable for the delivery of their own strategic plans. Lessons were learned from previous planning devolution exercises and the change was well-managed.

- 9.7 The System Operator has undergone two organisational changes this year. In October 2020, it changed its operating model. This resulted in roles delivering strategic planning for the regions moving from the System Operator to the regions. We reviewed [this change](#) under our [Managing Change policy](#).
- 9.8 The System Operator retained its primary responsibility for strategic planning (in accordance with Network Rail's network licence) by continuing to deliver:
- the strategic planning framework;
 - leadership of the long-term planning 'Core Business Process';
 - development of cross-cutting and network-wide strategies; and
 - leadership of the strategic planning profession within Network Rail.
- 9.9 The System Operator also developed Network Integration Forums for each of the regions (apart from Scotland which already had one) to support its work on strategic planning and network integration.

New governance is supporting network integration

- 9.10 Network integration refers to the work that Network Rail does to align the planning and implementation of the timetable, rolling stock, operations, infrastructure and its commercial and regulatory frameworks so that the railway delivers to passengers and freight customers in a coherent way. To support this, the System Operator's network integration team works with the regions to develop a high-level map of how and when the network is changing. The System Operator then tracks progress towards these changes, identifying gaps and dependencies.
- 9.11 As Network Integration Forums are important in ensuring that the System Operator remains primarily responsible for strategic planning, we required the System Operator to implement and appropriately resource them (in line with recommendations previously made about the [System Operator's governance arrangements in Scotland](#)). The System Operator has done this. These forums are at an early stage, and we will therefore continue to monitor how they are supporting the System Operator in delivering its leadership role in both strategic planning and network integration.

- 9.12 Following the devolution of local strategic planning to the regions, the System Operator is focused on network-level strategic planning, leading the strategic planning profession within Network Rail and network integration.
- 9.13 Strategic planners across Network Rail have delivered important pieces of strategic planning this year. The System Operator delivered the Traction Decarbonisation Network Strategy, Interim Business case in July 2020. This was a significant undertaking which will inform funders' decision-making and policy on decarbonisation.
- 9.14 Strategic planning is an important area which we expect to monitor more over the remainder of CP6.



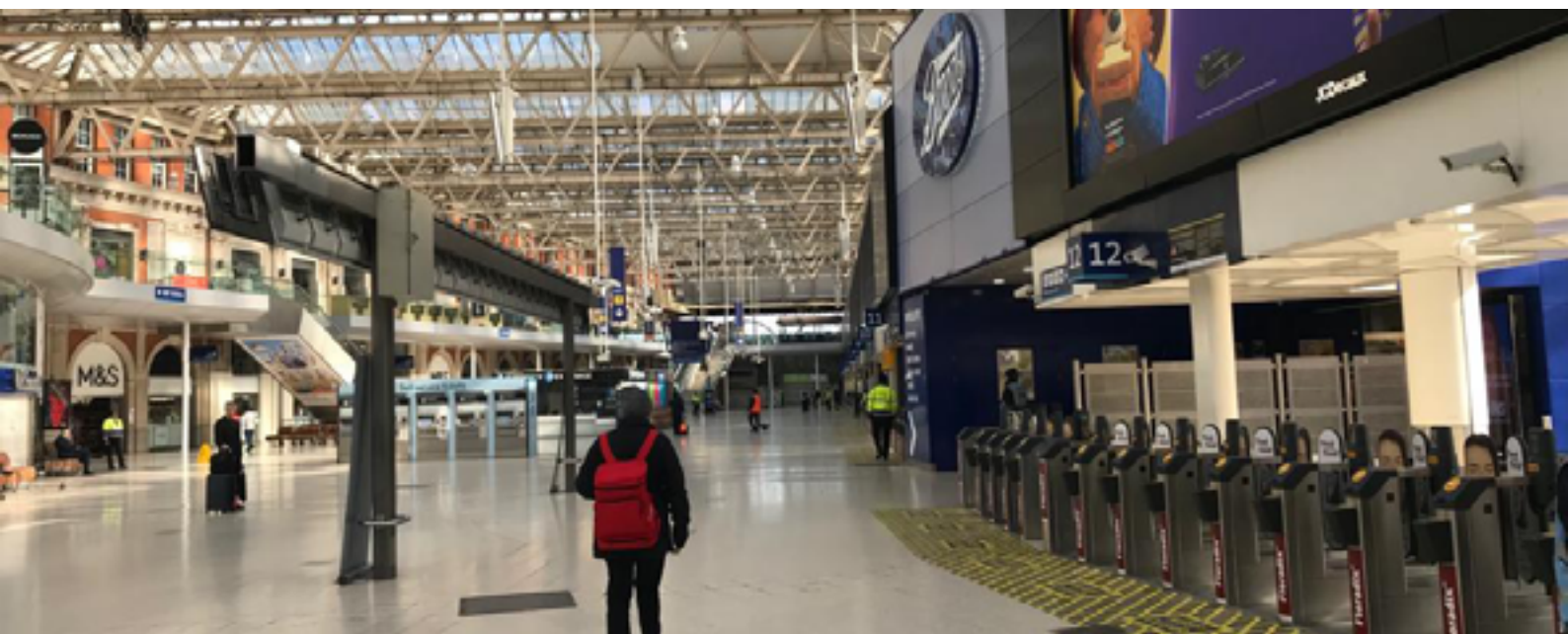
The System Operator is adapting to its additional responsibilities

- 9.15 In March 2021, the System Operator began the process of implementing further changes following the dissolution of Network Rail's Network Services directorate. These changes were:
- its Client Portfolio Management team moved to the Chief Finance Officer;
 - its Whole Industry Strategic Plan team moved to a new strategy and policy team under the Chief of Staff to the Chief Executive Officer; and
 - three teams from the disbanded Network Services directorate moved to the System Operator:
 - Network Strategy and Operations;
 - Operational Programme Delivery; and
 - National Passenger Operators, Customer Experience and Freight.
- 9.16 The System Operator will adjust its operating model in response to these changes over the coming year, which involve a significant broadening of its responsibilities and an expansion of the size of the System Operator organisation. We are content with its progress and will continue to hold Network Rail to account for the delivery of the Periodic Review 2018 Final Determination requirements.

Timetable planning responded well to uncertainty

The System Operator demonstrated a proactive and resilient approach to delivering its activities, particularly timetabling, throughout the pandemic. Timetable planners in Network Rail and across the industry worked incredibly hard to deliver an unprecedented number of timetable changes. At the start of the pandemic, this was through the contingency timetable, but as the pandemic progressed, the System Operator proactively developed a more frequent and agile approach to timetabling. While much good work has been done, we will continue to seek evidence of Network Rail's engagement with funders and wider stakeholders on this and whether it is doing all it can to influence a high performing timetable.

- 9.17 Before March 2021 and the effects of the pandemic, Network Rail delivered two major timetable changes a year, in May and December. Operators normally notify Network Rail of plans to make significant changes over a year in advance and formally request the timetable they would like to run forty weeks in advance. The May and December timetables are the base timetables. Network Rail has an ongoing weekly process of adjusting the base timetable to accommodate changes such as for engineering works, operational requirements, public holidays or events. This work is normally undertaken to produce the working timetable 12 weeks in advance. This is set to facilitate ticket sales and passenger information, and by freight operators as part of their planning of their services.
- 9.18 Network Rail necessarily adopted a different approach in response to the pandemic. At the start of the first lockdown, Network Rail and train operators revised the working timetable to reduce service levels while still delivering services required for those who need to travel and freight. We commented on the success of this in our [SO chapter of the 2019-20 Annual Assessment of Network Rail](#) and our [mid-year letter on the performance of the System Operator](#). In our letter, we also stressed the importance of effective risk management, information to passengers and support to freight operators. The System Operator responded positively to our concerns and continues to have open dialogue with us about its evolving approach to delivering timetabling.



- 9.19 As the pandemic progressed, the System Operator delivered further changes to the timetable in May, July, September and December 2020 in response to continuing short notice changes to passenger numbers and service levels. In summer 2020, the System Operator developed a plan to deliver four timetable interventions from April 2020 to March 2021, to provide structure and control to the more frequent changes to the timetable.
- 9.20 During 2020, we engaged with the System Operator about how it would return to publishing the timetable 12 weeks in advance, in accordance with the [network licence](#) and the [Network Code](#). In September, the System Operator [wrote to us](#) and confirmed a plan to recover normal timescales for publishing the timetable by December 2021. It subsequently became clear that the need to accommodate short-term changes would continue beyond 2020. The System Operator developed a number of approaches that were considered by operators and ultimately decided to [deliver four timetable interventions per year through to May 2022](#). This was to enable the industry to respond quickly to changing passenger levels, government policy, funder requirements and operational considerations.
- 9.21 Facilitating additional timetable changes required Network Rail to step away from agreed industry timescales. It also meant that the timetable was planned to be finalised less than 12 weeks in advance. Given the low passenger numbers this year, the impact of this was most keenly felt by freight operators whose rostering and train planning was impacted by delays in finalising the timetable. While the System Operator subsequently took steps to manage freight operator concerns, it could have engaged more successfully at an earlier stage with the freight operators to help manage this impact.
- 9.22 The System Operator has been successful in delivering its amended approach to timetabling, but this has not been without its challenges. Our engagement with Network Rail stressed the importance of:
- effective risk management;
 - clear and timely passenger information;
 - support to freight operations; and
 - the delivery of an effective dispute mechanism.
- 9.23 One of the key themes of [Stephen Glaister's inquiry into the May 2018 timetable disruption](#) was the vital importance of the timetable development processes being aligned with critical decision processes within the industry. We are keen to ensure that Network Rail and the industry have the appropriate processes to manage risk associated with timetable change, particularly while normal processes are not being followed.
- 9.24 The System Operator has a key role in delivering information to passengers. Usually this involves finalising the timetable to enable ticket information and sales 12 weeks in advance. Throughout the pandemic, we accepted that the System Operator was making best endeavours to finalise the timetable. We have also been assured by the work that Network Rail has undertaken with the Rail Delivery Group to separate ticket sales from finalising the timetable. We wrote to [train operators](#) and [third party retailers](#) in October 2020 to remind them of their roles and obligations in the delivery of timetable information to passengers.

- 9.25 Freight operators told us that they found the late publication of the timetable very challenging as it limited their opportunities to plan crew rostering and train diagramming effectively and respond to customer needs. It also reduced the time available for Network Rail and freight operators to work together to address any issues within the timetable, for example to negotiate alternative arrangements when requested services were not accommodated in the timetable. These issues were particularly severe when the timetable was being finalised at four or fewer weeks in advance. We understand that Network Rail engaged with freight operators about these issues and has developed plans to support them, such as prioritising key freight flows within the timetabling process.
- 9.26 Changes to the timetabling process also impacted on the timetabling disputes process as it reduced the timescales for the resolution of any access or timetabling disputes by the Access Disputes Committee. Network Rail is required to have an access disputes resolution process under [The Railways \(Access, Management and Licensing of Railway Undertakings\) Regulations 2016](#). It is important that train operators are able to challenge Network Rail and hold it to account for its decisions.

Effective risk management is critical to support forthcoming timetable changes

- 9.27 Timetable planners across the industry have made exceptional efforts to successfully deliver timetable changes through the pandemic. As the industry seeks to attract passengers back to the railway, it will be important that Network Rail continues to deliver the robust and resilient timetables that underpin a high-performing train service. In considering future timetable changes and preparations for increased passenger numbers, it is also important to recognise that, while more frequent and in condensed timescales, the changes delivered have been relatively simple ones. The complexity of change planned for future timetables, in particular May 2022, is far greater than the reductions and uplifts delivered from April 2020 to March 2021. The May 2022 timetable change includes major timetable recasts for the East Coast Mainline and West Anglia Mainline. Network Rail's management and mitigation of systemic risk will be particularly important to ensure the railway is able to deliver for passengers and freight customers. We will continue to monitor this.
- 9.28 Successful implementation of robust timetables will require timely and clear decision-making from those specifying train services. The System Operator will need to support train service specifiers in making trade-offs between different services, and between capacity utilisation and performance for the May 2022 timetable. As the work to develop these timetables will be significant, the timeliness of these decisions is also important to allow timetable planners sufficient time to develop robust timetables. The System Operator has taken positive steps in establishing a dedicated team to develop an advanced timetable for Eastern Region timetable changes for May 2022 through a combination of the Advanced Timetable and Production planners.
- 9.29 The Industry Timetable Assurance Programme Management Office (referred to as the PMO) is playing a critical role in communicating with train service specifiers and ensuring that the risks and consequences are understood. We have been impressed by the PMO's response to the pandemic and how it has constructively challenged where there have been issues to resolve. The PMO will need to continue to build on this success in order to effectively mitigate risks for May 2022, and we will monitor this.

The System Operator is leading a review of timetabling

- 9.30 The System Operator recently convened an Industry Timetable High Level Group to review options for future timetabling approaches and secure industry agreement prior to progressing proposals for change carried out through formal industry processes. This initiative is intended to learn from what has been achieved during the pandemic and ensure that the timetabling processes meet the needs of passengers, freight customers and the industry.
- 9.31 We welcome this approach as it allows Network Rail to lead the development of industry consensus about balancing the desire for a more agile timetabling process with more effective risk management. Any agreed changes will need to accommodate the work of passenger and freight train operators that underpins the successful delivery of any timetable. It is important that the industry has a process that is robust, agreed and captured in clear rules.

Improvement projects to support timetabling are being delivered

We allocated £100 million to the System Operator for Control Period 6 (CP6) to deliver a portfolio of capital improvement programmes to improve timetabling and capacity allocation. The System Operator continues to make good progress in delivering these programmes. While the full benefits are not planned to be realised during CP6, some good “quick wins” have already been delivered.

- 9.32 Funding was allocated in CP6 to allow the System Operator to address the recommendation in the Glaister Review that a strategy should be developed to address underlying technical issues which limited the industry's ability to plan effectively. The System Operator developed the Industry Timetable Technology Strategy to address this recommendation. It was finalised this year following comprehensive industry engagement. This strategy has led to a revised approach to the System Operator's capital programme, in which the various projects have been brought together into a single programme: 'Cornerstone'.
- 9.33 Delivery this year has included upgrades to timetable planning software to allow faster timetable simulations and improved modelling work. The System Operator has also developed a self-service performance hub to improve timetable development. Delivery of these programmes has created operational efficiencies by allowing several planners to work on the same model which reduces the timescales needed to deliver the work and reduces the amount of time it takes a planner to undertake a specific task. The resource released has been redirected to the increased workload associated with more frequent timetable changes. The introduction of machine reading and automating the transfer of data between some systems allows planners to focus on other tasks. Increased automation also reduces safety risks and increases timetable quality.
- 9.34 The System Operator is anticipating trialling new timetable technologies such as automated conflict detection in preparation to roll these out across the network in Control Period 7 (CP7). Network Rail anticipates that this kind of automation will improve timetable quality and reduce timetable errors, leading to improved train performance.

9.35 The System Operator has also supported work to learn from the high performance levels delivered during the pandemic. For example, the System Operator led a review of station dwell times. This was to identify stations where trains stayed longer than planned for in the timetable and to consider what could be done to improve performance. We have not yet seen evidence that information gathered during the pandemic has been used systematically to change the timetable and sustain the improvement in performance seen this year. The closer role for Network Rail in the development of train service specifications under new passenger service contracting arrangements may enhance its ability to ensure these lessons are reflected in decisions about train service specifications, which are currently taken by funders. We will continue to seek evidence of Network Rail's engagement with funders and wider stakeholders on this and whether it is doing all it can to influence a high performing timetable.

The System Operator is improving its provision of information about access and capacity

In response to our concerns the System Operator made some process improvements to support the provision of better evidence to support access applications. We will continue to monitor the quality of evidence submitted to us and will provide feedback to the System Operator and regions to support ongoing improvements.

9.36 The System Operator is responsible for assessing and articulating what capacity is available on the network and it owns the processes for allocating that capacity. Our [mid-year letter on the performance of the System Operator](#) said that it needed to improve the evidence it provides to support access applications. Since then, the System Operator has engaged with ORR and the regions to develop agreed working practices, including timescales and evidence to support contested applications. Changes have also been made to access application templates used by Network Rail so that key information is captured and reviewed more effectively. We will monitor whether this leads to improvements in the access process.

9.37 Network Rail's assessment and articulation of capacity have real world impacts for passengers and freight customers. The Freight and National Passenger Operators (FNPO) chapter explains the impact that Network Rail's access decisions on the East Coast Mainline and Castlefield Corridor had on the ability of freight operators to plan their businesses. Further information on the East Coast Mainline is included in the Eastern region chapter, and further information on Castlefield Corridor is included in the North West and Central region chapter.

9.38 We are continuing to closely monitor the evidence Network Rail submits to us on access applications. We will provide feedback to the System Operator and the regions to support continuous improvement. We are particularly keen to ensure that Network Rail provides adequate evidence to explain and justify its decisions on access applications. We expect this to include information used by Network Rail in its own decision-making. The importance of region and System Operator co-ordination in the provision of evidence is noted here, as well as in the Wales and Western, North West and Central, and Eastern region chapters.

Some improvements to information on congested infrastructure have been delivered

9.39 Our mid-year letter also expressed concern that Network Rail had not complied with the timescales for publishing the Capacity Enhancement Plan for the Castlefield Corridor, a shared responsibility between the North West and Central region and the System Operator. This was due in March 2020 but was published in February 2021. We have previously discussed the need for the System Operator to improve the supporting information it is required to provide in relation to congested infrastructure. We are satisfied that improved and updated information has now been published. Positive developments include Network Rail's revised Network Statement, the publication of a [register of congested infrastructure](#), and the fact that the System Operator has reviewed and is consulting on revisions to its [2016 Congested Infrastructure Code of Practice](#).

Sale of Access Rights timescales are not being met

9.40 Timely access applications are important to allow sufficient consideration of performance and capacity issues by operators, Network Rail and ORR. Last year our annual assessment expressed concerns that applications for track access continued to be made late, and that this was impacting our and the industry's ability to consider performance and capacity issues. This is an industry-wide issue and most access applications continue to be approved less than 12 weeks ahead of a timetable change date. The System Operator owns the Sale of Access Rights process, so it needs to lead cross-industry efforts to deliver improvements.

9.41 This year the rail industry needed to respond to high levels of uncertainty due to the pandemic, which impacted on the number of passenger services required. Sometimes this will have impacted on the System Operator's ability to make timely track access applications.

9.42 Despite the challenges of the pandemic, the System Operator has undertaken some improvements which we anticipate will support the industry's processes. We have already seen improvements in the periodic reporting and monitoring of known and anticipated applications. The System Operator also led a change to the Network Code so operators must provide Advance Notice of Timetable Change no later than 55 weeks before a timetable change. We anticipate further improvements as a result of a new online training programme and guidance for the customer relations teams within the Network Rail regions which are responsible for supporting track access applications.

9.43 Longer term, the approach to track access may need to be adjusted so it reflects and supports any changes made to timetabling. The System Operator is leading on the review of timetabling and it owns the access rights framework. We anticipate that it will continue to exercise this leadership role in ensuring that timetabling, capacity allocation and the sale of access rights framework are mutually supportive and enable Network Rail to deliver for passengers and freight customers.

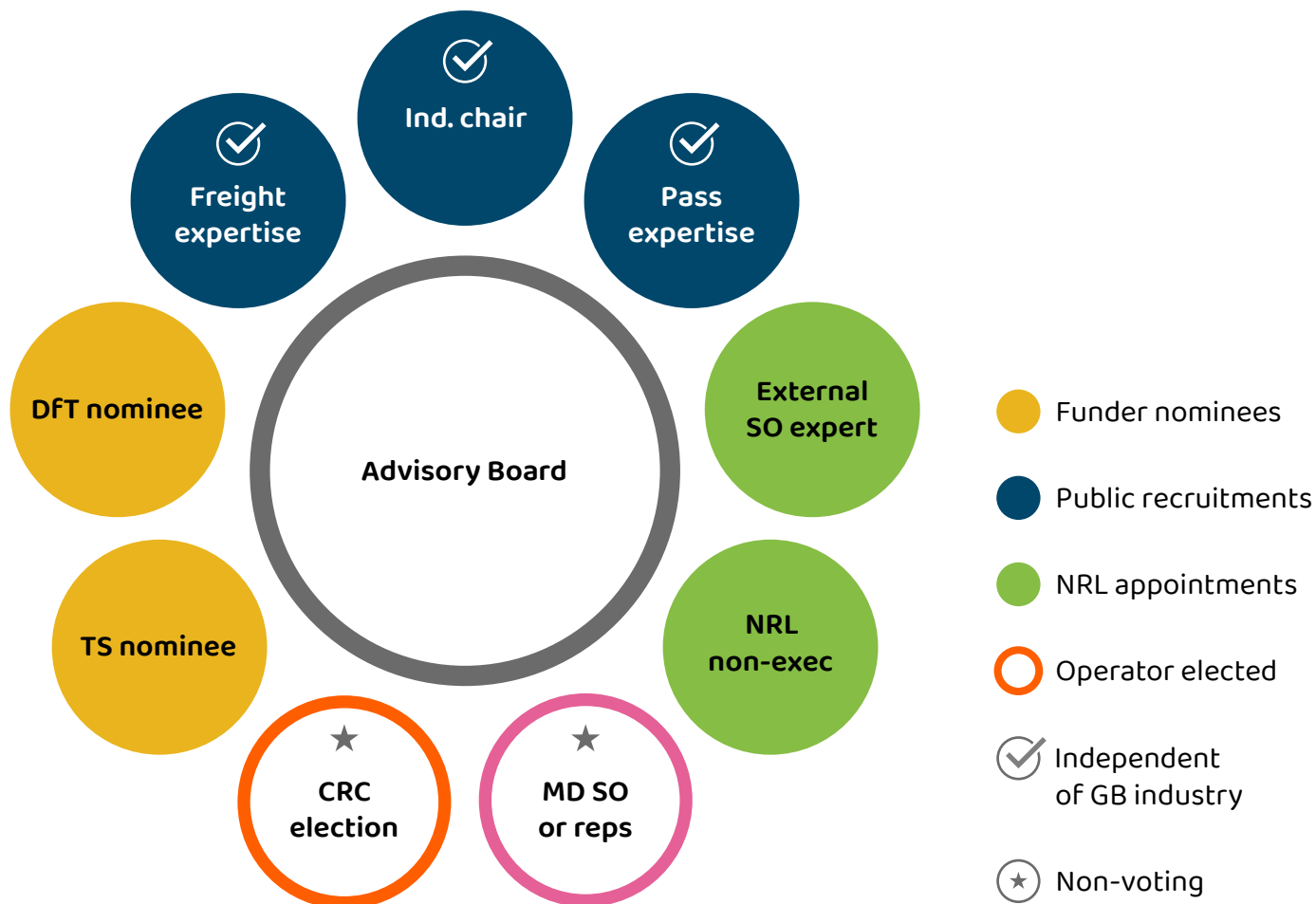
The System Operator has good governance and engages well with stakeholders

The System Operator continues to deliver high quality stakeholder engagement. Feedback from its customers has influenced the System Operator’s operating model and business planning.

System Operator Advisory Board

9.44 The System Operator has an independent Advisory Board which holds the System Operator to account on behalf of funders, customers, and end users for the development of its business plan. We have been impressed by the dialogue and openness between the System Operator and the System Operator Advisory Board.

Figure 9.1 System Operator Advisory Board



Customer advocacy survey

- 9.45 The System Operator conducted a customer advocacy survey again this year. We continue to be impressed by the System Operator's commitment to engage with its customers and take action to address issues raised. In particular, the transformation programme that the System Operator delivered in October 2020 drew on feedback from customers and was intended to deliver an operating model that was more easily understood. It seems that this effort has been recognised by the System Operator's customers, reflected in major improvements in the overall level of net positivity in the customer advocacy survey. The System Operator needs to be able to work effectively with industry and funders. It has found an effective way to solicit feedback, and we expect it to maintain this constructive dialogue.
- 9.46 The high-level evidence of the SO's engagement with its customers is generally positive. We are due to publish our annual stakeholder engagement assessment report later this summer. This report will provide a detailed assessment of the stakeholder engagement for year 2 of CP6. More information on this assessment can be found in the network wide chapter.

Annual Assessment of Network Rail April 2020 to March 2021

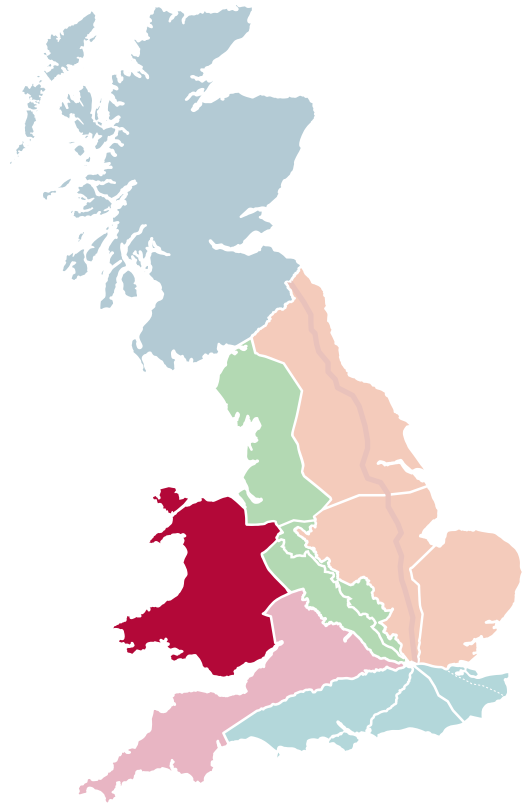
Wales Route



10. Network Rail's Wales route

Overview

- 10.1 Network Rail's Wales route links the major towns and cities of Cardiff, Newport, Swansea, Wrexham and Shrewsbury, as well as providing connectivity in more rural areas. The route is part of the wider Wales and Western region.
- 10.2 Most passenger rail services in the Wales route are operated by Transport for Wales and Great Western Railway. Cross Country and Avanti West Coast also operate passenger services between Wales and the rest of Great Britain.
- 10.3 Rail freight services are also very important, moving various commodities, particularly steel on the South Wales Main Line within Wales and beyond.
- 10.4 As with the rest of Great Britain's rail network, rail infrastructure in Wales is managed by Network Rail. The Core Valley Lines network was transferred from Network Rail to Transport for Wales on 28 March 2020.



Overall performance in 2020-21

- 10.5 Network Rail measures its company-wide and regional performance in core areas of its business using sets of metrics and internal targets. It captures these in national and regional scorecards.
- 10.6 Each region's scorecard is based on Network Rail's four strategic themes (on the side of passenger and freight users; easy to engage with, an efficient and dependable partner; proud to work for Network Rail; and instinctive industry leader) and it includes our consistent measures and locally driven customer measures and targets. We use scorecards as one way to hold Network Rail to account for its performance.
- 10.7 Performance for each scorecard measure is expressed as a percentage achievement between zero and 100, with 50% being on target for the majority of measures. While we hold the Wales and Western region to account for delivery of its agreed regional scorecard targets, we also monitor the Wales route performance using its route scorecard.
- 10.8 The Wales route performed well on its scorecard in 2020-21, with 11 of its 16 measures ending the year with 100% achievement of targets and only three measures missing their end of year 50% target. This is a considerable improvement on 2019-20 when only four of the 17 measures achieved 100% of their targets.

- 10.9 As with the Wales and Western region, the Wales route performance needs to be seen in the context of the coronavirus (COVID-19) pandemic. The route worked well to ensure passengers and staff were kept safe, with frontline staff keeping those who need to travel and freight moving during national lockdowns.
- The Wales route's passenger and freight performance improved during 2020-21, although the route did not see the same scale of improvement as elsewhere on the network. This was due partly to a number of disruptions caused by severe weather events throughout the year and from a major freight train derailment at Llangennech.
 - The number of asset failures decreased significantly in 2020-21 and the Wales route contributed to the region delivering well against its target for renewals volumes. The route also delivered well on its project commitments to mitigate the impacts of severe weather and climate change on the route.
 - Wales route improved its health and safety performance in 2020-21, exceeding its yearly targets in all four scorecard safety measures. While it is making good progress with track worker safety and passive level crossing improvements there were still too many near miss incidents on the route.
 - In 2020-21, the Wales and Western region exceeded its efficiency target for the second year in a row but the financial performance targets for the region and the Wales route were not met.

Train performance improved during 2020-21

The Wales route's passenger train and freight performance improved as a result of the pandemic, but it did not see the scale of improvement experienced elsewhere on the network. The route needs to understand why this is and work to deliver further improvement.

Network Rail's train performance in 2020-21

- 10.10 We use a range of metrics to assess overall train performance within the regions but focus on two consistent measures to compare performance across them:
- A consistent region measure for passenger services known as CRM-P. This is the delay minutes to passenger services attributed to Network Rail from incidents occurring in each Network Rail Region, per 100 train kilometres. A lower score reflects better performance; and
 - A freight delivery metric for each region known as FDM-R. This is the percentage of commercial freight services that arrive at their planned destination within 15 minutes of their booked arrival time, or with less than 15 minutes of delay caused by Network Rail or another operator that is not a commercial freight operator.

10.11 We monitor delivery of these measures for each region against an annual target and a regulatory minimum level of performance, referred to as the regulatory floor. This minimum level of performance signals the point at which we are highly likely to consider a formal investigation.

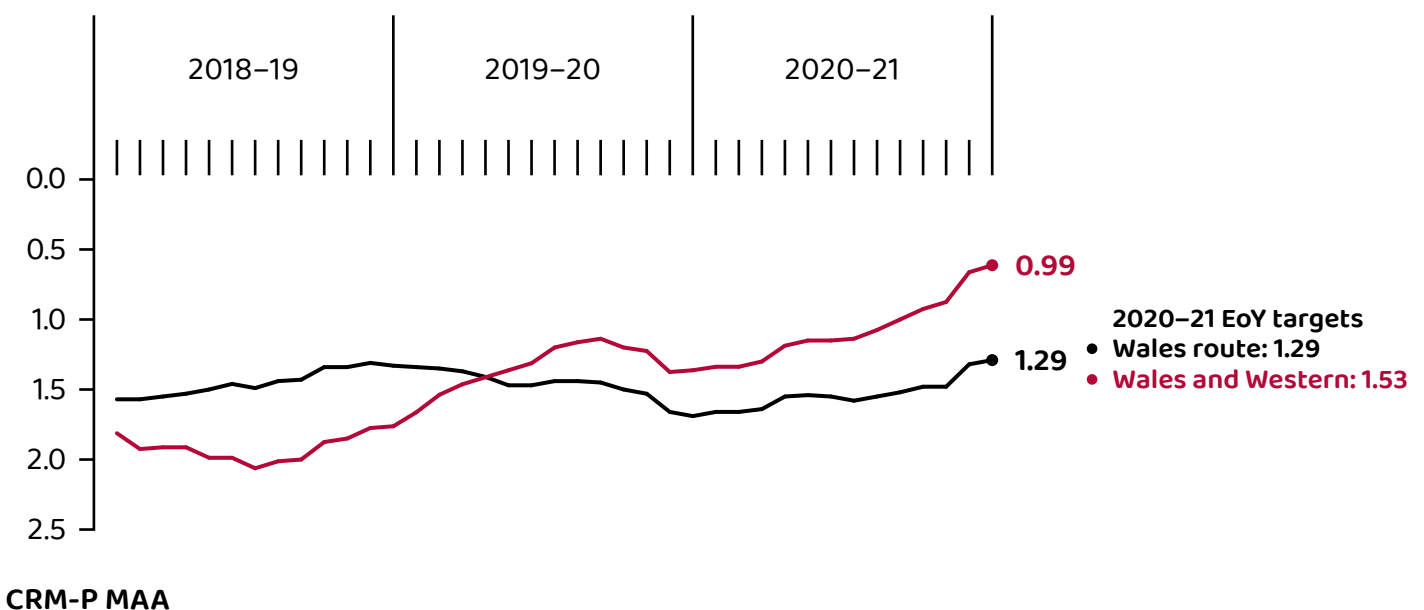
10.12 While we hold the Wales and Western region to account for delivery of its agreed scorecard targets and the CRM-P and FDM-R measures, we do not specifically regulate against CRM-P and FDM-R floors for the Wales route. However, its scorecard has target levels of performance against these metrics.

Passenger train performance did not meet its internal target

10.13 In 2020-21, the Wales route's internal target for CRM-P was based on it achieving 1.29 minutes of delay per 100 kilometres of train travel (using the moving annual average (MAA)). The route showed some improved performance during the past year and finished on target.

10.14 We recognise however, that a number of severe weather events during the year, which caused disruption, widespread flooding and the temporary closure of a number of lines, impacted on the route's performance. This indicates that the route has more work to do to improve its resilience and its performance delivery for train operators.

Figure 10.1 Passenger train performance (Network Rail caused delay minutes normalised, CRM-P), Wales route and Wales and Western region, 2018-19 to 2020-21



Source: ORR analysis of Network Rail data

Freight performance exceeded its 2020-21 target

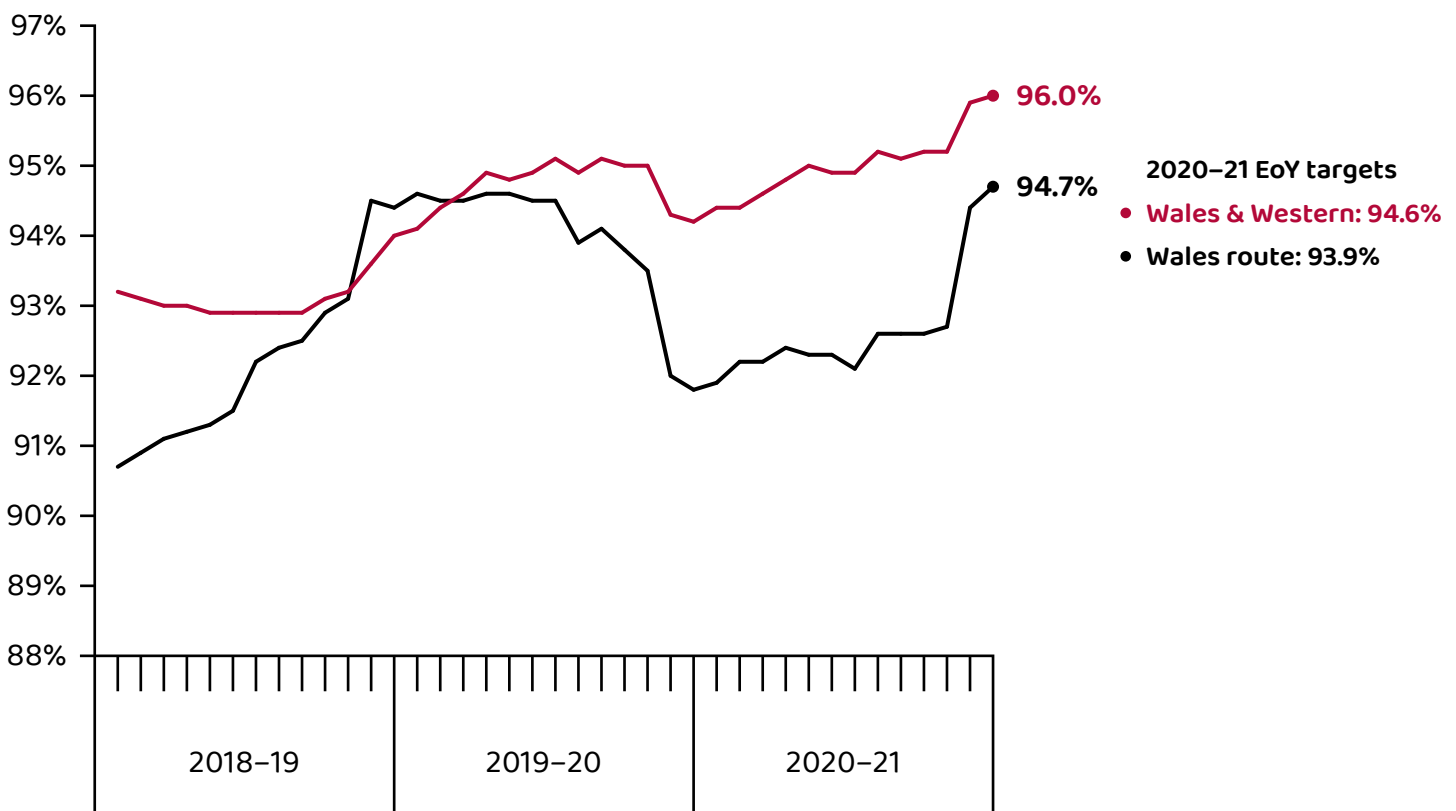
10.15 The Wales route exceeded its 2020-21 target for FDM-R, finishing the year at 94.7%, higher than its target of 93.9%. However, similarly to CRM-P, the route experienced inconsistent performance through the year.

10.16 Severe weather had a noticeable impact on route performance. Following a summer which saw persistent rain, strong winds and a heatwave, two storms, Ellen and Francis, impacted the route at the end of August 2020, with fallen trees, power outages and flooding, temporarily closing lines and contributing to line speed restrictions. From October 2020 to February 2021, the route had heavy rainfall and snow, both of which contributed to flooded rail lines and fallen trees, resulting in cancellations and temporary line closures.

10.17 The end of year result is therefore commendable, given the number of disruptions from severe weather events, and the occurrence of a major derailment at Llangennech.

Figure 10.2 Freight performance (FDM-R), Wales route and Wales and Western region, 2018-19 to 2020-21

FDM-R MAA



Source: ORR analysis of Network Rail data

Llangennech derailment

On 26 August 2020, a 25 wagon freight train derailed near Llangennech, Wales, causing a major fire and spilling 330,000 litres of fuel. Working in partnership with Natural Resources Wales and specialist environmental contractors, Network Rail's frontline teams worked around the clock on one of the biggest environmental recovery projects Network Rail has ever been involved with, described by Natural Resources Wales as the most challenging since the Sea Empress disaster in 1996.

The derailment resulted in the temporary closure of the Swansea District Line and the southern section of the Heart of Wales Line for seven months, impacting on the Wales route's freight performance as freight and passenger services were diverted to other lines.

The Wales route demonstrated strong engagement with stakeholders in the immediate aftermath of the derailment, during the environmental recovery, and through the restoration of the railway. The route provided regular and targeted updates to a diverse group of stakeholders, including local authorities, community councils, emergency services, other agencies and other rail organisations. This is commendable, particularly in light of the pandemic's challenges.

The line was reopened to traffic in early March 2021.



Derailed freight train near Llangennech

More attention is required in performance management capability

- 10.18 We recognise that lower passenger numbers and a reduced number of train services have contributed to improved train service performance. Given the impact of the pandemic on passenger and freight train performance levels, in 2020-21 we placed greater focus on a qualitative assessment of Network Rail's contribution to train performance, including assessing its performance management capability and the delivery of improvements.
- 10.19 During 2020-21 we have focused on the region's ability to embed improved performance management capabilities across its business. The Performance Improvement Management System (PIMS), is a whole industry programme looking at the capability of the industry to improve train performance. Network Rail has taken a leading role in this area, producing and sharing a range of materials and processes for the industry to follow to support delivery of improved train performance.
- 10.20 A key component of PIMS is the Risk Management Maturity Model for Performance (RM3P). This is a self-assessment tool focussing on the business processes supporting train performance improvements. This tool looks at five areas: policy, governance and leadership, monitoring, audit, and review.
- 10.21 During 2020-21, the Wales route has shown some progress with PIMS and RM3P, committing to deliver on performance improvements outlined in joint performance strategies with operators. A good example of the PIMS activity on the Wales route is the 'One Team' scheme, which acts as a conduit between Transport for Wales and Network Rail and focuses on the local operations areas. It helps to bring to bear employees' local knowledge in the development of performance improvement initiatives.
- 10.22 The route performance strategy manager has been an active participant in a recent peer review of joint performance strategies during 2020-21. This has provided them with greater exposure to best practice around the network, which can be integrated into the route's strategy. The route is currently focused on updating and improving the Transport for Wales joint performance strategy and the associated performance improvement plan. This work is being supported by the improving working relationship between the respective performance leads for Network Rail and Transport for Wales.
- 10.23 We note that the last Network Rail and Transport for Wales RM3P assessment was undertaken in 2019. As RM3P is key component of PIMS, it is important that Network Rail and Transport for Wales engage well to make sure that this is up to date and relevant to both organisations. We will be monitoring progress of the route's RM3P assessment over the coming months.

Capacity and access to the network

- 10.24 We make sure that passenger and freight train operating companies have fair access to the rail network to make best use of capacity. If a train operator wants to access the national railway network, it needs a track access contract with Network Rail. Where operators and Network Rail cannot reach agreement, they can appeal to us to use our statutory powers to direct a decision on access. Operators and Network Rail also need to plan these contracts in sufficient time to produce robust timetables to ensure other operators can plan their own use of capacity.

- 10.25 In September 2020, we highlighted that the Wales and Western region needed to improve its coordination and timeliness of response with the System Operator on the evidence it provided to support its track access decisions where it could not reach agreement with operators. This followed an open access application on the Great Western Main Line where the capacity and performance information provided by the region and the System Operator (which models capacity and performance) had not been produced in a timely enough manner.
- 10.26 Although our assessment of this case was concluded in early 2021, we will continue to monitor the region's approach to access applications closely as there are currently other 'live' freight and passenger applications where the region has not yet reached agreement with operators.

Asset management results were mixed

Asset reliability improved during 2020-21 but the Wales route was impacted by severe weather events, as shown by the number of delay minutes attributed to earthworks and structure failure incidents.

Asset sustainability and reliability remain strong

- 10.27 Network Rail needs to secure the maintenance, renewal and replacement of assets on the network so it is safe and operable, and do so in a way that is sustainable and efficient over the long-term. In Control Period 6 (CP6), we test this using a measure of asset sustainability (the Composite Sustainability Index (CSI)). This is set at regional level so we cannot report on CSI for the Wales route. We have agreed Network Rail's target for the end of CP6, based on a defined level of change since the end of Control Period 4 (CP4).
- 10.28 All regions are performing broadly in line with their expected end of CP6 targets. Wales and Western finished 2020-21 with a CSI of 0.2%. This represents an improvement in overall asset sustainability of 0.2% since the end of CP4. The region's trajectory for CP6 is to end the control period with a CSI of 0.2%.
- 10.29 However, as this measure of sustainability is slow-moving because of the very long operational life of railway assets, we also monitor a region's asset failure rates and their impact, volumes of maintenance and renewals delivery and other asset specific measures, which can be used as a proxy for longer-term sustainability. We assess a number of these against a region's internal scorecard targets including asset failure data and asset reliability measures, such as the Composite Reliability Index (CRI), which is a measure of the short term condition and performance of assets.
- 10.30 In 2020-21, the Wales route experienced fewer service affecting failures than target, primarily driven by the impact of the pandemic, and ended the year with a CRI score of 6.9% against a target of -13.1%. This means asset reliability in 2020-21 was 6.9% better than it was in the final year of Control Period 5 (CP5). While this is a considerable improvement on the 2019-20 score (4.2% worse than in the final year of CP5), this is likely due to fewer passengers and services operating during the year.

Figure 10.3 Composite Reliability Index (CRI) (total and per asset), status to target per period, Wales route, Period 1 to 13 2020-21

Key: ■ Above target ■ Below target, but above baseline ■ Below target and baseline

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13
CRI	2.2%	2.3%	2.9%	6.1%	4.6%	4.5%	5.1%	8.2%	9.1%	7.5%	7.0%	4.5%	6.9%
Track	-8.7%	-8.2%	-6.9%	-6.2%	-5.9%	-4.9%	-4.1%	-3.5%	-3.3%	-1.8%	-1.3%	-2.4%	-1.8%
Points	0.9%	1.0%	1.3%	1.5%	0.8%	0.8%	1.4%	1.2%	1.1%	1.1%	0.3%	-0.7%	0.0%
Signalling	10.3%	11.4%	11.6%	13.8%	12.9%	12.6%	13.7%	15.3%	14.7%	13.9%	13.3%	13.7%	13.2%
Buildings	0.0%	0.1%	0.4%	0.8%	0.9%	0.3%	0.2%	0.4%	0.7%	0.3%	0.2%	0.0%	1.0%
Electrical Power	-0.8%	-2.5%	-4.3%	-4.3%	-4.8%	-4.8%	-6.8%	-6.5%	-6.8%	-8.6%	-8.1%	-8.1%	-7.7%
Structures	0.0%	-0.3%	-0.2%	-0.7%	-0.6%	-0.8%	-0.7%	-0.5%	0.6%	0.6%	0.6%	0.2%	0.3%
Telecoms	0.5%	0.8%	0.9%	1.2%	1.3%	1.3%	1.4%	1.9%	1.9%	2.0%	2.0%	1.8%	1.8%

Source: ORR analysis of Network Rail data

10.31 All of the route's internal targets for asset reliability were exceeded in 2020-21, with the exception of points. This is due to a high number of points failures occurring on Wales' highest criticality routes, meaning the impact of these failures has the potential to be high. Track reliability, which was highlighted as an issue in 2019-20, improved considerably during 2020-21 and finished above target.

Delivery of renewals volumes was mixed

10.32 We scrutinise whether Network Rail is delivering vital asset renewals work, for example renewing its track, and if this is in line with planned volumes for each year of the control period. As part of our assessment we look at Network Rail's delivery of effective volumes. This refers to the volume of work undertaken in seven key areas, attributing weightings based on the life added to the asset by each type of work. For example, in the area of plain line track, a full renewal would be given a higher weighting than replacing one individual element.

10.33 Despite the challenges of the pandemic, the Wales and Western region worked hard to maintain renewals delivery during 2020-21. The Wales route does not have a separate route scorecard target for planned renewals volumes, but it did contribute to the region exceeding its internal effective volumes scorecard target in four of the five relevant effective volumes. As shown in the table below, structures bridge volumes were under-delivered due to the deferral of works at Cefn viaduct, caused by third party issues, and at Kidwelly viaduct as a result of access issues.

Table 10.1 Effective volumes (renewals), Wales and Western region, 2020-21

Percentage completion is based on actual volumes delivered against planned volumes.
A percentage completion in excess of 100% indicates delivering more than the planned volumes.

Asset	Actual	Plan	% complete
Conductor Rail Renewal (km)	n/a	n/a	n/a
Earthworks	101	91	▲ 110%
OLE re-wire and mid-life refurb (km)	n/a	n/a	n/a
Track – Plain Line	199	158	▲ 126%
Track – Switches and Crossings	42	33	▲ 128%
Signalling	16	8	▲ 190%
Structures – Bridges	3,313	3,536	▼ 94%
All assets (weighted total)			▲ 135%

Note: Conductor rails and OLE are not applicable in the Wales and Western region

Source: ORR analysis of Network Rail data

10.34 Some renewals work is not captured through the effective volumes measure, so we also look at wider delivery. The Wales and Western region's wider asset renewals work performance is mixed. Track, electrical power, earthworks and drainage all finished above internal targets, however the region under-delivered its planned structures, buildings and signalling. Specifically on the Wales route, wider asset renewals underperformed in most areas. Only drainage outperformed the target, with track, earthworks, structures, buildings (due to pandemic-related deferrals) and signalling (due to level crossings renewal works) all under-delivering.

Structures examination compliance needs action

10.35 One area of concern, which we have been seeking continuous progress on since 2011, is compliance with structures examinations. If examinations of structures, such as tunnels, bridges and culverts are not carried out, the condition of the asset is not fully known and faults may be undetected or not competently assessed.

10.36 As part of our ongoing assurance activities, we identified that there are a large number of incomplete structures examinations across the network. By way of mitigation, Network Rail undertakes risk assessments on site where there is non-compliance, to better understand whether there are any associated safety risks.

10.37 In the Wales and Western region, at the end of 2020-21, there were 2,069 structure non-compliances; 15.3% of the regional portfolio. We do not have sufficient assurance from Network Rail that it has suitable plans in place, or is making adequate progress towards eliminating the overall non-compliance of examinations. We are taking action to ensure this is rectified and we will closely monitor Network Rail's progress and delivery. We are also commissioning an independent reporter to assess the non-compliance across the regions in more detail.

Table 10.2 Structures examination non-compliance, Wales and Western region, 2020-21

Exam type	Site Examination Non-Compliance	Report Submission Non-Compliance	Evaluation Non-Compliance	Total Non-Compliance
Detailed	18	289	52	359
Visual	95	1,215	193	1,503
Underwater	3	197	7	207
Total	116	1,701	252	2,069
			% of regional portfolio	15.3%

Source: ORR analysis of Network Rail data

Good delivery of weather resilience projects

10.38 The first two years of CP6 have seen an increased frequency and severity of severe weather events across all regions. The number of delay minutes attributed to infrastructure failures decreased in the Wales and Western region during 2020-21 compared to 2019-20, due to the decrease in train services. However, the number of weather related and structure failure incidents increased, reflecting the impact of severe weather on the region. It should also be noted that 2020 was the 10th wettest year in Wales since records began in 1862.

10.39 The highest delay incident in the Wales and Western region in 2020-21 was a non-traction power supply failure that occurred in Bangor, Wales. The incident, in autumn 2020, resulted in a delay of 5,398 minutes, causing 47 trains to be cancelled and 462 to be trains delayed. The cable that failed had been identified for replacement by the Wales route and work was due to take place within days of the failure. The cable failed during very wet weather and, due to its length of approximately two miles, it took a comparatively long time to repair.

10.40 Incidents such as this one highlight the importance of the Wales route's management of weather resilience through its Weather Resilience and Climate Change Adaptation (WRCCA) plans. These plans deliver significant and long-term improvements in infrastructure resilience and service recovery in response to severe weather events and climate change. The route is also considering whether weather resilience should be incorporated into the remit of all projects being delivered.

Case studies – Black Bridge lift

Black Bridge, near Machynlleth, West Wales, has a long history of closures due to its vulnerability to severe weather events including flooding. During periods of heavy rainfall, the bridge is repeatedly flooded, leaving the steel deck to be completely submerged. This causes regular temporary closures along the Machynlleth to Shrewsbury route, with large sections of the Cambrian Line in Mid Wales isolated.

In mid-2021, the route will lift the bridge by one metre to incorporate greater resilience to climate change and from the anticipated increases from the water flow currently experienced. The scheme demonstrates an ongoing commitment to improve the resilience of the railway.



Camera footage of the Black Bridge in January 2021 shows flood water over the rail line

- 10.41 In addition to other planned resilience works, including CCTV cameras to monitor drainage asset condition and flooding, the Wales route is undertaking seasonal preparedness work. Through a Joint Vegetation Management Group Forum, the route is working with Transport for Wales to identify future vegetation problem sites and to monitor progress of its plans at current problem sites. We recognise this is a beneficial process as it will achieve a joined up approach to tackling vegetation issues, and lead to the sharing of resources and technologies that will help to achieve positive outcomes.

Assessment of drainage assets

- 10.42 In 2020-21, we undertook a Targeted Assurance Review (TAR) into drainage asset knowledge across all the regions. This is a risk-based review used to provide insight into ongoing and emerging risks and issues within Network Rail. The review identified that Wales and Western was the leading region for best practice in terms of drainage asset knowledge, although at the time, it had not committed to an end date by which it would locate and assess all of its drainage assets. The Wales and Western region has now formally committed to locate and assess these by the end of CP6. We will monitor its progress.
- 10.43 Our TAR found many positive examples of projects using higher specification components to improve weather resilience and save on future maintenance costs.
- 10.44 One example of good practice in Wales is drainage renewal at Gaerwen. The installation of a wider than standard pipe and extra deep catch pits to provide greater spare capacity has built resilience to deal with more severe weather events (e.g. one in 100 or one in 200 years), rather than just a one in 50 year event. While the larger pipe cost 50 to 100% more per metre, it was a small part of the overall project cost, and other efficiency savings contributed to the final project cost being roughly 10% less than the national average for this type of work.

Environmental Sustainability Index was below target

- 10.45 Network Rail has introduced a new measure for environmental sustainability this year, the Environmental Sustainability Index (ESI). This composite measure is comprised of key environmental measures on waste, carbon emissions and non-traction energy usage. During the pandemic, lockdowns across the region resulted in reductions in carbon and energy usage generated by the temporary retail closures at stations and to a lesser extent, offices.
- 10.46 The Wales and Western region did not meet its internal ESI scorecard target, achieving 27.7% against a target of 50%. This is due in part to the ESI measure being adversely impacted by increased activity at the Sudbrook pumping station, near the Severn Tunnel, due to exceptionally high levels of groundwater.
- 10.47 Given that this is a new measure, Network Rail and ORR have commissioned an independent reporter study to assess the reliability and accuracy of the data. Once finalised the findings report will be published on [our website](#).

The Wales route delivered well on its enhancement projects in 2020-21

10.48 Network Rail continued to deliver enhancement projects across the regions despite the pandemic, with continued successful delivery of a number of projects in the Wales and Western region. The pandemic presented challenges to project delivery, including limiting on-site work in confined areas and driver training timescales, which delayed some projects. However, the region worked well with stakeholders, contractors and the supply chain to manage the uncertainty and reduce the impact on project delivery timescales.

10.49 In June 2020, the last part of the electrified railway between London and Cardiff was delivered when electrification through the Severn Tunnel finally went live, following extensive works to resolve conductor beam corrosion issues. This provided a fully electrified route, enabling faster and more frequent electric rail services to run between London and Cardiff. This is a great result for train operators and passengers.

10.50 The route also undertook work on a number of other projects in 2020-21. These were undertaken in challenging circumstances due to pandemic restrictions and the route's progress on these projects is commended:

- On the Cambrian Line in Mid Wales, the restoration of timber beams and metallic elements on the 160 year old, Grade Two listed Barmouth viaduct, final stage to be completed in 2022, and restoration of Traeth Mawr Viaduct to improve resilience;
- Construction of a new, single platform station, car park, bus interchange and cycle storage at Bow Street, near Aberystwyth in February 2021;
- A £2.2 million investment in the Conwy Valley Line to help protect it from severe weather and flooding; and a £5 million upgrade of the River Ebbw railway bridge in Crumlin on the Wales route to support additional train services on the Ebbw Vale Line;
- A £3 million upgrade at Cadoxton station in South Wales making the station more accessible for passengers, with the opening of new lifts, a step-free footbridge, installation of tactile paving, a new waiting shelter, and a new ramp from the ticket office leading out onto the platform; and
- Construction of a new, longer platform four at Swansea station, to enable Great Western Railway's new Intercity Express Trains to arrive and depart from it.



Work on Stage 1 of the Barmouth viaduct in late 2020, was undertaken with pandemic restrictions in place

10.51 We also recognise that the route is undertaking further enhancement and renewal projects in 2021-22, such as the construction of new stations at St. Clears in Carmarthen, Wales, and Deeside Parkway, near Chester.

10.52 The planned introduction of new trains by Transport for Wales aims to increase services across the route by December 2022. However, this requires infrastructure changes such as on the Cambrian Line where digital signalling needs to be upgraded. The increase in services across Wales may result in an increased risk at level crossings so a risk mitigation plan is being developed, supported by our safety inspectors. These works will improve performance of the railway and support future growth.

Capability framework

10.53 We completed our first review of Network Rail's regions' capability using the new Capital Investment Capability Framework (CICF) maturity assessment in July 2020. This is the first time a maturity framework has been developed that measures Network Rail's role in the early stages of projects in a complex cross-industry environment.

10.54 For the Wales and Western region, our assessment concluded that it is operating as expected and at a level consistent with other Network Rail regions. We are monitoring the region's response where it has developed an improvement plan that incorporates and is aligned to current industry initiatives, such as Project SPEED (Swift Pragmatic Efficient Enhancement Delivery).

The Wales route improved its health and safety performance

The route had mixed health and safety results in 2020-21. While it made good progress with track worker safety and passive level crossing improvements, there were still too many near miss incidents.

- 10.55 The Wales route improved its health and safety performance in 2020-21, exceeding its yearly targets in all four scorecard safety measures, including Lost Time Injury Frequency Rate (LTIFR), which had worsened over the previous reporting year.
- 10.56 The route made substantial improvements to the management of track worker safety during 2020-21, and is on track to eliminate unassisted lookout warning work on site by July 2021. In addition, the Wales route is actively working towards sustained lower risk lineside work by increasing the availability of track possessions, and improving line blockage availability, planning and security.
- 10.57 However, more improvements need to be made to decrease the number of incidents and dangerous irregularities and issues which should not occur, specifically relating to track worker safety management. Near misses to staff highlight our ongoing concerns regarding track worker safety, including planning, assurance and behavioural safety. Despite a continued effort to make safety improvements, the level of incidents emphasises the importance of effective and ongoing assurance.
- 10.58 Our investigation of the July 2019 incident at Margam, near Port Talbot, is ongoing. In this incident, two track workers tragically lost their lives when they were struck by a train while working on lines open to traffic. In spite of the challenges of the pandemic, we have noted a good level of cooperation between all parties and we anticipate that the investigation will continue throughout 2021.
- 10.59 The Wales route is implementing the new national passive level crossings strategy, building on the improvements made during 2020-21. In addition, the route has a dedicated budget and programme of work through CP6, which is reducing risk significantly at some of the most problematic level crossings. The challenge for the route will be to sustain its current delivery progress of route improvement programmes, at the same time as implementing the strategy's additional changes.
- 10.60 We have concerns around the route's control of contractor risk when undertaking clearances of vegetation. A number of incidents in Wales, and the wider Wales and Western region, indicated that Network Rail does not have sufficient control over contractors to ensure management of risk, and that the use of multiple levels of subcontractors appears to have resulted in a dilution of control. We are following this up with the region.
- 10.61 Inspections during the past two years have identified that while there have been some improvements in the Wales route in asset safety management, some of our work (following track faults and in relation to risk decisions at earthworks, for example), has uncovered weaknesses in document control and the management of records relating to asset condition which need attention. We are working with the region to ensure these are acted upon.

10.62 Further information on our health and safety inspection activity, alongside a more detailed assessment of Network Rail's health and safety performance is in our 'Annual Health and Safety report'.

The Wales route contributed to the Wales and Western region exceeding its efficiency target but underperforming financially

In 2020-21, Wales and Western exceeded its regional efficiency target for the second year in a row but it did not meet its regional financial performance target due to underperformance in enhancements, renewals and maintenance costs.

Regional efficiency target was exceeded for the second year

10.63 We monitor the efficiency of Network Rail's core business activities of operations, support, maintenance and renewals. Wales and Western has demonstrated strong performance on efficiency in 2020-21, but its efficiency challenge continues to increase across the next three years.

10.64 In 2020-21, Wales and Western delivered £76.6 million of efficiency improvements, ahead of the £66 million of efficiency improvements assumed in its delivery plan for the year. This level of efficiency is good news. The region is also forecasting to deliver between £432 million and £626 million of efficiency improvements in CP6, with a central forecast of £534 million, which is in line with its efficiency target. Wales and Western's central forecast includes £62 million of additional efficiencies that are the region's share of Network Rail's additional £0.5 billion efficiency challenge.

10.65 During 2020-21, we conducted a review of a sample of Wales and Western region's efficiency plans. The purpose of our review was to understand how the region is planning and reporting on efficiencies, and the robustness of its assurance processes for assessing business changes and calculations of related efficiencies. Although there are still some improvements which could be made, based on the evidence that we have reviewed, we consider that the Wales and Western region appears to be sufficiently prepared to deliver the remainder of its CP6 target efficiencies.

10.66 The region's largest efficiency initiative in 2020-21 was from improved contract strategies. This made up £17.2 million of total in-year efficiency compared to a delivery plan target of £13 million. Significant efficiencies were also generated through improved multidisciplinary planning of track access bookings and possessions, totalling £7.3 million during the course of 2020-21.

Financial underperformance against regional and Wales route targets

10.67 The regulatory Financial Performance Measure (FPM) provides a better understanding of Network Rail's financial performance than simple income and expenditure variances. FPM compares a region's actual income and expenditure to its CP6 delivery plan across most items of income and expenditure. The FPM measure ensures that a region does not benefit from underspend by delaying work to a later date if that work still needs to be done.

10.68 In the Wales and Western region, FPM was £10 million behind delivery plan, as shown on Table 10.3. This is predominantly the result of an underperformance in renewals and higher than expected maintenance costs. This was offset by an outperformance in Schedules 4 and 8 income due to high levels of train performance, delivered predominantly because of the reduced timetable running on the network.

Table 10.3 Financial performance, Wales and Western region, 2020-21

£ million	Full year budget	Full year forecast	Budget variance better/(worse)	FPM out/(under) performance
Turnover	360	350	(10)	(9)
Schedules 4 and 8	(31)	17	48	47
Operations and support	(117)	(128)	(11)	(3)
Maintenance	(268)	(282)	(14)	(14)
Profit and Loss	(57)	(43)	13	21
Renewals	(525)	(496)	29	(33)
Enhancements	(385)	(290)	95	2
Total				(10)

Source: Network Rail

10.69 In the Wales route, FPM was £15 million behind delivery plan, as shown on Table 10.4. This is predominantly the result of an underperformance in renewals and an underperformance in operations, support and maintenance costs. Similarly to the region, on the Wales route this was offset by an outperformance in Schedules 4 and 8 income due to high levels of train performance, delivered predominantly because of the reduced timetable running on the network during the pandemic.

Table 10.4 Financial performance, Wales route, 2020-21

£ million	Full year budget	Full year forecast	Budget variance better/(worse)	FPM out/(under) performance
Turnover	57	56	(1)	(1)
Schedules 4 and 8	(8)	3	11	11
Operations, support and maintenance	(106)	(117)	(11)	(11)
Profit and Loss	(57)	(58)	(1)	(1)
Renewals	(165)	(179)	(14)	(15)
Enhancements	(14)	(22)	(8)	1
Total				(15)







Source: Network Rail

Regional leading indicators of efficient delivery

10.70 Learning from declining efficiency in CP5, we required Network Rail to demonstrate that it was better prepared to deliver efficiently from the start of CP6, in part through developing and reporting on new leading indicators.

10.71 We have seen progress with these leading indicators of efficient delivery. Table 10.5 provides an update on Wales and Western's preparations to deliver efficiently in 2021-22.

Table 10.5 Leading indicators for efficient delivery in 2020-21, Wales and Western region

Region	Renewals Planning		Securing Engineering Access		Maintenance Requirement 2020-21	
	Work authorised in Oracle	Target	% of required access booked	Target	Current headcount	Target
Wales and Western	72% 	91%	87% 	80%	100% 	100%
National	75% 	81%	98% 	76%	97% 	99%

Source: Network Rail

- 10.72 The Wales and Western region did not meet its target on renewals planning. Currently 72% of renewals projects for 2021-22 by value have completed detailed designs and had received financial authorisation for delivery. This was slightly below the 75% national average and fell short of the region's internal target by 19 percentage points.
- 10.73 This level of financial authorisation is concerning. However, we can also consider earlier stages of the planning lifecycle, such as remits issued and accepted by the supply chain. Under this measure, the supply chain has accepted 96% of planned renewals for Wales and Western in 2021-22, which is positive.
- 10.74 The Wales and Western region has reported that 72% of 2021-22 target efficiency will be achieved from projects that have already been delivered or have clear project plans. The remaining 28% of 2021-22 target efficiencies have no clear project plans, or have plans in place but low confidence in delivery. This is a significant improvement on the same time last year when this metric was at 47%, highlighting the region's confidence in continuing to outperform our efficiency challenge in CP6.
- 10.75 As discussed in the Network Wide chapter, risk funds are lower than may be necessary to meet financial risks in future years of the control period in all regions, in part due to the pandemic. A number of potential risks still remain in the future and greater clarity is required on whether these are currently included in Network Rail's analysis. We will continue to closely monitor and engage with Network Rail on this.
- 10.76 This analysis is based on draft financial information provided by Network Rail, comparing its financial performance against its annual budget. We will report more fully on Network Rail's financial performance against its CP6 Delivery Plan in our 'Annual Efficiency and Finance Assessment', due for publication in July 2021

Asesiad Blynyddol Network Rail Ebrill 2020 – Mawrth 2021

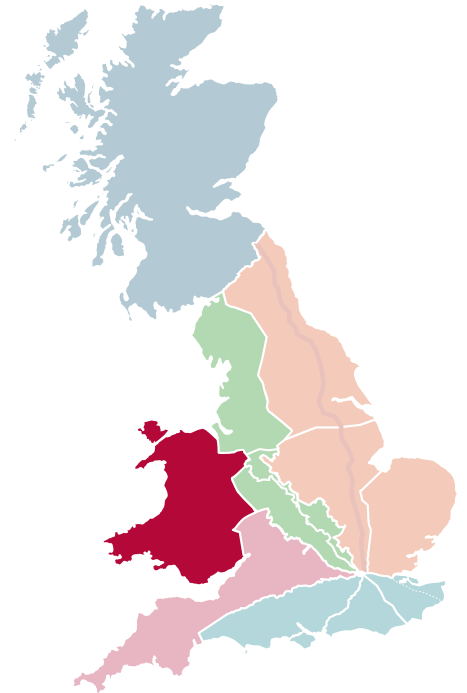
Llwybr Cymru



11. Llwybr Cymru Network Rail

Trosolwg

- 11.1 Mae Llwybr Cymru Network Rail yn cysylltu'r prif drefi a dinasoedd Caerdydd, Casnewydd, Abertawe, Wrecsam ac Amwythig, yn ogystal â chysylltu ardaloedd mwy gwledig. Mae'r rheilffordd yn rhan o ranbarth ehangach Cymru a'r Gorllewin.
- 11.2 Caiff y mwyafrif o wasanaethau teithwyr rheilffordd yng Nghymru eu gweithredu gan Trafnidiaeth Cymru a'r Great Western Railway. Mae Cross Country ac Avanti West Coast hefyd yn gweithredu gwasanaethau teithwyr rhwng Cymru a gweddill Prydain.
- 11.3 Mae gwasanaethau cludo nwyddau ar y rheilffyrdd hefyd yn bwysig, gan symud amrywiol nwyddau, yn enwedig dur ar brif reilffordd De Cymru, o fewn Cymru a'r tu hwnt.
- 11.4 Fel gyda gweddill rhwydwaith rheilffyrdd Prydain, caiff seilwaith rheilffyrdd yng Nghymru ei reoli gan Network Rail. Cafodd rhwydwaith Rheilffyrdd Craidd y Cymoedd ei drosglwyddo o Network Rail i Trafnidiaeth Cymru ar 28 Mawrth 2020.



Perfformiad cyffredinol yn 2020-21

- 11.5 Mae Network Rail yn mesur ei berfformiad ledled y cwmni a'i befformiad rhanbarthol mewn meysydd craidd o'i fusnes gan ddefnyddio setiau o fetrigau a thargedau mewnol. Mae'n cyfrifo'r rhan mewn cardiau sgorio cenedlaethol a rhanbarthol.
- 11.6 Mae cerdyn sgorio pob rhanbarth yn seiliedig ar bedair thema strategol Network Rail (o blaid teithwyr a defnyddwyr gwasanaeth cludo nwyddau; sefydliad hawdd ymwneud ag ef, partner effeithlon a dibynadwy; yn falch o weithio i Network Rail; ac arweinydd greddfoll ym myd diwydiant) ac mae'n cynnwys ein mesurau cyson a mesurau a thargedau ar gyfer cwsmeriaid a weithredir yn lleol. Rydym yn defnyddio cardiau sgorio fel un ffordd o ddal Network Rail yn atebol am ei berfformiad.
- 11.7 Caiff perfformiad ar gyfer pob mesur ar gardiau sgorio ei fynegi fel canran cyflawniad rhwng sero a 100, gyda 50% yn golygu bod ar y targed. Er ein bod yn dal rhanbarth Cymru a'r Gorllewin yn atebol am y targedau cardiau sgorio y cytunwyd arnynt yn rhanbarthol, rydym hefyd yn monitro perfformiad Llwybr Cymru gan ddefnyddio cerdyn sgorio ei lwybr.
- 11.8 Perfformiodd Llwybr Cymru yn dda ar ei gerdyn sgorio yn 2020-21, gydag 11 o'i 16 o fesurau yn diweddu'r flwyddyn gan gyrraedd 100% o'u targedau, a dim ond tri mesur yn methu eu targed 50% ddiwedd y flwyddyn. Mae hyn yn welliant sylweddol ar 2019-20 pryd na wnaeth ond pedwar o'r 17 o fesurau gyflawni 100% o'u targedau.

- 11.9 Fel gyda rhanbarth Cymru a'r Gorllewin, mae angen i berfformiad llwybr Cymru gael ei weld yng nghyd-destun pandemig y coronafeirws (COVID-19). Gweithiodd y llwybr yn dda i sicrhau bod teithwyr a staff yn cael eu cadw'n ddiogel, gyda staff rheng flaen yn cadw teithwyr hanfodol a nwyddau i symud yn ystod y cyfnodau clo cenedlaethol.
- Fe wnaeth perfformiad teithwyr a nwyddau llwybr Cymru wella yn ystod 2020-21, er na welodd y llwybr yr un raddfa o welliant â lleoedd eraill ar y rhwydwaith. Roedd hyn i'w briodolir rhannol i'r rhanbarth yn nifer o achosion o darfu yn sgil digwyddiadau tywydd garw drwy gydol y flwyddyn a damwain fawr wrth i drên nwyddau ddod oddi ar y cledrau yn Llangennech.
 - Lleihaodd nifer y methiannau asedau yn sylweddol yn 2020-21 a chyfrannodd llwybr Cymru at alluogi'r rhanbarth i gyflawni'n dda tuag at ei darged gwaith adnewyddu. Cyflawnodd y llwybr yn dda hefyd ar ei ymrwymadau o ran prosiectau i liniaru effeithiau tywydd garw a newid hinsawdd ar y llwybr.
 - Fe wnaeth llwybr Cymru wella ei berfformiad iechyd a diogelwch yn 2020-21, gan ragori ar ei dargedau blynyddol yn mhob un o'r pedwar cerdyn sgorio ar gyfer mesurau diogelwch. Er ei fod yn gwneud cynnydd da gyda gwelliannau i ddiogelwch gweithwyr trac a chroesfannau goddefol, roedd yn dal i fod ormod o ddigwyddiadau lle bu ond y dim i ddamwain ddigwydd ar y llwybr.
 - Yn 2020-21, rhagorodd rhanbarth Cymru a'r Gorllewin ar ei darged effeithlonrwydd am yr ail flwyddyn yn olynol, ond ni chyrrhaeddwyd y targedau perfformiad ariannol ar gyfer y rhanbarth a llwybr Cymru.

Fe wnaeth perfformiad trenau wella yn ystod 2020-21

Fe wnaeth perfformiad trenau teithwyr a chludo nwyddau wella o ganlyniad i'r pandemig, ond ni welodd raddau'r gwelliant a brofwyd mewn lleoedd eraill ar y rhwydwaith. Mae angen i Network Rail ddeall pam fod hyn a gweithio i gyflawni gwelliant pellach.

Perfformiad trenau Network Rail yn 2020-21

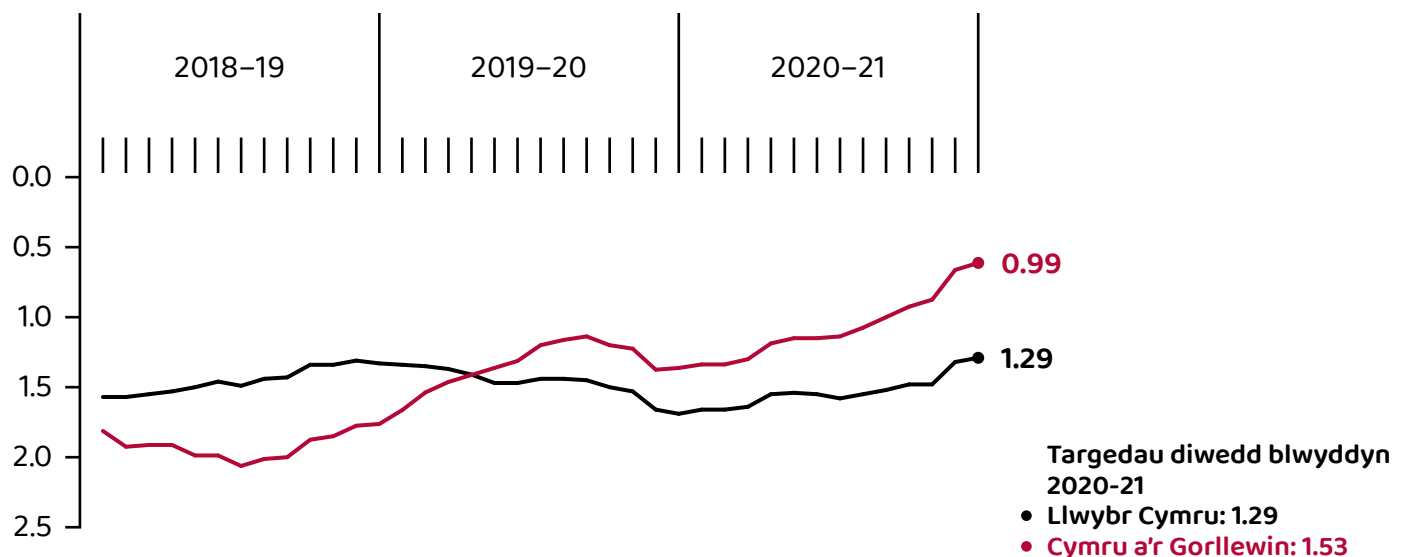
- 11.10 Rydym yn defnyddio amrediad o fetrigau i asesu perfformiad cyffredinol trenau yn y rhanbarthau ond yn canolbwyntio ar ddau fesur cyson i gymharu perfformiad rhyngddynt:
- Mesur cyson ar gyfer gwasanaethau teithwyr mewn rhanbarth, a elwir CRM-P. Dyma yw'r munudau o oedi i wasanaethau teithwyr a briodolir i Network Rail yn sgil digwyddiadau ym mhob un o Ranbarthau Network Rail, i bob 100 cilometr o deithiau trên. Mae sgôr is yn adlewyrchu perfformiad gwell; a
 - Metrig dosbarthu nwyddau ar gyfer pob rhanbarth a elwir FDM-R. Dyma'r ganran o wasanaethau cludo nwyddau masnachol sy'n cyrraedd y gyrchfan a fwriadwyd o fewn 15 munud i'r amser cyrraedd a archebwyd, neu gyda llai na 15 munud o oedi wedi ei achosi gan Network Rail neu weithredwr arall nad yw'n weithredwr cludo nwyddau masnachol.

- 11.11 Rydym yn monitro'r graddau y cyflawnwyd y mesurau hyn ar gyfer pob rhanbarth yn erbyn targed blynyddol ac isafswm rheoliadol lefel perfformiad, y cyfeirir ato fel y llawr rheoliadol. Mae'r isafswm lefel perfformiad hwn yn arwyddo'r pwynt lle'r ydym yn debygol iawn o ystyried ymchwiliad ffurfiol.
- 11.12 Er ein bod yn dal rhanbarth Cymru a'r Gorllewin yn atebol am gyflawni ei dargedau cerdyn sgorio y cytunwyd arnynt a'r mesurau CRM-P a FDM-R, nid ydym yn rheoleiddio'n benodol yn erbyn lloeriau CRM-P a FDM-R ar gyfer llwybr Cymru. Fodd bynnag, mae gan ei gerdyn sgorio lefelau targed perfformiad ar sail y metrigau hyn.

Ni chyrrhaeddodd perfformiad trenau teithwyr ei darged mewnol

- 11.13 Yn 2020-21, roedd targed mewnol llwybr Cymru ar gyfer CRM-P yn seiliedig arno'n cyflawni 1.29 munud o oedi i bob 100 cilometr o deithiau trenau (gan ddefnyddio'r cyfartaledd newidiol blynyddol (MAA)). Dangosodd y llwybr berfformiad rhywfaint gwell yn ystod y flwyddyn ddiwethaf, a gorffennodd ar y targed.
- 11.14 Cydnabyddwn, fodd bynnag, bod nifer o ddigwyddiadau tywydd garw yn ystod y flwyddyn, a achosodd darfu, llifogydd helaeth a chau nifer o reilffyrdd dros dro, wedi effeithio ar berfformiad y llwybr. Mae hyn yn dangos bod gan y llwybr fwy o waith i'w wneud i wella ei gydnerthedd a'r perfformiad mae'n ei gyflawni i weithredwyr trenau.

Ffigur 11.1 Perfformiad trenau teithwyr (Munudau o oedi a achoswyd gan Network Rail, wedi eu normaleiddio, CRM-P), llwybr Cymru a rhanbarth Cymru a'r Gorllewin, 2018-19 i 2020-21



CRM-P MAA

Ffynhonnell: Dadansoddiad ORR o ddata Network Rail

Rhagorodd perfformiad cludo nwyddau ar ei darged ar gyfer 2020-21

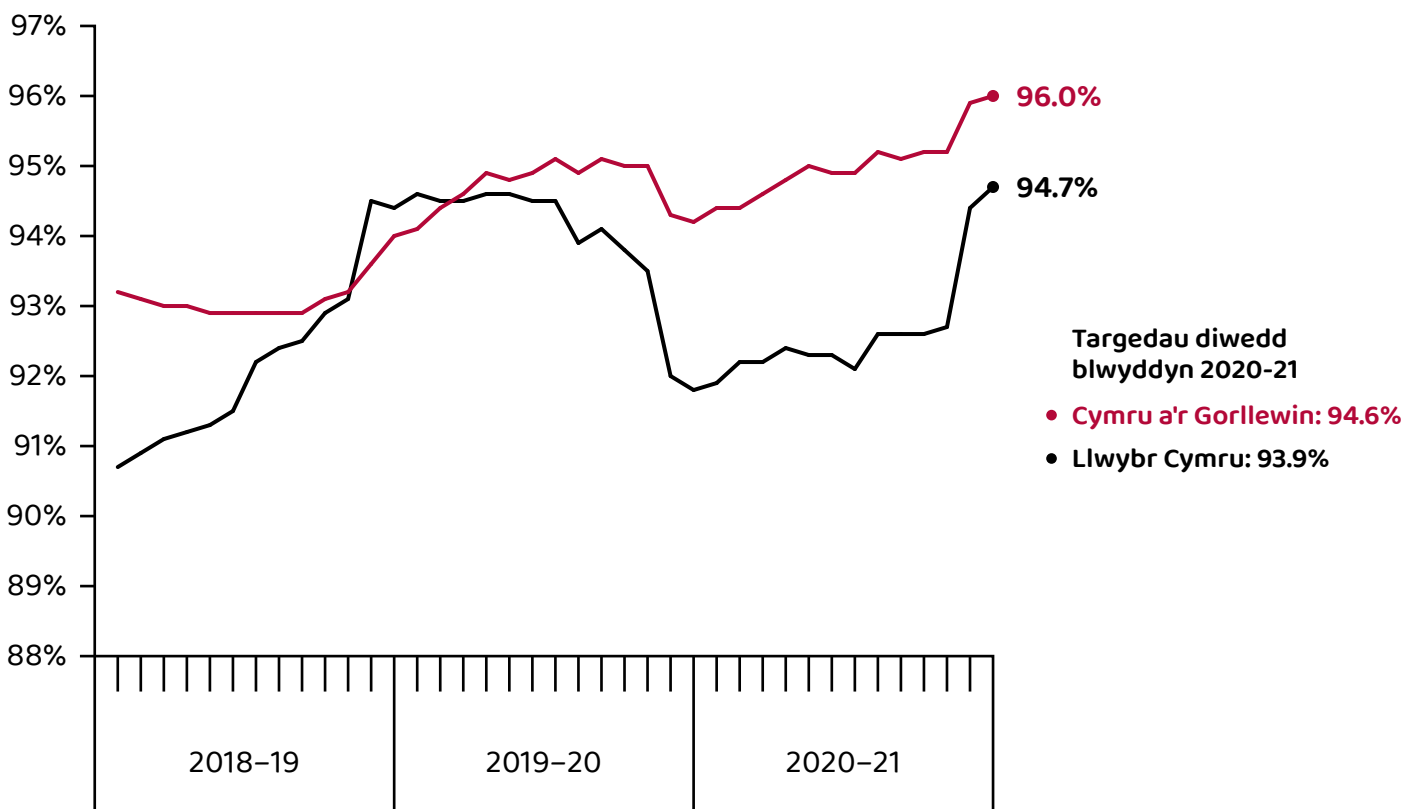
11.15 Rhagorodd llwybr Cymru ar ei darged yn 2020-21 ar gyfer FDM-R, gan ddiweddu'r flwyddyn ar 94.7%, sy'n uwch na'i darged o 93.9%. Fodd bynnag, fel gyda CRM-P, profodd y llwybr berfformiad anghyson drwy'r flwyddyn.

11.16 Cafodd tywydd garw effaith amlwg ar berfformiad y llwybr. Yn dilyn haf a welodd law parhaus, gwyntoedd cryfion a thywydd poeth, fe wnaeth dwy storm, Ellen a Francis, effeithio ar y llwybr ar ddiwedd mis Awst 2020, gyda choed wedi disgyn, toriadau yn y cyflenwad pŵer a llifogydd, gan gau rheilffyrdd dros dro a chyfrannu at gyfyngiadau cyflymder ar reilffyrdd. O fis Hydref 2020 hyd fis Chwefror 2021, cafodd y llwybr law trwm ac eira, gyda'r naill a'r llall yn cyfrannu at lifogydd a choed yn disgyn ar reilffyrdd, gan arwain at ganslo gwasanaethau a chau rhannau o'r rheilffordd dros dro.

11.17 Mae canlyniad diwedd y flwyddyn yn haeddu clod felly, yn wyneb graddau'r tarfu gan ddigwyddiadau tywydd garw, a digwyddiad mawr yn sgil trêen yn dod oddi ar y cledrau yn Llangennech.

Ffigur 11.2 Perfformiad cludo nwyddau (FDM-R), llwybr Cymru a rhanbarth Cymru a'r Gorllewin, 2018-19 i 2020-21

FDM-R MAA



Ffynhonnell: Dadansoddiad ORR o ddata Network Rail

Trên yn dod oddi ar y cledrau yn Llangennech

Ar 26 Awst 2020, daeth trên cludo nwyddau 25-wagen oddi ar y cledrau ger Llangennech, Sir Gaerfyrddin, gan achosi tân mawr a thywallt 330,000 litr o danwydd. Gan weithio mewn partneriaeth gyda Cyfoeth Naturiol Cymru a chontractwyr amgylcheddol arbenigol, gweithiodd timau rheng flaen Network Rail ddydd a nos ar un o'r prosiectau adfer amgylcheddol mwyaf mae Network Rail wedi ymwneud ag ef, a ddisgrifiwyd gan Cyfoeth Naturiol Cymru fel yr her amgylcheddol fwyaf ers trychineb y Sea Empress yn 1996.

Fe wnaeth yr argyfwng arwain at gau Rheilffordd Ardal Abertawe dros dro ac adran ddeheuol Rheilffordd Calon Cymru am saith mis, gan effeithio ar berfformiad cludo nwyddau llwybr Cymru wrth i wasanaethau nwyau a theithwyr gael eu dargyfeirio i reilffyrdd eraill.

Gwelwyd llwybr Cymru yn cyd-drafod yn drylwyr â rhanddeiliaid yn union wedi'r digwyddiad, yn ystod y gwaith adfer amgylcheddol, ac wrth adfer y rheilffordd. Rhoddodd y llwybr ddiweddariadau rheolaidd a phenodol i grŵp amrywiol o randdeiliaid, gan gynnwys awdurdodau lleol, cynghorau cymuned, gwasanaethau brys, asiantaethau eraill a sefydliadau rheilffordd eraill. Mae hyn yn haeddu clod, yn enwedig yng ngoleuni heriau'r pandemig.

Ailagorwyd y rheilffordd i draffig yn gynnar ym mis Mawrth 2021.



Trên nwyddau wedi dod oddi ar y cledrau ger Llangennech

Angen rhoi mwy o sylw i'r gallu i reoli perfformiad

- 11.18 Cydnabyddwn fod niferoedd is o deithwyr a llai o wasanaethau trên wedi cyfrannu at well perfformiad gwasanaethau trên. Yn wyneb effaith y pandemig ar lefelau perfformiad trenau teithwyr a nwyddau, yn 2020-21 buom yn canolbwyntio mwy ar asesiad ansoddol o gyfraniad Network Rail at berfformiad trenau, gan gynnwys asesu ei allu i reoli perfformiad a chyflawni gwelliannau.
- 11.19 Yn ystod 2020-21 rydym wedi canolbwyntio ar allu'r rhanbarth i gryfhau ei alluoedd i reoli perfformiad ym mhob agwedd o'i fusnes. Mae'r System Rheoli Gwella Perfformiad (PIMS) yn rhaglen a ddefnyddir gan y diwydiant cyfan sy'n edrych ar allu'r diwydiant i wella perfformiad trenau. Mae Network Rail wedi chwarae rhan flaenllaw yn y maes hwn, gan gynhyrchu a rhannu amrywiaeth o ddeunyddiau a phrosesau i'r diwydiant eu dilyn er mwyn helpu cyflawni gwell perfformiad trenau.
- 11.20 Un o elfennau allweddol PIMS yw'r Model Aeddfedrwydd Rheoli Risg ar gyfer Perfformiad (RM3P). Dull hunan-asesu yw hwn yn canolbwyntio ar y prosesau busnes sy'n cefnogi gwelliannau mewn perfformiad trenau. Mae'r dull yn edrych ar bum maes: polisi, llywodraethu ac arwain, monitro, archwilio, ac adolygu.
- 11.21 Yn ystod 2020-21, mae llwybr Cymru wedi dangos rhywfaint o gynnydd gyda PIMS a RM3P, gan ymrwmo i gyflawni gwelliannau perfformiad a amlinellir mewn strategaethau perfformiad ar y cyd â gweithredwyr. Enghraifft dda o weithgaredd PIMS ar lwybr Cymru yw'r cynllun 'Un Tîm', sy'n gweithredu fel cyfrwng rhwng Trafnidiaeth Cymru a Network Rail a chanolbwyntio ar ardaloedd y gweithrediadau lleol. Mae'n helpu manteisio ar wybodaeth leol gweithwyr wrth ddatblygu cynlluniau gwella perfformiad.
- 11.22 Mae rheolwr strategaeth perfformiad y llwybr wedi chwarae rhan weithgar mewn adolygiad cymheiriaid diweddar o gydstrategaethau perfformiad yn ystod 2020-21. Mae hyn wedi eu galluogi i weld mwy o'r arferion gorau o gwmpas y rhwydwaith, y gellir eu hintegreiddio â strategaeth y llwybr. Mae'r llwybr yn canolbwyntio ar hyn o bryd ar ddiweddarau a gwella cydstrategaeth perfformiad Trafnidiaeth Cymru a'r cynllun gwella perfformiad cysylltiedig. Caiff y gwaith hwn ei gefnogi gan y berthynas waith well sy'n datblygu rhwng arweinwyr perfformiad Network Rail a Trafnidiaeth Cymru.
- 11.23 Nodwn i asesiad RM3P diwethaf Network Rail a Trafnidiaeth Cymru gael ei gyflawni yn 2019. Gan fod RM3P yn elfen allweddol o PIMS, mae'n bwysig fod Network Rail a Trafnidiaeth Cymru yn cydweithio'n dda â'i gilydd er mwyn sicrhau fod hwn wedi'i ddiweddarau ac yn berthnasol i'r ddau sefydliad. Byddwn yn monitro cynnyd asesiad RM3P y llwybr dros y misoedd nesaf.

Capasiti'r rhwydwaith a mynediad iddo

- 11.24 Rydym yn sicrhau bod gan gwmnïau gweithredu trenau teithwyr a nwyddau fynediad teg i'r rhwydwaith rheilffyrdd i wneud y defnydd gorau o'r capasiti. Os oes ar weithredwr trenau eisiau mynediad i'r rhwydwaith rheilffyrdd cenedlaethol, mae arno angen contract mynediad i'r trac gyda Network Rail. Lle na all gweithredwyr a Network Rail ddod i gytundeb, gallant apelio arnom i ddefnyddio'n pwerau statudol i gyfarwyddo penderfyniad ar fynediad. Mae angen i weithredwyr a Network Rail gynllunio'r contractau hyn hefyd mewn da bryd i gynhyrchu amserlenni cadarn i sicrhau y gall gweithredwyr eraill gynllunio eu defnydd eu hunain o'r rhwydwaith.

- 11.25 Ym mis Medi 2020, roeddem yn pwysleisio bod angen i ranbarth Cymru a'r Gorllewin wella'i gydgyssylltu a phrydlondeb ei ymateb gyda'r Gweithredwr Systemau ar y dystiolaeth roedd yn ei darparu i gefnogi ei benderfyniadau mynediad i'r trac lle na allai gyrraedd cytundeb gyda gweithredwyr. Roedd hyn yn dilyn cais am fynediad agored ar Brif Reilffordd y Great Western lle nad oedd yr wybodaeth am gapasiti a pherfformiad a ddarparwyd gan y rhanbarth a'r Gweithredwr Systemau (sy'n modelu capasiti a pherfformiad) wedi ei chynhyrchu mewn modd digon prydlon.
- 11.26 Er i'n hasesiad o'r achos hwn gael ei gwblhau yn gynnar yn 2021, byddwn yn parhau i fonitro'n fanwl ddull y rhanbarth o ymdrin â cheisiadau mynediad gan fod ceisiadau 'byw' eraill ar hyn o bryd am redeg trenau nwyddau a theithwyr lle nad yw'r rhanbarth wedi dod i gytundeb eto gyda gweithredwyr.

Cymysg oedd canlyniadau rheoli asedau

Fe wnaeth dibynadwyedd asedau wella yn ystod 2020-21 ond cafodd llwybr Cymru ei daro gan ddigwyddiadau o dywydd garw, fel y dangosir gan y nifer o funudau o oedi a briodolir i ddigwyddiadau o fethiant cloddiau ac adeileddau.

Cynaliadwyedd a dibynadwyedd asedau yn dal i fod yn gryf

- 11.27 Mae angen i Network Rail sicrhau cynnal a chadw, adnewyddu a newid asedau ar y rhwydwaith fel ei fod yn ddiogel a modd ei ddefnyddio, a gwneud hynny mewn ffordd sy'n gynaliadwy ac effeithlon dros yr hirdymor. Yng Nghyfnod Rheoli 6 (CP6), rydym yn profi hyn wrth ddefnyddio dull o fesur cynaliadwyedd asedau (y mynegai cynaliadwyedd cyfansawdd (CSI)). Caiiff hwn ei osod ar lefel ranbarthol felly ni allwn adrodd ar CSI ar gyfer llwybr Cymru. Rydym wedi cytuno ar darged Network Rail ar gyfer diwedd CP6, ar sail lefel o newid a ddiffiniwyd ers diwedd Cyfnod Rheoli 4 (CP4).
- 11.28 Mae pob rhanbarth yn perfformio fwy neu lai yn unol â'u targedau disgwylidig ar gyfer diwedd CP6. Gorffennodd Cymru a'r Gorllewin 2020-21 gyda CSI o 0.2%. Mae hyn yn cynrychioli gwelliant mewn cynaliadwyedd asedau cyffredinol o 0.2% ers diwedd CP4. Mae'r rhanbarth yn symud i gyfeiriad lle bydd yn diweddu Cyfnod Rheoli 6 gyda CSI o 0.2%.
- 11.29 Fodd bynnag, gan fod y mesur hwn o gynaliadwyedd yn symud yn araf oherwydd oes weithredol hir iawn asedau rheilffordd, rydym hefyd yn monitro cyfraddau methiant asedau'r rhanbarth a'u heffaith, graddau cyflawni cynnal a chadw ac adnewyddu a mesurau eraill yn ymwneud ag asedau penodol, y gellir eu defnyddio fel procsi ar gyfer cynaliadwyedd mwy hirdymor. Rydym yn asesu nifer o'r rhain ar sail targedau cardiau sgorio mewnol rhanbarth, gan gynnwys data methiant asedau a mesurau cynaliadwyedd asedau, megis y mynegai dibynadwyedd cyfansawdd (CRI), sy'n ffordd o fesur cyflwr a pherfformiad tymor byr asedau.

11.30 Yn 2020-21, profodd llwybr Cymru lai na'r targed o fethiannau'n effeithio ar wasanaethau, a yrrwyd yn bennaf gan effaith y pandemig, a diweddodd y flwyddyn gyda sgôr CRI o 6.9% yn erbyn targed o -13.1%. Mae hyn yn golygu bod cynaliadwyedd asedau yn 2020-21 yn 6.9% yn well nag oedd ym mlwyddyn olaf Cyfnod Rheoli 5 (CP5). Er bod hyn yn welliant sylweddol ar sgôr 2019-20 (4.2% yn waeth nag ym mlwyddyn olaf CP5), mae hyn yn debygol o fod yn sgil llai o deithwyr a gwasanaethau'n gweithredu yn ystod y flwyddyn.

Ffigur 11.3 Statws Mynegai Dibynadwyedd Cyfansawdd (CRI) (cyfanswm a fesul ased), mewn perthynas â tharged pob cyfnod, llwybr Cymru, Cyfnod 1 i 13 2020-21

Key: ■ Uwch na'r targed ■ Is na'r targed, ond uwch na'r llinell sylfaen ■ Is na'r targed a'r llinell sylfaen

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13
CRI	2.2%	2.3%	2.9%	6.1%	4.6%	4.5%	5.1%	8.2%	9.1%	7.5%	7.0%	4.5%	6.9%
Trac	-8.7%	-8.2%	-6.9%	-6.2%	-5.9%	-4.9%	-4.1%	-3.5%	-3.3%	-1.8%	-1.3%	-2.4%	-1.8%
Pwyntiau	0.9%	1.0%	1.3%	1.5%	0.8%	0.8%	1.4%	1.2%	1.1%	1.1%	0.3%	-0.7%	0.0%
Signalau	10.3%	11.4%	11.6%	13.8%	12.9%	12.6%	13.7%	15.3%	14.7%	13.9%	13.3%	13.7%	13.2%
Adeiladau	0.0%	0.1%	0.4%	0.8%	0.9%	0.3%	0.2%	0.4%	0.7%	0.3%	0.2%	0.0%	1.0%
Pŵer Trydan	-0.8%	-2.5%	-4.3%	-4.3%	-4.8%	-4.8%	-6.8%	-6.5%	-6.8%	-8.6%	-8.1%	-8.1%	-7.7%
Adeileddau	0.0%	-0.3%	-0.2%	-0.7%	-0.6%	-0.8%	-0.7%	-0.5%	0.6%	0.6%	0.6%	0.2%	0.3%
Telathrebu	0.5%	0.8%	0.9%	1.2%	1.3%	1.3%	1.4%	1.9%	1.9%	2.0%	2.0%	1.8%	1.8%

Ffynhonnell: Dadansoddiad ORR o ddata Network Rail

11.31 Rhagorwyd ar bob un o dargedau mewnol dibynadwyedd asedau'r llwybr yn 2020-21, ac eithrio yn achos pwyntiau. Mae hyn yn sgil nifer uchel o fethiannau pwyntiau yn digwydd ar lwybrau mwyaf allweddol Cymru, sy'n golygu bod gan effaith y methiannau hyn y potensial o fod yn fawr. Fe wnaeth dibynadwyedd traciau, y tynnwyd sylw ato fel problem yn 2019-20, wella'n sylweddol yn ystod 2020-21 a gorffennodd yn uwch na'r targed.

Cymysg oedd graddau cyfansymiau'r gwaith adnewyddu a gyflawnwyd

11.32 Rydym yn archwilio'n fanwl a yw Network Rail yn cyflawni gwaith hanfodol ar adnewyddu asedau, er enghraifft, adewyddu'r trac, ac os yw hyn yn unol â'r cyfansymiau a gynlluniwyd ar gyfer pob blwyddyn o'r cyfnod rheoli. Fel rhan o'n hasesiad rydym yn edrych ar y graddau mae Network Rail yn cyflawni cyfanswm effeithiol o waith adnewyddu. Mae hyn yn cyfeirio at y cyfanswm o waith a gyflawnwyd mewn saith maes allweddol, gan briodoli pwysiadau ar sail y graddau yr ychwanegwyd at oes yr ased gan bob math o waith. Er enghraifft, ym maes trac plaen, byddai adnewyddu llawn yn cael pwysiad uwch na newid un elfen unigol.

11.33 Er gwaethaf heriau'r pandemig, gweithiodd rhanbarth Cymru a'r Gorllewin yn galed i gynnal graddau cyflawni gwaith adnewyddu yn ystod 2020-21. Nid oes gan lwybr Cymru darged cerdyn sgorio ar wahân ar gyfer y llwybr o ran cyfanswm gwaith adnewyddu a drefnir, ond fe wnaeth gyfrannu at i'r rhanbarth ragori ar ei darged cerdyn sgorio mewnol ar gyfer cyfansymiau ym mhedwar o'r pump cyfanswm effeithiol perthnasol. Fel y dangosir yn y tabl isod, mae gwaith ar adeileddau pontydd wedi cael eu tan-gyflawni yn sgil gohirio gwaith ar draphont Cefn, a achoswyd gan broblemau trydydd parti, ac ar draphont Cydweli o ganlyniad i broblemau mynediad.

Tabl 11.1 Cyfansymiau effeithiol (adnewyddu), Rhanbarth Cymru a'r Gorllewin, 2020-21

Mae'r ganran gwblhau yn seiliedig ar y cyfansymiau gwirioneddol a gyflawnwyd o gymharu â'r cyfansymiau a gynlluniwyd. Mae canran gwblhau o fwy na 100% yn dangos cyflawni mwy na'r cyfansymiau a gynlluniwyd.

Ased	Gwirioneddol	Cynllun	% a gwblhawyd
Adnewyddu Cledrau Dargludo (cilometrau)	n/a	n/a	n/a
Cloddiau	101	91	▲ 110%
Ailwifro ac adnewyddu canol oes offer llinellau uwchben (cilometrau)	n/a	n/a	n/a
Trac, Llinell Blaen	199	158	▲ 126%
Trac, Switsys a Chroesfannau	42	33	▲ 128%
Signalau	16	8	▲ 190%
Strwythurau, Pontydd	3,313	3,536	▼ 94%
Pob Ased (cyfanswm a bwysolwyd)			▲ 135%

Noder: Nid yw cledrau dargludo ac offer llinellau uwchben yn berthnasol yn rhanbarth Cymru a'r Gorllewin
 Ffynhonnell: Dadansoddiad ORR o ddata Network Rail

11.34 Mae rhai mathau o waith adnewyddu na chaiff ei gyfrif trwy'r mesur cyfansymiau effeithiol, felly rydym yn edrych hefyd ar gyflawni ehangach. Mae perfformiad gwaith adnewyddu asedau ehangach rhanbarth Cymru a'r Gorllewin yn gymysg. Fe wnaeth y trac, pŵer trydan, cloddiau a draenio i gyd orffen yn uwch na'r targedau mewnol, fodd bynnag, tan-gyflawnodd y rhanbarth gyda'r gwaith a gynlluniwyd ar adeileddau, adeiladau a signalau. Ar lwybr Cymru yn benodol, fe wnaeth gwaith adnewyddu asedau ehangach dan-berfformio yn y rhan fwyaf o feysydd. Dim ond draenio a ragorodd ar y targed, gyda'r holl feysydd eraill – trac, cloddiau, adeileddau, adeiladau (oherwydd oedi yn sgil y pandemig) a signalau (oherwydd gwaith adnewyddu ar groesfannau) – yn tan-gyflawni.

Angen gweithredu i gydymffurfio ag archwilio adeileddau

- 11.35 Un maes o bryder, un rydym wedi bod yn ceisio cynnydd parhaus arno ers 2011, yw cydymffurfio ag archwiliadau adeileddau. Os na chaiff archwiliadau o adeileddau, megis twneli, pontydd a chwlfertau eu cyflawni, ni fydd gwybodaeth lawn am gyflwr yr ased a gall fod diffygion na sylwyd arnynt neu na chafodd eu hasesu'n gymwys.
- 11.36 Fel rhan o'n gweithgareddau sicrwydd parhaus, rydym wedi canfod bod nifer mawr o archwiliadau anghyflawn o adeileddau ar draws y rhwydwaith. Caiff hyn ei liniaru rywfaint gan y modd mae Network Rail yn cynnal asesiadau risg ar y safle lle bo diffyg cydymffurfio, er mwyn deall yn well a oes unrhyw risgiau cysylltiedig i ddiogelwch.
- 11.37 Yn rhanbarth Cymru a'r Gorllewin, ar ddiwedd 2020-21, roedd 2,069 o achosion o beidio â chydymffurfio ag archwilio adeileddau; 15.3% o'r portfolio rhanbarthol. Nid ydym yn cael sicrwydd digonol gan Network Rail fod ganddo gynlluniau addas ar waith, na'i fod yn gwneud cynnydd digonol tuag at ddileu'r diffyg cydymffurfio cyffredinol gydag archwiliadau. Rydym yn cymryd camau i sicrhau bod hyn yn cael ei gywiro a byddwn yn monitro cynnydd a chyflawniad Network Rail yn gyson a thrylwyr. Rydym hefyd yn comisiynu adroddwr annibynnol i asesu diffyg cydymffurfio ar draws y rhanbarthau mewn mwy o fanylder.

Tabl 11.2 Achosion o beidio â chydymffurfio ag archwilio adeileddau, rhanbarth Cymru a'r Gorllewin, 2020-21

Math o archwiliad	Diffyg cydymffurfio ag archwilio safle	Diffyg cydymffurfio â chyflwyno adroddiad	Diffyg cydymffurfio â gwerthuso	Cyfanswm diffyg cydymffurfio
Manwl	18	289	52	359
Gweledol	95	1,215	193	1,503
O dan ddŵr	3	197	7	207
Cyfanswm	116	1,701	252	2,069
			% o'r portffolio rhanbarthol	15.3%

Ffynhonnell: Dadansoddiad ORR o ddata Network Rail

Cyflawni da o ran prosiectau gwrthsefyll tywydd

- 11.38 Mae dwy flynedd gyntaf CP6 wedi gweld cynnydd yn amlledd a llymder digwyddiadau tywydd garw ar draws pob rhanbarth. Gostyngodd y nifer o funudau oedi a briodolwyr i fethiannau seilwaith yn rhanbarth Cymru a'r Gorllewin yn ystod 2020-21 o gymharu â 2019-20, yn sgil lleihad mewn gwasanaethau trên. Fodd bynnag, cynyddodd y nifer o ddigwyddiadau cysylltiedig â thywydd a methiant adeileddau, gan adlewyrchu effaith tywydd garw ar y rhanbarth. Dylid nodi hefyd mai 2020 oedd y flwyddyn 10fed wlypaf yng Nghymru ers i gofnodion gychwyn yn 1862.
- 11.39 Y digwyddiad a barodd fwyaf o oedi yn rhanbarth Cymru a'r Gorllewin yn 2020-21 oedd methiant cyflenwad pŵer (nid pŵer tyniant) a ddigwyddodd ym Mangor, Gwynedd. Arweiniodd y digwyddiad, yn hydref 2020, at oedi o 5,398 o funudau, gan achosi i 47 o drenau gael eu canslo a pheri oedi i 462 o drenau. Roedd y cebl a oedd wedi methu wedi cael ei adnabod fel un oedd angen ei newid gan lwybr Cymru ac roedd disgwyl i waith gael ei wneud arno o fewn dyddiau i'r methiant. Methodd y cebl yn ystod tywydd gwlyb iawn ac, yn sgil ei hyd o tua dwy filltir, cymerodd amser cymharol hir i'w atgyweirio.
- 11.40 Mae digwyddiadau fel hyn yn amlygu pwysigrwydd rheoli gallu llwybr Cymru i wrthsefyll tywydd trwy ei gynlluniau Gwrthsefyll Tywydd ac Addasu i Newid Hinsawdd (WRCCA). Mae'r cynlluniau hyn yn cyflawni gwelliannau sylweddol a hirdymor mewn gwydnwch adeileddau ac adfer gwasanaethau mewn ymateb i ddigwyddiadau tywydd garw a newid hinsawdd. Mae'r llwybr yn ystyried hefyd a ddylai gwrthsefyll tywydd gael ei ymgorffori i gylch gwaith pob prosiect a gyflawnir.

Astudiaethau achos – codi'r Bont Ddu

Mae gan y Bont Ddu, ger Machynlleth yn y Canolbarth, hanes hir o orfod cau oherwydd ei bod yn agored i ddigwyddiadau tywydd garw, gan gynnwys llifogydd. Yn ystod cyfnodau o law trwm, caiff y bont ei tharo'n barhaus â llifogydd, gan adael y dec dur yn gyfan gwbl o dan ddŵr. Mae hyn yn peri achosion rheolaidd o gau llwybr Machynlleth i Amwythig dros dro, gyda rhannau helaeth o Linell y Cambrian yn y Canolbarth wedi eu hynysu.

Yng nghanol 2021, bydd y llwybr yn codi'r bont un metr i'w gwneud yn fwy abl i wrthsefyll newid hinsawdd a'r cynnydd a ragwelir yn y llif dŵr a brofir ar hyn o bryd. Mae'r cynllun yn dangos ymrwymiad parhaus i wella cydnherthedd y rheilffordd.



Llun o'r Bont Ddu ym mis Ionawr 2021 yn dangos dŵr llifogydd dros y rheilffordd

- 11.41 Yn ogystal â gweithiau gwrthsefyll eraill a gynllunir, gan gynnwys camerâu teledu cylch cyfyng i fonitro cyflwr asedau draenau a llifogydd, mae llwybr Cymru yn cyflawni gwaith parodrwydd tymhorol. Trwy Gydfforwm Grŵp Rheoli Llystyfiant, mae'r llwybr yn gweithio gyda Trafnidiaeth Cymru i adnabod safleoedd a all fod â phroblemau llystyfiant yn y dyfodol a monitro cynnydd ei gynlluniau mewn safleoedd lle mae problemau ar hyn o bryd. Cydnabyddwn fod hon yn broses fuddiol gan y bydd yn cyflawni dull cydgysylltiedig o fynd i'r afael â phroblemau llystyfiant, ac arwain at rannu adnoddau a thechnolegau a fydd yn helpu cyflawni canlyniadau cadarnhaol.

Asesu asedau draeniau

- 11.42 Yn 2020-21, gwnaethom Adolygiad Sicrwydd wedi'i Dargeddu (TAR) o wybodaeth am asedau draeniau ar draws pob rhanbarth. Mae hwn yn adolygiad seiliedig ar risg a ddefnyddir i ennill dealltwriaeth o'r risgiau a'r problemau, yn rhai parhaus ac yn rhai sy'n cychwyn dod i'r amlwg, o fewn Network Rail. Canfu'r adolygiad mai Cymru a'r Gorllewin oedd y rhanbarth sydd ar y blaen am yr arferion gorau o safbwynt gwybodaeth am asedau draeniau, er nad oedd ar y pryd wedi ymrwymo i ddyddiad y byddai wedi cwblhau darganfod ac asesu ei holl asedau draeniau. Mae rhanbarth Cymru a'r Gorllewin bellach wedi ymrwymo'n ffurfiol i nodi ac asesu'r rhain erbyn diwedd CP6. Byddwn yn monitro ei gynnydd.
- 11.43 Canfu ein TAR lawer o enghreifftiau cadarnhaol o brosiectau yn defnyddio cydrannau o safon uwch i wella'r gallu i wrthsefyll tywydd ac arbed ar gostau cynnal a chadw yn y dyfodol.
- 11.44 Un enghraifft o arfer dda yng Nghymru yw adnewyddu draeniau yn Gaerwen. Mae gosod pibell lletach na'r maint safonol a phyllau ac iddynt ddyfnder ychwanegol i gael lle wrth gefn i ddal dŵr wedi adeiladu cydnerthedd i ddygymod â digwyddiadau tywydd mwy garw (ee un mewn 100 neu un mewn 200 mlynedd), yn hytrach na dim ond digwyddiad un mewn 50 mlynedd. Er bod y bibell fwy yn costio 50% i 100% yn fwy y metr, rhan fach o gyfanswm y gost oedd hyn, ac roedd arbedion effeithlonrwydd eraill yn cyfrannu at wneud cost derfynol y prosiect tua 10% yn llai na'r cyfartaledd cenedlaethol am y math hwn o waith.

Roedd y Mynegai Cynaliadwyedd Amgylcheddol yn is na'r targed

- 11.45 Mae Network Rail wedi cyflwyno ffordd newydd o fesur cynaliadwyedd amgylcheddol eleni, sef y Mynegai Cynaliadwyedd Amgylcheddol (ESI). Mae'r dull cyfansawdd hwn o fesur yn cynnwys mesurau amgylcheddol o wastraff, allyriadau carbon a defnydd o ynni nad yw ar gyfer tyniant. Yn ystod y pandemig, fe wnaeth cyfnodau clo drwy'r holl ranbarth arwain at ostyngiadau mewn carbon a defnydd o ynni yn sgil cau safleoedd manwerthu dros dro mewn gorsafoedd, ac i raddau llai, swyddfeydd.
- 11.46 Ni chyrrhaeddodd rhanbarth Cymru a'r Gorllewin ei darged cerdyn sgorio ESI mewnol, wrth gyflawni 27.7% o gymharu â tharged o 50%. Mae hyn yn rhannol oherwydd i gynnydd mewn gweithgarwch yng ngorsaf bwmpio Sudbrook, ger Twnel Hafren, yn sgil lefelau eithriadol o uchel o ddŵr daear, effeithio'n wael ar y mesur ESI.
- 11.47 Gan fod hwn yn fesur newydd, mae Network Rail a'r ORR wedi comisiynu astudiaeth ar gyfer adroddiad annibynnol i asesu dibynadwyedd a chywirdeb y data. Unwaith y bydd wedi'i gwblhau, bydd adroddiad o'r canfyddiadau'n cael ei gyhoeddi ar [ein gwefan](#).

Cyflawnodd Ilwybr Cymru yn dda ar ei brosiectau gwella yn 2020-21

- 11.48 Parhaodd Network Rail i gyflawni prosiectau gwella ledled y rhanbarthau er gwaethaf y pandemig, wrth barhau i gwblhau nifer o brosiectau yn llwyddiannus yn rhanbarth Cymru a'r Gorllewin. Roedd y pandemig yn golygu heriau wrth gyflawni prosiectau, gan gynnwys cyfyngu ar weithio ar safleoedd mewn manau caeedig a graddfeydd amser hyfforddi gyrwyr, a wnaeth beri oedi i rai prosiectau. Fodd bynnag, gweithiodd y rhanbarth yn dda gyda rhanddeiliaid, contractwyr a'r gadwyn gyflenwi i reoli'r ansicrwydd a lleihau'r effaith ar raddfeydd amser cyflawni prosiectau.
- 11.49 Ym mis Mehefin 2020, cwblhawyd rhan olaf gwaith trydaneiddio'r rheilffordd rhwng Llundain a Chaerdydd pan aeth y trydaneiddio trwy Dwnel Hafren yn fyw o'r diwedd, wedi gweithiau helaeth i ddatrys problemau cyrydu trawstiau dargludo. Mae hyn wedi darparu llwybr wedi'i drydaneiddio yn llwyr, gan alluogi gwasanaethau rheilffordd trydan cyflymach ac amlach i redeg rhwng Llundain a Chaerdydd. Mae hwn yn ganlyniad gwych i weithredwyr a theithwyr trên.
- 11.50 Mae'r llwybr wedi cyflawni gwaith hefyd ar nifer o brosiectau eraill yn 2020-21. Cyflawnwyd y rhain mewn amgylchiadau anodd yn sgil cyfyngiadau'r pandemig ac mae cynnydd y llwybr ar y prosiectau hyn yn haeddu clod:
- Ar Linell y Cambrian yng nghanolbarth Cymru, adfer trawsiau pren ac elfennau metalig ar draphont Abermaw, sy'n 160 mlwydd oed ac wedi ei rhestru Graddfa Dau, y cam olaf i'w gwblhau yn 2022, ac adfer Traphont Traeth Mawr i wella cydnerthedd;
 - Adeildu gorsaf newydd un-platfform, maes parcio, cyfnewidfan bysiau a storfa beiciau yn Rhydypennau, ger Aberystwyth ym mis Chwefror 2021;
 - Buddsoddiad o £2.2 miliwn yn Rheilffordd Dyffryn Conwy i'w helpu ei hamddiffyn rhag tywydd garw a llifogydd; a gwelliant £5 miliwn i bont reilffordd Afon Ebwy yn Crumlin ar lwybr Cymru i gynnal gwasanaethau trên ychwanegol ar Reilffordd Glyn Ebwy;
 - Gwelliant gwerth £3 miliwn yng ngorsaf Tregatwg ym Mro Morgannwg gan wneud yr orsaf yn fwy hygyrch i deithwyr, wrth agor liffitiau newydd, pont droed heb risiau, gosod palmant botymog, cysgodfan aros newydd, a ramp newydd o'r swyddfa docynnau yn arwain allan i'r platfform; ac
 - Adeiladu platfform pedwar newydd, hirach yng ngorsaf Abertawe, i alluogi trenau newydd Intercity Express Great Western Railway ei gyrraedd a gadael ohono.



Cyflawnwyd gwaith ar Gam 1 o draphont Abermaw at ddiwedd 2020 pan oedd cyfyngiadau'r pandemig mewn grym

- 11.51 Cydnabyddwn hefyd fod y llwybr yn cyflawni prosiectau gwella ac adnewyddu pellach yn 2021-22, megis adeiladu gorsafoedd newydd yn Sanclêr, ger Caerfyrddin, a Parcfordd Glannau Dyfrdwy, ger Caer.
- 11.52 Nod y cynllun i gyflwyno trenau newydd gan Trafnidiaeth Cymru yw cynyddu gwasanaethau ar hyd yr holl lwybr erbyn mis Rhagfyr 2022. Fodd bynnag, mae hyn yn gofyn am newidiadau seilwaith fel ar Reilffordd y Cambrian lle mae angen uwchraddio signalau digidol. Gall y cynnydd mewn gwasanaethau ledled Cymru arwain at fwy o risg mewn croesfannau felly mae cynllun lleihau risg yn cael ei ddatblygu, gyda chymorth ein harolygwyr diogelwch. Bydd y gweithiau hyn yn gwella perfformiad y rheilffordd ac yn cefnogi twf yn y dyfodol.

Fframwaith gallu

- 11.53 Fe wnaethom gwblhau ein hadolygiad cyntaf o allu rhanbarthau Network Rail trwy ddefnyddio'r asesiad aeddfedrwydd newydd, y Fframwaith Gallu Buddsoddiad Cyfalaf (CICF) ym mis Gorffennaf 2020. Dyma'r tro cyntaf i fframwaith aeddfedrwydd gael ei ddatblygu sy'n mesur rôl Network Rail yng nghamau cynnar prosiectau mewn amgylchedd traws-ddiwydiant cymhleth.
- 11.54 O ran rhanbarth Cymru a'r Gorllewin, daeth ein hasesiad i'r casgliad ei fod yn gweithredu'n unol â'r disgwyl ac ar safon sy'n gyson â rhanbarthau eraill Network Rail. Rydym yn monitro ymateb y rhanbarth lle mae wedi datblygu cynllun gwella sy'n ymgorffori mentrau presennol y diwydiant ac sy'n gyson â hwy, megis prosiect SPEED (Cyflawni Gwelliannau Cyflym, Pragmataidd ac Effeithlon).

Fe wnaeth llwybr Cymru wella'i berfformiad iechyd a diogelwch

Cafodd y llwybr ganlyniadau cymysg o ran iechyd a diogelwch yn 2020-21. Er iddo wneud cynnydd da gyda diogelwch gweithwyr trac a gwelliannau diogelu i groesfannau, roedd yn dal i fod llawer gormod o ddigwyddiadau lle bu ond y dim i ddamwain ddigwydd.

- 11.55 Fe wnaeth perfformiad iechyd a diogelwch llwybr Cymru wella yn 2020-21, gan ragori ar ei dargedau blynyddol yn mhob un o'r pedwar mesur diogelwch cerdyn sgorio, gan gynnwys cyfradd amlder amser a gollwyd yn sgil anafiadau dros y flwyddyn adrodd flaenorol.
- 11.56 Fe wnaeth y llwybr welliannau sylweddol i reolaeth diogelwch gweithwyr trac yn ystod 2020-21, ac mae ar y ffordd o gael gwared ar weithio digymorth heb rywun i gadw gwylidwriaeth erbyn mis Gorffennaf 2021. Yn ogystal, mae llwybr Cymru wrthi'n gweithio'n ddyfal tuag at leihau risg yn gyson wrth weithio ar ochr rheilffyrdd trwy gynyddu ei gyfleoedd i feddiannu rhannau o'r trac a rhwystro trenau, a gwella cynllunio a diogelwch.
- 11.57 Fodd bynnag, mae angen gwneud mwy o welliannau i leihau'r nifer o ddigwyddiadau ac achosion o afreoleidd-dra peryglus a phroblemau na ddylai ddigwydd, sy'n ymwneud yn benodol â rheoli diogelwch gweithwyr trac. Mae digwyddiadau 'ond y dim' i staff yn amlygu'n pryderon parhaus ynghylch diogelwch gweithwyr trac, gan gynnwys cynllunio, sicrwydd ac ymddygiad diogel. Er gwaethaf ymdrech parhaus i wneud gwelliannau diogelwch, mae nifer y digwyddiadau'n pwysleisio pwysigrwydd sicrhau effeithiol a pharhaus.
- 11.58 Mae'n hymchwiliad i'r digwyddiad ym mis Gorffennaf 2019 ym Margam, ger Port Talbot, yn parhau. Yn y digwyddiad hwn, colodd dau o weithwyr trac eu bywydau mewn trychineb pan drawyd hwy â thrên wrth weithio ar reilffyrdd agored i draffig. Er gwaethaf heriau'r pandemig, rydym wedi nodi graddau da o gydweithio rhwng pob parti a rhagwelwn y bydd yr ymchwiliad yn parhau trwy gydol 2021.
- 11.59 Mae llwybr Cymru'n gweithredu'r strategaeth genedlaethol newydd ar gyfer croesfannau, gan adeiladu ar y gwelliannau a wnaed yn ystod 2020-21. Yn ogystal, mae gan y llwybr gyllideb unsydd a rhaglen o waith trwy CP6, sy'n lleihau risg yn sylweddol ar rai o'r croesfannau mwyaf problemus. Yr her i'r llwybr hwn fydd cynnal ei gynnydd presennol wrth gyflawni rhaglenni gwella'r llwybr, yr un pryd â gweithredu newidiadau ychwanegol y strategaeth.
- 11.60 Mae gennym bryderon ynghylch dull y llwybr o reoli risg i gontractwyr wrth glirio llystyfiant. Dangosodd nifer o ddigwyddiadau yng Nghymru, ac yn rhanbarth ehangach Cymru a'r Gorllewin, nad oes gan Network Rail reolaeth ddigonol dros gontractwyr i sicrhau rheoli risg, ac ymddengys fod y defnydd o sawl haen o isgontractwyr wedi arwain at wanhau rheolaeth. Rydym yn trafod hyn gyda'r rhanbarth.
- 11.61 Er bod archwiliadau yn ystod y ddwy flynedd ddiwethaf wedi dangos bod rhai gwelliannau wedi bod mewn rheoli diogelwch asedau yn llwybr Cymru, mae rhywfaint o'n gwaith (wrth ddilyn diffygion trac ac mewn cysylltiad â phenderfyniadau risg mewn cloddiau, er enghraifft), wedi datgelu gwendidau mewn rheoli dogfennau a rheoli cofnodion sy'n ymwneud â chyflwr asedau. Mae'r rhain yn gofyn am sylw. Rydym yn gweithio gyda'r rhanbarth i sicrhau y gweithredir ar y rhain.

11.62 Bydd gwybodaeth bellach ar ein gweithgarwch adolygu iechyd a diogelwch, law yn llaw ag asesiad mwy manwl o berfformiad iechyd a diogelwch Network Rail, yn cael eu cyhoeddi yn ein hadroddiad Iechyd a Diogelwch blynyddol.

Cyfrannodd llwybr Cymru at alluogi rhanbarth Cymru a'r Gorllewin i ragori ar ei darged effeithlonrwydd ond hefyd at dan-berfformio'n ariannol

Yn 2020-21, rhagorodd Cymru a'r Gorllewin ar ei darged effeithlonrwydd rhanbarthol am yr ail flwyddyn yn olynol ond ni chyraeddodd ei darged rhanbarthol am berfformiad ariannol yn sgil ei dan-berfformiad mewn costau gwelliannau, adnewyddu a chynnal a chadw.

Rhagorwyd ar y targed effeithlonrwydd rhanbarthol am yr ail flwyddyn

- 11.63 Rydym yn monitro effeithlonrwydd gweithgareddau busnes craidd Network Rail, sef gweithrediadau, cefnogi, cynnal a chadw ac adnewyddu. Mae Cymru a'r Gorllewin wedi dangos perfformiad cryf ar effeithlonrwydd yn 2020-21, ond mae ei her o ran effeithlonrwydd yn parhau i gynyddu dros y tair blynedd nesaf.
- 11.64 Yn 2020-21, cyflawnodd Cymru a'r Gorllewin £76.6 miliwn o welliannau effeithlonrwydd, sydd ar y blaen i'r £66 miliwn o welliannau effeithlonrwydd a bennwyd yn ei gynllun cyflawni am y flwyddyn. Mae'r lefel hon o effeithlonrwydd yn newyddion da. Mae'r rhanbarth hefyd yn rhagamcanu cyflawni rhwng £432 miliwn a £626 miliwn o welliannau effeithlonrwydd yn CP6, gyda rhagamcan canolog o £534 miliwn, sy'n unol â'i darged effeithlonrwydd. Mae rhagamcan canolog Cymru a'r Gorllewin yn cynnwys £62 miliwn o effeithlonrwydd ychwanegol sy'n cyfrif am gyfran y rhanbarth o her effeithlonrwydd ychwanegol £0.5 biliwn Network Rail.
- 11.65 Yn ystod 2020-21, buom yn cynnal adolygiad o gynlluniau effeithlonrwydd rhanbarth Cymru a'r Gorllewin. Diben ein hadolygiad oedd deall sut mae'r rhanbarth yn cynllunio effeithlonrwydd ac yn adrodd arno, a thrylwyredd ei brosesau sicrwydd ar gyfer asesu newidiadau busnes a chyfrifo effeithlonrwydd cysylltiedig. Er bod rhai gwelliannau o hyd y gellid eu gwneud, rydym o'r farn, ar sail y dystiolaeth rydym wedi ei hadolygu, yr ymddengys fod rhanbarth Cymru a'r Gorllewin wedi parato'n ddigonol ar gyfer cyflawni gweddill ei effeithlonrwydd targed CP6.
- 11.66 Menter effeithlonrwydd mwyaf y rhanbarth yn 2020-21 oedd gwella strategaethau contractau. Roedd hyn yn ffurfio £17.2 miliwn o'r cyfanswm o effeithlonrwydd blwyddyn o gymharu â tharged cynllun cyflawni o £13 miliwn. Cynhyrchwyd effeithlonrwydd sylweddol hefyd trwy well cynllunio amlddisgyblaethol o archebion a meddiannau mynediad trac, gan ffurfio cyfanswm o £7.3 miliwn yn ystod 2020-21.

Tan-berfformiad ariannol yn erbyn targed rhanbarthol a tharged llwybr Cymru

11.67 Mae'r Mesur Perfformiad Ariannol rheoleiddio (FPM) yn rhoi gwell dealltwriaeth o berfformiad ariannol Network Rail nag amrywiannau syml mewn incwm a gwariant. Mae FPM yn cymharu incwm a gwariant gwirioneddol rhanbarth â'i gynllun cyflawni ar gyfer CP6 ar sail y rhan fwyaf o eitemau o incwm a gwariant. Mae'r mesur FPM yn sicrhau nad yw rhanbarth yn elwa o danwariant trwy ohirio gwaith tan yn hwyrach os yw'r gwaith hwnnw'n dal angen ei wneud.

11.68 Yn rhanbarth Cymru a'r Gorllewin, roedd FPM £10 miliwn y tu ôl i'r cynllun cyflawni, fel y dangosir ar Dabl 1.3. Mae hyn yn bennaf o ganlyniad i dan-berfformio mewn adnewyddu a chostau cynnal a chadw uwch na'r disgwyl. Gwrthbwywyd hyn gan berfformio gwell mewn incwm rhestrau 4 a 8 yn sgil lefelau uchel o berfformiad trenau, a gyflawnwyd yn bennaf oherwydd y lleihad yn amserlen trenau'n rhedeg ar y rhwydwaith yn ystod y pandemig.

Tabl 11.3 Perfformiad ariannol rhanbarth Cymru a'r Gorllewin, 2020-21

£ miliwn	Cyllideb blwyddyn lawn	Rhagamcan blwyddyn lawn	Amrywiant cyllideb gwell neu (waeth)	Rhagoriaeth neu (dan-) berfformiad FPM
Trosiant	360	350	(10)	(9)
Rhestrau 4 a 8	(31)	17	48	47
Gweithrediadau a chefnogi	(117)	(128)	(11)	(3)
Cynnal a chadw	(268)	(282)	(14)	(14)
Elw a Cholled	(57)	(43)	13	21
Adnewyddu	(525)	(496)	29	(33)
Gwelliannau	(385)	(290)	95	2
Cyfanswm				(10)

Ffynhonnell: Network Rail

11.69 Ar lwybr Cymru, roedd yr FPM £15 miliwn y tu ôl i'r cynllun cyflawni, fel y dangosir yn Nhabl 11.4. Mae hyn yn bennaf o ganlyniad i danberfformio mewn gwaith adnewyddu a thanberfformio mewn costau gweithredu, cefnogi a chynnal a chadw. Fel yn y rhanbarth, gwrthbwywyd hyn ar lwybr Cymru gan ragori ar y perfformiad yn incwm rhestrau 4 ac 8 yn sgil lefelau uchel o berfformiad trenau, a gyflawnwyd yn bennaf oherwydd cwtogi'r amserlen o drenau'n rhedeg ar y rhwydwaith yn ystod y pandemig.

Tabl 11.4 Perfformiad ariannol llwybr Cymru, 2020-21

£ miliwn	Cyllideb blwyddyn lawn	Rhagamcan blwyddyn lawn	Amrywiant cyllideb: gwell neu (waeth)	Rhagoriaeth neu (dan-) berfformiad FPM
Trosiant	57	56	(1)	(1)
Rhestrau 4 a 8	(8)	3	11	11
Gweithrediadau, cefnogi a chynnal a chadw	(106)	(117)	(11)	(11)
Elw a Cholled	(57)	(58)	(1)	(1)
Adnewyddu	(165)	(179)	(14)	(15)
Gwelliannau	(14)	(22)	(8)	1
Cyfanswm				(15)







Ffynhonnell: Network Rail

Prif ddangosyddion rhanbarthol cyflawni effeithlon

11.70 Wrth ddysgu o leihad mewn effeithlonrwydd yn CP5, roedd hi'n ofynnol gennym i Network Rail ddangos ei fod yn fwy parod i gyflawni'n effeithlon o gychwyn CP6, yn rhannol trwy ddatblygu prif ddangosyddion newydd ac adrodd arnynt.

11.71 Rydym wedi gweld cynnydd gyda'r prif ddangosyddion hyn o gyflawni effeithlon. Mae Tabl 11.5 yn rhoi diweddariad ar baratodau Cymru a'r Gorllewin i gyflawni'n effeithlon yn 2021-22.

Tabl 11.5 Prif ddangosyddion cyflawni effeithlon yn 2020-21, rhanbarth Cymru a'r Gorllewin

Rhanbarth	Cynllunio Adnewyddu		Sicrhau Mynediad i Beirianwyr		Gofyniad Cynnal a Chadw 2020-21	
	Gwaith a awdurdodwyd yn Oracle	Targed	% o'r mynediad gofynnol a archebwyd	Targed	Cyfrif presennol	Targed
Cymru a'r Gorllewin	72% 	91%	87% 	80%	100% 	100%
Cenedlaethol	75% 	81%	98% 	76%	97% 	99%

Ffynhonnell: Network Rail

- 11.72 Ni chyrrhaeddodd rhanbarth Cymru a'r Gorllewin ei darged ar gynllunio adnewyddu. Ar hyn o bryd mae 72% o brosiectau adnewyddu ar gyfer 2021-22 yn ôl gwerth wedi cwblhau cynlluniau manwl ac wedi derbyn awdurdod ariannol i'w cyflawni. Roedd hyn fymryn yn is na'r cyfartaledd cenedlaethol o 75% a syrthiodd 19 pwynt canran yn fyr o darged mewnol y rhanbarth.
- 11.73 Mae'r lefel hon o awdurdodi ariannol yn peri pryder. Fodd bynnag, gallwn hefyd ystyried camau cynharach y cylch oes cynllunio, megis cylchoedd gwaith a bennir ac a dderbynnir gan y gadwyn gyflenwi. O dan y mesur hwn, mae'r gadwyn gyflenwi wedi derbyn 96% o'r gwaith adnewyddu a drefnwyd ar gyfer Cymru a'r Gorllewin yn 2021-22, sy'n arwydd cadarnhaol.
- 11.74 Mae rhanbarth Cymru a'r Gorllewin wedi adrodd y bydd 72% o darged effeithlonrwydd 2021-22 yn cael ei gyflawni o brosiectau sydd eisoes wedi eu cyflawni neu sydd â chynlluniau prosiectau clir. Nid oes cynlluniau prosiect clir gan y 28% sy'n weddill o effeithlonrwydd targed 2021-22, neu mae ganddynt gynlluniau ar waith ond hyder isel o ran eu cyflawni. Mae hyn yn welliant sylweddol ar yr un adeg y llynedd pan oedd y metrig hwn yn 47%, ac mae'n amlygu hyder y rhanbarth mewn parhau i ragori ar ein her effeithlonrwydd yn CP6.
- 11.75 Fel y trafodwyd yn y bennod 'Network Wide', gall cronfeydd risg fod yn is na'r hyn sydd ei angen ar gyfer risgiau ariannol yn y blynyddoedd o'r cyfnod rheoli sydd i ddod ym mhob rhanbarth, yn rhannol oherwydd y pandemig. Bydd nifer o risgiau posibl yn dal i fod yn y dyfodol ac mae angen mwy o eglurder ynghylch a yw'r rhain yn cael eu cynnwys yn nadansoddiad Network Rail ar hyn o bryd. Byddwn yn parhau i fonitro'n drylwyr a chyd-drafod gyda Network Rail ar hyn.
- 11.76 Mae'r dadansoddiad hwn, sy'n seiliedig ar wybodaeth ariannol drafft a ddarparwyd gan Network Rail, yn cymharu ei berfformiad ariannol â'i gyllideb ariannol. Byddwn yn adrodd yn llawnach ar berfformiad ariannol Network Rail o gymharu â'i Gynllun Cyflawni ar gyfer CP6 yn ein Asesiad Blynyddol o Effeithlonrwydd a Chyllid, y trefnwyd ei gyhoeddi ym mis Gorffennaf 2021.



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