



Annual assessment of Network Rail

April 2019 – March 2020

Wales & Western



7. Performance of Network Rail's Wales & Western region

- 7.1 Network Rail's Wales & Western region⁶² 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 Wales & Western are operated by Great Western Railway, Transport for Wales and CrossCountry. Rail freight services are also very important, moving various commodities within the region and beyond.

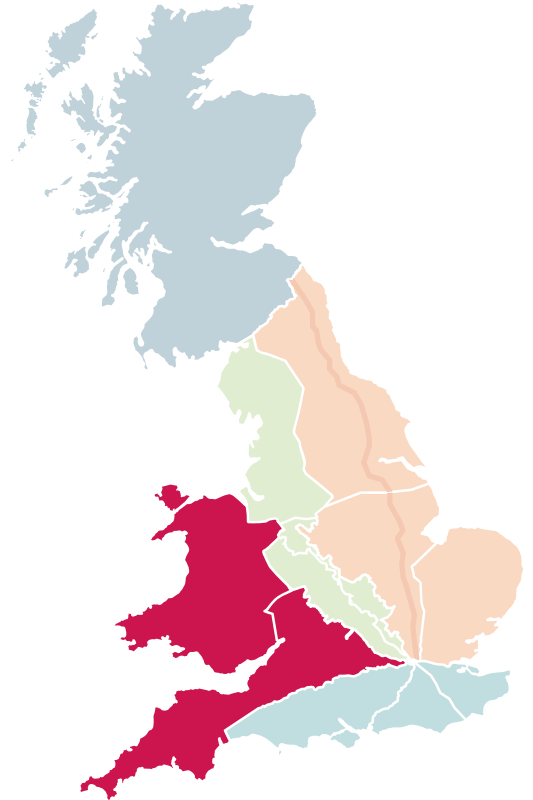
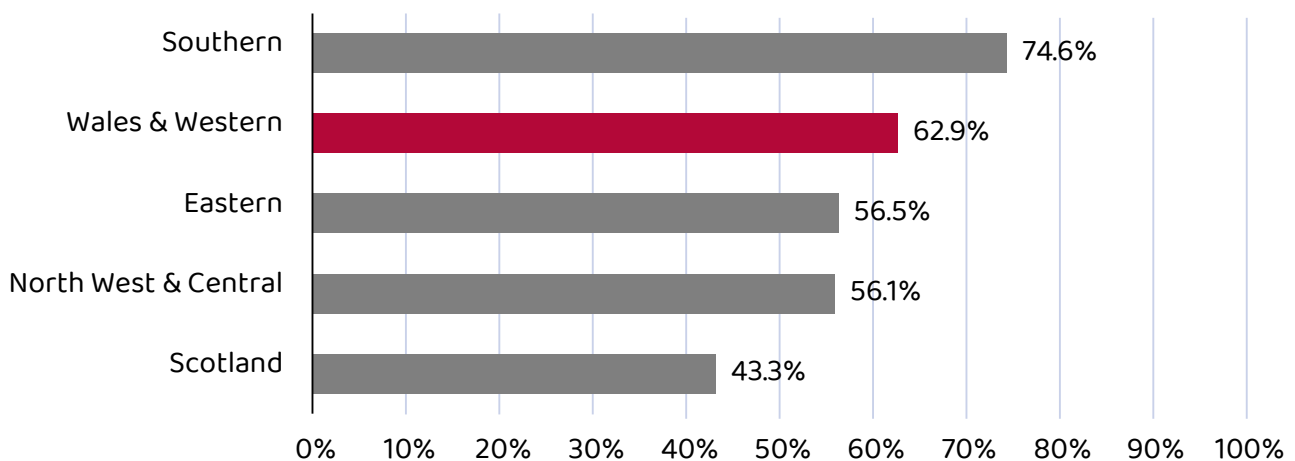


Figure 7.1: Overall scorecard performance by region, 2019-20



Source: Network Rail's regional scorecards

⁶² <https://www.networkrail.co.uk/running-the-railway/our-regions/wales-and-western/>

Performance of the Wales & Western region was strong

- 7.3 Network Rail uses scorecards to align its priorities with those of its customers and to help it incentivise its management to deliver those priorities.
- Wales & Western's overall scorecard performance was good, and, at 62.9%, the second highest of Network Rail's five regions.
 - The region delivered good train performance and positive outcomes in investment and asset management scorecard measures.
 - Performance of the Wales route has not been as expected, and needs to improve.

Train performance was above target

Passenger train and freight performance in the Wales & Western region has been better than the levels agreed with its customers – and better than the planned levels at the start of the year. The Western route achieved a very good level of performance, delivering the best train service for a decade, for all operators; but Wales route's contribution to passenger train and freight performance has been worse than planned.

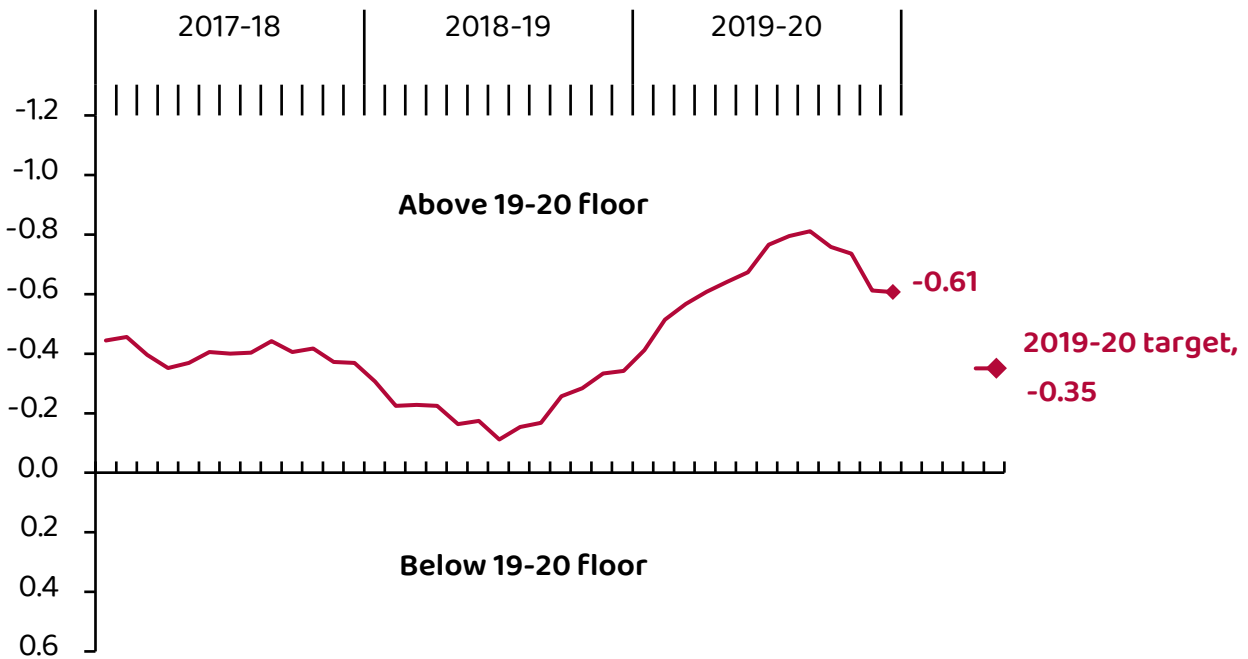
- 7.4 Train performance is a priority for passengers and for freight operators. In our Periodic Review 2018 (PR18)^{63,64}, we set regional trajectories for passenger and freight performance.
- 7.5 For passenger performance we hold Network Rail's regions to account for delivery of the 'Consistent Region Measure for Performance' (CRM-P). This measures the delay minutes caused by each region, for every 100km of train travel, and allows comparisons between regions. For CP6, we set trajectories for CRM-P and minimum levels ('floors').
- 7.6 Wales & Western region's trajectory for CRM-P was based on it achieving 1.88 minutes of delay per 100km of train travel. The region finished 0.26 minutes better than target at 1.62 minutes of delay (and 0.61 minutes above the floor). It has therefore caused less delay to train operators than was anticipated – a good outcome for passengers.
- 7.7 Wales & Western's share of delay to passenger rail services has reduced from 54.3% in 2018-19 to 52.9% in 2019-20.
- 7.8 In the Western route, passenger train service performance finished above target, providing the best train service delivery for a decade, for all operators. The CRMP target was based on it achieving 2.03 minutes of delay per 100km of train travel and the region finished with 1.58 minutes of delay.

⁶³ <https://orr.gov.uk/rail/economic-regulation/regulation-of-network-rail/price-controls/periodic-review-2018/publications/final-determination>

⁶⁴ https://orr.gov.uk/_data/assets/pdf_file/0010/41311/holding-network-rail-to-account-letter-2019-06-19.pdf

7.9 In contrast, passenger train performance in the Wales route finished worse than target. The CRM-P target was based on it achieving 1.59 minutes of delay per 100km of train travel and the region finished with 1.67 minutes of delay. It has therefore caused more delay to train operators than was anticipated. However, the route's performance was significantly impacted by severe weather in the last quarter. Figure 7.2 shows how CRM-P in the Wales & Western region has tracked over time.

Figure 7.2: Passenger train performance (Network Rail caused delay minutes normalised, CRM-P) - variance to regulatory floor for Wales & Western region, 2017-18 to 2019-20

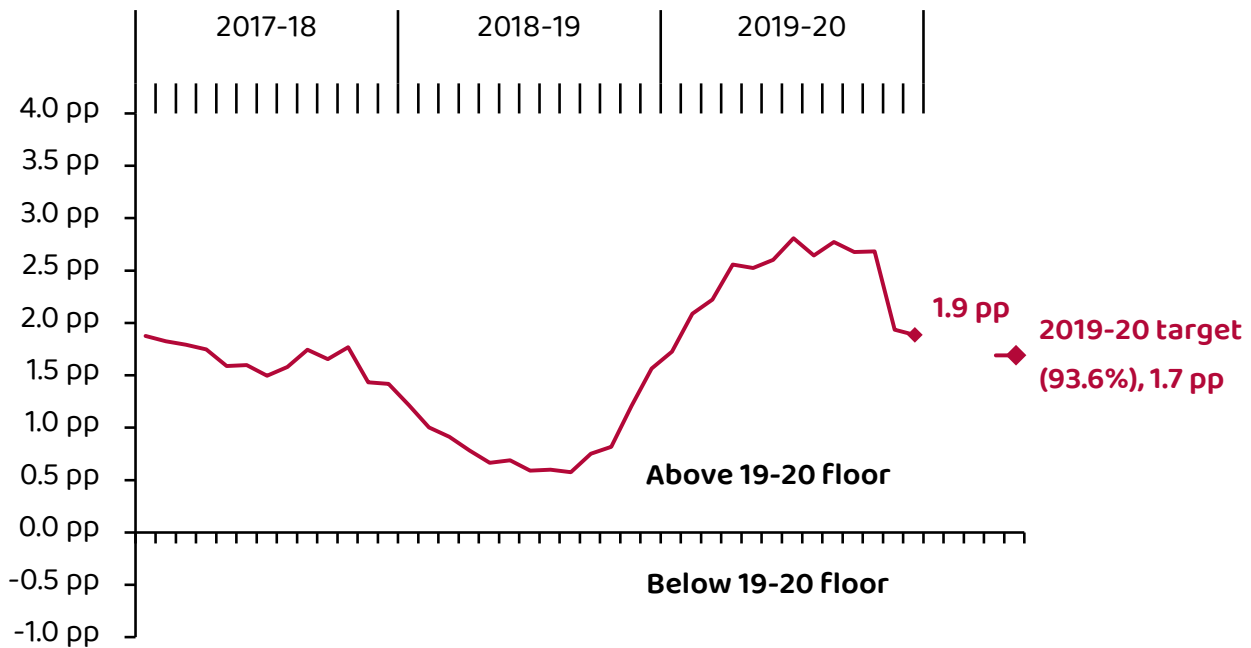


Source: ORR analysis of Network Rail data

7.10 We measure freight performance using the Freight Delivery Metric for Regions (FDM-R). This measures the percentage of commercial freight services that arrive at a planned destination within 15 minutes of their booked arrival time or with less than 15 minutes of Network Rail or passenger operator delay.

7.11 For the Wales & Western region, the end of year FDM-R was 93.8%, higher than the target of 93.6%. It was the second best performing region in 2019-20. For much of the year the region was performing substantially higher than target, before a drop in the last few months. This was due to severe weather (particularly Storms Ciara and Dennis) which caused damage to overhead lines and blew trees onto the line. Figure 7.3 shows how the Wales & Western region FDM-R has tracked over time.

Figure 7.3: Freight performance (FDM-R)
 - variance to regulatory floor for Wales & Western region, 2017-18 to 2019-20



Source: ORR analysis of Network Rail data

Wales & Western has delivered its renewals plans but there is work to do in the wider renewals portfolio

Asset reliability in Wales & Western has been broadly stable, but the reliability of track, buildings and telecoms has declined in 2019-20. The region has delivered its internal scorecard for renewals – a good start to delivery in CP6, but more work needs to be done in the wider renewals portfolio.

7.12 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 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).

7.13 Wales & Western finished 2019-20 with a CSI of 0.7%. This represents an improvement in overall asset sustainability of 0.7% since the end of CP4. The region's trajectory for CP6 is to end the control period with a CSI of 0.2%.

- 7.14 The measure of sustainability is slow-moving, because of the very long operational life of railway assets. We therefore also monitor asset failure rates (and their impact), volumes of maintenance and renewal delivery and certain other asset-specific measures, which can be used as a proxy for longer-term sustainability.
- 7.15 Network Rail's regional scorecards contain some of these shorter-term measures – and Wales & Western has performed well against them. It experienced fewer service affecting failures than target. This contributed to the region achieving a composite reliability index score of 2.7%. This means asset reliability on the route in 2019-20 was 2.7% better than it was in the final year of CP5. In particular, the reliability of electrical power, signalling and points has improved. However track, buildings and telecoms reliability has declined over 2019-20.
- 7.16 Earthworks failures are not included within the route CRI metric because they are relatively infrequent and are strongly linked to wet weather. Historically, large peaks in earthworks failures usually correspond to periods of adverse or severe weather conditions. In 2019-20, Wales & Western was particularly impacted by severe weather resulting in flooding in multiple locations, which caused a number of delay incidents. The largest delay due to severe weather was in January 2020, between Hullavington to Westerleigh Junction (to the north-east of Bristol), which caused 5,440 delay minutes and resulted in 43 cancelled, and 702 delayed, trains.
- 7.17 Wales & Western has generally delivered its planned renewals volumes in 2019-20, and exceeded its internal scorecard target. However, in the larger scope of renewals work, the region reported under delivery in the areas of signalling due to the deferral of level crossing works, and electrical power due to the deferral and mis-allocation of work.

Wales & Western delivered large enhancement projects

Western Capacity

- 7.18 Wales & Western's completion of capacity work in the South West (between Plymouth and Penzance) to improve capacity and reliability in Cornwall in 2018 enabled enhanced two trains per hour services to be operated from May 2019. More upgrades were introduced in conjunction with the December 2019 timetable release and finalisation of the Great Western Electrification Project, enabling London to Plymouth / Penzance services to run non-stop between Reading and Taunton in faster average journey times.



Great Western Electrification Project

7.19 In 2019-20, the Wales & Western region delivered the final section of the Great Western Electrification Project (GWEP), enabling faster and more frequent electric rail services to run between London and Cardiff from January 2020 (excluding through the Severn Tunnel which was fully electrified on 31 May 2020). The wider Great Western Route Modernisation programme also included resignalling and station upgrades with train operating companies improving services through the introduction of new rolling stock.



7.20 The final GWEP milestone (electrification from Newport to Cardiff) was delayed by two months from November 2019 to January 2020 due to construction issues and worse than forecast productivity, as well as ongoing work at Severn Tunnel to resolve conductor beam corrosion issues.

7.21 Corrosion to the conductor beam caused by damp and salty conditions in the 7km Severn Tunnel provided a significant challenge for Wales & Western in the final months of the project. As it was potentially unsafe to energise the beam, trains had to run through the tunnel under diesel mode resulting in a slight delay to services. The region has now successfully managed to resolve this issue and following extensive testing the beam was safely commissioned at the end of May 2020. The tunnel will continue to be monitored to check for any changes or potential failures.

7.22 The final delivery of GWEP provides faster, greener and more frequent services. However, over the lifetime of the scheme, GWEP suffered from delays, inefficiencies and substantial cost increases. More recently, performance has shown improvement, with the schedule and costs becoming more stable, but the final delivery milestone of November 2019 was missed. It is imperative that Network Rail continues to learn from GWEP and implements changes to its delivery of enhancements, and electrification schemes in particular, during CP6.

7.23 While some of these issues have been thoroughly reviewed, the region has recognised the need to review lessons from the delivery of the scheme and has committed to do this in 2020-21.

Core Valley Lines divestment

- 7.24 The Core Valley Lines network consists of tunnels, track and associated infrastructure from Cardiff to Treherbert, Aberdare, Merthyr Tydfil, Coryton, and Rhymney. It connects to the Network Rail infrastructure at two points – Cardiff Central Station and to the north of Ninian Park Station.
- 7.25 During 2019-20, the Wales & Western region managed this infrastructure, but on 28 March 2020 the infrastructure assets were transferred to Transport for Wales (Welsh Government). Transport for Wales leases the assets to Amey Keolis Infrastructure / Seilwaith Amey Keolis Limited (AKIL) who are the current Infrastructure Manager for the Core Valley Lines network.
- 7.26 In preparing for the transfer, Wales & Western worked closely with Transport for Wales to set out clear agreements on management of the network (including at the interfaces) and operational arrangements. The region also worked with ORR to ensure that authorisations (licensing, safety and track access) required under statutory obligations, were granted approval before the transfer took place.
- 7.27 The transfer has created one of the few instances on the rail network where rail services move between two different railway networks. Given this complexity, the transfer went well.
- 7.28 The Wales & Western region has engaged with ORR on the Core Valley Lines divestment, setting out the safety, financial and performance impacts. It has also updated its business plans accordingly to reflect this change to the Wales route network.

Two track workers tragically lost their lives in July 2019

In July 2019, two track workers tragically lost their lives when they were struck by a train in South Wales. The industry must make sure it learns lessons to prevent this happening again. We have seen long-term improvements in the region in asset safety management but there is a need for significant change in how staff working on the ground are monitored.

- 7.29 Wales and Western had a mixed health and safety performance in 2019-20. The region performed well in two of its four scorecard safety measures, achieving 100% for its Risk Management Maturity Model (RM3) and the Train Accident Risk Reduction Measure. However, while the Lost Time Injury Frequency Rate (LTIFR) showed an improvement over the previous year, the region did not meet its end of 2019-20 target.
- 7.30 Level crossing risk in the region has also slightly risen over the year, due to increasing numbers of trains and crossing users. This shows the importance of continuing to look for improvements in risk controls at level crossings.
- 7.31 In July 2019, two track workers tragically lost their lives when they were struck by a train while working on lines open to traffic at Margam, near Port Talbot. We are currently undertaking an investigation into the event and will report on the outcome in due course.

- 7.32 Whilst not specific to the Wales & Western region, Network Rail is looking at the potential impact of changes of working on a live railway, across its whole network. Our Improvement Notices on Track Worker Safety⁶⁵ aim to reduce this 'unprotected' working. While the Wales & Western routes are responding to the track worker safety improvement notices, this is still at an early stage and progress is slow.
- 7.33 As part of our safety reviews, we have looked at whether the region is doing all that is reasonably practicable to install automatic warning systems at footpath and user-worked level crossings that do not have active protection (such as lights, alarms and barriers). Our analysis suggests that Wales & Western's plans may not be sufficiently ambitious and we have encouraged it to review its plans as a result. Follow up work after near-miss incidents at user-worked and footpath crossings suggests that risks are generally well-controlled.
- 7.34 In 2019-20, the region underwent a significant maintenance reorganisation. This followed good change control practice with the new maintenance organisation designed to correct section sizing, enhance and centralise planning, improve HR support, improve engineering assurance, and introduce many other improvements. Evidence suggests that this was carried out as an integrated programme, with good communications and staff participation.

Wales & Western's efficiency has improved but there is financial underperformance for enhancements

Wales & Western exceeded its efficiency target for 2019-20. It has made progress in preparing to deliver efficiently in 2020-21 and later years of CP6 but there is more to do. There is a financial underperformance for enhancements. The region has identified that more work remains to be done around planning of renewals efficiencies. This may be hampered by the current disruption to renewals work due to the coronavirus pandemic – and ORR will continue to monitor its impact.

Financial performance was below target

- 7.35 Our primary measure of Network Rail's financial performance, the financial performance measure (FPM), covers most of Network Rail's activities. It provides a better understanding of Network Rail's financial performance than simple income and expenditure variances.
- 7.36 FPM compares actual income and expenditure to Network Rail's annual budgets, and to the financial assumptions in our PR18 final determination (which underpins the company's funding). It ensures that Network Rail does not benefit from delaying work or not delivering required outputs. A positive FPM means that Network Rail has outperformed and vice versa.
- 7.37 Wales & Western spent £1,199m against a budget of £1,362m in 2019-20, but financially underperformed against its CP6 delivery plan by £41m. This equates to a 4% overspend. This underperformance was primarily due to enhancements, and predominantly GWEP. Wales & Western also underperformed on renewals which was due to delays caused by aligning to other major projects and changes to original designs.

⁶⁵ ORR improvement notices:

<https://orr.gov.uk/rail/publications/enforcement-publications/improvement-notices/improvement-notices-2019>

Efficiency has improved

- 7.38 In the previous control period (CP5) Network Rail generally delivered poorly across renewals and efficiency targets. In PR18 we set Network Rail a £3.5bn efficiency improvement challenge for its core operations, support, maintenance and renewals activities.
- 7.39 Network Rail responded to this by developing an efficiency improvement plan, which we have reviewed. In 2019-20, the Wales & Western region delivered £50m of efficiency improvements, which was ahead of the £42m assumed in its delivery plan. The largest efficiencies were achieved in early contractor involvement, which allows contractors to refine designs earlier in the project process and become more fully embedded in the team. This level of efficiency is good news.

Case Study – Early contractor involvement⁶⁶

In 2019-20, an underbridge renewal was undertaken at Basildon Skew, near Reading. Initial remits and designs were produced for the complex renewal, which previously would have required the temporary removal of the overhead line equipment. By engaging the supply chain early, a different approach was identified and the overhead line equipment remained in place during construction.

Wales & Western's total saving for project was £1.4m. While this is a one-off saving, the lessons from involving contractors early, especially for bridge renewals, will be taken forward and applied to future years.

- 7.40 The efficiency challenge increases in future years – Wales & Western is forecasting to deliver between £390m and £490m efficiencies over CP6 (with a central forecast of £430m) – so continued focus on efficiency planning is needed.
- 7.41 Wales & Western considers that 80% of the target efficiencies for 2020-21 will be achieved from projects that have already been delivered or have clear project plans. The remaining 20% of efficiencies have no clear project plans or plans with low confidence of efficiency delivery. Therefore the region still needs to firm up plans for delivering these efficiencies.

There is more to do on planning efficient delivery

- 7.42 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.
- 7.43 We have seen progress with these leading indicators of efficient delivery. The table below provides an update on Wales & Western's preparations to deliver efficiently in 2020-21⁶⁷. Network Rail's underpinning analysis was undertaken before the significant recent impact of the coronavirus pandemic so there is likely to be disruption, which we will report on in due course.

⁶⁶ <https://www.networkrail.co.uk/news/abergavenny-to-hereford-line-to-reopen-ahead-of-schedule-updated/>

⁶⁷ This section is disaggregated by route rather than region. This is because some of the internal reorganisation from routes into regions as part of Putting Passengers First reorganisation have not yet been implemented.

Figure 7.4: Leading indicators for efficiency delivery in 2020-21, Wales & Western region

Route/ Region	Renewals Planning		Securing Engineering Access			Maintenance requirement 2020-21			
	Work authorised in Oracle	Target	% of required access booked	Target	Current headcount	Target			
Wales	46%	●	88%	78%	●	90%	91%	●	100%
Western	59%	●	100%	80%	●	82%	93%	●	100%
National/ GB	69%	●	83%	76%	●	93%	95%	●	99%

Source: Network Rail CP6 readiness report

- 7.44 Efficient renewals planning is important to ensure a stable profile of work over time within Network Rail's supply chain. To track this, Network Rail measures the percentage of renewal projects which have financial authorisation. The two routes which make up the Wales & Western region are both significantly behind their own internal targets, and behind the national average.
- 7.45 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 92% of planned renewals for the Western route and 77% for the Wales route for 2020-21.
- 7.46 The region unperformed slightly against its internal target for booking disruptive access to the network for planned engineering work in 2020-21. In addition, both routes have a shortfall (Wales 9% and Western 7%) compared to the required maintenance headcount for 2020-21.
- 7.47 Wales & Western has made further progress including strengthening of resources and more robust programme-level oversight. However, substantially more still needs to be done, particularly in relation to the quality of renewals efficiency plans, as these are critical to delivering required renewals volumes and the increasing efficiency challenge in later years of CP6.
- 7.48 Further information on Network Rail's financial performance, efficiency initiatives and preparations for 2020-21 will be published in ORR's Annual Efficiency and Finance Assessment (due for publication in summer 2020).



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