

Annual assessment of Network Rail

April 2019 – March 2020

North West & Central Region



4. Performance of Network Rail's North West & Central region

4.1 Network Rail's North West & Central region²¹ runs from London Euston and Marylebone in the south to Gretna near the Scotland/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 Europe²².

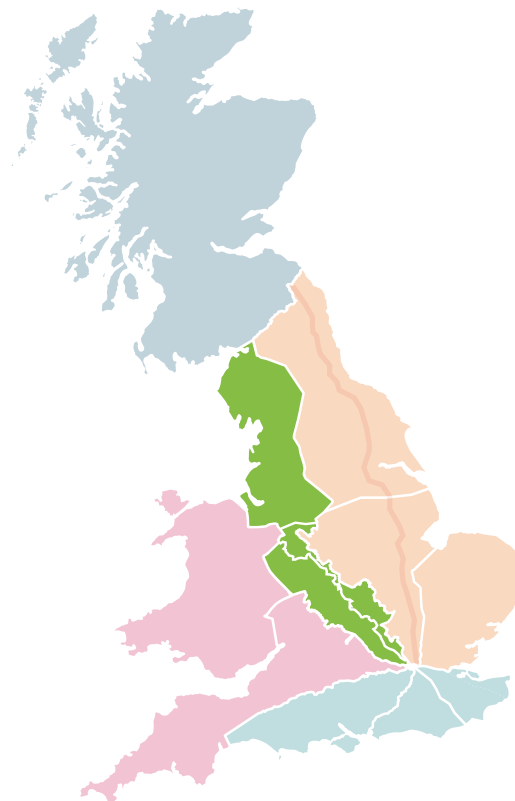
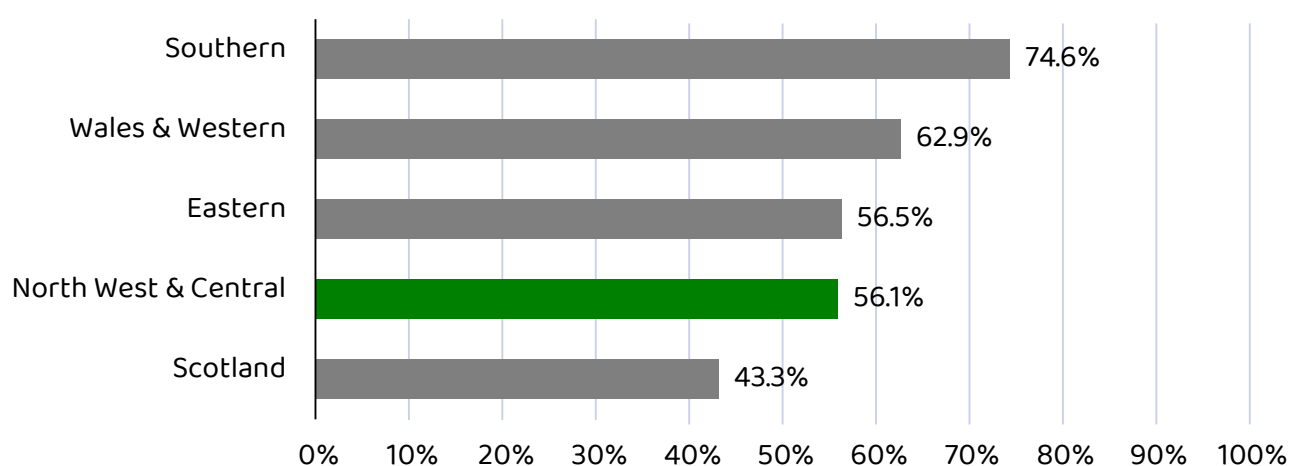


Figure 4.1: Overall scorecard performance by region, 2019-20



Source: Network Rail's regional scorecards

²¹ <https://www.networkrail.co.uk/running-the-railway/our-regions/north-west-and-central/>

²² <https://www.networkrail.co.uk/running-the-railway/our-routes/west-coast-mainline-south/>

Mixed delivery in North West & Central, but poor train performance

- 4.2 Network Rail uses scorecards to align its priorities with those of its customers and helps it incentivise its management to deliver those priorities.
- North West & Central's overall scorecard performance was 56.1% – the second lowest score of Network Rail's five regions.
 - It delivered poor train performance for passenger and freight operators and mixed outcomes in local measures, and health and safety.
 - North West & Central delivered well against its asset management scorecard targets but there is a maintenance backlog.

Train performance in North West & Central has been unacceptable

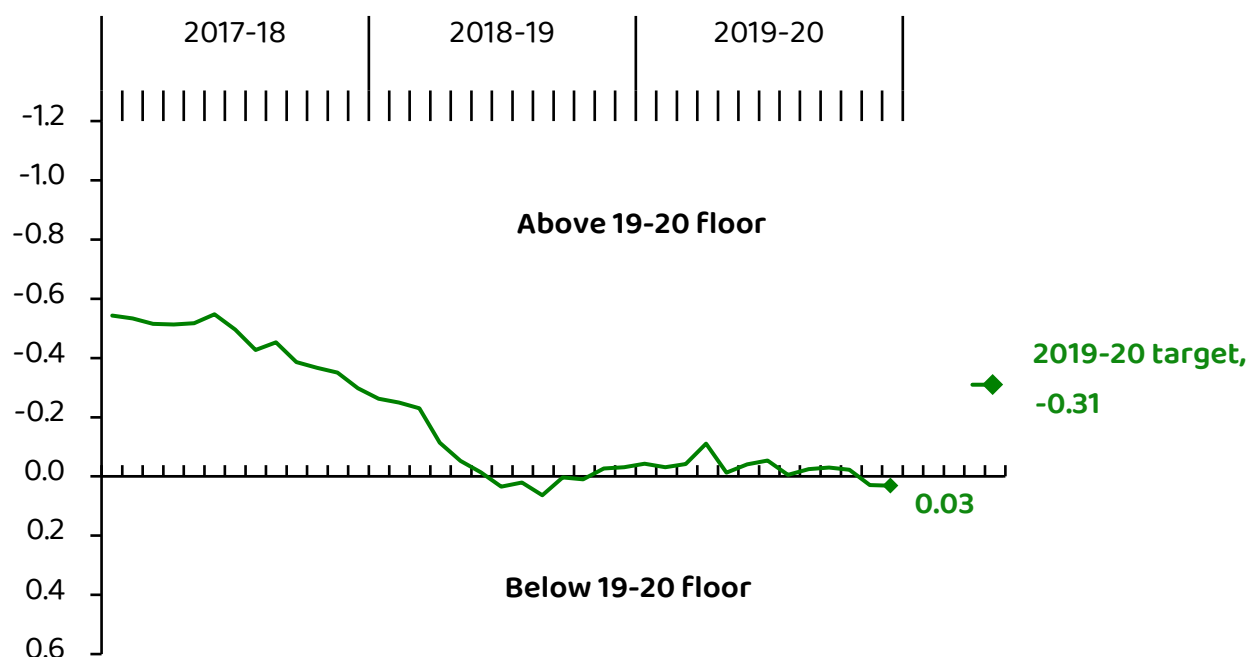
North West & Central's contribution to passenger train and freight performance has been worse than planned, with both falling below the minimum levels set by ORR. The main causes of poor performance in the region have been an increase in delays due to asset failures, the May 2019 timetable change, severe weather and train crew issues.

- 4.3 Train performance is a priority for passengers and for freight operators. In our Periodic Review 2018 (PR18)^{23,24}, we set regional trajectories for passenger and freight performance.
- 4.4 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').
- 4.5 North West & Central's trajectory for CRM-P was based on it achieving 1.71 minutes of delay per 100km of train travel. The region finished 0.34 minutes worse than target, at 2.05 minutes of delay, and 0.03 minutes worse than the floor. It has therefore caused more delay to train operators than was anticipated – a poor outcome for passengers.
- 4.6 Cancellations across the region have been high. While cancellations can be an important element of service recovery, particularly during disruption, they can be frustrating for passengers. North West & Central needs to focus on reducing the level of cancellations across the region for the benefit of its passengers.
- 4.7 North West & Central's share of delay to passenger rail services in the region has reduced from 57.3% in 2018-19 to 52.2% in 2019-20.

²³ <https://orr.gov.uk/rail/economic-regulation/regulation-of-network-rail/price-controls/periodic-review-2018/publications/final-determination>

²⁴ https://orr.gov.uk/_data/assets/pdf_file/0010/41311/holding-network-rail-to-account-letter-2019-06-19.pdf

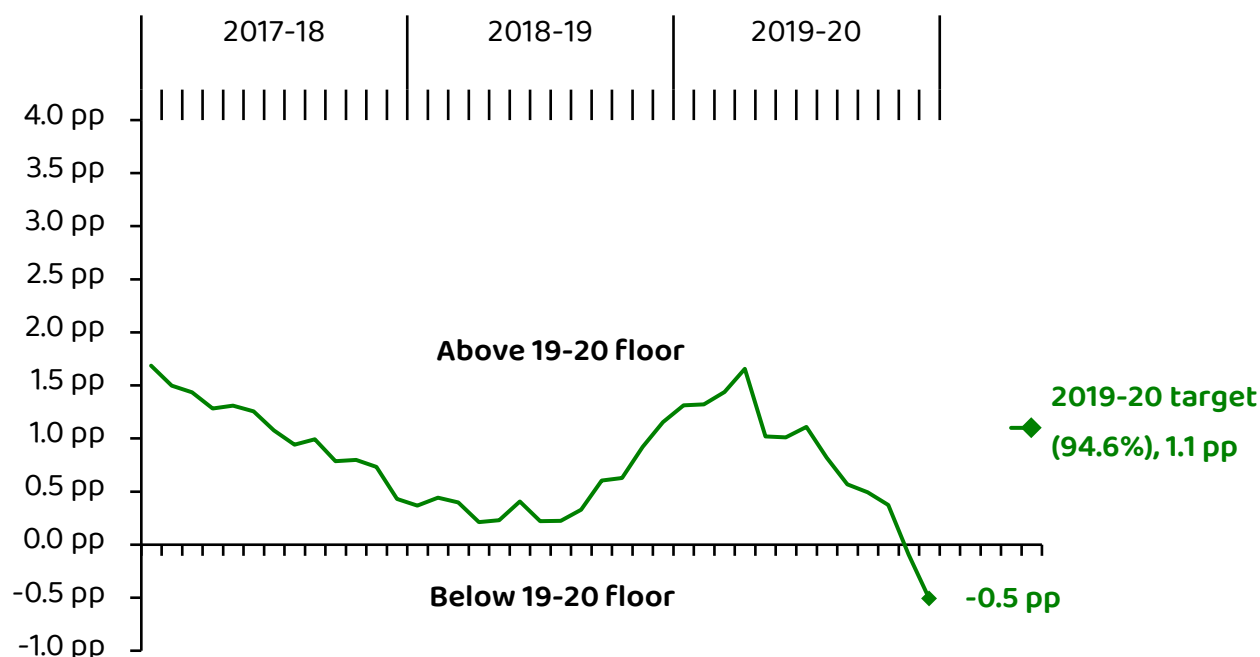
Figure 4.2: Passenger train performance (Network Rail caused delay minutes normalised, CRM-P) - variance to regulatory floor for North West & Central region, 2017-18 to 2019-20



Source: ORR analysis of Network Rail data

- 4.8 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.
- 4.9 North West & Central ended the year with FDM-R at 93.0%, lower than the target of 94.6%. Following a positive start, FDM-R declined for the last two thirds of the year. It was impacted by the implementation of the May 2019 timetable change which joined some poor and better performing services together. In addition, later in the year, severe weather (high temperatures and storms) caused overhead line failures, blew trees onto the line and caused flooding.

Figure 4.3: Freight performance (FDM-R)
 – variance to regulatory floor for North West & Central region, 2017-18 to 2019-20



Source: ORR analysis of Network Rail data

ORR performance review of North West & Central region

In early 2020, ORR reviewed North West & Central's activities to establish whether it was doing all it could to improve performance in the region. Our review found that the region had identified the main causes of poor performance, and we identified recommendations to build on the region's developing plans. We will monitor North West & Central's improvement plans closely.

- 4.10 Passengers and freight customers in the North West & Central region experienced increasingly poor performance through 2019-20. With delay incidents in the region lasting longer, and the region struggling to recover services, it launched a performance recovery management team in November 2019, called Project Alpha (led by its Regional Managing Director). The purpose was to identify the root causes of the region's performance issues, and to build a recovery plan that delivered the quickest improvement in train service reliability.
- 4.11 In early 2020, ORR commenced a review of North West & Central's performance to establish whether it was doing everything reasonably practicable to improve performance in the region. When the review was launched, North West & Central had fallen too far behind its targets and ORR needed assurance that the region was taking sufficient action to turn its performance around for passengers and freight users.

- 4.12 Our review focused on the region's approach to understanding and addressing its performance issues and looked at evidence provided by the region and key stakeholders. While the review looked at issues impacting performance in the region dating from mid-2017, it also identified those issues which occurred within 2019-20, particularly around the significant timetable change and severe weather events.
- 4.13 Our review showed that a range of factors impacted North West & Central. Some of these were within Network Rail's control – including the May 2019 timetable change and asset management failures (particularly with overhead line equipment) – and some were predominantly outside its control, such as operator delays and cancellations.
- 4.14 Our review found that North West & Central had identified the main causes of poor performance but at the time of the review, it had not yet fully developed improvement plans or established when they would be delivered.
- 4.15 The region has now developed remedial action plans (through Project Alpha) and we are working with North West & Central to monitor these plans closely.
- 4.16 We recognise that this review was undertaken prior to action taken in response to the coronavirus pandemic. It is therefore a snapshot in time generating conclusions and recommendations which will be more relevant when Network Rail and the industry returns to a more normal operating environment.
- 4.17 Our review showed that the scale of the challenge facing North West & Central means that it will need to continue efforts over a number of years before asset performance is fully optimised. Monitoring and reporting process going forward will need to be robust and flexible enough to respond to changes in demand and environmental factors.

Asset failures are decreasing and there is work to do in the wider renewals portfolio

Asset reliability in the region as a whole has improved. However the reliability of electrical power and structures has shown significant decline in North West & Central in 2019-20. The region has generally delivered its internal target for renewals volumes – a good start to delivery in CP6, but more work needs to be done in the wider renewals portfolio.

- 4.18 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).
- 4.19 North West & Central finished 2019-20 with a CSI of -0.4%. This represents a decline in overall asset sustainability of 0.4% since the end of CP4. The region's trajectory for CP6 is to end the control period with a CSI of -3.3%.

- 4.20 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.
- 4.21 Network Rail's regional scorecards contain some of these shorter-term measures and North West & Central has delivered well against them. The region experienced fewer service affecting failures than the scorecard target. This contributed to the region achieving a Composite Reliability Index (CRI) score of 1.3%. This means asset reliability on the route in 2019-20 was 1.3% better than it was in the final year of CP5. Within this composite measure, the reliability of track and signalling has improved over 2019-20, whilst the reliability of electrical power and structures reliability has declined.
- 4.22 The region experienced a number of overhead line failures through 2019-20 with high associated delay. In March 2020 in north-west London, a defect contributed to a 1km dewirement and extensive delay of 21,654 minutes. The second highest delay occurred in same vicinity in November 2019 due to a fault and resulted in 18,321 minutes of delay. In North West & Central in 2019-20 there were 13 overhead line failures which each caused in excess of 5,000 minutes delay.
- 4.23 North West & Central has now set short, medium and long-term strategies to improve the resilience of the overhead line contact system. These encompass maintenance based on weather patterns, new technologies and early climate change risk assessments. We will work with the region over the next year to monitor improvements.
- 4.24 Earthworks failures are not included within the CRI because they are relatively infrequent and are strongly linked to wet weather. Historically, large peaks in earthworks failures correspond to periods of adverse or severe weather. In 2019-20, heavy rainfall caused a number of delay incidents in the North West & Central region. One of the largest delays caused 14,112 delay minutes, due to a landslide between Weaver Junction to Winsford (between Warrington and Crewe) in February 2020.
- 4.25 North West & Central is taking action to address the risk of earthwork failures. Plans for weather resilience in CP6 include earthwork schemes with improved drainage and cross-team working to jointly identify and treat high risk locations to reduce the likelihood of future earthwork failures causing disruption to services.
- 4.26 North West & Central has exceeded its internal scorecard target for renewing seven key asset volumes – with switches and crossings being the only area which under-delivered against target. However, in the larger scope of renewals work the region did not deliver the volumes expected in a number of areas. This included a significant volume of work on tunnels that was deferred to later years and contributed to under-delivery in the area of structures. Overhead line structures refurbishment volumes were also deferred to 2020-21 due to weather conditions.
- 4.27 Buildings renewals volumes did not meet targets due to a prior year adjustment and work at a number of franchised station sites being deferred to later in the control period. This was due to issues with procurement and prioritisation of works at managed stations as part of the Putting Passengers First programme. These changes have been managed according to Network Rail's deferral process. In the remaining years of CP6, the North West & Central region will need to focus on planning, as well as liaising with key stakeholders in order to manage the delivery of these additional works.

Inspection of tenanted arches

- 4.28 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 North West & Central region.
- 4.29 We note that there is still significant non-compliance for visual and detailed examination of tenanted arches. We will be monitoring Network Rail to ensure it enforces its contract with Arch Co and completes the necessary examinations to return to compliance with its examination standards.

The major improvement programme to electrify key routes in the North West was delivered

North West Electrification Programme

- 4.30 In 2019-20, phases 4 and 5 of the approximately £1bn North West Electrification Programme (NWEPP) were delivered in the North West & Central region. The programme to electrify and upgrade the lines between Blackpool, Wigan, Bolton, Liverpool and Manchester was delivered in phases between 2014 and 2019. Phase 3 delivered electrification, re-signal and re-control of Preston to Blackpool North and re-signal & re-control of Kirkham to Blackpool South in 2018. Phase 4 (delivered in May 2019) electrified the line between Manchester and Euxton, delivering overhead line equipment, power distribution and journey time improvement works as well as capacity works at Bolton station and rolling stock gauge clearance.
- 4.31 Phase 5, which was completed in July 2019 in time for the December 2019 timetable change, was aimed at producing journey time improvements between Manchester Victoria and Stalybridge. In addition it delivered power supply resilience for Phase 4, additional overhead line equipment at the east end of Manchester Victoria and overhead line equipment enabling works elsewhere. It also provided a new grid supply point at Heyrod.
- 4.32 As part of the final phases, platform extensions at Mossley and Greenfield were successfully delivered in November 2019, in time for the December 2019 timetable change. The final phases of the NWEPP project saw 20 bridges reconstructed to make space for new overhead equipment and 1,659 foundations, the remaining steel masts and wiring completed to allow more electric trains to run.
- 4.33 While successfully delivered in 2019-20, NWEPP was not delivered to original planned timescales. It had numerous revised milestones and the final milestone was delivered four months late. The final project costs are still being determined but, given the overrun, it is expected that NWEPP will be over budget.
- 4.34 Learning from NWEPP, Network Rail and train operators have improved processes for timetable production and readiness. Within North West & Central, the lessons from NWEPP (and other large programmes) have been embedded, and completion milestones are no longer declared until a robust programme has been produced and peer reviewed. Network Rail has introduced the investment decision framework, providing defined stage gates which allow it and the Department for Transport (as an informed client), to challenge projects on their business cases and also pause / stop where appropriate.

North West & Central's health and safety performance was mixed

ORR's inspection and investigation work has identified mixed health and safety management: some examples of good management, and other areas where attention is required.

- 4.35 North West & Central performed well for two of its four scorecard safety measures. The Lost Time Injury Frequency Rate (LTIFR) showed an improvement over the previous year but the region did not meet its end of 2019-20 target.
- 4.36 Potential high risk train accidents showed a slightly reducing trend over the past year. However, level crossing events are of concern in the region as they have increased in 2019-20, after reducing last year. This appears largely due to level crossing events increasing in the North West route, whilst instances in the other two routes have remained static. The region has a £25m fund for improving level crossing safety and has made good progress with closures during the year – but progress with warning systems at open crossings has been disappointing.
- 4.37 Whilst not specific to the North West & Central region, Network Rail is looking at the potential impact of changes of working on a live railway when trains are running, across its whole network. Our improvement notices on Track Worker Safety²⁵ aim to reduce this 'unprotected' working, and while North West & Central is responding to the notices, it is still at an early stage. Initial monitoring does show that changes are occurring and 'unprotected' work is reducing.
- 4.38 Over 2019-20, the region underwent many changes, both in relation to Putting Passengers First and the Performance Review. While the changes were disruptive in the short-term they offer the promise of a strengthened, well-directed approach to health and safety management. Overall, there is a defined, structured process for managing change, albeit with some evidence of it being less well applied for organisational change when compared to engineering change.
- 4.39 Further information on our health and safety inspection activity, alongside a more detailed assessment of Network Rail's health and safety performance will be published in ORR's Annual Health and Safety Performance Report (due for publication later this year).

²⁵ ORR improvement notices:

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

North West & Central has underperformed financially but delivered efficiency

North West & Central exceeded its efficiency target for 2019-20 but more work needs to be done to prepare for the planning and delivery of efficiencies in 2020-21 and the later years of CP6. 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

- 4.40 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.
- 4.41 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.
- 4.42 North West & Central region spent £1,622m against a budget of £1,779m in 2019-20, but financially underperformed against its CP6 delivery plan by £61m. This equates to a 5% overspend. This underperformance was mostly due to lower Schedule 4 and 8 income. There was also underperformance of renewals due to reduced volumes but no reduction in corresponding overheads.

Efficiency has improved but there is more work to do

- 4.43 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.
- 4.44 North West & Central responded to this by developing an efficiency improvement plan, which we have reviewed. In 2019-20, the region delivered £70m of efficiency improvements, which was ahead of the £68m assumed in its delivery plan. This level of efficiency is good news. The largest efficiencies were achieved in reduced activity due to new technologies being introduced in 2019-20. Supply chain organisation initiatives were the second largest contributor, with efficiencies achieved by negotiating better contract rates for the treatment of trains for autumn and winter preparations.

Efficiencies case study – Docker Garths Viaduct

The Docker Garths Viaduct in Cumbria was a structures renewal in 2019-20. Works consisted of recasting defective masonry, de-vegetation works, re-pointing, and installation of anchors to address cracks in the viaduct. This would have previously required the installation of a full scaffold system to provide access to undertake the works. By engaging a specialist sub-contractor, an innovative solution was proposed to provide access – a suspended gantry, which moved vertically and horizontally.

North West & Central's total saving against this project was £0.6m. While this is a one-off saving, the lessons will be taken forward and applied in the future.









- 4.45 The efficiency challenge increases in future years – North West & Central is forecasting to deliver between £500m and £700m efficiencies over CP6 (central forecast of £590m) – so continued focus on efficiency planning is needed.
- 4.46 North West & Central considers that 47% of the target efficiencies for 2020-21 will be achieved from projects that have already been delivered or have clear project plans. The remaining 53% of efficiencies have no clear project plans or plans with low confidence of efficiency delivery. This is low compared to other regions and the region still needs to firm up its plans for delivering these efficiencies.

More to do to plan for efficient delivery

- 4.47 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.
- 4.48 We have seen progress with these leading indicators of efficient delivery. The table below provides an update on North West & Central's preparations to deliver efficiently in 2020-21²⁶. Network Rail's underpinning analysis was undertaken before the significant recent impact of the coronavirus pandemic. There is likely to be disruption and we will report on this in due course.

Figure 4.4: Leading indicators for efficiency delivery in 2020-21, North West & Central 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
NW&C	73%		100%	65%		100%	99%		100%
National/ GB	69%		83%	76%		93%	95%		99%

Source: Network Rail CP6 readiness report

- 4.49 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. North West & Central is behind its own internal targets – at 73% – but ahead of the national average.
- 4.50 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 57% of planned renewals for 2020-21. The region underperformed against its internal target for booking disruptive access to the network for planned engineering work in 2020-21.
- 4.51 These leading indicators are a cause for concern and show that action must be taken to improve efficiency planning.
- 4.52 The region's current maintenance headcount is more positive – with only 1% shortfall compared to the need in 2020-21.

²⁶ 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.

- 4.53 North West & Central 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.
- 4.54 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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