

Annual assessment of Network Rail

April 2019 – March 2020

Scotland



5. Performance of Network Rail Scotland

- 5.1 Network Rail Scotland looks after Scotland's rail infrastructure.
- 5.2 Most rail services in Scotland are operated by Abellio ScotRail (ScotRail). Caledonian Sleeper, London North Eastern Railway (LNER), Avanti West Coast, CrossCountry Trains, TransPennine Express (TPE) and freight operators also operate rail services between Scotland and the rest of Great Britain.

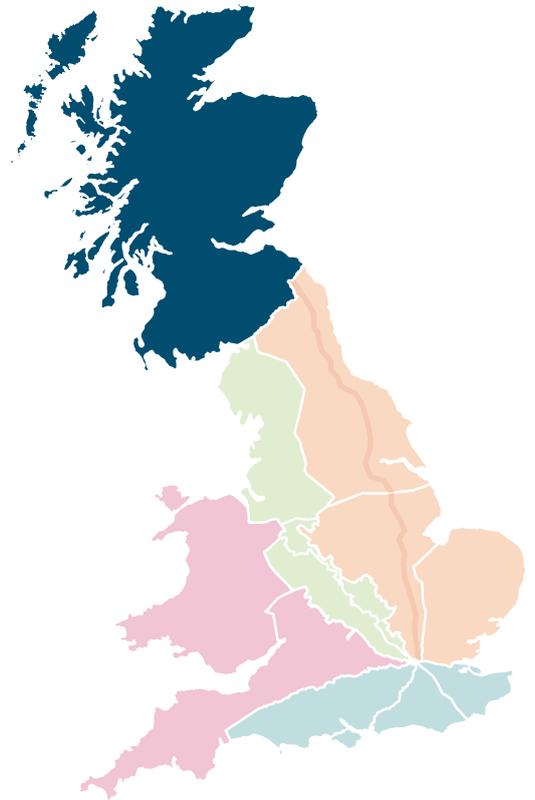
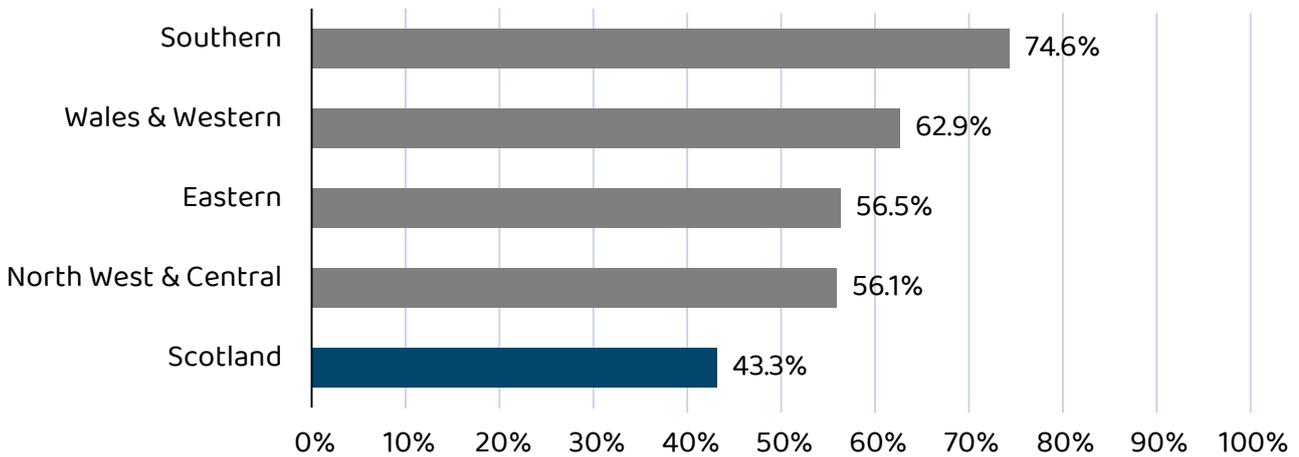


Figure 5.1: Overall scorecard performance by region, 2019-20



Source: Network Rail's regional scorecards

Network Rail Scotland's overall performance in 2019-20 was mixed

- 5.3 Network Rail uses scorecards to align its priorities with those of its customers and help it incentivise its management to deliver those priorities. Network Rail Scotland's scorecard sets out what it is seeking to deliver for its customers and for the Scottish Ministers.
- 5.4 We hold Network Rail Scotland to account for:
- its overall performance against its scorecard; and
 - the specific outputs that the Scottish Ministers require Network Rail to deliver throughout Control Period 6 (CP6)²⁷, which we refer to as the Scotland High Level Output Specification (HLOS) requirements²⁸.
- 5.5 Network Rail Scotland's overall scorecard performance was the lowest of all five regions (achieving 43.3%). The strongest performing areas of the scorecard were in safety, investment and asset management. However, Network Rail Scotland did not achieve its targets for train service performance or locally driven measures²⁸. Both of these areas significantly lowered the percentage of its overall scorecard achievement.
- 5.6 Network Rail Scotland has generally made good progress in delivering the Scotland HLOS requirements in the first year of CP6.

Train performance in Scotland continues to improve but was below target

Other than its freight performance target, Network Rail Scotland did not deliver the targets set by the Scottish Ministers or those agreed with its customers. However it has demonstrated that it understands what it needs to do to achieve its performance targets and, working closely with its customers, has plans in place to deliver these improvements.

- 5.7 Train performance is a priority for passengers, freight operators and their customers. In our Periodic Review 2018 (PR18)²⁹, we set specific targets for performance. These targets reflect the level of performance that the Scottish Ministers expect Network Rail Scotland to deliver throughout CP6.

²⁷ Control Period 6 covers from 1 April 2019 to 31 March 2024.

²⁸ Locally driven measures (such as customer satisfaction, reduction in works complaints and performance management) are set in alignment with Network Rail Scotland and its stakeholders' priorities.

²⁹ PR18 is our assessment of what Network Rail must achieve in CP6.

- 5.8 We hold Network Rail Scotland to account for its delivery of both the ScotRail Public Performance Measure (PPM)³⁰ target of 92.5% and 80% Right Time Arrival³¹ for Caledonian Sleeper services. 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. Network Rail Scotland is required to achieve all three targets to the greatest extent reasonably practicable.
- 5.9 In addition to the targets referred to above, we measure the delay minutes caused for every 100km of train travel – known as the ‘Consistent Region Measure of Performance’ (CRM-P). This measure allows us to compare how much delay Network Rail Scotland caused compared with other Network Rail regions.
- 5.10 In its plans for CP6, Network Rail Scotland were clear that it was unlikely to achieve the PPM target of 92.5% until the end of 2021-22. For the first two years of CP6, it forecast PPM of 90.5% and 91.5%. We recognised there were some potentially significant challenges in achieving the 92.5% PPM target, but we decided to set this as the CP6 ScotRail performance target for each year of CP6 to reflect the level of performance required by the Scottish Ministers’ High Level Output Specification³². As set out above, the obligation on Network Rail is to achieve the PPM target to the greatest extent reasonably practicable.



³⁰ The Public Performance Measure (PPM) is the percentage of trains arriving at their final destination within 5 minutes of their scheduled arrival time (within 10 minutes for long distance services).

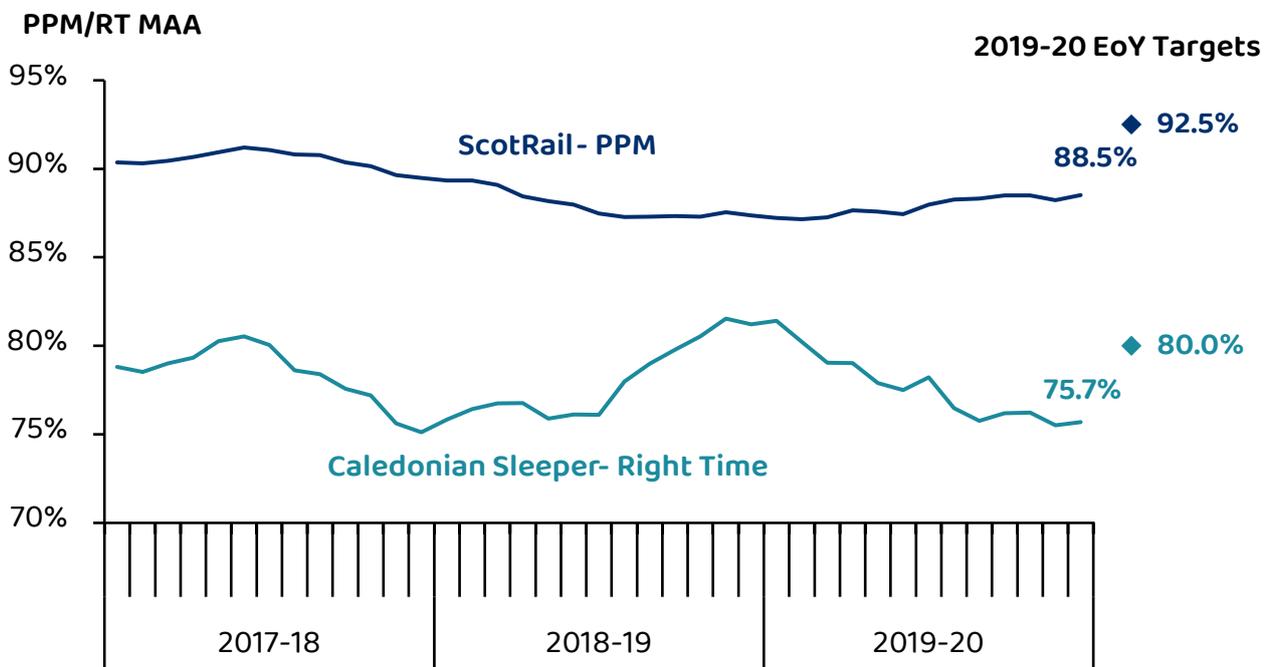
³¹ Right-time performance measures the percentage of trains arriving early or within 59 seconds of schedule.

³² The Scottish Ministers’ High Level Output Specification for CP6, published 20 July 2017:

<https://www.transport.gov.scot/media/39496/high-level-output-specification-hlos-for-control-period-6-final.pdf>

- 5.11 In 2019-20, 88.5% of Abellio ScotRail trains arrived at their destination within five minutes of their scheduled time. This is lower than the target of 92.5% but does represent an improvement on 2018-19 performance. This is illustrated in figure 5.2 below.
- 5.12 The portion of train delay in Scotland that is attributed to Network Rail was lower in 2019-20 than the previous year. Improved infrastructure performance and more robust summer and autumn preparedness contributed to Network Rail Scotland reducing its share of delay on Abellio ScotRail services from 58.5% to 54.4%.
- 5.13 Right time arrival (RTA) for Caledonian Sleeper services was 75.7% which is significantly below the target of 80%, as also shown in figure 5.2. However Network Rail Scotland's share of delays affecting Caledonian Sleeper services has also fallen. (Network Rail Scotland was responsible for 31.6% of delay in 2019-20, compared with 41.4% in 2018-19.)

Figure 5.2: Abellio ScotRail PPM and Caledonian Sleeper RTA performance 2017-18 to 2019-20



Source: ORR analysis of Network Rail data

- 5.14 The reduction in Network Rail Scotland caused delay is in part a result of improvements in infrastructure performance and more robust summer and autumn preparedness – both have resulted in a reduction in service affecting failures (2019-20 target was 2,259, total service affecting failures for the year was 1,978).

- 5.15 Network Rail Scotland has also successfully delivered targeted improvements. For example, its Glasgow Maintenance Delivery Unit was restructured to enable better geographical focus and introduce 24 hour response team coverage. Network Rail Scotland is learning from this to deliver similar improvements in its Perth Maintenance Delivery Unit. This should help to deliver much needed performance improvements in the Intercity sector³³ which is currently the lowest performing route within Scotland, with a PPM Moving Annual Average (MAA)³⁴ of 77.7%.
- 5.16 While the reliability of Network Rail Scotland's infrastructure is improving, it is important that it focuses on other areas where the proportion of delay remains high. Network Rail Scotland knows it must do this and has recently put in place plans and dedicated resources to help reduce delays associated with its operational management of the network³⁵. Network Rail Scotland is specifically focused on reducing the level of 'unexplained' delay by investigating the worst performing routes to better understand the factors impeding performance.
- 5.17 Severe weather has also impacted performance in Scotland during 2019-20. In particular there were a number of flooding incidents – with the second wettest February and third wettest August in Scotland since records began. We look at what Network Rail Scotland is doing to address flooding issues in the next section.
- 5.18 Network Rail Scotland undertook more robust summer and autumn preparedness in 2019-20, which led to lower levels of weather-related delay. For example, there was a 79% reduction³⁶ in failures caused by heat.
- 5.19 In terms of CRM-P performance, Network Rail Scotland achieved a CRM-P MAA of 1.24 minutes delay per 100km of train travel in 2019-20, 0.18 minutes worse than target, but 0.01 minutes above the floor. If Network Rail Scotland continues to deliver targeted improvements, such as those set out above, we expect CRM-P performance to improve.

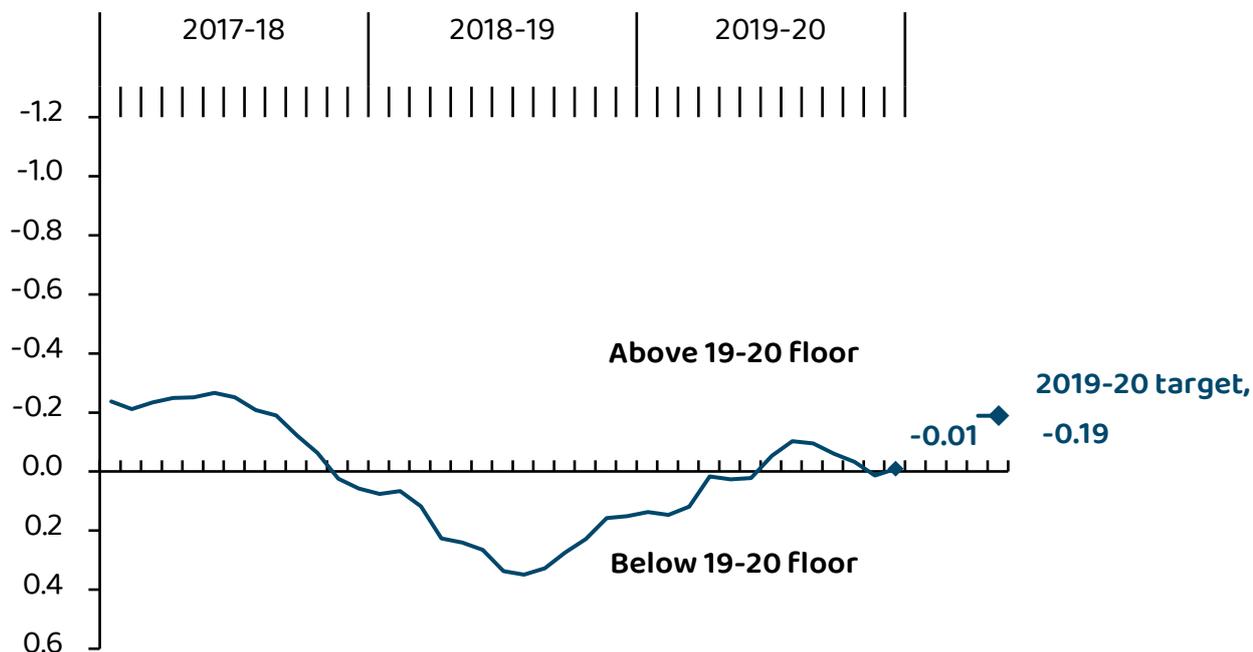
³³ Intercity refers to the following sectors within Scotland - Edinburgh to Aberdeen, Glasgow to Aberdeen and Glasgow/Edinburgh to Inverness.

³⁴ Moving annual average - the average of the last 13 four-week time periods.

³⁵ The Network Management Other delay category includes areas such issues with Network Rail operations and/or timetable problems.

³⁶ During summer of 2018-19 there were 1630 PPM failures attributed to heat, in 2019-20 there were 337.

Figure 5.3: Passenger train performance (Network Rail caused delay minutes normalised, CRM-P) – variance to regulatory floor for Network Rail Scotland, 2017-18 to 2019-20

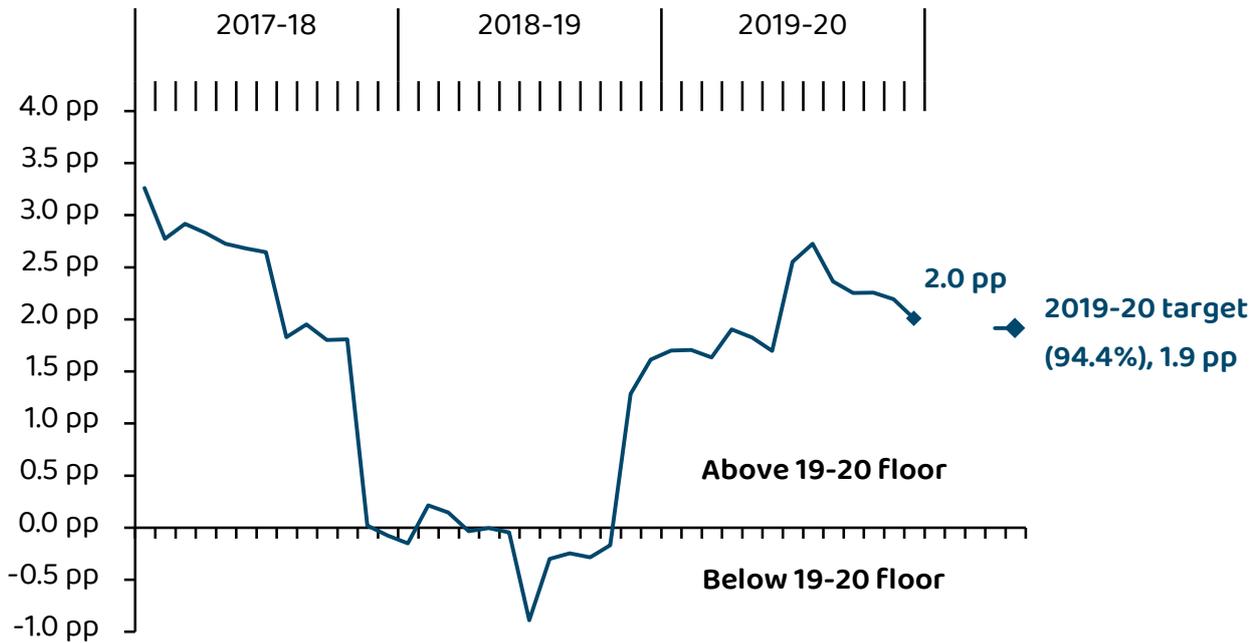


Source: ORR analysis of Network Rail data

5.20 For freight performance, the 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.

5.21 In 2019-20, FDM-R in Scotland was 94.5%, ahead of the regulatory target of 93% and better than the more stretching scorecard target of 94.4% which Network Rail Scotland agreed with its customers.

Figure 5.4 Freight performance (FDM-R)
 - variance to regulatory floor for Network Rail Scotland 2017-18 to 2019-20



Source: ORR analysis of Network Rail data

5.22 Overall, apart from the FDM-R target, Network Rail Scotland did not deliver the targets set by the Scottish Ministers or those agreed with its customers. But, from our monitoring of performance in 2019-20, we consider that it understands the areas where improvements are required. Network Rail Scotland has reduced its share of delay to both Abellio ScotRail and Caledonian Sleeper and has demonstrated that it has plans in place to target areas causing the highest proportion of delay.

5.23 We have also seen evidence that Network Rail Scotland is working closely with its customers to deliver performance improvements. The implementation of its plans for autumn and the work of Network Rail's Seasonal Delivery Team is a good example of this. It is important that this collaboration continues.

5.24 Over the next year we will closely monitor progress to ensure Network Rail Scotland continues to deliver on the areas it has committed to improve.

Renewals work was delivered, asset reliability remains strong

In 2019-20 Network Rail Scotland had fewer service affecting failures than target, as reflected in the improvements in train service performance discussed above. But higher levels of rainfall resulted in an increase in earthwork failures. Network Rail Scotland's plans for CP6 focus clearly on weather resilience (including significant investment in earthworks). It is vital that these plans are implemented.

5.25 Network Rail must secure the maintenance, replacement and renewal 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)).

- 5.26 The CSI measures the 'remaining asset value' on the network (with value reflecting the remaining useful life of the asset), weighted by the relative value of the asset. 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).
- 5.27 Asset sustainability in Scotland is better than in the other Network Rail regions, and is above the baseline at the end of CP4. Network Rail Scotland finished 2019-20 with a CSI of 3.3%. This represents an improvement in overall asset sustainability of 3.3% since the end of CP4. The region's trajectory for CP6 is to end the control period with a CSI of 2.9%.
- 5.28 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. Network Rail's regional scorecards contain some of these shorter-term measures – and Network Rail Scotland performed well against them.
- 5.29 Network Rail Scotland experienced fewer service affecting failures than target, which contributed to it achieving a composite reliability index (CRI) score of 14.4%. This means asset reliability in 2019-20 was 14.4% better than it was in the final year of CP5. In particular, the reliability of track and signalling showed a marked improvement. There was reduced reliability for buildings and telecoms assets. Network Rail Scotland has not highlighted any specific reliability concerns with buildings and it has attributed the underperformance to incorrect reporting of two hour and 24 hour faults. It has assured us that issues have now been addressed. This is an area we will continue to monitor for improvement in 2020-21.
- 5.30 Earthworks failures and flooding are not included within the CRI metric. The impact of earthwork failures and flooding varies significantly from one incident to another and is largely governed by rainfall and local geology, whereas CRI assumes that incidents at busier locations will have greater impact.
- 5.31 Network Rail Scotland experienced more earthworks failures in 2019-20 than previous year, but also higher rainfalls. The pattern of failures was dominated by two distinct peaks³⁷, relating to severe weather events. These peaks corresponded with some significant delays on the network, for example, in August flooding closed the railway between Linlithgow and Edinburgh Haymarket. In early 2020, incidents included a landslide between Dumfries and Kilmarnock and closure of the railway between Stirling and Perth after Network Rail Scotland engineers found damage at the Mill O'Keir viaduct, as part of their proactive severe weather management protocol.



³⁷ In periods 5, and 12 to 13.

- 5.32 Network Rail's plans for CP6 have a clear focus on weather resilience. They include expenditure of around £10m on sites prone to repeat flooding, and £130m on earthworks resilience, which covers cutting and embankment renewals / refurbishments necessary to mitigate the risk of landslides caused by intense or prolonged rainfall.
- 5.33 Network Rail Scotland has made a good start in delivering against its CP6 resilience plans. This is an important area which we will continue to monitor. For example, it delivered a weather resilience scheme on the Kyle line³⁸. It spent £5.2m improving the resilience of embankments and soil cuttings to heavy rainfall, renewing and improving drainage and installing rockfall protection measures.

Case Study: Network Rail's response to flooding at Dalmarnock station

Flooding is a significant contributor to delay at Dalmarnock station. It is susceptible to flooding due to the local geography and its location in a cutting.

In 2014, Network Rail Scotland installed fixed pumps to remove excess water from the trackbed. On investigation, it found that the local drains could not carry water away from the railway fast enough. To address this Hydraulic accumulators were installed at the station to hold flood water so that water can be pumped away at a rate the local infrastructure can accommodate.

Towards the end of last year, Network Rail Scotland installed new remote condition monitoring on the pump system and the hydraulic accumulators, including remotely accessible CCTV.

The remote monitoring enables preventative action and quicker rectification of faults so that the impact of floods on train performance can be minimised. It also reduces the amount of working at height required.

- 5.34 It is important that Network Rail Scotland maintains a sustainable programme of vegetation clearance works. It reports that it delivered above its planned targets in both vegetation inspections and maintenance volumes in 2019-20. During the year, our monitoring found that Network Rail Scotland understands its level of non-compliance with the required standard, has appropriate mitigations in place and is making progress on developing its vegetation plan.
- 5.35 We identified a specific concern in the way that Network Rail Scotland manages vegetation clearance to avoid risk of encroachment on overhead line equipment. In 2020-21, we will hold a separate review workshop with the region to assess its progress on vegetation management.

³⁸ From Inverness to Kyle of Lochalsh.

- 5.36 Network Rail Scotland has generally delivered its planned renewal volumes in 2019-20, and has exceeded its internal scorecard target. Five of the six key volumes met or exceeded their targeted volumes³⁹. It was behind on is the delivery of planned underbridges volumes due to deferrals in scour works. This was partly due to severe weather events. Flooding / high water levels meant that this work could not be re-programmed within the year. Network Rail Scotland has prioritised this for delivery in early 2020-21.
- 5.37 During the year we have had concerns about the deferral of signalling volumes from 2019-20 to later years in CP6⁴⁰. In response to this issue, Network Rail Scotland established a pipeline of renewals to draw on in the event of planned renewals being deferred. This is an area we continue to monitor but Network Rail Scotland has, to date, demonstrated successful implementation of this pipeline which has helped it mitigate against a significant underspend for 2019-20. This is important so that Network Rail operates within its budget flexibility rules⁴¹ and will also be a useful tool for Network Rail Scotland to deploy if it has to re-plan its renewal work in light of the coronavirus pandemic.
- 5.38 The CP6 settlement included significant funding for the Carstairs renewal (£103m). The track layout at Carstairs dates from the 1970s and Network Rail Scotland consider that the infrastructure is now life expired, with a number of temporary speed restrictions in place to allow trains to run safely.
- 5.39 At the time of our PR18 determination, the plans for Carstairs were at an early stage of development (where outputs were being defined⁴²) and there was no firm estimate of costs.
- 5.40 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. A review would ensure that Network Rail Scotland's costs were justified and that a robust option process had been followed. 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.
- 5.41 Throughout 2019-20 there has been substantial engagement between us, Network Rail Scotland and Transport Scotland on the Carstairs renewal. There were some initial delays to the scheme due to discussions between Network Rail and Transport Scotland to agree the renewal design. These discussions resulted in important changes – for example Network Rail Scotland now plans to make the station fully accessible for all passengers by ensuring it provides step-free access to the station platform. The project is now proceeding at pace and it is important that this continues. We expect to start our review of efficient costs in the next few months.

³⁹ Network Rail Scotland record six key volumes instead of seven as it does not have any conductor rail.

⁴⁰ We noted our concerns in a letter to Transport Scotland on Network Rail's funding for network grant related expenditure in year 1 of CP6, published 3 December 2019: https://orr.gov.uk/_data/assets/pdf_file/0019/42175/network-rails-funding-for-network-grant-related-expenditure-in-year-1-of-CP6.pdf

⁴¹ As discussed in the Financial Framework document for CP6, published 31 October 2018:

https://orr.gov.uk/_data/assets/pdf_file/0004/39307/pr18-final-determination-financial-framework.pdf

⁴² Governance for Railway Investment Projects (GRIP) stage 1.

- 5.42 In our PR18 determination, we also required Network Rail to demonstrate and improve its asset management capability. All of its regions committed to improve their asset management capability by achieving compliance or alignment with the ISO55001 standard⁴³, and set their own target dates that varied between March 2020 and March of 2021. In its CP6 plan, Network Rail Scotland set itself a target date of March 2020.
- 5.43 In 2019-20, we undertook an assurance review of progress against Network Rail Scotland's commitments on asset management capability. Our review found that it was not sufficiently prepared to meet its strategic objective of achieving ISO55001 alignment by March 2020. Prompted by our assurance review, Network Rail Scotland undertook its own assessment and decided to revise the target date to March 2021 which it believes to be more realistic and consistent with other regions. Since then, Network Rail Scotland has shown greater commitment to improvement and has developed an action plan to develop the core features of the asset management system (framework) capabilities required by the ISO55001 standard.
- 5.44 Our review highlighted that Network Rail Scotland's course of action, proposed initiatives and plans were positive developments. However there were some risks and concerns for which recommendations have been made.

Enhancement projects were delivered within budget

Network Rail Scotland has progressed well with two major enhancement schemes – Aberdeen to Inverness and Glasgow Queen Street redevelopment. Both projects are within budget and will deliver significant benefits to passengers.

- 5.45 In 2019-20, Network Rail Scotland made good progress with two major enhancement schemes – Aberdeen to Inverness and Glasgow Queen Street redevelopment. While these were rollover projects from CP5, both have been progressing to their revised programme and importantly, are within budget.
- 5.46 The Aberdeen to Inverness project is now complete and has delivered benefits for passengers including an hourly service between Elgin and Inverness, additional Elgin-Aberdeen early morning and late evening services, and a half-hourly service all day between Inverurie and Aberdeen. This project will also deliver improvements for freight operators.

⁴³ ISO55000 is a series of International Standards for Asset Management. ISO55001 defines the requirements for management system for asset management.

5.47 The Glasgow Queen Street station redevelopment (pictured) has also progressed well throughout the year. The extended platforms have increased capacity with Abellio ScotRail operating longer trains and, once completed, the transformation of the station should deliver further improvements for both passengers and operators using the stations.



5.48 In 2019-20, Network Rail Scotland also delivered a new 271 metre platform and fully accessible footbridge at Dunbar. This project was completed on time for the December 2019 timetable change and was within budget. Works also included the renewal of overhead power line equipment and the installation of new information screens and new waiting shelters.

5.49 In addition to the above projects, in 2019-20 Network Rail Scotland also continued to deliver enhancements to provide obstacle free, accessible route to and between platforms for passengers at several locations. For example:

- it delivered a fully-accessible footbridge and lifts at Kilwinning station;
- it installed lifts at Cleland, Fauldhouse and Addiewell stations; and
- it completed access-for-all improvements at Stirling station with the refurbishment of the listed footbridge and the addition of new lifts as part of the Stirling, Dunblane, Alloa electrification project.

Health and safety performance showed some improvement

Network Rail Scotland has shown improvements in a number of areas. Track geometry continues to improve, potential high risk train accidents show a downward trend, steps are being taken to improve track worker safety and it is improving its risk assessment of plain line signals. But improvements are needed in the Lost Time Injury Frequency Rate (LTIFR) for workers and in compliance with standards for selecting assurance targets at delivery unit level.

- 5.50 Network Rail Scotland's LTIFR⁴⁴ is above the region's target and the highest of all regions. It appears to be experiencing difficulty in reducing the number of minor injuries, especially slips, trips and falls among workers. The region has developed campaigns and initiatives to raise situational awareness as part of risk control, but significant reductions in incidents have yet to materialise.
- 5.51 During 2019-20, our safety inspections identified issues with Network Rail Scotland's compliance with its own standards for selecting assurance targets at delivery unit level. We found that it did not always target its assurance at the most critical risk controls. We continue to seek evidence that it is taking all necessary steps to fully address this issue.
- 5.52 More positively, track geometry continues to improve and potential high risk train accidents show a downward trend, as does level crossing risk. Infrastructure wrong-side failures⁴⁵ hazard ranked 50+ (those failures which present a potentially very serious risk) have declined.
- 5.53 Network Rail Scotland is aware of the steps it needs to take in response to two national improvement notices concerning track worker safety. Our dialogue with the regional managers indicates that it is responding positively to the substantial task ahead. Steps being taken to improve risk control include the provision of automatic protection and warning equipment, on all the West Coast Main Line (from Carstairs to the English border).

⁴⁴ Lost Time Injury Frequency Rate measures the number of lost time accidents normalised by the number of hours worked.

⁴⁵ A failure that causes a piece of equipment to cease functioning in such a way as to cause danger to the safety of the line.

5.54 Network Rail Scotland is also taking steps to improve its risk assessment of plain line signals. Its risk-based assessment plan will run throughout CP6 and aims to address plain line signals and other areas such as ground position lights. Options to reduce risk could include the fitment of train protection equipment to trains and track which can reduce risks from signals passed at danger and over-speeding⁴⁶. This includes Train Protection and Warning Systems (TPWS)⁴⁷ which Network Rail Scotland has recently installed at two of the highest risk plain line signals. It has also undertaken a number of steps to further mitigate risk, including:

- prioritising the risk of 156 plain line signals at stations with line speeds greater than 60mph;
- incorporating a second stage risk assessment to support the Signal Overrun Risk Assessment Tool; and
- identifying and developing a fitment programme for TPWS at 10 signals with a further 26 signals being incorporated into current and future projects.

5.55 Network Rail Scotland has also identified the reduction of train accident risk as a key aspect of its Whole System Signalling Strategy (this strategy is discussed in more detail in the next section). The increased use of engineering controls such as TPWS is evidence of Network Rail Scotland's approach to proactive risk management.

Network Rail Scotland is making good progress in delivering Scottish Ministers' requirements

Network Rail Scotland has made good progress with many of the Scottish Minister's CP6 requirements. It has collaborated with the wider rail industry to develop plans to improve journey times, encourage freight growth and develop depot and stabling facilities within Scotland.

5.56 In our PR18 determination, we set a number of requirements for Network Rail Scotland to deliver throughout CP6⁴⁸. These requirements reflected what the Scottish Ministers required Network Rail Scotland to deliver in this control period – as set out in their HLOS.

5.57 To monitor progress against each of these requirements, Network Rail Scotland developed an HLOS tracker prior to the start of CP6 which was jointly agreed with Transport Scotland and ORR⁴⁹. The tracker provides a tool through which we can monitor Network Rail Scotland's delivery of each of the HLOS requirements.

⁴⁶ A signal is passed at danger when a train passes a stop signal when not allowed to do so.

⁴⁷ Train Protection and Warning Systems are designed to automatically apply a train's brakes if it approaches a designated point (for example on the approach to a set of signals) too fast, or if it fails to stop at a signal set to "danger" (red).

⁴⁸ The requirements are set out in Annex A.1 of the Final Determination, published 31 October 2018: https://orr.gov.uk/_data/assets/pdf_file/0020/39305/pr18-final-determination-scotland-conclusions-and-route-settlement.pdf

⁴⁹ A copy of the tracker is available here:

https://orr.gov.uk/_data/assets/pdf_file/0010/39484/pr18-scotland-hlos-tracker.pdf

- 5.58 Before the start of CP6, Network Rail Scotland worked with its rail industry stakeholders, to establish a series of plans to deliver specific measures. This included plans for journey time improvements (for both freight and passenger services) and for freight growth. This is important as it provided Network Rail Scotland with clear and agreed objectives and a plan of how it would deliver certain requirements from the start of CP6.
- 5.59 We have engaged closely with Transport Scotland to monitor how well Network Rail Scotland is delivering against the HLOS requirements. Our monitoring in 2019-20 has shown that good progress has been made with many of the requirements.
- 5.60 In particular, Network Rail Scotland has demonstrated strong collaborative engagement with the wider rail industry in a number of areas, including development of plans to improve journey times and production of its depot and stabling strategy. Its plans for freight growth were welcomed by the freight industry. The plans show strong commitment to help identify and create opportunities for future growth. It is important that this collaborative work continues. We note that it is likely that freight growth has and will continue to be impeded by the coronavirus pandemic. However Network Rail Scotland and the Freight and National Passenger Operators (FNPO) function are working closely with the freight industry to identify and work through what service provision could look like in the future.

5.61 Figure 5.5 below outlines progress made with each requirement in 2019-20. The red, amber, green status illustrates our confidence in Network Rail Scotland delivering each requirement within the required timescales. This shows that there has been good progress in the majority of the requirements, but we think that Network Rail Scotland's delivery of its gauge strategy is at most risk. As explained below, there have been delays as Network Rail Scotland has not yet secured agreement from Transport Scotland on funding and this needs to be resolved. We are concerned that further delays on the delivery of this strategy will impact Network Rail Scotland's ability to deliver improvements by the end of CP6.

Figure 5.5: Network Rail's delivery of the Scottish HLOS requirements

Requirement		On course
Passenger journey time improvements	<ul style="list-style-type: none"> Network Rail submitted its ScotRail Journey Time and Freight Average Speed Industry Plan to ORR on 31 March 2019. This plan was developed in collaboration with Abellio ScotRail. Network Rail's plan seeks to identify opportunities to improve journey times through for example the timetable or through infrastructure interventions (i.e. through targeted interventions to remove the need for temporary speed restrictions). In 2019-20, the journey time measure (ScotRail Average Timetabled Minutes per Mile Travelled) was 1.586. While this was 0.002 minutes worse than Network Rail Scotland's own scorecard target of 1.584, it was 0.001 minutes better than the requirements in the final determination and Abellio ScotRail Franchise Agreement (to deliver a mile per minute target of 1.587 by December 2019). 	G
Passenger satisfaction	<ul style="list-style-type: none"> Autumn 2019 results showed improvement, from 79% to 89%⁵⁰. This is a notable nine point increase from the autumn 2018 survey where satisfaction with ScotRail services was at its lowest for 16 years. 	A
Quality of station services	Work undertaken in 2019-20 included: <ul style="list-style-type: none"> footbridge refurbishments / repairs; franchised station platform refurbishments; and high footfall train shed refurbishments. 	G

⁵⁰ Source: Transport Focus National Rail Passenger Survey, published 28 January 2020.

<p>Freight journey times</p>	<ul style="list-style-type: none"> • Plan submitted to ORR on 31 March 2019. Plan was developed with Freight Operators. • Network Rail continue to look for opportunities to improve journey times (i.e. reviewing freight flows and paths to help identify how average freight speed could be improved). • The baseline average speed for CP6 was 34.95 miles per hour (mph) – the baseline reflects the average scheduled speed of all commercial freight trains between period 6 and 13 2018-19. In 2019-20, Network Rail Scotland did not achieve any improvement in freight speeds (average speed for 2019-20 was 35.05mph, which is 0.1 mph worse than the CP6 baseline). • Network Rail Scotland has reported a number of fluctuations in the average speed of class 4 empty, class 5 (Empty Postal) and class 6 empty trains. It has committed to undertake further analysis to understand what is driving those fluctuations. It has also committed to review the impact of the December 2019 timetable change. 	<p>G</p>
<p>Freight growth</p>	<ul style="list-style-type: none"> • Network Rail submitted its freight growth plan to ORR on 31 March 2019. This plan was developed with the Freight industry. • Throughout 2019-20, Network Rail has continued to demonstrate collaborative engagement with the Freight industry and several freight projects have been progressed in the first year of CP6, for example: <ul style="list-style-type: none"> • At Blackford, in partnership with Transport Scotland and Highland Spring, Network Rail Scotland supported its Client through the GRIP and land planning processes resulting in the efficient delivery of the infrastructure required to connect the new terminal at Blackford to the rail network in very short timescales from conception to construction. • Network Rail has also supported a project to load timber on the line-side on the West Highland line and, while this project is still in Feasibility Stage, Network Rail has supported its Client throughout the development of the project and secured train paths for the service and amended possession times to allow the train to load overnight. • There are several other projects and trials, also currently in feasibility stages, where Network Rail has worked closely with customers to develop a method of work for the operations, to secure train paths and to support trials. 	<p>G</p>

<p>Asset data quality</p>	<ul style="list-style-type: none"> • Network Rail Scotland has maintained data quality at an A2 standard for the following disciplines: Drainage; Earthworks; Electrical Power; Signalling; and Structures. • However it has reported it being below the A2 standard for both Buildings and Track. • Network Rail aims to address these two areas in its data quality improvement plan which it is currently progressing. 	<p>A</p>
<p>Carbon emissions reduction and climate change</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 traction and nontraction energy use by the end of CP6. • Throughout 2019-20, it has continued to report quarterly on these metrics (to both ORR and Transport Scotland). 	<p>G</p>
<p>Network capability and capacity</p>	<p>Network Rail Scotland did not include the cost of delivering the Scottish gauging strategy in its plan for CP6. It could not confirm costs as analysis was needed to establish what works were required. As costs were not known we did not include funding for this in our final determination. Instead, we said that once better cost estimates were available, Network Rail Scotland should present its case for funding to Transport Scotland and Transport Scotland should decide whether to provide these funds.</p> <p>Network Rail presented its gauging strategy to ORR and Transport Scotland in March 2019. At this meeting, Transport Scotland confirmed its support for Network Rail to submit a funding request.</p> <p>In September 2019, following work undertaken by Network Rail Scotland to refine the estimated cost, it wrote to Transport Scotland to ask for funding to cover years 1 and 2 of CP6. This is to pay for:</p> <ul style="list-style-type: none"> • Clearance of the West Highland and Far North Lines for Class 153 and 158 introduction; • Survey/analysis/design/cost estimate for 242 sites where physical interventions will be required; • Probabilistic analysis of potential sites; and • Some physical works to coincide with planned vehicle introductions. 	<p>R</p>

<p>Network capability and capacity (cont)</p>	<p>In the final determination we said that Network Rail Scotland needed to establish a rolling programme to deliver the Scottish Gauge Requirement, no later than 1 April 2019 and be completed by the end of CP6. Network Rail Scotland has established a plan to deliver this requirement, however without confirmation on funding we are concerned that this requirement will not be delivered on time by the end of CP6. Network Rail and Transport Scotland must therefore seek to agree funding of this requirement as this will allow Network Rail to progress the areas outlined above</p>	
<p>Development of an efficient electrification specification</p>	<p>Submitted to ORR and Transport Scotland at the start of CP6.</p>	<p>Complete</p>
<p>Depots & stabling strategy</p>	<ul style="list-style-type: none"> • Plan in place for year 1. 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. 	
<p>Support for the rural economy and tourism</p>	<p>There are two areas that Network Rail must fulfil for this requirement:</p> <ul style="list-style-type: none"> • to support the reasonable requirements of charter, tourist and other special train operators; and • to ensure vegetation on rural and scenic routes should be controlled and maintained so as to facilitate views from the train, and to prevent damage to trains. <p>In 2019-20, Network Rail has made the following progress:</p> <ul style="list-style-type: none"> • Network Rail has worked with Charter train operators to review charter contracts and industry track access rights to investigate whether there were options to protect a limited amount of capacity for charter train operation. It had agreed proposed changes with industry however Network Rail has since confirmed that there is currently no appetite in the wider industry to pursue those proposals further; and • Network Rail complete 100% of its plans to clear vegetation on the areas that it had deemed to be scenic. Further Network Rail has confirmed that it has issued remits and work scope for CP6 Y2 scenic clearance sites. 	

Delivery of whole system signalling strategy

- 5.62 In response to Transport Scotland's concerns around digital rail, we required Network Rail Scotland to create a long term, whole system signalling strategy for Scotland. We said that this should incorporate its existing signalling renewal strategy, the elements of the GB Digital Rail Strategy applicable to Scotland and rolling stock plans. This requirement is in addition to the HLOS requirements set out above.
- 5.63 At the start of CP6, Network Rail Scotland recruited dedicated resource and established a small development team to deliver this strategy. Once this team was in place, development of the strategy started to gain momentum in autumn 2019 with Network Rail Scotland establishing a steering group, working closely with Transport Scotland and Abellio ScotRail.
- 5.64 While Network Rail Scotland has been developing its whole system signalling strategy, progress has been made with other strategies and areas of government policy which are linked but separate to this strategy – for example Network Rail's Depot and Stabling Strategy. Network Rail Scotland recognises both the opportunity and need to align this strategy with these other workstreams.
- 5.65 Network Rail Scotland has recently confirmed that it will shortly present its signalling strategy to industry, finalise its programme milestone plan and launch detailed workstreams. We will continue to report on progress in this area.

Network Rail Scotland has delivered on financial performance and outperformed its efficiency target

In 2019-20, Network Rail Scotland financially outperformed against its internal budget by £1m. It also delivered £46m of efficiency improvements – £7m more than planned.

- 5.66 This section examines Network Rail Scotland's efficiency and wider financial performance in 2019-20. This analysis is based on draft financial information provided by Network Rail. We will report more fully on these matters in our annual efficiency and finance assessment.

Efficiency has improved

- 5.67 We monitor the efficiency of Network Rail Scotland's core business activities. These are operations, support, maintenance and renewals. Network Rail Scotland delivered £46m of efficiency improvements in 2019-20. This was ahead of the £39m of efficiency improvements assumed in its delivery plan for the year.
- 5.68 Network Rail Scotland is forecasting to deliver between £340m and £372m of efficiency improvements in CP6, with a central forecast of £347m. This is ahead of its £339m efficiency target for CP6.

5.69 Given the issues with Network Rail's efficiency that we reported on in CP5, one of the important changes to our monitoring in CP6 has been to require Network Rail's regions to show in much more detail how they are planning and delivering efficiency improvements. We most recently reported on Network Rail Scotland's CP6 efficiency plans in December 2019⁵¹. Figure 5.6 shows the main initiatives that have contributed to Network Rail Scotland's efficiency improvement in 2019-20.

Figure 5.6: Network Rail Scotland's main efficiency initiatives in 2019-20



Source: Network Rail 2019-20 P13 efficiency pack and ORR analysis

5.70 Network Rail Scotland's largest efficiency initiative in 2019-20 was the implementation of a new contractor framework for the delivery of geotechnical works (£10m efficiency). This is included within 'improved contracting strategies' in figure 5.6. The new collaborative partnership should result in lower costs for the specialist rock-cutting supplier. This has enabled lower contractor rates for the planned work.

5.71 Significant efficiencies were also generated through optimisation of track access, totalling £13.8m over the course of 2019-20. These included a variety of different initiatives aimed at making disruptive possessions more efficient, including using extended possessions to reduce repetition of setup and handback activities on multiple possessions, and coordinating disruptive access requirements across different asset types to minimise the need for additional possessions on the same areas of the East Coast Mainline and West Coast Mainline.

5.72 There can be no let-up in the focus that Network Rail needs on delivering efficiency improvements in Scotland in CP6. Since reporting on this in December, we have seen a continuing effort to improve Scotland's CP6 efficiency plans and delivery. Over the coming year we will continue our work reviewing Scotland's efficiency planning and delivery, including wider leading indicators of readiness, and we will report publicly on these matters. We will provide further information in our annual efficiency and finance assessment, which we plan to publish in summer 2020.

⁵¹ Preparations to deliver efficiently in Scotland in CP6, published 13 December 2019: https://orr.gov.uk/_data/assets/pdf_file/0003/42177/network-rails-preparations-to-deliver-efficiently-in-scotland-in-CP6.pdf

Financial performance is good

5.73 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 done⁵².

5.74 Overall, Network Rail Scotland financially outperformed its CP6 delivery plan by £1m in 2019-20.

Figure 5.7: Scotland's financial performance in 2019-20⁵³

£m	Full year budget	Full year forecast	Budget variance better/(worse)	FPM out/(under) performance
Turnover	378	373	(5)	(5)
Schedules 4 & 8	(33)	(34)	(1)	(2)
Operations and support	(144)	(137)	7	(1)
Maintenance	(180)	(172)	8	4
Profit & Loss			10	(5)
Renewals	(379)	(343)	36	(3)
Enhancements	(205)	(190)	15	9
Total			61	1

Source: Network Rail financial reporting

⁵² See our regulatory accounting guidelines for further details, <https://orr.gov.uk/rail/publications/economic-regulation-publications/regulatory-accounts>

⁵³ Note that the figures quoted differ from the Scotland regional scorecard amounts as they capture all relevant Scotland expenditure including – expenditure of Network Rail Scotland; the amount recharged by Network Rail Scotland to the Freight & National Passenger Operator (FNPO); and the share of the FNPO's own support and operations expenditure, and recharged System Operator costs, attributable to freight operations in Scotland.

5.75 As shown in Figure 5.7, FPM was £1m ahead of delivery plan mostly due to outperformance in enhancements, including the Highland Main Line, New Down platform works in Dunbar, Edinburgh to Glasgow Improvement Programme, and Aberdeen to Inverness improvements. This was partly offset by increased costs on Profit & Loss activities and renewals. Turnover underperformed due to a delay in the sale of the Queen Street leasehold to Glasgow City Council.



Good progress in planning for efficient delivery

5.76 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 pressed Network Rail to demonstrate that it is better prepared to deliver efficiently from the start of CP6. This section provides an update on Network Rail Scotland's preparations to deliver efficiently in 2020-21⁵⁴.

⁵⁴ 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.

5.77 Table 5.8 illustrates Network Rail Scotland's preparations to deliver efficiently in 2020-21. Network Rail's underpinning analysis was undertaken before the significant recent impact on society of the coronavirus pandemic. There will be disruption, particularly to renewals delivery and related efficiencies during at least the first six months of 2020-21. We will report on this in due course.

Figure 5.8: Leading indicators for efficiency delivery in 2020-21, Network Rail Scotland

Route/ Region	Renewals Planning		Securing Engineering Access		Maintenance requirement 2020-21				
	Work authorised in Oracle	Target	% of required access booked	Target	Current headcount	Target			
Scotland	76%		60%	103%		100%	88%		100%
National/ GB	69%		83%	76%		93%	95%		99%

Source: Network Rail CP6 readiness report

5.78 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.

5.79 For Network Rail Scotland, 76% of renewals projects for 2020-21 (by value) had completed detailed designs and had received financial authorisation for delivery. This was ahead of the internal target of 60% and above the 69% national average.

5.80 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 93% of planned renewals in 2020-21. We consider that Network Rail Scotland has made progress in developing its 2020-21 renewals workbank, and we will continue to monitor levels of authorisations.

5.81 Network Rail Scotland has achieved its internal target for booking disruptive access for planned engineering work in 2020-21. Of all Network Rail regions, it had the highest percentage of disruptive possessions booked, with all expected possessions in place for 2020-21.

5.82 Network Rail Scotland is currently operating with a maintenance staffing level of 12% lower than the overall headcount requirement. It supplements the difference with subcontracted labour. It is working to increase direct labour staff levels but identifies hiring to remote locations as a risk.

- 5.83 Network Rail considers that nearly 60% of its 2020-21 target efficiency will be achieved from projects that have already been delivered or have clear project plans. The remaining 40% of 2020-21 target efficiencies have no clear project plans, or have plans in place but low confidence in delivery.
- 5.84 We previously commissioned the independent reporter, Nichols, to review Network Rail's efficiency plans for year 1 and 2 of CP6⁵⁵. Since this work concluded, Network Rail Scotland has made further progress, including the strengthening of resources and more robust programme-level oversight. It is important that Network Rail Scotland continues to build on this progress. The quality of renewals efficiency plans is critical to delivering required renewals volumes and the increasing efficiency challenge in later years of CP6.

⁵⁵ Review by Nichols of Network Rail's renewals and efficiency planning for years 1 and 2 of CP6, 11 July 2019: https://orr.gov.uk/_data/assets/pdf_file/0013/41602/interim-nichols-review-of-network-rails-renewals-and-efficiency-planning.pdf



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