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Chief Executive

Wendy Morton MP
Minister of State for Transport
Department for Transport
Great Minster House
33 Horseferry Road
London, SW1P 4DR
(By email)

26 May 2022

Dear Minister

ORR's advice to the UK Government on the development of its High-Level Output Specification (HLOS) and its Statement of Funds Available (SoFA)

This letter, and our attached report, sets out our advice to the UK Government on Network Rail's outputs and funding for Control Period 7 (or CP7), which will run for five years from 1 April 2024. This is intended to inform our on-going engagement (including with Network Rail and across the UK Government) over the summer and in advance of the publication of the England & Wales HLOS and SoFA by 28 October 2022.

I look forward to picking up the themes in this letter when we meet on 6 June.

Context

The UK Government's decisions on CP7 outputs and funding are being made in very challenging circumstances.

They will need to take account of the current and very difficult fiscal context (including rising and uncertain inflation), as well as wider change in the industry as it responds to the impact of the COVID-19 pandemic and works to deliver savings (including with respect to its workforce). The outputs and funding decisions will also need to support the UK Government's five strategic objectives for rail, as set out in its recent Whole Industry Strategic Plan document. These include, for example, meeting customers' needs and delivering environmental sustainability. Crucially, the UK Government's decisions will also need to take account of the long-term needs of the network's infrastructure.

Alongside this, we note the decisions on CP7 outputs and funding are being made as the rail industry prepares to transition to a new and different structure that involves establishing a new body, Great British Railways (GBR), that will both own the railway infrastructure and let and manage most passenger rail contracts. We expect that GBR will be held accountable for delivery of the commitments made in PR23 when it succeeds Network Rail.

Scope and focus of our advice

Reflecting the expected scope of PR23 and the forthcoming HLOS and SoFA, our advice to the UK Government covers Network Rail's proposed expenditure on operations, support, maintenance and renewals (OSMR) activities and their associated outputs. While it focuses on Network Rail's activities in England & Wales, we also set out our views on Network Rail's delivery of safety and accessibility in Scotland given that they are reserved matters for the UK Government. We are providing separate advice to Transport Scotland in respect of Network Rail's outputs and funding in Scotland.

Our advice centres around our review of Network Rail's initial CP7 submission, which it provided to us and the Department for Transport (DfT) on 31 March 2022. In scrutinising this submission, we have made use of our own understanding of the network's assets and Network Rail's financial position, as well as its CP6 performance, built up through our holding-to-account work over CP6 and previous periodic reviews. This has been complemented by significant engagement across Network Rail (including with its regions, functions and technical expert areas), as well as supplementary information on specific topics. We appreciate the collaborative engagement we have had from Network Rail in this exercise.

Unless we state otherwise, all figures are presented in 2023-24 prices using the November 2021 Bank of England forecast for CPI inflation.

High-level summary of Network Rail's initial CP7 submission

At a high-level, Network Rail's initial submission centres around the delivery of 'steady state' outcomes, as agreed with DfT. This means that the network would be sustained in a broadly comparable state over CP7 relative to CP6 exit levels for asset performance, capability, safety, and train service performance.

Network Rail says that delivering a 'steady state' outcome would cost £43.2bn over CP7 (on a post-efficient basis), which represents a 16% increase in spend compared with CP6. In return, the 'steady state' proposals forecast to deliver the following key outcomes:

1) Overall safety levels would be maintained at least to the CP6 exit point level throughout CP7.

2) Train performance would be maintained in line with forecasted CP6 exit levels. Passenger train performance for CP7 is forecast at 70-72% On Time (in 2021-22, it was 73.2%) and the Freight Delivery Measure (FDM) is forecasted at 92.5 – 94.5% (in 2021-22, it was 93.5% across Great Britain).

3) Asset condition would deteriorate (despite a proposed increase in asset renewals). Using the Composite Sustainability Index (CSI) as a measure of asset condition, it would fall to -3.2% compared with -1.6% by the end of CP6 (based on the current forecast exit point level). However, this is in the context of f the expected and overall downward trajectory of CSI over CP6, CP7 and CP8, which reflects the distribution of remaining asset life across Network Rail's network.

4) Network Rail would continue to deliver in line with its environment sustainability strategy.

5) Network Rail would commit to post-efficient forecasts that reflect an efficiency target of £3.7bn, of which £1.6bn relates to the delivery of 'business as usual' efficiencies not related to wider initiatives, such as industry reform.

In addition, the initial submission includes some 'reduced cost' options which, taken together, would cost £39.4bn.

Network Rail's initial submission spending proposals for both the 'steady state' and the 'reduced cost' options are set out in Table 1.

Table 1: Network Rail's initial submission spending proposals*

		CP7 'steady state' (at P50**)		CP7 'reduced cost' options (at P50**)	
£bn, 2023-24 prices	**CP6 (£bn, at P80**)**	**(£bn)**	**Variance to CP6 (%)**	**(£bn)**	**Variance to CP6 (%)**
Operations	3.5	3.4	-2.0%	3.4	-2.0%
Support	4.1	3.5	-14.4%	3.5	-14.8%
Maintenance	9.3	9.4	+1.2%	9.3	-0.1%
Renewals	18.0	23.0	+27.6%	19.2	+6.7%
Risk	0.4	0.0	n/a	0.0	n/a
Post-efficient OSMR total	**35.3**	**39.3**	**+11.3%**	**35.4**	**+0.3%**
Rates and industry costs***	2.0	2.4	+18.4%	2.4	+21.2%
HS2	0.0	0.5	n/a	0.5	n/a
ETCS enablers	0.0	1.1	n/a	1.1	n/a
Post-efficient total expenditure	**37.2**	**43.2**	**+16.0%**	**39.4**	**+5.8%**

* Note that numbers may not sum due to rounding.
** P50/P80 refers to the confidence level to which Network Rail has developed its plan/submission. This is discussed in further detail below.
*** Note this includes business rates and Network Rail's contributions to funding British Transport Police, the Rail Safety and Standards Board and ORR, but does not include traction electricity costs.

The initial submission makes a number of key assumptions, including that train service levels will be at 88% of pre-pandemic levels and that passenger footfall will be at 85% of pre-pandemic levels. Freight traffic is assumed to be at pre-pandemic levels by the beginning of CP7 (33.5 million kms per annum) and assumes that it will grow by 7.7% by the end of CP7.

We note that the initial submission also includes some 'incremental spend' options that would cost an additional £3.5bn on top of the 'steady state' proposals, should the UK Government choose to fund them. This reflects Network Rail's approach of seeking to provide options to the UK Government about what it chooses to fund.

Our advice focuses on Network Rail's 'steady state' and 'reduced cost' options proposals, reflecting Network Rail's focus and our understanding of DfT's expectations of our advice.

Quality of Network Rail's initial CP7 submission in informing output and funding decisions

In almost all respects, and compared with its summer 2021 submission that set out Network Rail's very early views on CP7 funding requirements, Network Rail's initial submission represents an important step forward in the development of a robust CP7 plan. Furthermore, and compared with this point in the PR18 process, Network Rail (and ORR) have a better view about the likely funding requirements and the associated impact on proposed activities and outputs for the forthcoming control period.

As we would have expected at this stage in the PR23 process, the initial submission has been prepared on a largely top-down basis (albeit at a regional and functional basis) and is high-level. It has not, for example, been built up by a detailed understanding of Network Rail's individual asset requirements (e.g. workbanks). It has also not benefitted from extensive stakeholder input and/or challenge.

Reflecting the challenging context in which the UK Government will make decisions on CP7 outputs and funding, it is worth noting these areas for improvement with respect to the initial submission. They, in our view, are likely to create opportunities for reduced volumes (and/or savings) and, in turn, have implications for the HLOS and SoFA decisions. We set out our views in this respect in more detail below.

We note that Network Rail continues to develop its CP7 business plan and is now focused on developing its first 'bottom-up' plan for this summer. We will continue to work closely with Network Rail on this, including in ensuring that it works to address our key observations below.

Key observations

We set out below nine key observations that we consider the UK Government should take account of in developing its HLOS and SoFA. The following section discusses the 'supplementary advice' we intend to provide the UK Government with to help progress some of these areas further.

1) **We are concerned that Network Rail's 'steady state' proposals may overstate the required levels of renewals work and may not be deliverable.**

   The individual submissions from the regions and functions underpinning the initial submission could have been better joined up. In its 'steady state' proposals, Network Rail intends to increase spend on all asset types to help improve long-term asset condition without appearing to have taken account of the 'portfolio effect' across assets (whereby spend on one asset area often benefits other assets). This is likely to create opportunities for reduced volumes (and/or savings) in future iterations of the business plan.

   The proposals also represent a significant step-up (27.6% increase) in proposed renewals spend compared with CP6, which we are not convinced is entirely deliverable. Network Rail is already at risk of not delivering some of its CP6 renewals commitments and, while it has reflected on CP7 deliverability at a high-level, it does not appear to have considered in detail how it will deliver this level of work at this stage of the business plan process.

   Nevertheless, we recognise that our own analysis in PR18 indicated that Network Rail would need to sustain at least CP6 levels of funding over several control periods to limit asset deterioration and ensure affordability in future control periods.

2) **Network Rail's 'reduced cost' options are, on the whole, commensurate with a more realistic spend level and the evidence we have seen to date suggests that the impact on asset condition would not be unduly detrimental. However, we have some initial concerns around how Network Rail would identify and mitigate any potential operational performance and safety effects, which it would need to address as it develops its CP7 plan further.**

   Under the 'reduced cost' options (and noting the limitations of using a single measure to capture this outcome), asset condition as measured by the CSI would deteriorate by 1.9 percentage points to -3.5% compared with the current forecasted CP6 exit point of -1.6%. (This compares with a reduction to -3.2% under the 'steady state' proposals and to -2.2% that was forecast at the time of PR18). We recognise that funding decisions need to take account of Network Rail's outputs (including asset sustainability) and the available funding and to balance these two factors over both the short- and long-term. Based on the evidence we have seen, we would expect the deterioration in asset condition under the 'reduced cost' option to be manageable.

Assuming funding levels increase in CP8 and CP9 to the levels discussed below, this would help avoid irreversible decline in asset condition. However, Network Rail would need to develop robust plans to recover asset condition over CP8 and CP9 if funding was limited to this level; this aspect would form a key element of our review of Network Rail's Strategic Business Plan (SBP), which we expect to receive in February 2023.

Furthermore, and under the 'reduced cost' options, it is not always clear that Network Rail has included sufficiently increased inspections, maintenance and refurbishment works over CP7 to manage risks to assets where renewals may be deferred. We would expect Network Rail to put more focus on how it would address the risks of unsafe asset condition going unidentified and unmitigated in future iterations of its plan.

In addition, and while noting that the 'reduced costs' options may represent a realistic view of renewals activities, we consider (and agree with Network Rail) that more spend compared with CP6 is necessary in drainage and earthworks. This reflects the challenges of managing the increasing impact of climate change and the weaknesses exposed by the Carmont derailment.

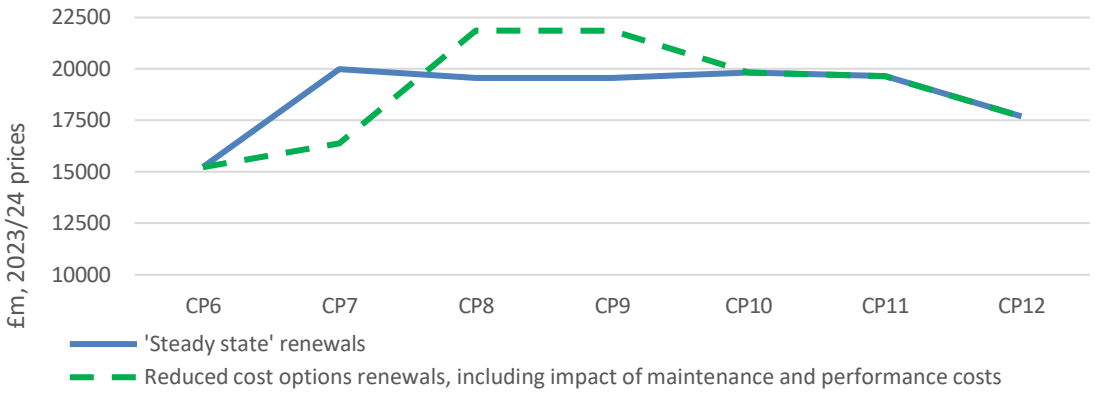
3) **If the 'reduced cost' options were adopted, Network Rail has estimated there would be an overall increased cost of £1bn elsewhere (pre-efficient) compared with 'steady state' spending levels over CP7, CP8 and CP9. This is in addition to the c.£5bn of additional spend that Network Rail estimates to be required over CP8 and CP9 to recover asset condition.**

Under the 'reduced cost' options, Network Rail would do less renewal volumes in CP7. This would increase the number of performance-related faults on the network over CP7. This would adversely impact maintenance costs and train performance. Currently, Network Rail estimates the net increased maintenance costs and financial consequences of poorer train performance over CP7, CP8 and CP9 to be £1bn. However, this is based on current top-down plans and requires further consideration as Network Rail develops its business plan.

Network Rail would do the equivalent of £3.4bn less renewals work under the 'reduced cost' options. To recover asset condition to CP6 levels, Network Rail has estimated that it would require an additional c.£5bn over CP8 and CP9 compared with spending levels over CP7 under the 'reduced cost' options. It has focused recovery over two control periods given, it says, the scale of the volumes required and the deliverability constraints. This is illustrated in Figure 1, which also shows suggested spend under 'steady state' proposals.

Reflecting the size of the proposed uplift in renewals spend, Network Rail would also need to provide robust evidence that this is deliverable and what the consequences would be on train performance and asset management if it was not deliverable.

Figure 1: Comparison of longer-term renewals expenditure under 'steady state' and 'reduced cost' options



4) **It is difficult to determine with any certainty what the implications of the 'reduced cost' options are for operators, passengers and freight customers given the limitations in Network Rail's information in this area at this stage.**

Network Rail has said that, under the 'reduced cost' options, there would be an increased risk to train performance in CP7 and into CP8 and that Network Rail would look to use mitigating measures to reduce the impact to passengers.

Recovery of train service levels post-pandemic will also have a significant impact on future train performance. We asked Network Rail to provide analysis of the impact of different traffic levels on performance forecasts, but it said that it does not have the underlying data to provide these forecasts at this stage in the development of its plans.

As discussed above, we appreciate that the initial submission is high-level and that further detail will be provided as the plan develops. However, in order for the UK Government to make informed decisions in its HLOS and SoFA, we have asked Network Rail to accelerate its analysis of train performance that will be delivered in CP7.

5) **It is a matter for the UK Government to decide the level of confidence it wants Network Rail's CP7 plan to be funded at. However, we are concerned that Network Rail's current approach (of developing the plan to a P50 confidence level and not having separate risk funding) reduces the transparency over what Network Rail will seek to deliver and, more generally, increases the risks around CP7 delivery.**

As agreed with DfT, Network Rail has developed its submission on a P50 basis (meaning there is a 50% chance that costs will not exceed the forecasts in the plan and a 50% chance they will) and has not included additional or separate expenditure to help manage risk. It has also said that there is £3.6-4.0bn of potential risk in CP7 which, if funded, would take the plan to a P80 basis.

In PR18, Network Rail received an England & Wales risk fund of £2.7bn (cash prices) to manage cost increases and any unexpected additional activity. This put the plan on a P80 basis. Over CP6, risk funding has played an important role in helping Network Rail manage cost increases and undertake additional work without having to re-plan or defer work unnecessarily, which would be inefficient.

We are concerned with the initial submission's approach to managing risk. As noted above, it has not included any separate expenditure for risk. Instead, it has indicated that it could 'carve out' funding from renewals work to create a risk fund. If it were to do that, we would expect this to come from certain cost areas (e.g. track renewals) instead of all types of costs because some costs (such as the number of signallers) cannot be easily reduced. This would reduce the transparency of the plan (given we do not know what the asset volumes Network Rail would actually seek to deliver are) and, without adequate risk funding, would likely be very challenging. This is particularly the case under the 'reduced cost' options.

In setting the funding that will be available to Network Rail through the SoFA, it is a matter for the UK Government to decide the level of confidence it wants Network Rail's CP7 plan to be funded at and how it wants Network Rail to manage those risks. It could, for example, choose to provide explicit risk funding (including at a level commensurate with the confidence level it wants the plan to be set at) and/or it could explore other mechanisms available to manage risk, such as reducing the level of CP7 outputs as and when risks arise. Whatever is decided, it will need to reflect the wider uncertainty and challenges facing Network Rail's delivery over CP7.

One key factor is the impact of rising and uncertain inflation. Assuming the SoFA is set in cash terms, there is a risk Network Rail may not have enough funding to meet its outputs (where inflation is higher than expected) or too much funding (where inflation is lower than expected).

We note that discussions are ongoing with the UK Government, Network Rail and ORR on risk funding (including in the context of financial arrangements for GBR), as well as the treatment of inflation. It is important that there is an agreed and appropriate approach to these issues in time to be reflected in the HLOS and SoFA decisions.

6) **It is not always clear how Network Rail has attributed funding to environmental sustainability priorities, as well as the associated outputs this would deliver.**

We recognise that Network Rail will need to spend more to help address the impact of climate change. However, it has not well-articulated the case for this spend in all cases, including at the levels of funding it has proposed. It is also not sufficiently clear how it would attribute this funding to environmental sustainability, as well as the associated outputs this would deliver.

7) **While Network Rail's proposals for signalling renewals seem broadly appropriate, further detail is required on the roll-out of digital signalling and the proposals relating to the enablers of digital signalling.**

Network Rail's proposals seem appropriate and appear to offer the right balance between full conventional renewals, digital renewals and life-extension works. However, in developing its plan for signalling, Network Rail will need to provide more detail on the implications of different options in the roll-out of digital signalling and the proposals relating to the enablers of digital signalling (e.g. fleet-fitment costs).

8) **The efficiency assumptions remain relatively ambitious and are reasonable at this stage of the process, though there are significant risks to Network Rail delivering them.**

Reflecting the wider macroeconomic context, as well as the specific challenges facing the rail industry, there are a number of significant risks to delivery in CP7.

A key area of risk relates to delivery of workforce reforms. Of the £3.7 billion of estimated efficiencies, [redacted] relate to industry reform initiatives. [Redacted].

We recently commissioned independent analysis to compare Network Rail's (and wider industry's) employment costs with comparable sectors. While this has not yet been finalised, the early findings indicate that Network Rail's total remuneration to employees (including benefits and pensions) is above the market median rate for the majority of roles, with typical variances of between

10% and 20%. This finding is before the impact of workforce reforms, the potential changes in pay for the remainder of CP6 and the effect of high levels of inflation, all of which mean that, by the start of CP7, Network Rail's employment costs variances to market comparators could look quite different. However, this work highlights that Network Rail's staff costs and productivity should be a focus for CP7, including with respect to the delivery of efficiencies.

There are also wider challenges facing the rail industry in responding to the post-pandemic recovery and in the transition to a new industry structure. We will continue to work with the UK Government (and Network Rail) on the design of our CP7 regulatory framework to help manage these risks.

In addition, we note that Network Rail's proposals on market-led and whole system approaches to planning (which have not been quantified and/or included in the core spending proposals) may present opportunities to deliver more efficiencies and are a useful area for continued consideration. However, because Network Rail's thinking is at an early stage, we cannot yet form a view on the scope for related efficiencies at this stage.

9) **Reflecting the context in which the UK Government is making its decisions, as well as the fact that we are some way from the start of CP7, there are considerable uncertainties around what level of funding Network Rail is likely to require.**

As noted above, Network Rail's initial submission is nominally on a P50 confidence level. However, it is difficult this far ahead of the start of CP7 to be confident that the submission, including those from each of the regions and the functions, is on a P50 basis.

Work towards agreeing the HLOS and SoFA decisions

We note the positive engagement DfT and HMT have had to date on CP7 funding and outputs, much of which has also involved ORR and Network Rail. We expect this to ramp up over the summer as the UK Government's decisions on the HLOS and SoFA begin to crystallise, including on the choices (and the merits of the relevant options) that need to be made.

In this context, ORR remains willing to provide further input and advice to help support this engagement and the forthcoming decisions.

More specifically, we also intend to provide supplementary advice to the UK Government on key areas that are likely to be material in helping to conclude on the HLOS and SoFA decisions. This is likely to involve two key deliverables:

1) First supplementary advice on 8 July, which will provide high-level views on Network Rail's additional analysis on train performance and 'cost variability' (i.e. the relationship between network usage and costs, though we note that a high proportion of Network Rail's costs are fixed and do not vary very much with a change in usage, at least over the short to medium-term); and

2) Second supplementary advice on 16 September, which will provide further views on Network Rail's central costs, digital signalling plans and HS2 readiness costs, as well as a view on Network Rail's analysis on the impact of maintenance activities under the 'reduced cost' option.

We expect our supplementary advice will be high-level and centre around providing our views (rather than a full assurance of Network Rail's information, for example). Furthermore, the extent to which we can provide meaningful and timely advice to inform these decisions is contingent on Network Rail providing appropriate information to us. As such, we have developed the proposed list of supplementary advice in close cooperation with Network Rail, including what it will provide to us (and when). Further detail is set out in Annex A. We will work closely with DfT in the development of this advice.

Development of Network Rail's SBP

We expect to receive Network Rail's SBP by 24 February 2023. To help inform this, we will provide formal guidance to Network Rail on our expectations for the SBP this summer. This will seek to reflect the areas for improvement in the initial submission (as discussed herein), as well as lessons learned from PR18 and our on-going work to review changes to Network Rail's CP6 plan. We would also expect to put particular focus on Network Rail's stakeholder engagement to help inform the development of the CP7 plan. This includes engagement with passenger groups, operators and the supply chain (particularly given its contribution to delivery in CP7).

Holding to account for the PR23 commitments

While the UK Government (and Scottish Ministers) have yet to set out their decisions on outputs and funding, we have already begun considering how we will hold Network Rail to account for the PR23 commitments set out in the final CP7 plan. We will consult this summer on our high-level approach.

Overall, it is important we have a robust set of tools in place to hold Network Rail (and, in time, GBR) to account for its commitments in CP7, while being flexible enough to cope with uncertainty. In our summer consultation, we expect that a key part of our proposals will be to establish a set of headline 'success measures'. We will seek to design these so that they help provide clear expectations on the outcomes that should be achieved for CP7. We will also align the success measures with the outcomes specified in the HLOS.

Articulation of the HLOS

It is a matter for the UK Government to decide how it will define the outputs it sets for Network Rail in its HLOS. Reflecting the uncertainty over the outputs it can deliver (as discussed above), we recommend that it considers the following approach:

1) indicate an expected direction of travel across key outcome areas, such as safety and delivery of train performance to passengers and freight customers;

2) highlight the outcome areas where the UK Government expects Network Rail to plan for increased focus in CP7. For example, there could be an increased focus on environmental sustainability or resilience to climate change; and

3) include any of the incremental options, which Network Rail included as choices in its initial submission, which the UK Government considers affordable within the SoFA and wants Network Rail to deliver.

The UK Government may choose to set quantified targets for specified measures in its HLOS. If so, we will align our holding to account approach with these requirements.

Next steps

In addition to providing the UK Government with this formal advice and the proposed 'supplementary advice', my team and I remain committed to continued engagement on these issues, including through our existing engagement and governance channels.

Reflecting the need for transparency about how periodic review decisions are made, as well as ORR's role in contributing to these, we intend to publish this letter at an appropriate time, likely to be shortly after your HLOS and SoFA are published.

Yours sincerely

John Larkinson
Chief Executive

cc. Andrew Haines, Chief Executive, Network Rail

Annex A: List of ORR's supplementary advice

Areas of ORR supplementary advice	Network Rail supplementary information	Scope of ORR supplementary advice
1) The performance implications of Network Rail's spending proposals **ORR will provide this by 8 July.**	This information will focus on: • the impacts on both CP7 performance (and CP8 and CP9 expenditure) under the 'reduced cost' options; and • the impacts on both CP7 performance (and CP8 and CP9 expenditure) under further reductions to the 'reduced cost' options. This will address both passenger services at an England & Wales level and freight services at GB-level (reflecting the nature of freight services). The analysis will: • look at different levels of spend / volumes to provide comparisons across four 'scenarios' (i.e. CP7 steady state baseline; CP7 reduced renewals cost options; a further £1bn reduction; and a further £2bn reduction); and • assess the relationship between asset renewals, service affecting failures and temporary speed restrictions, with a view to articulating a general relationship of asset failures to train performance (punctuality) and FDM, as well as a high-level view of the likely operational consequences of reductions to expenditure from a 'steady state' level. It is worth noting the high-level nature of the approach (reflecting the time available) and the need for a number of assumptions to be made. **Network Rail will provide this information by 3 June.**	We will provide a view on Network Rail's methodology, assumptions and analysis for calculating the likely performance implications of different funding levels. We also will provide a view on whether Network Rail has taken a reasonable approach to considering uncertainty around these performance forecasts.
2) Interaction between network usage and costs **ORR will provide this by 8 July.**	Network Rail will provide a paper that draws together its work on cost variability, which will consider the relationship between network usage and cost. **Network Rail will provide this information by 3 June.**	We will provide an initial view on Network Rail's methodology, assumptions and analysis relating to the relationship between network usage and costs.

Areas of ORR supplementary advice	Network Rail supplementary information	Scope of ORR supplementary advice
3) Network Rail's CP7 digital signalling plans **ORR will provide this by 16 September.**	The work will focus on: • A workshop to discuss the principles of digital signalling renewals costing and how that translates into Signalling Equivalent Unit (SEU) rates; how this is used by the regions for planning purposes (e.g. in developing the initial submission); and a discussion on the purpose of the digital signalling SEU rate strategy and how it will be used going forward. This will be held by 30 June, with further follow-up if required. • Provision of an overarching document that gives a detailed breakdown of and/or an overview of the basis (assumptions, etc) for the assessment of fleet fitment funding requirements in CP7 (which in some cases also looks ahead into CP8). This will include all fleet types for which funding has been requested and show how this aligns to the future digital signalling workbank. Network Rail will provide initial data and host a session to discuss this and agree areas for focus, as well as any additional levels of detail that may be required. This will be held by 30 June, with further follow up if required. Network Rail will provide a final document by 22 July. • A consideration of the impact of the deferral of c.£200m for fleet fitment suggested in Network Rail's initial submission as a 'reduced cost' option. This will refer back to our market study into the supply of signalling systems, the Rail Sector Deal and the Long-Term Deployment Plan (LTDP) and discuss the impacts on how the industry can manage the signalling asset and renewals needs. It will also have a particular focus on the supply chain and future signalling renewals bow-wave. This will be held by 30 June, with follow up as required. **The dates for Network Rail information is set out above.**	We will provide a view on: • how the adoption of the SEU rate strategy is being applied across regions and if the assumptions included are reasonable; • the inclusion of fleet fitment funding in the PR23 determination; and • the suggested deferral of funding linked to digital signalling and how this may impact future control periods.

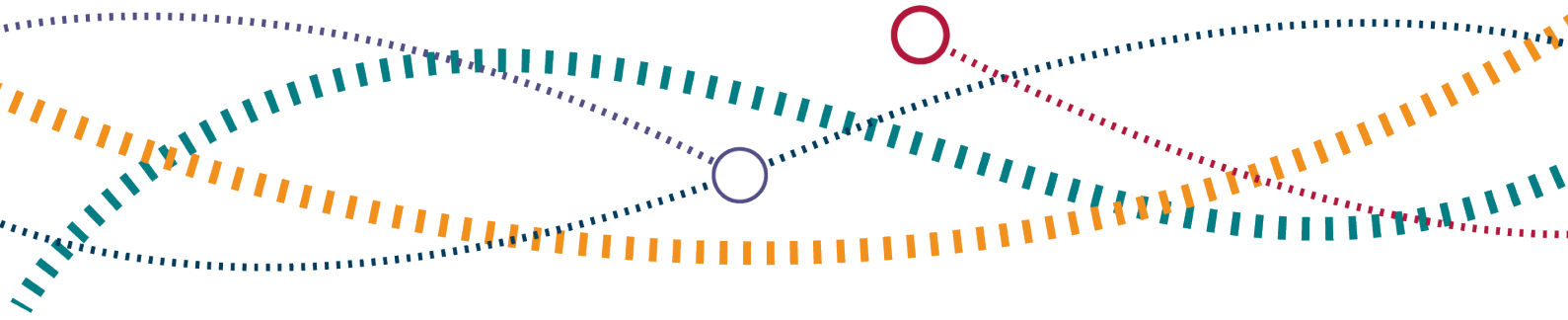
Areas of ORR supplementary advice	Network Rail supplementary information	Scope of ORR supplementary advice
4) Network Rail's CP7 central costs **ORR will provide this by 16 September.**	The information will include: • an overview of the outputs from structured engagement between regions and network-wide functions, which will review and challenge network-wide functions' plans, including the priorities for the function, particularly around capital spend (e.g. high output plant); • outputs from a review of the allocation methodology for network-wide functions; and • reflections from meetings to provide an updated view of network-wide function costs for CP7. **Network Rail will provide this by 12 August.**	We will provide a view on the latest iteration of CP7 central costs, the allocation of functions' costs, the alignment of Network Rail's regional and functional plans, and the resultant implications of Network Rail's outputs and funding.
5) HS2 readiness **ORR will provide this by 16 September.** (However, where possible, we will endeavour to provide this sooner if Network Rail brings forward the date for providing its information).	Network Rail will provide initial outputs from the Outline Business Case (assuming funding is secured in late May through wider industry governance arrangements). **Network Rail will provide this by 12 August.**	We will provide a view on whether Network Rail's planning information is reasonable.

Areas of ORR supplementary advice	Network Rail supplementary information	Scope of ORR supplementary advice
6) Network Rail's 'reduced cost' options **ORR will provide this by 16 September.**	The information will set out an updated view on the impact on maintenance costs of the 'reduced cost' options, which will be based on the latest view of maintenance plans from the regions and will have been reviewed / assured by Network Rail. **Network Rail will provide this by 12 August.**	We will provide a view on the methodology used to generate the cost impact on maintenance of deferral.

Periodic review 2023: ORR's advice to the UK Government on the development of its High-Level Output Specification and its Statement of Funds Available

Supporting report

26 May 2022



Contents

1. Introduction

1.1 This report sets out our advice to the UK Government on Network Rail's outputs and funding for Control Period 7 (or CP7), which will run for five years from 1 April 2024. This is intended to inform our on-going engagement (including with Network Rail and across government) over the summer and in advance of publication of the UK Government's High-Level Output Specification (HLOS) and Statement of Funds Available (SoFA) by 28 October 2022.

1.2 Reflecting the expected scope of the Periodic Review 2023 (PR23), it focuses on Network Rail's operations, support, maintenance and renewals (OSMR) activities. It does not cover Network Rail's enhancement projects (i.e. projects that deliver new infrastructure capabilities) as decisions for these projects will continue to be made separately by the Department for Transport (DfT). Our advice primarily focuses on Network Rail's proposed activities in England & Wales, though we also discuss Network Rail's delivery of safety and accessibility in Scotland, reflecting they are reserved matters for the UK Government.

1.3 Below, we set out further information on our approach to developing this advice, as well as some high-level information on Network Rail's initial CP7 submission. Further information on the wider process, including our role in assessing Network Rail's plans, is set out in our March 2022 guidance on how Network Rail's CP7 funding and outputs are determined.

Development of Network Rail's CP7 business plans

1.4 At key stages throughout PR23, Network Rail develops a plan that sets out its views on proposed outputs and funding for CP7.

1.5 In August 2021, Network Rail submitted to ORR and DfT an early view on the likely level of funding required to deliver a 'steady state' network for England & Wales in CP7 ('summer 2021 submission'). Under this submission, 'steady state' was defined as delivering broadly comparable levels of safety, performance and asset condition as in CP6.

1.6 More recently, in March 2022, Network Rail provided its initial CP7 submission to DfT and ORR. This is intended to support the development of the UK Government's HLOS and SoFA and forms the basis of our review for the purposes of this advice. As agreed with DfT, it centres around the delivery of 'steady state'

outcomes but also includes certain 'reduced cost' options. A high-level summary of the initial submission is set out in Box 1.1.

1.7 Network Rail's initial submission represents a helpful step-forward in the development of a robust CP7 plan and, compared with this point in the PR18 process, Network Rail (and ORR) have a better view about the likely funding requirements and the associated impact on proposed activities and outputs.

1.8 However, the submission has been prepared on a top-down basis (albeit at a regional and functional basis) and is high-level. It has not, for example, been built up by a detailed understanding of Network Rail's individual asset requirements (e.g. workbanks). While this reflects the position we would expect Network Rail to be in at this point in the PR23 process, it does create certain issues that ORR considers are important for the UK Government to take account of when deciding on outputs and funding levels for CP7. We discuss these further throughout the report.

Our approach to preparing this advice

1.9 In developing our advice, our work has brought together our expertise and experience in safety, engineering, regulatory finance and economics. We have made use of our own understanding of the network's assets and Network Rail's financial position, as well as its CP6 performance, built-up through our holding-to-account work over CP6 and previous periodic reviews.

1.10 Much of our advice has focused on our review of Network Rail's initial submission, as well as supporting material provided by Network Rail relating to forecasted volumes/spend and certain aspects of the plan. As part of this, we have had extensive engagement across Network Rail. This includes, for example:

(a) engagement with the regions and functions, which has involved over 20 sessions on their input to the initial submission;

(b) asset-specific sessions with the Technical Authority (which provides an internal assurance/review function to the regions);

(c) deep-dive sessions on a range of topics, to help address specific questions we had and/or to explore areas of concern; and

(d) stand-alone submissions/notes produced for our purposes, as well as responses to our written questions.

1.11 We have also made use of our own analysis, including our own Targeted Assurance Reviews (TARs, which we undertake to gain a more in-depth understanding of an issue) and our benchmarking analysis of Network Rail's renewals and maintenance expenditure proposals (see supporting documents 1 and 2 for further information on our work in this area). In addition, we have drawn on a number of ORR-led independent consultancy reviews into certain topics, namely:

(a) Management of Depot Plant Assets – Frazer-Nash Consultancy – May 2022 (supporting document 3);

(b) Understanding Network Rail's digital signalling programme – Turner & Townsend – March 2022 (supporting document 4);

(c) Advice on factors affecting Rail Freight Growth – Arup – May 2022 (supporting document 5); and

(d) Review of Network Rail's property forecasts – Savills. (Please note this report has yet to be finalised, though the findings have informed our advice. It will be made available and published in due course.

These reviews are being made available to DfT and Network Rail as part of our overall submission.

1.12 We have also participated in 'deep dive' sessions on aspects of the initial CP7 submission for HM Treasury (HMT), with DfT and Network Rail, which have helped to inform our analysis.

Box 1.1: High-level summary of Network Rail's initial CP7 submission

For England & Wales, Network Rail's initial submission focuses on delivering 'steady state' outcomes for CP7, though it also includes a set of 'reduced cost' options. The proposed spend forecasts for key activity areas and for both scenarios are set out in Table 1.1, as well as comparison with CP6 expenditure (though making simple comparisons between these positions should be done with caution). This is based on the Bank of England's (BoE's) November 2021 forecast for inflation using the Consumer Price Index (CPI).

Table 1.1: Summary of Network Rail's initial submission*

		CP7 'steady state' (at P50**)		CP7 'reduced cost' options (at P50**)	
£bn, 2023-24 prices	**CP6 (£bn, at P80**)**	**(£bn)**	**Variance to CP6 (%)**	**(£bn)**	**Variance to CP6 (%)**
Operations	3.5	3.4	-2.0%	3.4	-2.0%
Support	4.1	3.5	-14.4%	3.5	-14.8%
Maintenance	9.3	9.4	+1.2%	9.3	-0.1%
Renewals	18.0	23.0	+27.6%	19.2	+6.7%
Risk	0.4	0.0	n/a	0.0	n/a
Post-efficient OSMR total	**35.3**	**39.3**	**+11.3%**	**35.4**	**+0.3%**
Rates and industry costs***	2.0	2.4	+18.4%	2.4	+21.2%
HS2	0.0	0.5	n/a	0.5	n/a
ETCS enablers	0.0	1.1	n/a	1.1	n/a
Post-efficient total expenditure	**37.2**	**43.2**	**+16.0%**	**39.4**	**+5.8%**

* Note that numbers may not sum due to rounding.
** P50/P80 refers to the confidence level to which Network Rail has developed its plan/submission. This is discussed in further detail below.
*** Note this includes business rates and Network Rail's contributions to funding British Transport Police, the Rail Safety and Standards Board and ORR, but does not include traction electricity costs.

Network Rail has made the following key assumptions in developing its submission:

- **Passenger numbers**: Passenger traffic (train service levels) is forecast at 88% of pre-Coronavirus (COVID-19) pandemic levels over CP7. Passenger demand (footfall) is assumed to return to 85% of pre-pandemic levels (2019-20: 1.7 billion) by the start of CP7 and to grow by 1.7% each year of CP7, leading to passenger demand of 1.6 billion by 2028-29. Passenger train km is forecast at around 0.5 billion kms, remaining flat until the end of CP7.

- **Freight**: Freight traffic is forecast to be at pre-pandemic levels of 33.5 million kms per annum and is assumed to increase by 7.7% over CP7 to 35.8 million kms, along with larger increases in freight net tonne miles moved.

- **Inflation**: Inflation is assumed to follow the BoE's forecast as of November 2021, which assumed above target CPI inflation for two years (to the end of CP6) and then 2% each year of CP7. Due to the uncertainty of future inflation, Network Rail has included sensitivity analysis that suggests that, on a simple basis, if CPI inflation is 1% higher throughout CP7 than it forecasts (i.e. 3% instead of 2%), it would mean additional cash costs of c.£250m per annum for OSMR in 'steady state'. Also, if the BoE's February 2022 forecast had been used, expenditure would be £1.5bn higher than the £43.2bn 'steady state' total.

- **[Redacted]**

- **CP6 delivery**: Network Rail has assumed it will meet its CP6 outputs. (However, our review of Network Rail's changes to its CP6 plan has highlighted the risks around this; this is discussed below.)

- **Project Reach**: This is a telecoms project designed to improve Network Rail's fibre network and is assumed to go ahead.

In contrast with the England & Wales submission, the Scotland submission is based on a [redacted] scenario, focusing on what can be delivered with funding at or close to CP6 levels. It forecasts total expenditure of £4.7bn (CP6 +7%). This increase is largely driven by central functions' renewals of £98m (CP6 +40.2%), which the Scotland region will contribute towards. Excluding these central costs, the region-specific spend represents a 2% increase compared with CP6.

2. Network Rail's 'steady state' renewals proposals

2.1 Network Rail proposes to spend £23.0bn (CP6 +27.6%) on renewals in its 'steady state' initial submission, split between £19.5bn (CP6 +26.4%) on core asset renewals and £3.5bn (CP6 +34.8%) on 'other renewals'. This chapter sets out our views on Network Rail's proposals for core asset renewals. Annex A sets out in more detail our views on Network Rail's renewals proposals for each asset area.

2.2 Presented as 'core options' (but as part of its overall 'steady state' submission), Network Rail also includes expenditure on passenger and freight cab fitment (£1.1bn) to support the delivery of digital signalling and expenditure to support the introduction of High-Speed 2 (HS2) services (£0.5bn). This chapter discusses our views on these areas also.

2.3 Our views on Network Rail's proposals for 'other renewals' (e.g. replacement of a timetabling IT system), which would be delivered by the System Operator (SO) and central functions, are discussed in Chapter 5.

Development of renewals plans

2.4 As discussed in Chapter 1, Network Rail's initial submission represents early and high-level thinking about potential CP7 outputs and funding. Although this has been informed by a network-level view of the asset portfolio, it has not been informed by bottom-up planning based on individual asset needs. This is to be expected given that we are almost two years away from the start of CP7. Nevertheless, we have identified certain issues with Network Rail's approach to developing its initial submission that are worth noting.

2.5 **Specifically, we are concerned that Network Rail's proposals on renewals may be overstated because of the way in which it has developed its initial submission** in four key respects:

(a) The initial submission is based on individual inputs from each region and function that, in some cases, do not take account of what other regions/functions propose to do. This is likely to create additional opportunities for reduced volumes (and/or savings). The lack of coherency between regions' and functions' submissions is discussed in Chapter 5.

(b) The regions and functions have not interpreted the definitions of 'steady state' (and 'reduced cost' options) in a consistent way. This means that a number of betterment items, such as the modernisation of station information systems and improvements to station environment, have been presented as proposed renewals without sufficient justification. Although these may be legitimate areas of spend, Network Rail has not explained the justification sufficiently at this stage.

(c) The submission does not take account of the 'portfolio effect' across individual asset types within control periods. Rather, it has been built-up based on a high-level understanding of the renewals requirements for each asset type (e.g. track, drainage) without taking account of the interactions between asset types that would enable proposed spend/works to be optimised. For example, currently, track assets are preforming well. It is generally accepted that increased renewals on other assets (e.g. earthworks, drainage, some bridge work) should extend track life and, in turn, create scope to reduce proposed track volumes in a way that is manageable over the short-term. We have not, however, seen any evidence of such considerations in the initial submission's proposed renewals.

(d) The initial submission has not reflected any potential opportunities to spend less on certain asset types in CP7 compared with the 'steady state' proposals and to recover that spend/asset condition in future control periods. This reflects the 'top-down' approach to developing the submission which has constrained consideration of the longer-term view around spend and activities and how they are prioritised to a top-level portfolio view.

2.6 In addition, we note that Network Rail's own internal assurance (undertaken by the Technical Authority) found that forecasted renewals spend within the 'steady state' submission was 4.5% higher than what it had considered necessary to retain safety and acceptable performance levels, whilst not unduly compromising asset sustainability. However, it should be noted that, although the regional costs were higher than Technical Authority's assessment, they were within our (and Network Rail's) view of acceptable bounds (though we note that the Technical Authority has also yet to consider the 'portfolio effect' across asset types).

2.7 Furthermore, we note that while our statistical analysis (which seeks to model Network Rail's expected renewals expenditure; see supporting document 1 for further information) suggests that the initial submission's overall volumes for England & Wales appear to be within the bounds expected by our model, there are inconsistencies amongst regions. This may have implications for overall volume

levels and will require further consideration. In particular, there appears to be wide variances in average unit costs among regions that have not been clearly explained and that make it difficult to fully assure proposed asset volumes and spends for individual regions.

2.8 It is worth noting that we would expect a need for a reasonable increase in renewals for some critical asset areas, including funding to improve weather resilience based on reassessed climate change impacts and to address previous lower levels of spend on metallic structures. Indeed, in 2017 and as part of PR18, we forecast that even with broadly consistent levels of CP6 funding in CP7, asset condition would deteriorate over CP7 (and CP6), before recovering in CP8 and reaching a degree of equilibrium from CP9 onwards.

2.9 However, we are concerned that Network Rail's 'steady state' proposals may be somewhat overstated due to the inherent uncertainty built into its estimates at this stage of the planning process. Examples of this include the selection of higher-range work (volume) estimates and a tendency towards using the higher of local / national unit rates for cost estimates, which may mean an undue amount of contingency is included. This relates closely to the level of confidence (e.g. P50) Network Rail has developed the plan to; this is discussed further in Chapter 6.

Delivery of renewals in CP7

2.10 As noted above, Network Rail is proposing to spend 27.6% more on renewals in CP7 compared with CP6 under the 'steady state' proposals. This is a significant proposed increase in spend and in volume of work and, compared with CP6, spend is higher in all asset areas and for all regions. **We do not consider that Network Rail has fully justified that the level of renewals it is proposing is deliverable.** This is driven by four key factors:

(a) Network Rail is already at risk of not delivering its full set of CP6 output volumes with respect to renewals. As set out in our recent letter to DfT regarding our review of Network Rail's updated plan for Years 4 and 5 (dated 29 March 2022), Network Rail has increased the 'backend loading' of renewals work. This is creating a risk that some schemes are not completed in CP6 and/or would need to be deferred to CP7, and suggests that Network Rail's proposals to deliver volumes significantly above CP6 is likely to be very challenging. We acknowledge certain external factors during CP6 (e.g. the pandemic) are not likely to recur but, even without these, there would still be a large increase in planned volumes against actual CP6 delivery.

(b) While Network Rail has considered deliverability at a high-level, it has not yet had the opportunity to consider thoroughly certain factors that are likely to be central to delivering its CP7 renewals work, including the capacity of the supply chain and network access availability. Furthermore, it is not clear from the initial submission how far enhancement projects (e.g. HS2) will affect the supply chain's ability to deliver existing OSMR activities, as well as important schemes such as Network Rail's Electrical Safety Delivery Programme.

(c) Network Rail's proposals may be unduly optimistic with respect to possessions (i.e. track closures for railway works). As set out in last year's independent reporter review into the efficiency of possessions, there is room for improvement in how Network Rail manages its possessions. Without addressing these over the rest of CP6, there is a risk that the initial submission's proposals may not be deliverable.

(d) The initial submission has not included separate risk funding. Instead, Network Rail has suggested that it will 'carve out' funding from renewals to create a separate risk fund to help manage risks over CP7. We are concerned that this would mean that Network Rail would be unable to allocate the full volume of spend being proposed for each asset group which would, in turn, have implications for the extent to which it could meet the proposed volumes. This is discussed further in Chapter 6.

2.11 This is exacerbated by the early-stage, top-down nature of the initial submission, which has not yet, for example, been informed by deliverability assessments for each asset/workbank and/or been tested in detail with stakeholders.

Expenditure on environmental sustainability

2.12 Network Rail's initial submission outlines four key priorities to deliver a sustainable railway in CP7: a low-emission railway; a reliable railway service that is resilient to climate change; improved biodiversity of plants and wildlife; and minimal waste and sustainable use of materials.

2.13 Reflecting the wider environmental challenges, **we would expect Network Rail to spend more on environmental sustainability in CP7 compared with CP6**, including in priority areas such as earthworks and drainage management and extreme weather response. For example, our May 2021 TAR on earthworks and drainage weather resilience noted the limited amount of funding in CP6 to improve weather resilience and found that this is unlikely to be sufficient to cover priority areas for CP7. **However, without detailed and bottom-up plans, its proposals**

on how funding should be allocated to asset areas have not been clearly articulated. Until this is clarified, there is the potential for the same renewals to be counted under more than one category (i.e. 'double counting' of required funding).

2.14 For example, the initial submission includes significant increases in renewals funding for earthworks (£1.3bn / CP6 +16%) and drainage (£684m / CP6 +82%) and then adds separate, additional funding under 'other renewals' for 'environment & sustainable development' (£326m) and 'weather resilience and climate change' (£124m). In this example, it is not clear the basis under which Network Rail is justifying this additional spend (notwithstanding the point above that we recognise it needs to spend more on environmental sustainability compared with CP6).

2.15 We have also noted other issues with Network Rail's approach to environmental sustainability planning that make it difficult to assure its proposals in this area:

(a) We have found little evidence of Network Rail working with other parties, such as the Environment Agency, to explore further ways to maximise the benefits (including financial benefits) of its activities in this area. For example, there have been fruitful partnerships in CP6 that should be encouraged in future Control Periods but are not referenced in the initial submission.

(b) The regions' submissions on certain key assets impacted by climate change (e.g. drainage and earthworks) have yet to be aligned with the maintenance strategies that will be required going forward.

(c) There is insufficient evidence that Network Rail is 'CP7 ready' to deliver the spend in environmental sustainability. For example, delivery of much of the proposed CP7 works for earthworks and drainage depends on successful achievement of actions in CP6 to address the Lord Mair/Dame Slingo Task Force recommendations.

(d) With respect to other environmental outcomes (e.g. carbon impacts, biodiversity), the initial submission provides limited detail about the types of actions that Network Rail will undertake to achieve its stated objectives. For example, it is not clear whether Network Rail has fully considered the cost of reducing its carbon emissions through the supply chain.

2.16 We will work closely with Network Rail as it develops its CP7 plans in this area to understand how it is attributing funding to environmental sustainability and the types of activities it will seek to undertake, as well as the proposed outputs it would deliver.

Digital signalling plans

2.17 Whilst recognising the funding pressures on the UK Government, we remain supportive of the need for progressing the renewal of Network Rail's signalling assets aligned to the strategy set out in the Long-Term Deployment Plan (LTDP). Network Rail's initial submission proposes a revised migration strategy that takes into account changes to programme timescales and, compared with the LTDP, moves expenditure into later control periods.

2.18 **Network Rail's proposals seem appropriate and appear to offer the right balance between full conventional renewals, digital renewals and life-extension works**. This approach should get the best value out of existing assets whilst minimising abortive costs, which would occur if Network Rail was proposing large volumes of full conventional renewals given the strategy to deploy digital signalling in CP7 and future control periods.

2.19 In addition, we note that the initial submission includes various costs for the Signalling Equivalent Unit (SEU) rate. This is used to forecast and measure unit costs for signalling projects. However, the rates used for costing CP7 show a marked difference to those used in the East Coast Digital Programme (ECDP) Final Business Case; see Table 2.1. Further work is required to establish SEU rates that take account of current digital signalling programmes (e.g. ECDP) and/or to demonstrate why large differences exist. This has not been provided in the initial submission.

Table 2.1: SEU rates used in the initial submission and in the ECDP

	Rate used in the initial submission	ECDP rate
Conventional SEU	[Redacted]	[Redacted]
Digital SEU	[Redacted]	[Redacted]

2.20 There is a strong reason to include all the costs of digital signalling within the scope of the PR23 process. However, if those costs are to be included, it is important to articulate clearly and separately what digital signalling costs relate to OSMR and what sits outside this (i.e. enabling works, research and development (R&D) and fleet fitment), along with the status of funding streams. It is also important to demonstrate the absence of any 'double counting' of activities and

that there is clear oversight and accountability for planned spend in this area, including among regions and the SO.

2.21 As such, **we would expect to see more detail in Network Rail's 'bottom up' planning on the implications of different options in the roll-out of digital signalling.** Taking account of our market study into the supply of signalling systems, we also expect to see Network Rail implementing its revised commercial approach aimed at encouraging more suppliers into the signalling market. This reflects the opportunities from deploying new digital signalling technology given that, other things being equal, new technology tends to create better conditions for entry and expansion by suppliers.

2.22 We discuss below what further work we intend to do on ETCS.

ETCS enablers and HS2 readiness

2.23 As noted above, Network Rail includes in its 'steady state' plan two core options relating to ETCS cab-fitment and HS2 readiness.

ETCS enablers

2.24 We anticipate funding for fleet fitment may be confirmed at the same time as, or as part of, the SoFA decisions. As a key enabler, clarity and certainty of fleet fitment funding is crucial to the deployment of digital signalling. It is separate from the OSMR funding proposals but is required for the transition to digital signalling. Network Rail has included £1.1bn funding for fleet fitment in its initial submission. This includes fitment for multiple categories and classes of fleet, including for passenger, freight, On Track Machines (OTM), Heritage, and Charter trains.

2.25 Decisions on the funding of fleet fitment is particularly important given the long lead-time for European Train Control System (ETCS, which refers to the wider signalling and control system for digital signalling) fleet fitment. This is because it is intrinsically linked to the digital signalling renewal (the trains cannot run without the relevant technology being fitted).

2.26 We consider that it is reasonable to include funding for all fleet fitment as part of the PR23 process. It is worth noting that funding was included in our PR18 Final Determination to initiate the fitment programmes for OTM and freight. These were not considered as renewals but were in addition to the OSMR for CP6.

2.27 However, further work is required to establish the funding mechanism for commencing the passenger fleet fitment programme which have not previously

been included within the periodic review process. Funding for Heritage and Charter trains in England & Wales has been included within the submission but has been identified as a 'incremental option' in Network Rail's 'steady state' submission; it is not clear what the impact would be if this is not taken forward.

2.28 Furthermore, we note that in the context of the 'reduced cost' options, Network Rail provided supplementary information which suggests that reducing fleet fitment funding by c.£200m would significantly increase whole life costs, though this requires further review and analysis.

2.29 To help provide further advice on the issues above, **we will also provide an update to the UK Government on Network Rail's further thinking on digital signalling in September.** This is discussed further in Chapter 8.

HS2 readiness

2.30 The initial submission proposes expenditure designed to support the introduction of HS2 services, principally on works on the West Coast Main Line (WCML) north of Crewe ('WCML North'). This includes £0.7bn of expenditure for track and signalling renewals and to commence one major signalling project, which is included as part of the 'steady state' submission. It also includes £0.5bn, presented separately as a 'core option' but included in the overall 'steady state' submission, for other re-signalling work and electrification renewals. Network Rail says that if this £0.5bn work is not funded in CP7, it would result in performance issues and have negative financial and/or reputational impacts for the network and HS2 once the new services are introduced. In its summer 2021 submission, Network Rail included £2.5bn for HS2 related works.

2.31 In December 2021, we published a TAR on the impact of HS2 on Network Rail's planned work, focusing on whether Network Rail is taking a reasonable approach to managing the impact of HS2 on its business. The issues we identified as part of this work remain relevant to our review of Network Rail's HS2-related initial submission proposals. In particular, we consider that cost estimates are at an early level of development and we require additional detail from Network Rail, including:

(a) information in the form of Outline Business Cases for the Crewe Hub and WCML North programmes. These should include benefits and the effect on Network Rail's core plans for CP7, considering factors such as safety, whole life costs, deliverability and customer experience; and

(b) further assurance on the potential impact of other aspects of HS2 (such as the delivery of materials by rail) on Network Rail's assets and the risk and mitigations put in place.

2.32 The initial submission does not include this information. However, we understand from discussions with Network Rail that the £0.7bn of renewals within the core plan relates to assets that are nearly life-expired and the renewals have already been deferred from previous control periods multiple times. As such, Network Rail has not included these renewals as an option in the 'reduced cost' options package and has indicated that it would seek to prioritise these renewals over others, where possible. Because these assets are nearly life-expired, they are at increased risk of failures, which could lead to reactive renewals if they are not done proactively. This could be inefficient.

2.33 With respect to the 'core option' of £0.5bn for other re-signalling/electrification renewals, we have challenged Network Rail to articulate the expected benefits of these renewals being brought forward to CP7, as well as potential detriment (including financial impacts) of not carrying out these works in CP7. It has indicated that some work would be undertaken before the assets are life expired (the work is not required to deliver 'steady state' outcomes in CP7), meaning it would represent some sub-optimal expenditure over the asset's lifetime. **We consider that it is a matter for the UK Government whether it wishes to fund this for CP7, noting that it is potentially cheaper and lower risk than funding it in CP8 when HS2 enters service.** There may also be an argument for HS2 Limited to fund all or part of this work, which could be explored further.

2.34 To help provide further advice on the issues above, **we will provide an update to the UK Government on Network Rail's further thinking on HS2 readiness in September.** This is discussed further in Chapter 8.

3. Network Rail's proposals on 'options'

3.1 As part of its initial submission, Network Rail has included options to reduce costs (which, taken together, would reduce costs from the 'steady state' by £3.8bn in total). These options mainly relate to renewals work, though do provide some proposals relating to maintenance and operations. This chapter sets out views in this area.

Performance implications of the 'reduced cost' options

3.2 It is difficult to determine with any certainty what the implications of the 'reduced cost' options are for operators, passengers and freight customers given the issues with Network Rail's information at this stage in the development of the business plan. In particular, it is high-level and lacks more detailed analysis. For example:

(a) The England & Wales and regions' submissions mostly provide qualitative statements regarding the additional risk to performance due to reduced spend options. This does not give us confidence that there is a clear line of sight between proposed OSMR activities and train performance outputs.

(b) There is a lack of a clear narrative about what performance levels funders could 'buy' in return for different funding levels.

(c) There is no evidence of assurance to support the England & Wales 'steady state' submission and there is only limited region-led analysis about the performance implications.

3.3 The UK Government will need further detail on the performance implications for passenger and freight customers in order to make informed decisions in its HLOS and SoFA. To support this, **we will provide an update to the UK Government on Network Rail's further thinking on the performance implications of the spending proposals in July.** This is discussed further in Chapter 8.

Longer-term cost implications of the 'reduced cost' options

3.4 Under the 'reduced cost' options, Network Rail would do less renewal volumes (equivalent to around £3.4bn of work), which would have an impact on asset condition and the implications for longer-term funding requirements of renewals.

3.5 Despite Asset condition as measured by the Composite Sustainability Index (CSI) would deteriorate by 1.89 percentage points to -3.5% compared with the current forecasted CP6 exit point of -1.6%. This compares with a reduction to -3.2% under the 'reduced cost' options. This is set out in more detail in Table 3.1. This needs to be considered in the context of the expected and overall downward trajectory of CSI over CP6, CP7 and CP8, which reflects the distribution of remaining asset life across Network Rail's network.

3.6 Based on the evidence we have seen, **we would expect the deterioration in asset condition under the 'reduced cost' option to be manageable**.

Table 3.1: Impact on forecasted CSI at different spending levels

Floor at end of CP6	PR18 target end of CP6	Current end of CP6 forecast	End of CP7 forecast made at PR18	End of CP7 forecast under 'steady state' expenditure***	End of CP7 forecast under 'reduced cost' options***
-2.3%*	-1.9%	-1.6%**	-2.2%	-3.2%	-3.5%

* Floor set at regional and not England & Wales (or GB) level
**Still to be fully tested
***As of March 2022

3.7 **To recover asset condition in CP8 and CP9, Network Rail has forecasted that it would need to increase spend on renewals by £5bn above the CP7 'reduced cost' levels for CP8 and maintain this level of spend in CP9**. It has focused recovery over two control periods given, it says, the scale of the volumes required and the deliverability constraints.

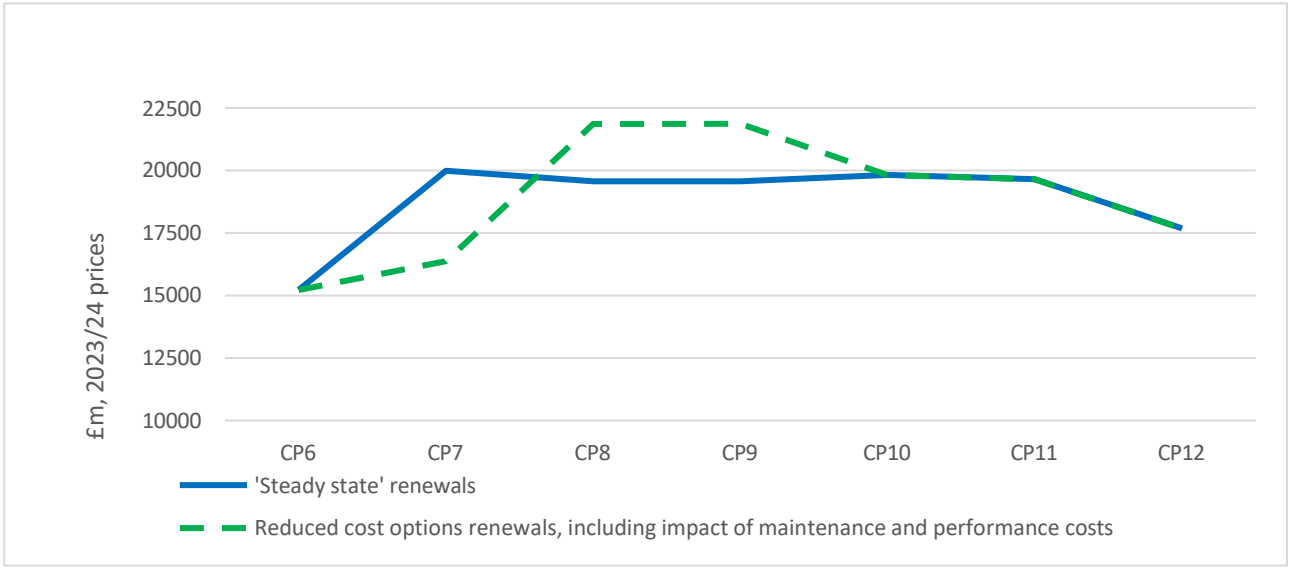
3.8 However, the relatively poorer condition of assets across CP7 to CP9 (as indicated by the CSI) would also lead to:

(a) an increased number of faults leading to train disruption costs as a result of reduced asset condition; and

(b) in turn, increased maintenance costs to address the faults. Network Rail has assessed these as being an increase between 3% and 5% to maintenance costs.

3.9 Network Rail estimates these total additional costs, due to the deferral of renewals under the reduced cost options, is £1bn spread over CP8 and CP9. This is in addition to the costs of conducting the renewals in later periods. This is illustrated in Figure 3.1.

Figure 3.1: Comparison of longer-term renewals expenditure under 'steady state' and 'reduced cost' options



3.10 In addition, and compared with the 'steady state' proposals, there is likely to be less scope under the 'reduced cost' options for Network Rail to take advantage of the portfolio effects of increased spend in one asset area benefitting another asset area. There is also likely to be less scope to 'carve out' risk funding from the renewals spend. Furthermore, if Network Rail were to be funded to this level, we would expect to put particular focus on how it would intend to recover asset condition over CP8 and CP9.

3.11 To help provide further advice on the issues above, **we will provide an update to the UK Government on Network Rail's 'reduced cost' options, focusing on the impact on maintenance expenditure as a result of the deferred spending on renewals, in September.** This is discussed further in Chapter 8.

Box 3.1: Measuring asset condition and the Composite Sustainability Index (CSI)

Assets on the railway will degrade over time due to age, environmental factors and wear and tear. To measure the long-term sustainability of the assets, the CSI index provides an algorithmic measure of the life left in the portfolio of assets at network and regional level, taking account of the different asset classes on the railway. It is a relative measure based against the asset condition as at the start of CP5.

The CSI is also an indicative measure and there are weighting factors applied to the asset classes and the type of work conducted. This means that some renewals work has a more significant impact on CSI than other renewals. As such, an increase in spend on structures would not have as large an impact on CSI as a commensurate spend on track. Similarly, as CSI takes into account the life left on an asset and as regions will have assets at varying proximities to their ends of life, similar levels of regional spend on assets will not impact CSI equally.

Taken together, this means that it is imperative that Network Rail is cognisant of, not just the CSI, but the profile of remaining asset life across asset categories and regions. This can help enable a portfolio plan to be developed that maximises spend in those areas that need it most. This is likely to mean that, for asset classes and within regions that have been historically funded at a level broadly commensurate with the required level of renewals, Network Rail may have to consider a short-term reduction to allow greater focus on those areas with more pressing imperatives.

Recognising the limitations of relying on any single measure to hold Network Rail to account, CSI will continue to be one measure within a broad range of performance indicators used to monitor asset management in our holding to account activities.

Safety implications of the ‘reduced cost’ options

3.12 In its initial submission, Network Rail says that, taken together, the ‘reduced cost’ options maintain safety whilst sacrificing asset sustainability, in part by relying on reactive mitigation in certain areas.

3.13 We have not yet examined in detail the impact that the ‘reduced cost’ options would have on asset sustainability, performance and required safety mitigations. At this stage, the information is high-level and further detail is required about how Network Rail would seek to mitigate the safety risks. For example, in the initial submission, it is not always clear that Network Rail has included sufficiently increased inspections, maintenance and refurbishment works to manage risks to

assets where renewals may be deferred. Furthermore, while Network Rail has suggested that the 'reduced cost' options may require 3-5% more maintenance work over CP7, this is a high-level assessment and requires further, more detailed consideration. These issues are exacerbated by the wider risks relating to Network Rail's maintenance proposals, which we discuss in more detail in Chapter 4.

3.14 As such, and as Network Rail develops its plans further, **we would expect it to set out how it will identify and mitigate any potential safety impacts of the 'reduced cost' options**.

Categorisation of 'options'

3.15 We are not yet convinced that Network Rail has appropriately categorised the 'options' identified under the 'reduced cost' options. Under the 'steady state' proposals, Network Rail has proposed omitting certain spend items that we consider are likely to be required to maintain 'steady state' outcomes and could be included as part of OSMR. This includes spend on asset monitoring, systems and data (£350m); 'passive' level crossing safety improvements (£102m); and additional operational data for the SO (£108-127m).

3.16 We note the initial submission also includes some spend items as part of the 'steady state' proposals that would, in our view, be better considered as part of Network Rail's 'incremental spend' options. This includes Project Reach [Redacted] (which we discuss further in Chapter 6) and works to improve franchised stations in the Eastern region [Redacted].

3.17 As such, **we consider that there is merit in considering carefully what Network Rail's initial submission includes, as some options may be essential to the delivery of 'steady state' outcomes (including safety)** and other items included in the 'steady state' submission may not be essential.

4. Network Rail's other spend

4.1 Outside of renewals spend, Network Rail's initial submission covers forecasted spend and outputs on maintenance, operations and support which, taken together, make up 37.7% of Network Rail's total 'steady state' forecasted spend and 40.9% of its total 'reduced cost' options spend. It also faces certain other costs relating (in the main) to industry costs and rates. This chapter discusses our views on these areas.

Proposed maintenance activities

4.2 Taking account of efficiency initiatives, the 'steady state' proposals include £9.4bn (CP6 +1.2%) on maintenance activities. This is driven by around £0.5bn in increased maintenance activities (including on weather resilience and climate change and on ash dieback management), which is offset by the delivery of savings in CP7, including the 'modernising maintenance' programme. Under the 'reduced cost' option, the submission also includes a proposal to reduce maintenance costs by around £0.2bn compared with the 'steady state' proposals. However, as discussed in Chapter 3, Network Rail has also said that if renewal volumes were in line with the 'reduced cost' options, it would expect more reactive maintenance work to be required to address an increase volume of faults arising from deteriorating asset condition.

4.3 Using our own statistical model, we have undertaken benchmarking analysis to estimate Network Rail's maintenance expenditure for CP7 by region and have used this to compare against what Network Rail is proposing in its submission. This suggests that the forecasted expenditure on maintenance is broadly in line with what the model would expect, both for England & Wales and across the regions. Furthermore, it suggests that the initial submission's maintenance expenditure forecasts represent a potential reduction of c.16% in post-efficient cost (compared with the end of CP6) and that both the 'steady state' and the 'reduced cost' options proposals have similar amounts of efficiency improvements in them.

4.4 Although our modelling alone does not determine the appropriateness of Network Rail's proposals, it does provide a useful tool in forecasting likely expenditure and in identifying significant discrepancies across business units; further information on our cost benchmarking work relating to proposed maintenance spend is provided in supporting document 2.

4.5 However, at this stage and looking beyond our own modelling, **there are a number of uncertainties that make it difficult to determine with certainty the appropriateness of the submission's proposals for maintenance**. In particular:

(a) It is predicated on Network Rail achieving [redated] workforce reforms to its maintenance activities in CP6 and CP7, which is a challenging programme to deliver given the risks of industrial action. [Redacted]. We set out further views on Network Rail's workforce reform efficiencies in Chapter 6.

(b) It is dependent on delivering the benefits of two key R&D programmes that are (as we have discussed in more detail in a recent TAR on technology adoption) facing a number of challenges in implementing the new technology and processes 'on the ground'. These R&D programmes relate to enhanced asset condition monitoring (which is designed to reduce the overall level of maintenance activity by better predicting where asset failures will occur and the operational impact of this) and new tools to optimise operational efficiencies (e.g. relating to cost, time and quality of maintenance delivery).

(c) There are increasing demands on maintenance activities and the initial submission has not clearly explained how they will be resourced over CP7. These relate to, for example, additional works associated with ash dieback and vegetation works due to the effects of climate change, as well as to cater for assets being brought into service following the completion of new enhancement projects.

4.6 In addition, we have some concerns that Network Rail is not appropriately reporting its maintenance activities, which could have implications for its proposals as set out in the initial submission. As discussed in the March 2022 Independent Reporter work on the accuracy of maintenance reporting volumes, there is scope for Network Rail to improve its monitoring and reporting of maintenance activities, including with respect to volumes and the standards to which assets are being maintained. This would, the review found, help Network Rail improve how it plans and monitors its maintenance activity.

4.7 Under the 'reduced cost' options, Network Rail says it would expect to do 3-5% (variable by asset area) more maintenance work as a result of doing less renewals, owing to aging asset condition and a deterioration in asset condition. While we would expect more maintenance works to be required when less renewals are taking place (other things being equal), **our view is that this** assessment is particularly high-level and has yet to be developed through bottom-up planning.

Proposed support activities

4.8 Network Rail's 'steady state' submission is forecasting to spend £3.5bn (CP6 -14.4%) on support expenditure. This is made up of support costs provided by the central functions (e.g. Technical Authority, property unit; £2.7bn) and professional support provided to and by the regions (e.g. HR, legal; £0.8bn).

4.9 The significant drop in support costs is largely driven by the modernising management programme. As in other areas (and as discussed in more detail in Chapter 6), the key risk to the level of support costs is the delivery of these workforce reform-related initiatives.

4.10 We expect to scrutinise further Network Rail's support costs, including benchmarking analysis it has recently undertaken on its IT and finance costs. W**e will provide an update to the UK Government on Network Rail's proposed central costs in September.** This is discussed further in Chapter 8.

Proposed operations activities

4.11 Network Rail's submission is forecasting to spend £3.4bn (CP6 -2%) on its operations. This includes activities such as signalling, emergency response management and staff in control rooms and at stations.

4.12 For CP7, Network Rail says much of its focus is on delivering improvements for train services (e.g. access to signalling simulators, roll-out of a new competency management system), which it expects to deliver efficiencies from. However, Network Rail also faces some workforce reform-related risks in this area, including implementing new work practices [Redacted].

Industry costs and rates

4.13 Network Rail's initial submission includes industry rates and costs of £2.4bn (CP6 +18%). These costs are largely outside of Network Rail's control and include business rates (£1.7bn) and Network Rail's contribution to funding British Transport Police (£0.5bn), the Rail Safety and Standards Board (£0.1bn) and ORR (£0.1bn).

4.14 The increase in these costs is driven mainly by an assumed increase in business rates. However, this remains somewhat uncertain until a formal decision from the Valuation Office Agency regarding future rates, which is not expected until 2023-24. Furthermore, we note there may be a wider question about the extent to which Network Rail may be required to pay business rates given that it is a publicly-owned company.

4.15 The headline cost proposals exclude forecasted traction electricity costs (Electric Current for Traction, or EC4T; £3.3bn). This was excluded because the cost of traction electricity is passed through to train operators so has a very small overall impact on Network Rail's finances. We note, however, that the UK Government will ultimately incur the cost of traction electricity in England & Wales.

5. SO and national functions' plans

5.1 In addition to input from each of the four regions in England & Wales, the submission also reflects input from the SO and national functions, including Route Services (which provides services to regions in support of the delivery of renewals), the Technical Authority (which provides technical expertise and leadership) and corporate functions (e.g. Chief Financial Officer unit, Human Resources). Under the submission's 'steady state' proposals, the central functions' expenditure makes up 14.8% of the overall forecasted spend. This chapter discusses our views on this aspect.

Interaction between regions and SO/national functions' submissions

5.2 As discussed in Chapter 2, **we are concerned that, in some cases, there is a lack of coherency between each region's plan and the SO/national functions' plans**. In some cases, the central functions have made assumptions about the regions' CP7 activities that do not align with what the regions are proposing. **This is likely to create additional opportunities for reduced volumes (and/or savings)**. For example:

(a) The regions' plans relating to the use of high output plant (used in renewal of track in large projects) do not correspond with what is being proposed by the Route Services function, which is accountable for delivering this service. [Redacted]. This creates a risk that the service [redacted] is underutilised over CP7. There is also a risk that, should track renewals be funded below 'steady state' proposed levels, Route Services would be unable to respond to demands for the high output plant in CP8, when it is likely to be required more compared with CP7.

(b) The Technical Authority has identified certain R&D-related initiatives, including those undertaken in previous control periods, that have not always been reflected in regions' plans as we would envisage. As such, certain efficiencies and costs savings have not been captured. For example, regions have not reflected the introduction of 'faster isolations', which are designed to

improve the efficiency of possessions by providing more 'time on task', in their plans.

(c) The initial submission's 'other renewals' includes £21m for the SO to develop improved operational systems, focused on supporting improved safety and performance. However we have not seen any clear indication of efficiencies in the regional plans to indicate that they intend to make use of these tools.

SO and national functions' renewals

5.3 Network Rail classifies capital expenditure that is not core infrastructure asset driven as 'other renewals'. These include, for example, expenditure led by Route Services, the Technical Authority and/or the SO (e.g. replacement of a timetabling IT system), as well as some non-core asset expenditure in the regions. In its submission, Network Rail's proposed spend on 'other renewals' is significant, accounting for 15.3% of total renewals expenditure (£3.5bn; CP6 +34.8%), of which £2.6bn is through national functions.

5.4 In many cases, however, we are concerned that there is currently insufficient evidence to justify the increased levels of spend. This is exacerbated by Network Rail's own internal assurance, which has been targeted at the regions' plans rather than the 'other renewals' delivered by the central functions.

5.5 As noted in Chapter 4, **we will provide supplementary advice to the UK Government on Network Rail's proposed central costs in September**.

The SO's submission

5.6 Under the submission's 'steady state' proposals, the SO's forecasted spend (for England & Wales only) is £384m (CP6 +1%). This includes further work on delivering the timetable technology strategy and a new programme to deliver better operational data (£111m), as well as expenditure on a Freight Safety Improvement Programme (£22m) to address systemic and strategic risks. This is partly offset by savings arising from workforce reform that are being delivered over CP6.

5.7 The SO's expenditure is a reasonably small proportion of Network Rail's overall forecasted spend. However, it is worth considering this (and its associated delivery) in more detail given the important role it plays in providing network functions that are necessary to the effective operation of the railway, including for freight operators.

5.8 Over CP6, some of the SO's responsibilities (e.g. early timetable planning and regional strategic planning) have moved to the regions. The SO has been undergoing a restructure of its organisational structure as part of implementing a new operating model and it now expects to reduce its headcount by c.20% by the end of the CP6. It is targeting further operational spend (i.e. operations, support and maintenance) efficiency of 10% by the end of CP7. However, it is worth noting that although the SO has protected timetable planning resource, the level of resourcing is likely to be an ongoing constraint on Network Rail's ability to deliver multiple and complex timetable changes. This is especially the case where there are more frequent timetable changes in a condensed period.

5.9 We note that the UK Government is expected to make decisions on potential freight schemes under the rail enhancement pipeline shortly. It is possible that the SO (and Network Rail more widely) will need to consider whether these decisions give rise to any impact on freight growth or performance and, in turn, what this means for Network Rail's delivery to freight.

5.10 In addition, the SO has also identified a number of 'reduced cost' options (mainly around reducing the scope of proposed 'steady state' activities). It has also included some incremental options relating to better operational data (£120m) and market development activities to help grow the freight market (£90m). However, as discussed in Chapter 3, we consider that the latter is likely to amount to an enhancement and, unless the UK Government considers otherwise, would fall outside the scope of PR23.

Research, development and innovation

5.11 Network Rail's 'steady state' proposals include £221m for R&D and innovation (RD&I; CP6 -12%). This focuses around eight 'innovation themes' that relate to, for example, increased use of data and digitalisation, environmental sustainability and automation.

5.12 R&D has been a significant focus of our monitoring work over CP6. While Network Rail is generally delivering its R&D programme, we have concerns that the regions are not taking-up/operationalising these initiatives in their business-as-usual activity. This creates a risk that potential savings are also not reflected in the regions' plans and efficiency opportunities are being missed.

5.13 Furthermore, where regions have committed to adopt the changes, they are not always reflected in the plans at this stage. For example, programmes such as 'faster, safer isolations' are likely to have an additional benefit by reducing the time

taken to initiate and relinquish possessions and, therefore, allowing more time on task and making high-output-plant more attractive. However, we have not seen them reflected in the submission as we would have expected. This reflects our wider concern that the central and regional plans are not as well-aligned as they could be.

Allocation of SO and national functions' costs

5.14 There are helpful benefits in having certain services provided centrally to each of the regions. This reflects wider economies of scale and scope and that Network Rail is one company (albeit with two funders who both benefit from centrally managed expenditure). For example, it is likely to be inefficient to have two payroll systems. Both the England & Wales regions and Scotland pay a proportion of the costs incurred by the SO and the national functions. They also pay a proportion of other regions' costs where they have a wider network benefit. For example, over CP6, all regions have contributed to the Eastern region's costs in delivering the digital signalling programme, which reflects the wider network benefits.

5.15 At this stage of the PR23 process, we are especially interested in the allocation of costs between England & Wales and Scotland (compared with the allocation across England & Wales regions, for example) because each government's SoFA will include funding for central costs.

5.16 Under the initial submission, the allocation of these costs has been determined according to the current, CP6 methodology. This allocates a portion of centrally incurred costs to each region based on the criteria most relevant to the costs incurred. These criteria include the region's headcount, train miles, track miles, and planned capital expenditure, as well as other factors.

5.17 As part of PR18, we (with support from independent consultants, CEPA) reviewed the allocation methodology and found that it was reasonable, although CEPA found that Network Rail could be more transparent about how the central allocation process works and could widen the allocation methodologies used. Over CP6, we have worked with Network Rail (and Transport Scotland) to support efforts to improve the transparency of the allocation process.

5.18 For the initial submission, and as discussed in Chapter 1, Network Rail England & Wales regions, the SO and national functions' submissions centre on a core 'steady state' proposal that (overall) would result in a 16% increase compared with CP6. However, the Scotland region's submission has focused on a different, 'realistic minimum' scenario. This highlights the need for further consideration in

this area. As noted above, we will provide supplementary advice to the UK Government on central costs in September.

6. Finance issues

6.1 There are a number of finance-related issues that are important to consider in reviewing Network Rail's initial submission, as well as to inform the UK Government's decisions on the HLOS and SoFA. This chapter discusses our views on these issues. It is important that all relevant parties (DfT, HMT, ORR and Network Rail) are clear on the financial assumptions being made and how these could impact the level of funding in the SoFA.

6.2 We note that a separate process is also in place between Network Rail and DfT around the funding needed to service Network Rail's historic debt (i.e. that taken on prior to reclassification in 2014), which we have not been asked to consider as part of this advice.

Inflation

6.3 Network Rail's CP7 plan is being developed at a time of significant economic uncertainty, with inflation at its highest rate for 40 years. The latest BoE CPI inflation forecast from May 2022 is 10% for 2022-23, which is far above the bank's own target of 2% per annum.

6.4 We expect that the SoFA will be in cash terms, meaning it is likely that the network grant funding will not be adjusted if CPI inflation is higher or lower than expected. This makes inflation a key risk for Network Rail. (However, it is expected that fixed track access charges (FTAC, which refers to the income that it receives from train operators) will be adjusted for inflation).

6.5 Between November 2021 and March 2022, the BoE 2022-23 forecast for CPI inflation increased by 5.3 percentage points (the May 2022 forecast is not included as the BoE have not yet published annual figures). Inflation is due to peak in 2022-23 and then fall back to 2% per annum during CP7.However, it is also highly uncertain. See Table 6.1 that illustrates how varied and uncertain inflation forecasts are. This includes forecasts from the Office for Budget Responsibility (OBR).

Table 6.1: Recent CPI inflation forecasts

Source	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
November 2021 BoE forecast	3.4%	2.2%	2.0%	2.0%	2.0%	2.0%	2.0%
February 2022 BoE forecast	5.8%	2.4%	2.0%	2.0%	2.0%	2.0%	2.0%
March 2022 OBR forecast	8.7%	1.5%	2.0%	2.0%	2.0%	2.0%	2.0%

6.6 Network Rail has based its initial submission on the November 2021 BoE forecast for CPI inflation. It has also quantified the impact of the November to March inflation forecast for CP7 to be £1.5bn. We note, however, that the rate of inflation may decrease as well as increase (e.g. the 2023-24 forecast has now dropped to 1.5%).

6.7 Network Rail has also included an adjustment for input price inflation over and above CPI inflation. This is because Network Rail considers that it experiences a higher rate of inflation than general inflation based on the specific basket of goods it purchases (such as materials, plant, contracted services etc.). As such, it has included an inflation assumption of CPI plus an adjustment for this input price effect of between 0.5% (for operational spend) and 1.9% per annum (for renewals). These are made up of a range of different assumptions for the different assets and types of spend.

6.8 As such, general CPI inflation plus input price inflation results in an average annual total inflation adjustment of 2.5% for operational spend and 3.9% for renewals. Based on these assumptions, Network Rail estimates the cost of inflation, on a simple basis in cash prices, on steady state OSMR over CP7, could be c.£4.1 billion, made up of c.£2.4 billion (CPI inflation) and c.£1.7 billion (input price inflation). This highlights that the impact of inflation, and the general uncertainty around future inflation, could materially impact the funding needed. **This highlights that the impact of inflation, and the general uncertainty around future inflation, could materially impact the funding needed.**

6.9 Our PR18 Final Determination for Network Rail included a level of input price inflation. Network Rail's own analysis is improving in this area, although we will seek to deepen our understanding over the coming year.

6.10 There are likely to be some things Network Rail can do to try and manage inflation, such as putting in place longer-term contracts to provide some protections from price increases over time. While we recognise that some strategies might not be possible (e.g. government rules around managing public money rules do not encourage hedging strategies), we expect Network Rail to explore further the options available to it to mitigate the risks in this area.

6.11 If inflation turns out to be higher or lower than expected then there is a risk Network Rail may not have enough funding to meet its outputs (where inflation is higher than expected) or too much funding (where inflation is lower than

expected). For example, Network Rail's own sensitivity analysis on a simple basis suggests that a variance between actual and forecast CPI inflation of around 1% throughout CP7 would increase cash steady state OSMR costs by c.£1.3 billion over five years (c.£250m per annum).

6.12 It is likely that our Final Determination will be based on a later forecast of inflation compared with the SoFA. Assuming the SoFA is in cash prices, Network Rail will need to consider how best to manage any significant departure from the inflation assumptions underpinning the SoFA.

6.13 However, should the UK Government wish to, it could reduce the inflation risk to Network Rail by varying the balance between FTAC and the Network Grant. Unlike the Network Grant, income from the FTAC would be adjusted for inflation during the control period, which reduces Network Rail's exposure to general inflation risk.

6.14 We will continue to engage with DfT and Network Rail on inflation ahead of the SoFA decision.

Financial risk

6.15 As noted above, the initial submission has been developed during a period of high economic uncertainty and Network Rail faces a number of risks during CP7, such as rising inflation and uncertain passenger levels.

6.16 In PR18, Network Rail received an England & Wales risk fund of £2.7bn to manage cost increases and any unexpected additional activity. This put the plan at a P80 confidence basis (i.e. there is an 80% chance that costs will not exceed the forecasts in the plan and a 80% chance they will). This has been essential to help Network Rail manage the risks that have emerged over CP6 including the impact of the pandemic, expenditure on track worker safety and rising inflation. Having a separate risk fund means Network Rail can manage risks without having to unnecessarily re-plan or defer work, which would be inefficient.

6.17 Network Rail's initial submission does not have a separate risk fund. The plan is nominally based on a P50 confidence level. Network Rail has said that there is £3.6-4.0bn of potential risk in CP7 which, if this was funded, would take the overall confidence in the plan from P50 to P80 (the level of confidence of the CP6 plan). However, Network Rail has not provided sufficient information at this stage for us to fully understand the impact this will have on renewals activities and, in turn, key outputs such as asset sustainability.

6.18 We are concerned with the initial submission's approach to managing risk. As noted above, it has not included any separate expenditure for risk. Instead, it has indicated that it could 'carve out' funding from renewals work to create a risk fund. If it were to do that, we would expect this to come from certain cost areas (e.g. track renewals) instead of all types of costs because some costs (such as the number of signallers) cannot be easily reduced. This creates some key concerns for us:

(a) 'carving out' risk funding from renewals reduces the transparency of the plan, given we do not know what the asset volumes Network Rail would actually seek to deliver are; and

(b) delivering the proposed levels of renewals without adequate risk funding is likely to be very challenging (reflecting the lessons from CP5 and how it has improved in CP6). This is particularly difficult in the 'reduced cost' option and would be likely to have more serious implications for the delivery of renewals volumes and associated outcomes as there is less funding overall. This is especially the case given the uncertainty with inflation and that the SoFA is set around 18 months before the start of the control period.

6.19 It is also difficult for us to be confident that the plan is at a P50 plan, especially given the initial submission has so far only been developed on a 'top down' basis. (We will be commissioning activity to understand where risk and uncertainty is embedded within the Network Rail bottom-up estimating process, which will inform our review of the Strategic Business Plan (SBP)).

6.20 We expect to continue to work with Network Rail and DfT on risk funding so that, by the point at which the UK Government makes its decisions on CP7 funding, there is an agreed approach to risk funding and a clear understanding of the impact on projected asset volumes and funding.

6.21 This is more of an issue under the 'reduced cost' options, where renewals volumes (equivalent to total reduction of around £3.4bn in spend) are already lower than the 'steady state' plan. As such, reducing them further by carving out funding to manage risk is much harder as they are already lower, meaning Network Rail would likely find it more difficult to manage risk under the 'reduced cost' options.

6.22 Whichever approach is taken, and building on existing CP6 arrangements (e.g. we report on Network Rail's use of risk funding in our annual efficiency and finance assessment), we will ensure appropriate governance and control arrangements

are in place. This will provide oversight and transparency over when and how Network Rail uses risk funding.

Efficiency

6.23 We challenged Network Rail to deliver £3.5 billion of efficiency improvements in CP6. This was a stretching target in the context of Network Rail's poor financial performance in CP5. As a result of cost pressures relating to the pandemic and more recent inflationary pressures, Network Rail is now seeking to deliver £4.0 billion of efficiency improvements in CP6, with the additional savings coming mostly from reduced pay awards, bonuses and other workforce modernisation initiatives.

6.24 Network Rail's initial submission includes £3.7 billion of efficiencies in England & Wales. If delivered this would make it 13.4% more efficient by the end of CP7 compared with the end of CP6. Operational expenditure would be 10.0% more efficient and renewals expenditure would be 15.7% more efficient. This is broadly consistent with the assumptions underpinning Network Rail's summer 2021 submission.

6.25 Of the £3.7 billion of estimated efficiencies, [redacted] relate to workforce reform initiatives. [Redacted]. As reported in our latest annual efficiency and finance assessment of Network Rail, these changes need to be seen in the context of the 4,400 (10 percent) increase in Network Rail's headcount in the first two years of CP6, including a 27 percent increase in senior management grades, which Network Rail mostly attributed to the implementation of its Putting Passengers First internal re- organisation.

6.26 **We have a number of concerns about the deliverability of Network Rail's assumed efficiency savings relating to workforce reform**:

(a) As discussed in Chapter 4, there are considerable risks that Network Rail will be unable to deliver planned workforce reforms in its maintenance function. If Network Rail is unable to deliver the full programme of changes in CP6, then this will have a knock-on impact on what can be delivered in CP7, reducing efficiencies.

(b) There is a risk that staff changes resulting from workforce reform initiatives could result in a shortage of skilled staff in critical roles. Training to address any gaps would take time, meaning that there could be a delay in achieving the forecast benefits.

Recognising these risks, Network Rail has included £0.4bn of additional funding for CP7 in its initial submission.

6.27 Project Reach is an initiative to work with a commercial partner to renew Network Rail's telecommunications infrastructure. Network Rail's initial submission includes [redacted] of assumed efficiency savings in CP7 from Project Reach, [redacted].

6.28 Network Rail's assumed efficiency improvements includes £1.6 billion from improvements to its business-as-usual activities. Network Rail's regions have made good progress in delivering these types of improvements in CP6 (for example, through improved contracting strategies, more productive working during disruptive possessions and in the deployment of improved electrical isolations). In particular, Network Rail appears to be on track against the recommendations from the Independent Reporter review of Network Rail Contract & Procurement (C&P) practices in February 2021, which made suggested improvements to the Procurement Management Framework. Network Rail has also invested in R&D programmes in CP6 that should enable further improvements through, for example, the deployment of new technologies (though, as discussed in Chapter 5, there is insufficient detail about how these initiatives will be operationalised.

6.29 However, whilst we acknowledge that Network Rail is making good progress in delivering our CP6 efficiency challenge, **there is little detail about how the efficiencies will be delivered**. This means that it is hard for us to assess whether these efficiencies are sufficiently challenging or deliverable. We also note that it has struggled to make efficiency improvements in CP5.

6.30 Therefore, **whilst we consider that the overall efficiency forecasts in Network Rail's submission remain relatively ambitious and are reasonable at this stage of the process, there are significant risk to Network Rail delivering them.** Given the wider economic uncertainty and issues around risk and inflation, it is important that Network Rail's efficiency assumptions for CP7 are sufficiently challenging. If the assumptions are too challenging, then Network Rail will be unable to deliver its plan fully (everything else being equal).

6.31 Under the 'reduced cost' options, Network Rail's proposed efficiencies would be around £0.5bn lower compared with the 'steady state' proposals. Network Rail has largely attributed this reduction to delivering a lower volume of work, which means that the percentage efficiency target is the same in both options. However, the 'reduced cost' options could restrict Network Rail's ability to deliver efficiency improvements by more than Network Rail has suggested. For example, it may lead to management actions that are focussed on reducing expenditure at the expense of innovation and business improvement.

6.32 Furthermore, and given the importance of employment costs to the plan, we recently commissioned independent analysis from Income Data Research (IDR) and Steer consultancies to compare Network Rail's (and wider industry's) employment costs with comparable sectors. While this has not yet been finalised, the early findings indicate that Network Rail's total remuneration to employees (including benefits and pensions) is above the market median rate for the majority of roles, with typical variances of between 10% and 20%. This finding is before the impact of workforce reforms, the changes in pay for the remainder of CP6 and the effect of high levels of inflation, all of which mean that, by the start of CP7, Network Rail's employment costs variances to market comparators could look quite different. However, **this work highlights that Network Rail's staff costs and productivity should be a focus for CP7, including with respect to the delivery of efficiencies**.

Headwinds and tailwinds

6.33 Network Rail's initial submission includes forecasts for 'headwinds' and 'tailwinds'. These terms refer to unforeseen cost and income variances due to factors largely outside of its control. For example, over the past two years, the pandemic has required Network Rail to purchase additional personal protective equipment (a headwind). However, its staff also undertook fewer business journeys resulting in lower travel costs (a tailwind).

6.34 Network Rail's initial submission assumes that £0.7 billion of headwinds will be incurred in CP7. This is in addition to the financial impact of general inflation and input price increases. To put this in context, Network Rail expects to incur £1.1bn of headwinds in CP6, which includes the impact of the pandemic (£0.3 billion).

6.35 The £0.7bn of headwinds is based on an average value of headwinds experienced over CP6 less the pandemic-related costs. Network Rail expects this to cover costs relating to changes to safety standards, the need for increased access to the network to undertake engineering work and potential changes to taxation.

6.36 Network Rail has not included any explicit tailwinds in its initial submission. We understand that any tailwinds have been netted off against headwinds in this submission. We note that Network Rail is currently forecasting around £0.2 billion of tailwinds in CP6. In continuing to develop its CP7 plan, we expect Network Rail to consider in more detail the potential for CP7 tailwinds.

Market-led and whole-system initiatives

6.37 The initial submission discusses some early ideas on market-led and whole-system approaches to planning, though these have not been quantified and/or included in the submission's spending proposals. These include, for example, optimising the timetable to reflect market demand and facilitating a more co-ordinated approach to possessions.

6.38 Taking a greater market-led and whole-system approach may present opportunities to deliver more efficiencies, especially in the context of wider rail reform. However, **because Network Rail's thinking is at an early stage, we cannot form a view on the scope for related efficiencies at this stage**. As Network Rail develops its ideas in this area, we will need to consider how these approaches can help to realise further efficiency improvements.

Network Rail's property-related income

6.39 Network Rail's initial submission includes £1.4 billion of income from property rental and sales. It assumes that property income will increase by 2.1% per annum in CP7. This is underpinned by growth assumptions relating to increased train service levels (88% of pre-pandemic levels over CP7) and footfall (85% of pre-pandemic levels, with an expected 1.7% annual increase over CP7) at Network Rail-managed stations.

6.40 We commissioned an independent consultant, Savills, to review Network Rail's forecast for its CP7 property income. Savills found that the forecast was high-level but appears to be robust at this stage of the CP7 planning process. It did, however, consider the forecast unambitious, particularly for property development and sales, where Network Rail has not provided sight of a forward pipeline of opportunities.

6.41 Over the course of CP6 to date, responsibility for much of Network Rail's property portfolio has been devolved from the centre to the regions. Savills identified in its review that this new structure is still bedding in. As a result, the property income forecast is highly dependent on central assumptions and guidance, with the opportunity going forwards for the regions to be more pro-active in managing their own portfolios.

6.42 Savills also reviewed the use of hurdle rates (the minimum rate of return required on a project or investment), which have been unchanged for some time. We will ask Network Rail to take account of this report in its SBP and, in particular, to review whether its hurdle rates are appropriate under the 'reduced cost' options.

7. Network Rail's delivery of CP7 outcomes

7.1 Drawing together our key finding around Network Rail's proposed CP7 activities, as set out in Chapters 2 to 6, we discuss below our views on how Network Rail's activities are likely to contribute to the outcomes that passengers, freight users and funders experience. We do this, in turn, for each of the four objectives of PR23 that we outlined in our June 2021 launch letter (namely, safety, performance, asset sustainability and efficiency), as well as other outcomes that are likely to be important to the UK Government.

7.2 We also discuss:

(a) our emerging views on how we intend to hold Network Rail to account for delivery of the PR23 outcomes/outputs. We expect to set out more detail on this when we consult on our approach in summer 2022; and

(b) our early thoughts on how the UK Government could articulate the outcomes it wants Network Rail to deliver over CP7 in its forthcoming HLOS.

Safety

7.3 Reflecting that rail safety is not a devolved matter, we discuss below our views on the potential safety implications of both the England & Wales submission and the Scotland submission.

England & Wales

7.4 Under its 'steady state' proposals, Network Rail says that safety of the network will be maintained broadly in line with CP6 levels of safety. We have not identified any major issues that suggests this would not be the case. However, we note that some important activities (e.g. to address shortcomings revealed by the fatal derailment at Carmont) require more spend compared with CP6 or spend in new areas). We welcome the submission's proposals to continue spending on priority safety areas such as electrical safety, extreme weather response and earthworks and drainage management.

7.5 However, as discussed in Chapter 2, the rationale for proposed spend levels on priority safety projects has not been well-justified in some cases (e.g. earthworks and drainage).

7.6 Furthermore, and as discussed in Chapter 3, some proposals that have been presented as 'options' are likely to be essential to the delivery of Network Rail's safety obligations. These relate to Radio Based Limited Supervision (RBLS, which is designed to accelerate some of the benefits of ETCS) and its bespoke application, OTTO (or Optimising Train and Track Operation). Both of these are fundamental to unlocking the safety benefits of removing detonators and blocking lamps as a means of protecting engineering possessions. They also offer substantially improved implementation of emergency and temporary speed restrictions. The submission also includes £200m as an 'incremental option' to improve level crossing renewals and safer walkways. These appear to offer a safe way for Network Rail to manage the network and it should consider whether they are part of core funding rather than be treated as an incremental option.

7.7 Under the submission's 'reduced cost' options, Network Rail says that safety would be maintained, and that safety risks would be mitigated by speed and weight restrictions and by taking assets out of use earlier. However, we have some initial concerns around how Network Rail would identify and mitigate any potential operational performance and safety effects. Specifically:

(a) it is not clear that the submission has included additional expenditure for increased inspections, maintenance and/or refurbishment works, which is likely to be required to manage the risks to assets that have had deferred renewals; and

(b) it is not clear that the submission has taken account of the likely smaller workforce that will be available to undertake the additional work, driven by Network Rail's reforms to maintenance activities. This is exacerbated by staff sizing being based on historic data when assets were in relatively better condition than they would be under the 'reduced cost' options. It is also not yet clear that there is sufficient capability within the fleet of infrastructure monitoring trains to deliver required service levels.

Scotland

7.8 Under its core [redacted] submission, and as per the England & Wales submission, Network Rail Scotland is proposing that safety would be maintained and that safety risks would be mitigated by speed and weight restrictions and by taking assets out of use earlier. However, we have concerns that the Scotland submission may reduce renewals too far. Whereas the 'reduced cost' options for England & Wales keeps renewals broadly in line with Technical Authority advice, the Scotland submission is based on renewals 4.5% below the level

recommended by the Technical Authority. As such, we have some concerns around how Network Rail would identify and manage the safety effects of unsafe network conditions. We have found, for example, no evidence of Network Rail Scotland considering increased operational risks associated with making more use of speed restrictions and operational disruption. Network Rail will need to consider this further in developing its CP7 plan.

7.9 There is also limited discussion in the submission about occupational safety and health, both of which are core to Network Rail's safety vision of protecting its staff from harm. We would like to understand better Network Rail's proposals in this area.

Performance

7.10 Under the 'steady state' proposals, Network Rail says that it will maintain train performance in line with CP6 levels. We have not identified any major issues in its initial submission that may undermine its ability to deliver this level of performance in CP7.

7.11 We note Network Rail's plans are at an early stage of development and lack more detailed analysis of the implications of different funding levels for train performance. However, in order for the UK Government to make informed decisions on its HLOS and SoFA, Network Rail will need to provide this analysis. We discuss what we will do to support this work in Chapter 8.

7.12 Under the 'reduced cost' options, Network Rail says that performance would be maintained compared with the long-run average for both passenger and freight performance. However, it also says that that there would be increased risks of asset failure and a greater need for operational restrictions, which would have a knock-on risk to train performance. The evidence we have seen to date would suggest this is manageable from the point-of-view of asset condition. However, given the limitations of Network Rail's initial submission (as discussed in Chapter 3), it is difficult to form a view on the implications of the 'reduced cost' options on train performance.

7.13 As noted above, there are significant external factors that could impact on performance in CP7, such as post pandemic train service recovery and severe weather events.

7.14 In any case, we would expect it will be difficult to forecast with any certainty future train performance. To help manage this uncertainty, we will put in place a process

for holding Network Rail to account in CP7 that is both robust and can react to change.

Asset sustainability

7.15 Under its 'steady state' proposals, Network Rail says that asset sustainability will be broadly maintained and that any reduction in remaining asset life over CP7 would not lead to unmanageable risk and bow waves of activity in future control periods. Notwithstanding our wider concerns with the planned volume and spend on renewals in the 'steady state' proposal (as discussed in Chapter 2), Network Rail has provided evidence to support this assertion.

7.16 As discussed in Chapter 2, Network Rail proposes to spend around £3.4bn less n renewals under the 'reduced cost' options compared with the 'steady state' proposals. Network Rail says that asset sustainability would decline, which would require catch-up activity in future control periods. However, in using CSI as a measure of the assets' projected rates of decline, we note that the differences in outcomes between the two scenarios and across CP7 are marginal (see Table 3.1). This suggests that, on the whole, the impact of the 'reduced cost' options on asset sustainability would not be unduly detrimental. However, this isn't true for every asset type and certain assets would face sustainability challenges in CP8 onwards.

7.17 We discuss in Chapter 8 the further work we will do in this area.

Efficiency

7.18 The efficiency assumptions remain relatively ambitious and are reasonable at this stage of the process, though there are significant risks to Network Rail delivering them. This is discussed in further detail in Chapter 6.

Other outcomes

7.19 Drawing on the views set out in Chapters 2-6 above, we discuss below how Network Rail's initial submission delivers other outcomes areas:

(a) **Environment**: While some of the larger-scale initiatives on environmental sustainability (such as electrifying the network and changing rolling stock), fall outside the scope of PR23, Network Rail's OSMR activity does play an important role in contributing to environmental sustainability. As we would have expected, the 'steady state' submission is proposing to spend more in this area for CP7, including on drainage (£684m / CP6 +82%) and

earthworks (£1.3bn / CP6 +16%). However, at this stage and as discussed in Chapter 2, it is not clear how this is being attributed to particular assets and/or activities and what outputs this delivers. Environmental sustainability is a key area, and we plan to increase our scrutiny of Network Rail's activities in this area in CP7. As discussed below, we will hold Network Rail to account for delivery of sustainable development in CP7 and expect to require it to report on specific measures in this area. We will set out the measures we plan to use to monitor and report on Network Rail's environmental performance in our summer 2022 consultation.

(b) **Accessibility (England & Wales and Scotland)**: In discussions with Network Rail, it says it expects that any refurbishment work it undertakes as part of renewals in CP7 would need to be fully compliant with its accessibility obligations, including DfT's Accessible Design Standards for Railway Stations (the Code of Practice). However, as the initial submission has been developed on a top-down basis, the needs of specific assets – including accessibility-related requirements – have not been identified nor costed in most cases. While we would expect Network Rail to address this as it develops its 'bottom-up' plans, it is worth noting that cost considerations in this area are currently very high level. We will also set out our proposed approach to monitoring Network Rail's delivery of its obligations in this area as part of our summer consultation.

(c) **Network capability:** We are not clear the extent to which regions have been consistent in including additional funding to support heavy freight traffic (heavy axle weight (HAW)). Some regions have identified this activity as an additional spend option and some regions have indicated that it may be possible to cover HAW costs within current renewals activity without increasing the probability of further operating restrictions. We also note that some regions may not have sufficient asset condition information to predict accurately the renewals required to accommodate this type of freight traffic. However, this is likely to be important given the need to ensure that Network Rail is undertaking appropriate and targeted renewals in order to support this traffic.

Holding to account for the PR23 commitments

7.20 While Network Rail's plans are currently at a high level, we have already begun considering how Network Rail should demonstrate that it is achieving the outcomes that will be agreed in the final Delivery Plan. It is important we have a

robust set of tools in place to hold Network Rail to account for its commitments in CP7, while being flexible enough to cope with uncertainty.

7.21 As noted above, we will publish a consultation this summer that sets out our high-level approach to holding Network Rail to account in CP7. This consultation will also include proposals on:

(a) the structure of our PR23 output and funding settlements; and

(b) the principles of how changes to these settlements during CP7 will be managed.

7.22 A key part of our proposals for holding Network Rail to account in CP7 is to establish a set of headline success measures. These will set clear expectations on the outcomes that should be achieved for CP7. Our initial proposals for these measures will be part of our consultation this summer.

7.23 The success measures will be aligned to the outcomes to be specified in the UK Government's HLOS. Also, as a minimum, these measures will cover the four objectives of PR23 (as discussed above), as well as potentially other areas, such as environmental sustainability.

7.24 We plan to set-up a robust process for holding Network Rail to account, based around the above success measures. These measures will be used to set clear, quantified expectations that we will hold Network Rail to account against in CP7.

7.25 Our process for holding Network Rail to account will need to be flexible to cope with change throughout CP7, such as workforce reform. This flexibility is key to make sure that we can monitor Network Rail against its obligations throughout CP7 and that incentives are not lost, as external factors change and pragmatic trade-offs might need to be considered. Strong change control governance will be required to provide assurance that Network Rail's obligations to its customers and funders are only changed when there is a clear change to assumed external factors.

7.26 In addition to the above consultation, we plan to continue engagement with DfT to make sure the UK Government's HLOS requirements and our holding to account process are aligned. This should provide the framework required to make sure Network Rail delivers in CP7.

ORR's views on the articulation of the HLOS

7.27 The UK Government needs to decide how it will define the outputs that Network Rail should deliver in CP7 in its HLOS. This is challenging, as Network Rail's initial submission is currently based on top-down analysis reflecting the relatively early stage of development. This results in uncertainty around the level of outputs that Network Rail can deliver in CP7. External factors such as train service recovery post-pandemic and forecasts of inflation only add to this uncertainty.

7.28 We recommend that the UK Government should consider the following approach when describing requirements in its HLOS:

(a) indicate an expected direction of travel across key outcome areas, such as safety and delivery of train performance to passengers and freight customers; and

(b) highlight the outcome areas where the UK Government expects Network Rail to plan for increased focus in CP7 (e.g. increased focus on environmental sustainability or resilience to climate change).

7.29 In the event that the UK Government wants Network Rail to delivery any of the incremental options set out in Network Rail's submission, it should also include them in its HLOS.

7.30 This approach would help us set effective incentives in our Final Determination based on our assessment of Network Rail's more detailed SBP in 2023. This further development will also allow Network Rail to firm up its market led and cross industry proposals so that, where applicable, the benefits of these initiatives are considered in its output forecasts and our Final Determination. We will also consider how our approach to holding Network Rail to account can respond to uncertainty throughout CP7.

7.31 The UK Government may choose to set quantified targets for specified measures in its HLOS. If so, we will align our SBP assessment and approach to holding Network Rail to account for these requirements. However, there is a risk that setting targets based on Network Rail's initial submission in the current uncertain circumstances could be either too easy or too challenging to achieve during CP7, weakening the incentive on Network Rail to deliver.

8. Next steps

8.1 We discuss below our proposed next steps regarding Network Rail's CP7 outputs and funding.

Summer 2022 'supplementary advice'

8.2 We note the positive engagement DfT and HMT have had to date on CP7 funding and outputs, much of which has also involved ORR and Network Rail. We expect this to ramp up over the summer as the UK Government's decisions on the HLOS and SoFA begin to crystallise, including on the choices (and the merits of the relevant options) that need to be made.

8.3 In this context, we remain willing to provide further input to help support this engagement and the forthcoming decisions. This could include, for example, expanding on aspects of our advice set out herein and/or providing responses to specific, ad hoc questions regarding CP7 outputs and funding.

8.4 More specifically, and as discussed in the context of our findings, we also intend to provide supplementary advice to the UK Government on certain key areas over the summer. This will include a high-level review of Network Rail (and its consultants') thinking around the relationship between network usage and costs (though our assumption is that a high proportion of Network Rail's costs are fixed and do not vary significantly with a change in usage, at least over the short to medium-term). Table 8.1 sets out the full list of areas we intend to provide supplementary advice on.

8.5 Reflecting the tight timescales involved, we expect that this will be high-level and centre around providing our views (rather than a full assurance of Network Rail's information, for example). It will also target those priority areas that are likely to be material in helping to conclude on the HLOS and SoFA decisions.

8.6 We have developed the list of supplementary advice in close cooperation with Network Rail, including what it will provide to us (and when). This reflects that the extent to which we can provide meaningful and timely advice to inform these decisions is contingent on Network Rail providing the appropriate information to us in line with the agreed timescales.

8.7 In addition, we note that we need to consider separately what supplementary advice we provide to the Scottish Government, though our starting assumption is

that the information Network Rail provides to us will cover both England & Wales and Scotland, where relevant.

Development of Network Rail's SBP

8.8 As discussed above, we are working closely with Network Rail on the development of its CP7 business plan. This centres around a 'progressive assurance' approach whereby we are engaging with Network Rail on a regular basis to monitor its progress in developing the CP7 plan and to provide clarity around our expectations for Network Rail's key business planning deliverables.

8.9 Increasingly, our focus is around the development of Network Rail's SBP, which we expect to receive by 24 February 2023. To help inform this, we will provide formal guidance to Network Rail on our expectations for the SBP over summer 2022. This will seek to reflect the areas for improvement in the initial submission, as well as lessons learned from PR18 and our on-going work to review changes to Network Rail's CP6 plan. We also expect to set out our expectations for Network Rail's stakeholder engagement in the development of the SBP, reflecting the important role of stakeholder input to and challenge of the plans. We are already working with Network Rail on the development of the SBP.

Towards the Final Determination

8.10 Once the UK Government and the Scottish Government issue their HLOS and SoFA documents, our focus will turn to assessing Network Rail's SBP in order to develop our determination of Network Rail's funding and outputs, as well as the supporting settlements for each region and the SO. Further details on the longer-term timeline for PR23 are set out here.

Table 8.1: Areas of ORR's supplementary advice

Areas of ORR supplementary advice	Network Rail supplementary information	Scope of ORR supplementary advice
1) The performance implications of Network Rail's spending proposals **ORR will provide this by 8 July.**	This information will focus on: • the impacts on both CP7 performance (and CP8 and CP9 expenditure) under the 'reduced cost' options; and • the impacts on both CP7 performance (and CP8 and CP9 expenditure) under further reductions to the 'reduced cost' options. This will address both passenger services at an England & Wales level and freight services at GB-level (reflecting the nature of freight services). The analysis will: • look at different levels of spend / volumes to provide comparisons across four 'scenarios' (i.e. CP7 steady state baseline; CP7 reduced renewals cost options; a further £1bn reduction; and a further £2bn reduction); and • assess the relationship between asset renewals, service affecting failures and temporary speed restrictions, with a view to articulating a general relationship of asset failures to train performance (punctuality) and FDM, as well as a high-level view of the likely operational consequences of reductions to expenditure from a 'steady state' level. It is worth noting the high-level nature of the approach (reflecting the time available) and the need for a number of assumptions to be made. **Network Rail will provide this information by 3 June.**	We will provide a view on Network Rail's methodology, assumptions and analysis for calculating the likely performance implications of different funding levels. We also will provide a view on whether Network Rail has taken a reasonable approach to considering uncertainty around these performance forecasts.
2) Interaction between network usage and costs **ORR will provide this by 8 July.**	Network Rail will provide a paper that draws together its work on cost variability, which will consider the relationship between network usage and cost. **Network Rail will provide this information by 3 June.**	We will provide an initial view on Network Rail's methodology, assumptions and analysis relating to the relationship between network usage and costs.

Areas of ORR supplementary advice	Network Rail supplementary information	Scope of ORR supplementary advice
3) Network Rail's CP7 digital signalling plans **ORR will provide this by 16 September.**	The work will focus on: • A workshop to discuss the principles of digital signalling renewals costing and how that translates into Signalling Equivalent Unit (SEU) rates; how this is used by the regions for planning purposes (e.g. in developing the initial submission); and a discussion on the purpose of the digital signalling SEU rate strategy and how it will be used going forward. This will be held by 30 June, with further follow-up if required. • Provision of an overarching document that gives a detailed breakdown of and/or an overview of the basis (assumptions, etc) for the assessment of fleet fitment funding requirements in CP7 (which in some cases also looks ahead into CP8). This will include all fleet types for which funding has been requested and show how this aligns to the future digital signalling workbank. Network Rail will provide initial data and host a session to discuss this and agree areas for focus, as well as any additional levels of detail that may be required. This will be held by 30 June, with further follow up if required. Network Rail will provide a final document by 22 July. • A consideration of the impact of the deferral of c.£200m for fleet fitment suggested in Network Rail's initial submission as a 'reduced cost' option. This will refer back to our market study into the supply of signalling systems, the Rail Sector Deal and the Long-Term Deployment Plan (LTDP) and discuss the impacts on how the industry can manage the signalling asset and renewals needs. It will also have a particular focus on the supply chain and future signalling renewals bow-wave. This will be held by 30 June, with follow up as required. **The dates for Network Rail information is set out above.**	We will provide a view on: • how the adoption of the SEU rate strategy is being applied across regions and if the assumptions included are reasonable; • the inclusion of fleet fitment funding in the PR23 determination; and • the suggested deferral of funding linked to digital signalling and how this may impact future control periods.

Areas of ORR supplementary advice	Network Rail supplementary information	Scope of ORR supplementary advice
4) Network Rail's CP7 central costs **ORR will provide this by 16 September.**	The information will include: • an overview of the outputs from structured engagement between regions and network-wide functions, which will review and challenge network-wide functions' plans, including the priorities for the function, particularly around capital spend (e.g. high output plant); • outputs from a review of the allocation methodology for network-wide functions; and • reflections from meetings to provide an updated view of network-wide function costs for CP7. **Network Rail will provide this by 12 August.**	We will provide a view on the latest iteration of CP7 central costs, the allocation of functions' costs, the alignment of Network Rail's regional and functional plans, and the resultant implications of Network Rail's outputs and funding.
5) HS2 readiness **ORR will provide this by 16 September.** (However, where possible, we will endeavour to provide this sooner if Network Rail brings forward the date for providing its information).	Network Rail will provide initial outputs from the Outline Business Case (assuming funding is secured in late May through wider industry governance arrangements). **Network Rail will provide this by 12 August.**	We will provide a view on whether Network Rail's planning information is reasonable.

Areas of ORR supplementary advice	Network Rail supplementary information	Scope of ORR supplementary advice
6) Network Rail's 'reduced cost' options **ORR will provide this by 16 September.**	The information will set out an updated view on the impact on maintenance costs of the 'reduced cost' options, which will be based on the latest view of maintenance plans from the regions and will have been reviewed / assured by Network Rail. **Network Rail will provide this by 12 August.**	We will provide a view on the methodology used to generate the cost impact on maintenance of deferral.

Annex A: ORR's views of Network Rail's renewals approach by all asset types

This annex provides further, high-level views on Network Rail's renewals proposals across the different categories of Network Rail's assets.

The views relate to the 'steady state' renewals proposals, unless otherwise stated.

Asset	**ORR's high-level views**
Drainage	We recognise the need for appropriate spend in CP7, especially for assets reaching end of serviceable life. However, the proposed spend is a significant increase on CP6 and the case for this has not been sufficiently well articulated at this stage. The assumptions made about drainage infrastructure assets identified in recent resurveys, and the subsequent renewal needs of these assets, may not be borne out.
Earthworks	We support a suitable level of increased renewals, but detail is lacking in the submission around plans to improve asset sustainability. This creates a risk of double counting.
Electrification & fixed plant	The asset condition data is relatively poor for Electrification and fixed plant, which leads to uncertainty in proposals that we expect to be resolved as part of the SBP. This could provide opportunities for reliability risk maintenance which are not yet benefiting Network Rail's activities nor reflected in the initial submission. We acknowledge the requirement for renewals for elements of West Coast and East Coast Main Lines, and note the proposal to bring some work forward to support the implementation of HS2. The Severn Tunnel improvement works are being considered as a separate option, though these appear critical and there is likely to be a strong argument to include them in the 'steady state' proposals.

High output plant	[Redacted] If reduced cost options for track renewals are taken forward, there is a risk that Route Services will be unable to respond to likely increased demand from regions for high output plant in CP8 compared to CP7. [Redacted]
Level crossings	CP7 trends on level crossings are largely following those in CP6. Despite technology issues causing strain among overlay crossings, ceasing development of 'Meerkat' enhanced warning technology would appear to be a sub-optimal use of previous spend. Closure of some crossings is 'crucial' to success of East Coast Digital Programme.
Lineside (vegetation and fencing)	Costs may be overstated as Network Rail has not done full tree surveys, but regions are reviewing their strategies for CP7 which may help reduce costs. In addition, we have deliverability concerns around the proposed sudden increase in activity in CP7 compared with that undertaken in CP6 in this area. The 'reduced cost' options include reducing renewal volumes for fencing, which could increase pressure on off-track spend. We would have a particular concern about a proposed 30% reduction in the Eastern region in this scenario.
Operational Property	We consider that a lack of detailed knowledge about asset condition impacts the ability to make clear plans, and we note significant variance in unit costs between regions. We do not think certain works in this area (e.g. Franchised Station works) have been fully justified at this stage. However, there is a potential bow wave (i.e. a peak of renewal needs after deferring in previous periods) in CP8/CP9 of building works if regions do not carry out full renewals for proposed station platform renewals. There is also a risk of safety and sustainability issue in the longer term if there is insufficient investment in CP7.

Plain track	Across the network, it appears that estimates have been generated on the basis of the majority of track renewals being full renewals. However, more can be done to investigate making partial renewals as an alternative. More work also needs to be done to justify the stated expectation of a bow wave in future renewals required and, in turn, the justification for the high level of renewals in CP7. It is likely that track would continue to perform well with reduced renewals in CP7, especially if planned earthworks and drainage works are carried out. This could represent an opportunity to reduce a significant volume of renewals compared with the initial submission.
Signalling (conventional)	We would expect impacts on performance of conventional signalling assets as manufacturers move to digital signalling products. Some life extension compared to previous estimates is possible as additional spare parts have been found, but concerns about longer-term suitability cannot be avoided.
Signalling (digital)	We are supportive of the long-term need for progressing the renewal of Network Rail's signalling assets as detailed in the LTDP. However, we would expect to see more detail in Network Rail's 'bottom-up' planning on the implications of different options in the roll-out of digital signalling.
Structures	We recognise the case for increased renewals activities on metallic structure. However, there is some uncertainty about asset condition on the wider asset portfolio due to a significant volume of incomplete asset examinations to determine the need for renewal or repairs. Neither the 'steady state' nor 'reduced cost' options appear to address the current backlog of condition examinations. The 'reduced cost' options include sustainability interventions (e.g. painting schemes) for structures, but these are unlikely to mitigate a bow wave of renewal needs in future control periods, albeit this bow wave is likely to be further away than other assets.

Telecoms	The plan submitted for telecoms appears broadly appropriate. Telecoms generally perform well in stand-alone projects but are reliant on other areas for combined projects (e.g. signalling renewal). The main areas of potential concern are around [redacted] and the potential costs arising from the Public Switched Telephone Network (PSTN) switch off in 2025.
Track switches & crossings	Network Rail has acknowledged that some asset lives have been increased by improvements to maintenance approach and track infrastructure. In addition, a CP6 R&D project is expected to result in new modified pattern designs that are expected to last 30-40% longer than previously.
Tunnels	Tunnels appear as a relatively small cost in the plan. We welcome the inclusion of some work on major assets in the plan (e.g. Severn Tunnel), but consider there is a lack of justification for the significant fall in planned volumes (-33%) still leading to significant increase in costs (+35%).

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