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15 February 2017

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By e-mail only

Dear Brian

Periodic Review 2018: ORR's advice on the development of the England & Wales High-level Outputs Specification (HLOS) and Statement of Funds Available (SoFA)

1. Thank you for your letter of 16 December 2016, in which you asked for ORR's advice on three areas: the specification of safety outputs; how the England & Wales HLOS could support a new framework for ORR's regulation of performance at a route level; and Network Rail's costs. It is important to note that safety is not a devolved responsibility; any safety-related outputs in the Secretary of State's HLOS apply to England & Wales and Scotland.
2. You also asked for input on any other issues that might assist in your deliberations on the England & Wales HLOS and SoFA¹, and we have set these out in four further sections in respect of: the handling of financial risk; efficiency improvements; issues relating to deliverability; and the approach to enhancements..
3. We have had some useful discussions about all these issues. Our advice is now set out below.
4. Our advice reflects the information that is currently available to us, including financial numbers provided by Network Rail. These are derived from the company's latest iteration of its business planning process, rather than a formal regulatory submission, and as such have not been audited by us.

Summary

5. A package of reforms is emerging that could make a significant contribution to improvements for passengers and freight customers. As your letter recognises, the HLOS and SoFA should support these reforms to maximise their benefits. The timing

¹ For brevity, the remainder of this advice refers to the 'HLOS' (high-level output specification) and 'SoFA' (statement of funds available). Unless otherwise specified, these relate only to England & Wales. There is a separate HLOS and SoFA for Scotland, issued by the Scottish Ministers.

of the HLOS/SoFA publication needs to fit with these plans, as Network Rail needs sufficient time to prepare its business plans and hence maximise the opportunities created by the emerging reforms.

6. Network Rail's work to devolve more decision-making to its route businesses and to create a distinct National System Operator is central to these reforms. It will support increased customer and end-user involvement in agreeing priorities, greater accountability to customers and more effective regulation allowing greater use of public comparisons to encourage routes to improve.
7. This presents an opportunity to deliver better performance and improvements to efficiency over time. But more action is needed to realise fully the potential benefits. We continue to work with Network Rail and DfT to remove barriers that might prevent route management teams growing their role. To this end, we set out our views on how we might take further steps to improve the effectiveness of route devolution, in a letter to Mark Carne on 11 November 2016.
8. Building on the Bowe report, we must also learn the lessons of the current control period. In the context of your letter this means reflecting on the implications of the £3.4bn of renewals work that is likely to be deferred from CP5. Deferring renewals as a way of reducing costs is not sustainable over time, and it has real impacts on passenger and freight train performance.
9. We must also look for all opportunities to improve efficiency. Network Rail is working to reverse the decline in the efficiency of renewals work during this control period, identifying this as one of its 'must wins', and we will hold the company to account for this work. But it will not meet our efficiency challenge in CP5 and we are assessing the extent to which: the targets were simply too high; unanticipated external pressures affected outcomes; and/or Network Rail did not respond effectively. Moreover, we need to be clear why CP6 will be different.
10. Linking all these themes is the need for Network Rail to be clearly accountable. In areas where our proposals give the company more discretion, we have considered what further assurance needs to be put in place.
11. Finally we must be clear on the differences between the SoFA and our final determination on Network Rail's funding. The SoFA sets an envelope, but not the actual money the company will receive – this is not decided until October 2018 in the final determination. And in contrast to the position with private regulated companies, setting a challenging efficiency target does not in itself protect end users, due to the absence of private shareholders.
12. Reflecting all this, our main recommendations are:
 - i. DfT should set out its high-level objectives for performance but should not include a quantified target or baseline in the HLOS. Instead you should build on the introduction of Network Rail scorecards and support an industry-driven process, to determine challenging targets for Network Rail to improve in ways that align with customer and end-user priorities.

- ii. On its own, this approach runs the risk that Network Rail has too much discretion over what it must deliver for its funding in CP6. We will therefore complement this in our PR18 determination by placing clear obligations on Network Rail to further improve the management of its assets and operation of the network; the company's two core functions.
- iii. There needs to be a significant increase in the volume of renewals undertaken in CP6, to reverse the impact of the deferrals that have taken place in CP5, meet the pressures of growing traffic and address the condition of long-lived assets. Using current unit rates, but with increased volumes, this would imply around £21bn of spend.
- iv. Clearly we would expect an improvement over current unit rates. Reflecting that Network Rail is midway through its business planning, that customer challenge has not yet taken place and that our efficiency work is not complete, it is too early to set a CP6 efficiency assumption for the purpose of the SoFA. Indeed, there is uncertainty around likely efficiency improvements in the remainder of CP5. We therefore recommend that the SoFA is prepared against current efficiency levels, noting that: funds included in the SoFA are an envelope not the determination of planned spend; that we continue to scrutinise Network Rail's efficiency; and that any within-period efficiency savings beyond our forecasts could be returned to taxpayers. Such an approach would also mitigate the risk that there is a formal 'mismatch' between the SoFA and HLOS, which would disrupt Network Rail's business planning and create further uncertainty. We plan to publish an analysis of how Network Rail's efficient expenditure in CP6 will be determined (drawing on the lessons of CP5) by end March 2017.
- v. Funding will need to include a suitable risk allowance, so that Network Rail is able to manage the risks where it is best-placed to do so. Without this, overall costs will increase as risks will either be transferred inappropriately or the stability of the five-yearly settlement will be undermined as soon as any risks crystallise. However, provision of funding in the SoFA for risk does not mean that this funding will be spent by Network Rail in the event that risks do not crystallise. This will be concluded in the final determination.
- vi. The HLOS should include committed and in-progress enhancement schemes where the scope of work is reasonably clear. This would support joined-up planning with renewals activity, reduce risks in the supply chain and support whole-industry cost reduction. Schemes at an earlier stage of development should not be included.

13. We set out more detail behind these recommendations below.

Context

14. We are providing this advice to assist with your preparation of the HLOS and SoFA for England & Wales, focussing on Network Rail. But the HLOS and SoFA are for the whole industry. You will need to set out sufficient information to allow us to check whether the funding available is consistent with the requirements in the HLOS. This

will be different than in the past, as we will need to take more account of the arrangements by which Network Rail can incur additional debt.

15. Despite Network Rail's reclassification to the public sector, the HLOS and SoFA continue to play an important role in supporting improvements. In particular, the HLOS and SoFA are ways for governments to provide clarity over the volume of work to be carried out and sufficient stability in funding through the periodic review to support cost reduction, avoiding a stop-go cycle that drives cost into the supply chain.
16. I now turn to each of the questions you raised, and then to our additional points.

The specification and measurement of safety outcomes

17. You asked for our views on how best to express safety specifications, and the merits of the different methods adopted in previous HLOSs.
18. We think that the most useful approach is to measure progress in safety management rather than specifying targets or requirements for safety outcomes. One reason for this is that (unlike other parts of the HLOS) safety is the subject of a range of statutory requirements that arise from the Health and Safety at Work etc. Act 1974 and secondary legislation (for example the Railways and Other Guided Transport Systems (Safety) Regulations 2006), which enshrine the concept of continuous improvement. Specifying targets or requirements would introduce the risk that they might fall short of, or be overtaken by, other legal requirements.
19. Network Rail has embarked on a health and safety strategy, 'Transforming Safety and Wellbeing', which will continue throughout CP6. Its implementation is achieved through the 'Home Safe Plan' and monitoring the success of the outcomes described in this plan is an effective way of gauging improvement. This would complement ORR's continuing monitoring and enforcement of the legal requirements.
20. There are several areas where Network Rail is not yet fully compliant with aspects of safety legislation requirements. This is usually due to 'legacy' issues of an infrastructure constructed long before the introduction of requirements in law, including The Electricity at Work Regulations 1989, Control of Asbestos Regulations 2012 and The Work at Height Regulations 2005. There are plans to achieve better compliance with the law, but in many cases these extend over considerable timescales. You might want to consider whether to specify and fund accelerated compliance in the HLOS and SoFA.
21. It is also open to the Secretary of State to identify areas to raise safety levels above those required by statute. For example, previous determinations have included ring-fenced funds to enable Network Rail to go beyond basic legal requirements (e.g. on level crossings) or to accelerate introduction of what is reasonably practicable (e.g. safer, faster isolations). Such funds could be included within the SoFA, or be introduced at a later stage.

22. You also asked whether there was potential for 'smarter and more efficient safety practices' to reduce operations, maintenance and renewals costs, without detriment to the safety of the network, its users or workforce.
23. We understand that there is a concern that safety adds costs and/or causes inefficiencies. As you would expect, Network Rail works with industry to identify improvements in working practices that can be made while maintaining safety. However, we are not aware of evidence of systematic or sufficiently widespread issues that would be material to setting the SoFA. We would be keen to explore specific examples you have in mind where safety considerations are deemed inherently excessively burdensome as we have no significant evidence that this is the case.
24. That said, we recognise that the industry can be relatively slow to adopt new technologies that might make safety management quicker, cheaper and more effective. Also, parts of industry have, on occasion, been poor in recognising or interpreting some statutory requirements. This has resulted in expensive retrospective remediation to meet legal obligations, or, on the other hand, 'over-engineered' solutions that could be characterised as risk averse. This can be traced back to variable levels of capability possessed within the industry to carry out suitable and sufficient risk assessments – the foundation of good safety management.
25. In all cases very early application of safety by design principles provides an opportunity both to improve safety outcomes and efficiency, and we continue to press this point for all schemes.

Supporting a new framework for ORR's regulation of performance at a route level

26. You asked how you could most effectively set a framework through your HLOS which would enable ORR to regulate performance targets at a route level which reflect the needs of customers. You also asked for advice on the metrics used to measure and report on performance.
27. You noted that you do not currently envisage setting network wide performance targets (which we take to mean both for passenger and freight train performance). We have focussed this letter on passenger train performance – freight train performance is being discussed as part of the plans for the freight and national train operators route.
28. The overall framework for encouraging improvements in passenger operator performance includes the arrangements for Network Rail and also those put in place by franchise authorities. We are mindful of the need to ensure that the approaches taken by different franchise authorities are reflected in our regulation of Network Rail, notably decisions by Transport Scotland in its HLOS and franchises, and the Welsh Government and other franchising authorities, on the metrics they include in their franchise contracts or concessions.
29. It is also important to reflect upon the experience of the two previous HLOSs and the actual delivery of performance by the industry. We think that this points towards taking a different approach for the next control period.

Specifying performance metrics and levels in the HLOS

30. In terms of how to specify performance in the HLOS, there are two main options:

Option 1: Include a quantitative target or baseline in the HLOS

- The HLOS would include a quantitative target either in terms of actual numbers or in terms of direction from a specified baseline ('performance to improve from the end of CP5').
- This target could vary by geography (e.g. by TOC or route) and could cover all or part of the control period.

Option 2: Set out objectives to inform the design of the performance framework

- The Secretary of State would set out the high-level objectives for performance (and perhaps any relative priorities), but this would not be included in the HLOS as a quantified target or baseline.
- These objectives would be used to design and implement the performance framework. The detailed performance requirements would be set later – after the publication of the HLOS – by a combination of Network Rail-operator agreement and ORR determination.

31. We have considered the relative merits of these two broad approaches, against the following criteria:

1. **End user interests:** How are the needs of passengers and freight customers best reflected?
2. **Accountability:** Is it clear what Network Rail has to deliver for the money it receives?
3. **Realism:** Does it reflect lessons learnt both from previous HLOSs and the delivery of the HLOSs, including how flexibility is provided when circumstances change?
4. **Encouraging improvement:** Does it encourage Network Rail to improve and enable ORR as regulator to act decisively in the event of a failure to deliver?
5. **Alignment of incentives:** Does it support existing franchise commitments and the need for greater alignment of operators and Network Rail routes?
6. **Consistency with operational devolution:** Does it support the direction of travel for regulation of Network Rail at route and system operator level?

Option 1: Including a quantitative target / baseline in the HLOS

32. The advantages of a quantified target / baseline approach are that it provides certainty about what should be delivered (*criteria #1 and #2*), and it enables action in the event of failure to deliver (*#4*).
33. The main disadvantage is that there is a significant risk that the target chosen will turn out to be inappropriate. It may too easily be achieved (and thus does not provide a stimulus to further improvement) or may not be reasonably achievable, reducing its incentive effects in practice (*undermining #3, 4 & 5*). One contributory factor here is the difficulty in forecasting future performance levels, as illustrated by the recent poor forecasting record. DfT would need to specify targets from 2019-20 to 2023-24 in Spring 2017, and experience in the current control periods has been one of under delivery against passenger targets.
34. In summary, we do not consider that setting a quantitative target in the HLOS is likely to work well in terms of providing a realistic baseline to measure performance. We consider that it will not, in practice, support improvements or support ORR's effective regulation of Network Rail. This is the case for both passenger and freight performance.
35. The arguments are slightly different in respect of setting a quantitative minimum level of performance to act as a baseline below which performance should not fall. However, it is unclear whether this approach would support improvements, as it could inadvertently attract attention away from the key task of delivering performance levels above this minimum, and would in any case need to be supplemented by a framework to deliver performance consistent with end users' interests.

Option 2: Set out objectives to inform the design of the performance framework

36. Under this approach, the Secretary of State would set out his objectives in respect of performance. These objectives would then inform the development of an updated performance framework, including by being reflected in customer scorecards and in any targets determined by ORR. Consequently, there would be no formal target/baseline specified in the HLOS.
37. The advantages of this approach would be the avoidance of commitment to inflexible targets (and the necessary funding) some years out, enabling a more fluid system of target setting throughout the control period to reflect changes in circumstances (*supporting #1, 3, 4, 5 & 6*).
38. The main disadvantage is a lack of clarity at this point in the process of what end users will experience and what Network Rail must deliver for the money it receives (*acting against #2, in particular*). This can be addressed by building in two safeguards.
39. First, the final determination would place a series of obligations on Network Rail for the next control period, both for the routes and the national system operator (NSO). We have already consulted on the need to set obligations at a route level and these are likely to include requirements on asset condition/reliability. At a national level,

obligations would also be placed on the NSO, including in respect of planning and timetabling. Improvement in these areas would be likely to improve train service performance as they are the underlying drivers of performance.

40. Second there would need to be a process for setting performance targets, and for updating them through CP6. The detail needs to be worked through, including interactions with licence enforcement and other aspects of the performance regime (such as schedule 8), but we think this could build on the existing use of route scorecards. This would allow performance targets to be agreed between Network Rail and its customers, where those customers are a reasonable proxy for the interests of current and future end users. Where they are not a reasonable proxy, ORR and/or DfT might need to play a larger role. ORR might need to resolve disputes and DfT determine appropriate targets where train operators do not have a sufficient role in doing so (e.g. where their franchises are expiring). These targets could be annual or cover longer periods, with suitable arrangements to vary them as circumstances change.
41. One recurring issue has been the alignment between franchise commitments and Network Rail's own performance targets. This process of discussion between Network Rail and operators would encourage scorecard targets to reflect, as far as is appropriate, the relevant franchise commitments. In addition, freight and passenger open access operators would face commercial incentives to seek challenging targets for Network Rail, and to focus their efforts where there is potential for the greatest improvements for end users.

Performance metrics

42. You ask for views on performance metrics. Network Rail's main obligations are currently expressed in terms of the Public Performance Measure (PPM) and Cancellations and Significant Lateness (CaSL) for passenger operators, and the Freight Delivery Metric (FDM) for freight.
43. In respect of freight, FDM was developed in CP4 by the freight operators and Network Rail. Responses to our initial consultation document and our July 2016 working paper on the outputs framework were supportive of continuing to use this measure, albeit that it may need to be supported by additional route level metrics.
44. For passenger operators, we support work to consider the case for improving how the experience of passengers is reflected in how performance is measured and monitored. Building on the work undertaken by the National Task Force (NTF) the independent reporters have begun an assessment of the new measures, the incentive effects they will have and what steps may be needed to improve data quality. This work is due to complete in Spring 2017. These measures may be adopted by train operators and DfT may wish to use these measures in its franchises. Over time, these new measures may appear on scorecards supporting closer alignment between Network Rail and train operators.
45. We have adopted a working assumption that Network Rail routes and franchises will be allowed to agree their own metrics for route scorecards which reflect their market

conditions and franchise obligations. In which case the decisions would not need to be made in your HLOS.

46. In our recent consultation working paper on the outputs framework we noted that to underpin the Network Rail scorecard process we would be likely to identify at least one consistent Network Rail route-level measure, to support comparison between routes and enable us to monitor performance over time. This is most likely to be based on Network Rail-caused delay minutes.
47. In summary, the above approach does not require DfT to specify performance metrics in the HLOS. Furthermore, we have not identified any reasons to suggest that the choice of metric will make a material difference to Network Rail's forecast spend requirements (although there may be some system costs to meet in producing the various measures across the industry and some costs in improving the robustness of this data).

Network Rail Maintenance and Renewals expenditure

48. You asked if we could provide estimates for Network Rail costs, reflecting likely work volumes. The timing of your request and the stage of Network Rail's ongoing planning work means that we have not been able to review its plans in any detail. Instead, we have considered the factors affecting the overall level of work likely to be required in CP6, before any account is taken of changes in efficiency levels. We have focussed on maintenance and renewals and have, for example, not considered the likely levels of central support costs or other single till income.
49. We have not sought to reflect any improvements to the planning and prioritisation of work that might arise from greater route-level decision making and business planning. Indeed, Network Rail will continue to refine its route-level plans up until November of this year.
50. Although we have not provided efficiency assumptions (see efficiency section below), analysis of spend levels before any efficiency adjustments can still be useful in informing the funding levels to be included in the SoFA. Indeed, one approach available to government is to use these 'pre-efficient' spend levels to inform the SoFA spending envelope, in the knowledge that the analysis in the periodic review would be expected to identify a lower funding requirement in the draft and final determinations, as spending projections would be adjusted for anticipated efficiency improvements. Furthermore, within CP6, where Network Rail delivers further (unanticipated) efficiency savings these benefits could be retained by/returned to government. In short, inclusion in the SoFA does not imply Network Rail will or should spend the money.
51. In general terms, our analysis highlights significant upward pressure on the volume of renewals likely to be needed in CP6 compared to volumes currently planned for CP5. This is because significant volumes have been deferred during CP5 due to affordability, so the sustainable volume of work is higher than the CP5 volume would suggest, and the deferred work also needs to be delivered. However, we recognise that there are difficult trade-offs to be considered. Renewals are typically more expensive in cash terms than the maintenance activity that would otherwise be

required. Lower renewals volumes can, therefore, reduce short-term cash pressures. However, lower renewals volumes will tend to reduce asset reliability, with consequent impacts on passenger and freight performance. This stores up greater volumes of work for future periods, potentially increases the whole-life cost of sustaining the railway and introduces incremental safety risks that need mitigating (e.g. through increase use of speed restrictions).

52. We considered the volume of renewals likely to be necessary by:
- drawing on our analysis of CP5 to date and likely CP5 outturn;
 - reviewing Network Rail's emerging CP6 Plan;
 - focussing on volumes of work assuming no change in efficiency, but assuming we do want asset condition and performance to be sustained over time (noting the above discussion on the importance of performance to end users); and
 - undertaking selective sense checks on alternative high level approaches, and by looking at specific assets.
53. In recent Network Rail monitors we have noted that renewals are being deferred and that we expect some adverse effect on asset condition and asset performance across the network. We also identified a need for greater reliance on other safety controls in order to maintain asset safety. The volume of work for the specialist supply chain is likely to shrink in some areas, potentially impacting its ability to deliver the greater volumes required to recover in the medium term, and increasing future costs.
54. For renewals our starting position is what work would be needed to counter on-going wear and degradation, sustaining the condition of the network as a whole taking into account the projected 8.3% growth (gross tonnage) during CP6.
55. The renewals budget for CP5 is currently £12.6bn in 2016/17 prices. This includes £0.4bn for signalling projects that deliver opex efficiencies, which should be deducted to arrive at an estimate of spend based on maintaining asset condition. In addition a further £3.4bn of renewals to address deteriorating asset condition has had to be deferred during CP5 due to constrained funding and assumed efficiencies not being realised. So at current costs, the CP5 baseline spend for sustaining asset condition in the near term is around £15.6bn.
56. Assuming steady state, a possible baseline for CP6 is therefore £15.6bn plus £3.4bn to catch up with the condition driven renewals deferred from CP5, a total of around £19bn before efficiencies.
57. In reality the network is not in steady state. CP5 was intended to begin a recovery from historical underspend on civils assets, which in the event turned out to be unaffordable during CP5. We are also concerned about the much larger volume of signalling renewals that will be required from CP7 onwards, reflecting the age profile of these assets across the network, and we expect Network Rail to begin making inroads into this in CP6 to ensure future deliverability. Including an allowance for

these and for the projected growth would give a renewals spend of around £21bn before efficiencies.

58. Looking at the calculation another way, Network Rail's straight line depreciation model based on replacement cost suggests a steady state 5-yearly spend of around £18bn. To this should be added the £3.4bn CP5 deferrals catch up and an allowance for growth, giving around £22bn. This is a very simple model, but it provides a useful sense check.
59. Network Rail has also developed a more sophisticated top down estimate, based on compliance with its asset policies (in which we require Network Rail to set out the least whole life cost approach to managing the assets). This approach should take into account CP5 deferrals and growth, but not necessarily longer term issues. The policies themselves require consideration of local factors in determining the optimum intervention, and this is reflected in the range of modelled cost for CP6: £16.5bn to £19.5bn.
60. We have also considered the bottom-up route plans. These core plans have been constrained to an overall Support Operations Maintenance and Renewals (SOMR) spend of CP5 +15%. For renewals the core plans add up to £14.7bn. In addition Network Rail is proposing a further £5.1bn renewals spend on improving the railway, taking the total to £19.8bn.
61. On their own, the core plans would deliver comparable or less volume than during CP5, implying further deferrals during CP6. The only quantitative sustainability data we have reviewed is for track, where the core plan is for 19% less volume than originally planned for CP5, or 5% less than currently planned after deferrals. The data show that rail, ballast and sleeper used-life indicators will all increase during CP6, and suggest that about 15% more renewals is required to maintain steady state.
62. Our overall assessment is that the volume of work needed to recover CP5 deferrals and stabilise the condition and performance of the network in the near term implies renewals expenditure of around £19bn. Addressing longer term sustainability issues on signalling and civils, and addressing growth would imply a higher figure around £21bn. These numbers do not include the effect of efficiency improvements in CP6 and the remainder of CP5.
63. For maintenance we expect the plan to maintain or improve safety, while achieving about the same level of asset performance as now. Network Rail's core plans propose an increase in maintenance spend from £5.1bn for CP5 to £6.1bn, reflecting growth, an increase in the asset base following electrification, and a move to deeper maintenance interventions to prolong asset life.
64. We have not analysed the core plans in detail, but we think they also include more reactive maintenance, reflecting the constrained renewals spend in the core plans. A slightly lower figure of say £5.8bn would be consistent with a sustainable level of renewals.

Efficiency

65. At this stage of the review there is considerable uncertainty about the level of efficiency that Network Rail might realistically deliver both for the remainder of CP5 and into CP6. Network Rail is midway through its business planning process and its plans have not yet benefited from customer challenge. In addition, while our work has started, including reviewing the effectiveness of how the company determines its asset policies and turns these into planned projects, we have not yet commenced our detailed review of Network Rail's cost forecasts. Indeed, Network Rail has yet to make any formal submission to ORR on these cost forecasts for CP6.
66. Against this background, we are not currently able to offer a view – based on evidence and analysis – of the efficiency improvements that Network Rail could realistically deliver for you to use when preparing the SoFA. We therefore recommend that the SoFA is prepared against current efficiency levels.
67. This approach will support the orderly completion of the periodic review; one purpose of which is to identify an appropriate efficiency forecast to support Network Rail's revenue requirement. Indeed, we are mindful that anticipating efficiency savings in the SoFA increases the risk that the funding provided is not consistent with the requirements included in the HLOS. In such circumstances, ORR has a statutory role to declare a 'mismatch', which would require government to revise the HLOS and/or SoFA and inevitably risk undermining Network Rail's ability to develop its business plans in an orderly way and to engage effectively with its customers.
68. It is also worth noting that, in contrast to other regulated networks, the act of setting a challenging efficiency target does not in itself protect end users (due to the lack of private sector shareholders) and instead increases the likelihood that governments need to either provide further funding at a later stage or intervene to scale back the company's deliverables. Such a process is likely to reduce efficiency over the longer-term, relative to one where the company has realistic targets and a funding envelope (including risk allowances) that is realistic and reasonably achievable.

Current and planned work on efficiency

69. A key current priority, and one that our work is focusing on for the next control period, is how to assess Network Rail's plans to improve the efficiency of its activities. The PR18 work is well underway, aligned to the timing of Network Rail's planning process. We have been scrutinising Network Rail's development of its asset policies, and will engage with the routes to assess how these policies are being used to create suitable work banks, and manage the condition and performance of the network sustainably. This is supported by our scrutiny of the company's progress in improving its capability in cost planning, by which the maintenance and renewals parts of the business plan are generated from the work banks.
70. We have also set out our expectations for Network Rail's ongoing business planning process, so that there is a greater focus on customer engagement, and put in place our plans for making more use of comparison to challenge route plans during the current review. Following the determination, our monitoring and reporting will sustain

the focus on outturn efficiency, with improved comparison between routes acting as a further stimulus to improve.

71. However, this ongoing focus on efficiency – by which we mean the cost incurred for a given level of work² – reflects the scale of the current challenge. For the first two years, Network Rail reported a 23.4% reduction in renewals efficiency, compared to an 11.6% improvement assumed in PR13. For the work actually delivered, Network Rail spent £800m more than we assumed in PR13.
72. Consistent with our 2015/16 Annual Efficiency and Finance Assessment (AEFA), the deterioration in renewals efficiency has, in particular, been driven by:
- the cost and availability of labour which reflects the continued strength of the UK economy, particularly when compared to the efficiency savings realised in CP4;
 - how Network Rail commissions work following devolution, with concerns that routes are not yet getting best value from what the supply chain has to offer, and that greater discipline is needed on the scope of renewals projects to limit unfunded elements of improvement;
 - Network Rail’s continual replanning to remain within the available funding envelope, which has disrupted the letting of work to the supply chain, adding to costs as activity levels ramp up and down, and resources are lost to the wider economy and then reengaged;
 - tighter constraints on Network Rail’s access to deliver work on the railway, reflecting the increased pressure on train operators to recover falling performance levels, which increases non-productive time within the supply chain, and greater risk-aversion following high-profile disruptions caused by engineering overruns.
73. This efficiency challenge is recognised by Network Rail, and has prompted it to initiate a ‘renewals recovery plan’, to identify changes that will deliver renewals efficiently in the remainder of CP5 and ahead of CP6. We are engaged in this programme with Network Rail and the supply chain, and are challenging the speed of progress. Network Rail is forecasting year-on-year recovery in efficiency for the remainder of CP5, leading to an improvement of around 10% by the exit of CP5. Given that not all the recent drivers of increasing cost can be influenced by Network Rail, and that some will require a cross-industry approach that will take time to deliver, our view is that Network Rail’s forecast could currently be optimistic.
74. Likely efficiency gains are partly linked to the emerging reform agenda including devolution. There are a number of steps that Network Rail can take to realise the potential benefits of greater devolution, including by ensuring that routes have sufficient freedom to adopt new approaches, to contract directly for more of the services they need, and to challenge whether provision by Network Rail’s national

² Our ‘Annual efficiency and finance assessment of Network Rail 2015-16’ explains more about how we measure efficiency ([link](#)).

business units (e.g. Infrastructure Projects) is appropriate. Indeed, Network Rail may need to review its strategy for national contracting so that it does not act artificially to discourage greater decision-making at the route level. Further, it will be important to ensure that routes have an appropriate incentive to support volume growth and the creation of extra capacity, including for services that operate across different routes.

75. More generally, all parties need to work together to ensure that as further franchise commitments are established there is clarity about the funding required to deliver any consequential changes required to the network. The PR18 change control arrangements could support this.
76. We plan to publish an analysis of how Network Rail's efficient expenditure in CP6 will be determined (drawing on the lessons of CP5) by end March 2017.

Deliverability

77. We are monitoring Network Rail's progress with improving its capability in delivery planning as part of our preparation for PR18. In due course we will review Network Rail's plan in detail, to understand the risks associated with deliverability of the volume of work proposed; both in terms of whether the supply chain and company can deliver the work required, and whether the profile and level of activity is consistent with effective management of the supply chain and achieving efficient levels of spend.
78. At this stage we have undertaken some high level analysis to provide an indication of whether the implied volumes are consistent with the levels achieved recently. In particular, we have considered Network Rail's current activity levels, converted this into an implied five-year volume of work, and then compared this to the volumes in Network Rail's core plans for CP6. This is summarised in the table below.

	<i>Units</i>	2015/16 Actual (A)	5 year totals at 2015/16 activity levels (B=5xA)	CP6 activity levels in NR's core plans (C)	C as % of B
Plain Line Track	<i>km</i>	1,433	7,165	5,829	81%
Signalling	<i>SEU</i>	1,468	7,340	6,705	91%
Structures (excl. Coastal Defences)	<i>m²</i>	176,749	883,745	667,640	76%

79. While these are only an indication of the potential magnitude of deliverability risks, there is some broad comfort that the levels of activity currently indicated in the core plans can be achieved in practice, with scope for delivering the additional volumes required to achieve a sustainable level of renewals. Signalling may be a higher risk area, where Network Rail needs to develop a more strategic approach to tackle the significantly higher levels of signalling renewals that will be required in future control periods, reflecting the age profile of these assets.

80. Furthermore, in order to achieve the orderly delivery of renewals activity, it will be important to ensure that the profile of Network Rail's work avoids significant ramping up and down of activity over time. This has been seen in previous control periods (including lower volumes in the first year of the control period) and is a contributory factor towards increased cost. A stable medium-term plan with sufficient confidence over the funding available to deliver it will support Network Rail's efforts to improve efficiency in this respect.
81. Finally, we will need to consider Network Rail's detailed plans to understand the impacts of the proposed volume of maintenance and renewals, and the implications for possessions planning. There are likely to be difficult trade-offs here, as possessions cause disruption to passengers and freight customers, while longer possessions typically allow more efficient delivery of work.

Management of financial risks

82. The approach to managing financial risk, and the level of any risk provision, will affect the level of SoFA and the borrowing limit and how Network Rail behaves as a company. ORR has a statutory role to ensure that the commitments in the HLOS are consistent with the resources stated to be available in the SoFA. To do this, when calculating the level of funding required, we need to consider the financial risks faced by Network Rail.
83. The current regulatory framework requires Network Rail to manage those financial risks it is best placed to manage. For example, we index Network Rail's required revenue in line with inflation as we recognise Network Rail has a limited ability to influence general inflation.
84. Financial risk on enhancements in CP5 has been heavily mitigated because outputs are reduced if a forecast level of spend exceeds the capped amount. However this does not mean efficiency is necessarily improved. In the previous financial year Network Rail overspent (compared to the Hendy report) on the enhancements it delivered by c£180m, including £95m on Crossrail. The financial risk on OMR expenditure is currently being met mainly by deferring renewals (with consequent impacts on efficiency).
85. Options to manage financial risk (other than output adjustments) in CP6 include providing Network Rail with one or a combination of the following:
 - a risk-buffer in the revenue requirement; and/or
 - a risk-buffer included within a borrowing limit; and/or
 - conditional funding, should certain risks crystallise.
86. Our PR18 determination will be set at a route and National System Operator (NSO) level, including assumptions on financial risk. We will therefore need to consider the provisions under which Network Rail could transfer financial resources amongst routes and the NSO. Our approach will need to balance the need to preserve the integrity of route and NSO financial settlements, with the need for Network Rail to be

able to efficiently manage risks and exploit opportunities across its business as a whole. Our starting point is that any such transfers need to be transparent.

87. You also need to think about how having a SoFA for the steady state (OMR) part of Network Rail interacts with some enhancements potentially being funded separately, e.g. would additional amounts for financial risk be granted for every enhancement project as they are approved.
88. We recognise that at first sight there may be budgetary advantages in seeking to minimise risk funding in CP6. However, encouraging Network Rail to manage its business in a way that unduly reduces its risk could increase overall cost as Network Rail will be encouraged to transfer risk inefficiently to other parties, potentially with impacts on both industry cost and performance e.g. with possessions. Similarly, it may constrain Network Rail's plans such that they are not consistent with its view of an efficient way to manage its assets.
89. There is also a link between efficiency assumptions and financial risk. This is because taking a more demanding approach to efficiency but providing more contingency/a higher borrowing limit can have the same monetary effect as taking a less demanding approach to efficiency and providing a lower contingency/borrowing limit. But these two different approaches have different incentive effects.

Financial risk allowance

90. At this stage, any attempt at quantifying risk allowances will inevitably be based on high level assumptions, and will change as more analysis is undertaken. Network Rail's initial, very high level numbers show a range for total risk on maintenance and renewals in England & Wales of £1.3bn (at 'P80', the 80th percentile level) to £2.4bn ('P95') (these numbers exclude the financing costs on the borrowing to fund the additional expenditure on maintenance and renewals)³. It is not clear yet what Network Rail's spot forecast would be for risk on maintenance and renewals in England and Wales.
91. Network Rail has derived these risk numbers from some high level analysis based on past experience of variances in income and expenditure. Historical variations in expenditure include past decisions about changes to outputs, e.g. deferrals, and so this analysis implicitly assumes the ability to make these decisions in managing its business.
92. To provide context to these numbers, Network Rail in CP5 is forecasting to underperform by c£4bn on maintaining and renewing the network in England and Wales. It is also deferring c£3.4bn of renewals for England and Wales.
93. We have not had the opportunity to undertake detailed analysis of these risk numbers given the time constraints, however we believe the initial range proposed by

³ When Network Rail was modelling financial risk it used renewals numbers that were constrained to an increase of 15% and as a result excluded some renewals to improve the railway, e.g. for weather resilience, that are now included in its base plan. Also, Network Rail needs to consider whether it has fully captured all the issues that could affect the worst case scenario.

Network Rail is broadly appropriate to cover the range of risk funding required for a steady state railway.

94. Based on a renewals and maintenance number for England and Wales of £26.8bn (renewals of £21bn and maintenance of £5.8bn) our advice for a total financial risk allowance for maintenance and renewals would be c£1.5-3.5bn.
95. In our financial framework consultation document published on 26 January 2017⁴ we discuss how financial risk can be provided for in CP5. Network Rail in its current plan is assuming that it is provided through a combination of contingency included in revenue and headroom in a borrowing limit⁵.
96. The element of risk that is funded through additional revenue could create higher corporation tax liabilities for Network Rail in CP5. Given the proposed changes in corporation tax legislation, in particular the proposal to reduce the utilisation of historic losses to offset taxable profits, this could increase expenditure by an amount that could be in the low hundreds of millions. Network Rail has not yet factored this issue into its current forecast expenditure numbers.

Other financial risk issues

97. Beyond uncertainties associated with the delivery of OMR, other financial risk issues that will affect the SoFA include:
 - We are expecting that the borrowing limit will be in nominal terms, which will expose Network Rail to some inflation risk. This could be material especially in the current economic situation.
 - Fixing the interest rate on government debt reduces the headroom required in the borrowing limit.
 - The variability of collateral levels on financial instruments has not been included in Network Rail's financial risk numbers as Network Rail is still hoping that this issue can be addressed outside of the borrowing limit: discussions between Network Rail and DfT are ongoing. If it is not it would need to be taken account of in the borrowing limit and could be a material issue.
 - If some enhancements are included in the borrowing requirement, there would be a portfolio effect with OMR, which would produce a lower borrowing limit than if OMR and individual enhancements were given separate borrowing limits. It would also be less complicated to provide an overall allowance for risk instead of reviewing risk after every enhancement is approved.

⁴ This is available at: <http://orr.gov.uk/consultations/pr18-consultations/consultation-on-the-financial-framework-for-pr18>

⁵ In the plan it has not specified whether this additional revenue is provided through a change to the cost of capital approach or a separate specific allowance for financial risk.

Enhancements

98. A further area for DfT to consider is the extent to which any enhancements are included in the HLOS and SoFA, now that the Secretary of State has confirmed his intention to change his approach to the commissioning of enhancements, with more projects being commissioned outside the periodic review.
99. It has always been the case that some enhancements have been included in the HLOS and others taken forward during the control period i.e between HLOSs. DfT's intention therefore represents a shift in the balance between these two approaches.
100. This leaves the issue of where to draw the line between those projects that will be included in the HLOS and those that fall outside. In particular, you will need to consider the case for including in the HLOS schemes to which you are committed, and that satisfy your requirements in terms of benefits. Including such projects could deliver benefits which could improve the outcomes of CP6:
- Schemes that have started construction in CP5 have certainty of funding that they will continue in CP6. Operators and passengers will be better able to plan.
 - Network Rail will be able to make informed whole life cost decisions about its asset base when assessing interventions on assets which may be the subject of enhancement schemes.
 - Network Rail can plan for its access requirements for all types of work, this could potentially result in more of the network being available to operators more of the time, while also encouraging operators to agree to access that supports improved efficiency.
 - More generally, as these enhancements are underway or committed, including these projects would ensure a single, consistent baseline against which Network Rail can prepare its plans and understand its overall capacity to deliver efficiently, avoiding the potential for a set of HLOS plans and separate plans that take full account of the most likely enhancement projects.
 - Network Rail and its supply chain will be able to assess the deliverability of the required CP6 outputs in the round; this will assist with ensuring critical resources are in place to deliver.
 - We are concerned that in not adopting this approach DfT will create inefficiencies by making it harder to plan renewals and enhancements together.
101. You have stated that you intend to publish your plans for enhancements during the summer. Our view is that committed/in-progress schemes should be in the HLOS.

Next steps

102. Balancing the need for transparency with the need to provide advice in a way which allows policy to continue to be developed, we plan to publish this letter at an appropriate time, likely to be when your HLOS is published.

Yours sincerely

A handwritten signature in black ink, appearing to read 'John Larkinson', written in a cursive style.

John Larkinson