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19<sup>th</sup> April 2017  
Bill Reeve  
Director of Rail  
Transport Scotland

Dear Bill

**Periodic Review 2018: ORR's advice on maintenance and renewals expenditure**

1. You asked for ORR's advice on the likely required level of maintenance and renewals expenditure by Network Rail in Scotland in CP6. As you know we have provided similar advice to DfT, alongside advice on the treatment of safety, performance and enhancements in the HLOS. We sent you a draft of this letter on 21 February and with a few minor changes this letter confirms the material provided in the draft.
2. We have prepared the numbers at current efficiency levels. Clearly we would expect an improvement over current unit rates, but at this stage of the periodic 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, its plans have not yet benefited from customer challenge and our efficiency challenge work is not complete. Indeed, Network Rail will not make its formal submission to us on its cost forecasts for CP6 until 8 December 2017.
3. Rather than trying to take an early view on efficiency we recommend that your SoFA is prepared against current efficiency levels. Funds included in the HLOS are an envelope, not the determination of planned spend, which will only be decided at our draft and final determination. Such an approach would also mitigate the risk that there is a formal mismatch between the HLOS and the SoFA which would disrupt Network Rail's business planning and create further uncertainty.
4. It is also worth noting that, in contrast to other regulated networks, the act of simply 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.

5. However, Network Rail must challenge itself on efficiency and show that it has learnt the lessons from this control period. As you know, we are producing a paper on Network Rail's efficiency to date, why and how this might change in the future and how we will assess this. We will discuss a draft of this with you shortly.
6. For the purpose of this advice, 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; and
  - undertaking selective sense checks on alternative high level approaches, and by looking at specific assets.
7. We have not sought to reflect any improvements to the planning and prioritisation of work that might arise from greater devolution of decision making and business planning. Network Rail will continue to refine its route-level plans up until November of this year.
8. For renewals our starting position is what work would be needed to deliver enough renewals to counter on-going wear and degradation, sustaining the condition of the network as a whole taking into account the projected 5% growth (gross tonnage) during CP6.
9. The renewals spend for CP5 is currently forecast to be £1,400m in 2016/17 prices. This includes £38m 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 around £88m of renewals to address deteriorating asset condition has had to be deferred during CP5 (mainly affecting track) due to constrained funding and assumed productivity and efficiencies not being realised. So at current costs, the CP5 baseline spend for sustaining asset condition in the near term is around £1,450m.
10. Assuming steady state, a possible baseline for CP6 is therefore £1,450m plus £88m to catch up with the condition driven renewals deferred from CP5, a total of around £1,538m before efficiencies.
11. In reality the network is not in steady state. CP5 was intended to begin a recovery from historical underspend on civils assets, and some progress has been made towards this in Scotland, but there is more to do, including improvement of weather resilience. We are also concerned about the large volume of signalling renewals that will be required from CP7 onwards, reflecting the age profile of these assets across the network, and we would want to see Network Rail making inroads into this in CP6 to ensure future deliverability. Including an allowance for these and for

the projected growth would suggest a renewals spend around £1.8bn before efficiencies.

12. 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 £2.2bn. To this should be added the £88m CP5 deferrals catch up and an allowance for growth, giving around £2.3bn. This is a very simple model, but it provides a useful sense check.
13. 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 deliverability 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: £2bn to £2.5bn, with a figure towards the lower end of this range thought to be more likely.
14. We have also considered Network Rail's latest the bottom-up route plan (RF11). This core plan has been constrained to an overall Support Operations Maintenance and Renewals (SOMR) spend of CP5 +15%. For renewals the core plans add up to £1,770m. Network Rail has also proposed an additional £25m of spend to tackle further sites at risk of scour, and to improve resilience against adverse weather at key sites, taking the total to £1,795m before efficiencies.
15. The plan includes increased renewals volumes in switches and crossings (+29%), underbridges (+20%) and earthworks (+12%) compared to CP5. These increases are geared towards achieving sustainable asset condition. The plan includes a significantly reduced volume of plain line track (-31%), reflecting a change in the mix of work; the average used life of these assets is still forecast to improve slightly over CP6. The plan also includes a reduction in signalling renewal volumes (-6%), although spend is significantly higher (+35%), due to a change in the mix of work. We understand this is sufficient to prevent signalling assets becoming life expired, but average remaining life is forecast to fall during CP6. Bearing in mind the challenge of delivering significantly higher volumes in future control periods, our view is that a higher volume of signalling renewals is required in CP6 to achieve future sustainability in this area. Adding our signalling adjustment would take the total to £1.9bn. This number looks to be the most robust forecast on current data.
16. Our overall assessment is that the volume of work needed to sustain the network during CP6 is therefore in the region of £1.9bn, before efficiencies.
17. Network Rail's analysis of headwinds and efficiencies during CP6 has identified net savings of £90m. It is too early to assess the robustness of this figure. As discussed above, we think the SoFA should be based on a pre-efficient figure, and we will set out our view on the post-efficient figure in our determination in due course.
18. 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 £539m for CP5 to £714m, before efficiencies. This increase reflects growth, an increase in the asset base following electrification, improvements in weather resilience and progress towards compliance with asset policy in fencing and vegetation management.

19. The RF11 plan is the first time Network Rail has used its new Activity Based Planning (ABP) tool to determine the resource required to deliver maintenance and what it costs, using bottom-up actual cost and productivity data for the local maintenance delivery unit, which we see as a major step forward. Network Rail expects adoption of the ABP tool to significantly improve its understanding of where maintenance costs arise, and that this will lead to opportunities to improve efficiency in due course. As for renewals, we think the SoFA should be based on the pre-efficient figure, and we will set out our view on the post-efficient figure in our determination.
20. 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



**John Larkinson**