Network Rail's response to ORR's Draft Determination: Technical Authority

31 August 2023

# Contents

Executive summary

This is the Technical Authority's response to the Office of Road and Rail's (ORR) Draft Determination of the 2023 Periodic Review (PR23). This response will lay out the financial changes made to the Technical Authority's Strategic Business Plan (SBP) and respond to the draft determination findings, particularly those related to asset renewals and health & safety.

Following consideration of how Network Rail will respond to further expenditure and income pressures since the SBP (including additional expenditure requirements in ORR's draft determination), the TA has made a further £20m reduction in Other Renewals funding. TA will hold an overlay and will identify a saving opportunity ahead of the CP7 delivery plan in order to address Network Rail funding pressures and challenges that have been identified.

OTTO is not being taken forward in the form developed in CP6, on the basis it was considered as too complex and high risk. No funding has been allocated to it in CP7. However, the speed restriction management element is being taken forward, in order to continue the delivery of commitments that have been identified, and £21m has been allocated to this in the TA plan. There has been an update to the inflation, input prices and headwinds to reflect that since our SBP, recent inflation forecasts show higher than assumed inflation for 2023/24 and across CP7. Given the high and volatile levels of inflation we are currently experiencing, there is a direct link between the level of CPI inflation and our input price assumptions. We also indicated in our SBP that we would reduce headwind provisions to accommodate higher inflation / input price impacts; TA has reduced the headwinds target by 50%.
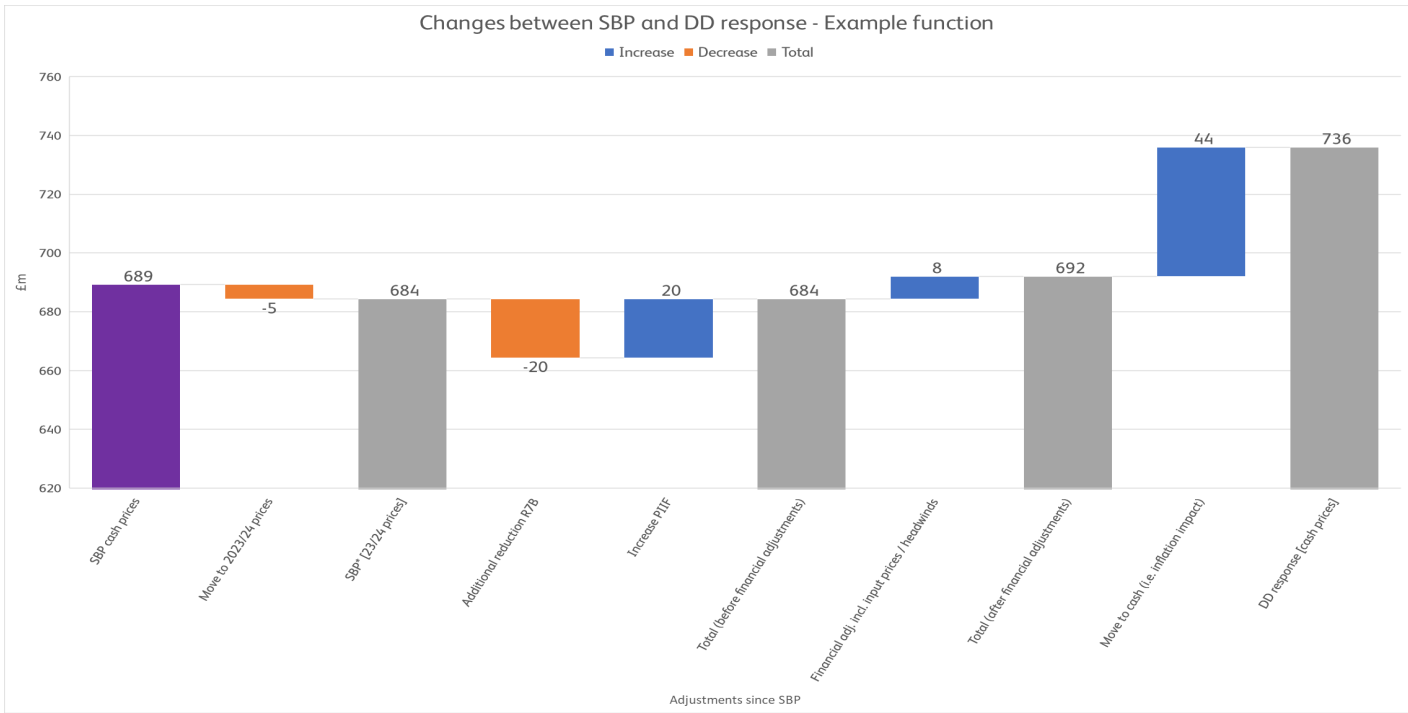
We have provided updates in our response on the OTTO project, and T190+ signalling renewals programme, as well as the Electrical Safe Delivery (ESD) programme. We also continue to develop our plans for managing occupational health, trackworker safety and fatigue, and have outlined our approach in the response below.

In response to ORR's proposal for a Performance Improvement and Innovation Fund for CP7, we have included an extra £20m in Technical Authority's RD&I fund, with a minimum commitment to spend £20m on train performance improvement and innovation initiatives. This will replace the Performance Improvement and Innovation Fund, aligning the governance of RD&I across Network Rail and allowing us to draw on cross-industry collaboration and engagement with TOCs and freight operators. More broadly, the Technical Authority is leading the development of a new bow tie risk assessment model for asset safety to better understand the changing risk profile in CP7 due to reduced asset renewals. This will provide assurance that risk is reduced so far as is reasonably practicable on all routes during CP7.

Finally, we have provided an update on the assurance underway on the maintenance modernisation programme.

In our response to the draft determination and our development of the SBP we have conducted extensive stakeholder engagement, both with our regions, the System Operator and with industry partners. The details of our stakeholder engagement process are outlined in section 3 of this document.

Technical Authority response to ORR's PR23 draft determination settlement document

1. Introduction

This is the Technical Authority's response to ORR's 2023 Periodic Review (PR23) Draft Determination. We also provide an update on any key changes to our CP7 plan since submission of the CP7 strategic business plan in February 2023.

We cover GB-wide activities. We have considered how our updated plans and response to ORR's draft determination impacts delivery of both the UK and Scottish Governments' priorities within available funds, as set out in their respective High Level Output Specifications (HLOSs) and Statements of Funds Available (SoFAs).

Following the publication of ORR's draft determination, we have reviewed and considered ORR's draft proposals, decisions and actions, in relation to our activities. This document sets out our response on these areas. To inform this response, we have undertaken a targeted review of our CP7 strategic business plan (SBP), as part of our iterative CP7 plan development process. This update has also been reviewed and assured by subject matter experts where relevant. Recognising the limited time available to update, assure and consolidate CP7 plans, our approach has been necessarily targeted and high-level.

The key changes we have made since submission of our SBP to ORR in February 2023 can be summarised as follows:

- In response to the continued expenditure and cost pressures across our CP7 plan, we have reduced our provision for other renewals by £20m (which is currently reflected as an overlay, with specific savings to be identified ahead of the CP7 delivery plan)
- We have updated our input prices to reflect recent price changes
- We have amended our provision for inflation across the control period
- We have reduced our funding for headwinds by 50%
- In response to ORR's proposal for a Performance Improvement and Innovation Fund for CP7, we have included an extra £20m in Technical Authority's RD&I fund, with a minimum commitment to spend £20m on train performance improvement and innovation initiatives. This will replace the Performance Improvement and Innovation Fund, aligning the governance of RD&I across Network Rail and allowing us to draw on cross-industry collaboration and engagement with TOCs and freight operators.

Inflation

Increases in inflation forecasts since the start of the year mean that the cost of our CP7 plan is significantly higher than we assumed in our SBP (£1.5bn higher across England & Wales using May

2023 Bank of England forecasts). For Technical Authority, the recent forecast increase the cost of our plan by £44m in cash terms. Whilst we have not had time to reflect the latest August 2023 Bank of England inflation forecasts in our Technical Authority response, but the forecast is similar to the May 2023 forecast. We set out the high level assessment of the impact of this latest forecast on our CP7 plans in our overall Network Rail response.

Our overall Network Rail response explains how we are seeking to balance funding pressures, including inflation, across our CP7 plans, such as moving to the risk adjusted plan. We will continue to monitor the impacts of inflation as we move towards the delivery plan as it is one of the major risks to the delivery of our CP7 plans.

Efficiency

We are committed to delivering the ambitious 10% opex and 15% capex efficiency targets for CP7 that we set out in our SBP, and have provided further detail on operational efficiencies as requested by ORR. However, achieving this level of efficiency will be increasingly challenging due to a number of factors:

1) As the funding envelope shrinks it becomes harder to deliver the % based efficiency due to reduced opportunity for Economies of Scale.
2) Inflationary pressure could lead to further pressure on cash resulting in higher efficiency required.
3) External pressure from third parties and potential increased costs or reduced performance.

We need to ensure we are focussed on our internal efficiency for CP7 now and drive forward to ensure they are embedded as soon as possible with CP7 to generate maximum benefit. This should not impact the delivery of TA enabled efficiency within the Regions but add additional pressure to deliver the internal TA efficiency due to the reduction in total portfolio spend.

We also note that around 30% of Network Rail's total CP7 efficiencies relates to our share of industry reform savings, and that this may be more challenging to achieve given delays to reform legislation. Not all reform initiatives require legislative reform (e.g. joint property strategies, workforce modernisation and optimising access initiatives) and ORR support for driving forward / delivering these whole-system savings will be instrumental.

2. Technical Authority's response to ORR's draft determination findings

Safety risk profile - overview

We will deliver a safe plan in CP7 to support our vision to get 'everyone home safe, everyday', and remain strongly committed to the Train Accident Risk Reduction and Workforce Fatalities and Weighted Injuries forecasts for our risk adjusted plan, set out in the SBP.

ORR's draft determination set out the need for us to demonstrate how we will manage the shift in risk profile resulting from undertaking fewer renewals (compared with CP6) and taking a more maintenance-based approach to management of the infrastructure in CP7. We recognise that the planned reduction in asset renewals in CP7, and subsequent increase in refurbishment and maintenance of assets, is likely to lead to the requirement for more operational controls (such as speed restrictions) towards the end of CP7.

To understand the change in risk profile (between CP6 and across CP7) further and to identify suitably effective risk controls, we have developed a bow tie risk assessment framework which has been tested and endorsed by stakeholders. The bow tie risk assessment framework will be completed at both a network and regional level, and will set out in a very clear, logical manner the threats and mitigations that influence what we consider to be the central risk – infrastructure is unable to safely support the delivery of the train plan. It will also support our regions in further embedding market-led planning and informing asset management decision making during CP7, demonstrating that the risks on all regions have been reduced so far as is reasonably practicable (SFAIRP).

The development of the bow tie risk assessment framework complements our existing and well-established BAU safety risk management approach. This includes our Enterprise Risk approach where causes, consequences, controls and actions are closely monitored, along with our assurance / governance approach across the business which applies the three lines of defence model (discussed in our SBP) and will continue to apply in CP7.

This includes the hierarchy of risk controls we use when making asset management related decisions, for example undertaking a partial renewal / refurbishment and component replacement instead of a full renewal to mitigate the risk. We shared a more detailed overview of our current approach to monitoring safety risk with ORR in April 2023 to support the development of its draft determination.

Bow tie risk assessment framework

The bow tie risk assessment sets out the core principles to assess the shift in risk profile as a result of undertaking fewer renewals in CP7, as well as the key operational mitigations we may need to

implement. We have summarised the framework in figure 1.1, below, with the full details of the safety bow tie risk assessment available in Annex B.

Summary of the safety bow tie risk framework – Figure 1.1

Is asset information and data complete, accurate, and up to date?

Do we understand how the asset will change and the associated impacts?

Do we have competent resources?

Are we delivering planned maintenance?

Is planning approach fit for purpose?

Constrained renewal funding in CP7

Infrastructure unable to safely support delivery of the train plan

Degradation of safety

Degradation of train performance

Degradation of financial performance

Degradation of long term asset sustainability

We have already taken steps to populate the bow tie risk assessment framework at a national level for the assets most affected by the reduction in renewals activity in CP7 (i.e. track, structures and earthworks). To date, we have focused on how to evaluate the asset risk and the potential secondary consequences of the increased use of operational control of risk, and any risk transfer that may take place from Network Rail to train operators. We have determined that whilst signalling, overhead line equipment and telecoms assets may have clear failure modes, they do not have significant train accident risk failure modes, although such failures do lead to performance risk. Therefore, in populating the bow tie risk assessment framework, we have prioritised track, structures and earthworks, given they are the significant risk precursor of train accident risk.

The nature of the bow tie risk assessment means that it can be used to evaluate the risks associated with lower levels of renewals activity in CP7 by asset type, and is scalable at different levels (e.g. line of route to national). More broadly, it also supports us in evaluating specific areas of concerns. For example, over the past few weeks, we have used the safety bow tie risk assessment to demonstrate the alignment between our maintenance and renewals plans in CP7. We have developed 25 questions which enable us to assess the level of alignment between our

maintenance and renewals plans (including that the funding provisions for maintenance activities in CP7 are scaled appropriately) and identify any gaps which we will seek to address as part of the development of the CP7 delivery plan and into CP7. We will also be able to use the safety bow tie risk assessment to assess the alignment between our asset management and operational plans and will seek to do as part of the development of our delivery plan.

Fully developing and populating the bow tie risk assessments at a national and regional level will take time. Therefore, we will continue to iterate and populate the safety bow tie risk assessment framework after our draft determination response, and this will be developed as part of our CP7 delivery plan. We have welcomed ORR's constructive engagement and input on the development of the assessment framework over the draft determination response period, and its support for the approach to populating these as part of our CP7 delivery plan. We will continue to engage with ORR, and keep it updated as our work progresses.

Market-led approach

The bow tie risk assessment methodology that Technical Authority is developing (referenced above) will assist the routes and regions in their asset management decision making during CP7 so that routes and regions can demonstrate that the risks on all routes have been reduced SFAIRP including in prioritising their plans through a market-led approach to planning. Further detail on the market led approach to asset management, how we expect this approach to evolve, and the link to safety, can be found in the overall E&W response.

Research & Development projects

We note the questions about both the OTTO project and the T190+ project in the draft determination, particularly around scope and phasing of the projects.

Work undertaken by the industry Train Protection Strategy Group highlighted that advances in technological development means that there was the possibility of a new train protection solution that would be reasonably practicable and reduce risk more quickly than the implementation of ETCS. It recognised that this means that the current train protection solutions may no longer reduce risk so far as is reasonably practicable (SFAIRP) and that the industry should consider the potential benefits of new technology. The OTTO programme in CP6 was developed to explore these opportunities and build a business case for developing new solutions. This programme was ultimately considered as too complex, with high risk development activities associated with adapting existing technologies and therefore the OTTO programme is not being taken forward in the form developed in CP6.

Network Rail does recognise however that there may be potential solutions available that are reasonably practicable, and reduce risk SFAIRP, and that facilitate the transition to ETCS over time.

Given that the OTTO programme was considered as too complex and high risk no funding has been allocated to it in CP7. Elements of the programme are however being taken forwards, particularly the Speed Restriction Management system, with funding allocated to this of £21m in System Authority supported by RD&I funding. Should a further solution be identified in CP6/7 which has a clear business case and demonstrates safety benefits, then funding for this will be considered through our existing business mechanisms for investment, which consider safety and economic factors in a joined up manner.

The scope of T190+ project remains unchanged from our SBP submission and our benefits projection has been shared with ORR as part of this. The programme plan for this is still being developed in detail, with an outline plan in place at present until funding is confirmed. The majority of the benefits of this programme are expected to be realised in CP8 and beyond, with some being realised in CP7.

TA welcomes the positive support around the RD&I plan and we detail further information on the cultural improvement programme. Network Rail recognises the importance of culture change to support wider roll out of new technology, new ways of working and our modernisation agenda. Our CP7 RD&I strategic plan includes provision for a programme to develop and implement a framework for enabling innovation across Network Rail. Our early thinking has identified the following considerations:

- The programme must include culture change throughout the organisation, from executive leadership through to frontline teams, from asset management and engineering to finance, legal and procurement teams.

- There are several principles in common with other culture change initiatives such as Everyone Home Safe Every Day, Project SPEED and standards challenge. That is, empowering teams, creating a safe environment for challenge and providing supportive, consistent and clear leadership. We can build on the excellent progress of these initiatives.

- There are many existing models for innovation. We are exploring the options, but our goal is to be able to assess/measure Network Rail's current readiness and willingness to innovate, to baseline where we are today and monitor progress against this baseline. Frameworks such as ISO 56002 Innovation Management, and the industry Innovation Capability Maturity Model, may help us do this.

We expect to spend the first 6 months of CP7 developing the details of our innovation culture change programme so this workstream can move to delivery from October 2024.

The scope and benefits of the RD&I projects remain unchanged from the SBP. The £165m direct (GB-wide) RD&I investment has been allocated across these strategic objectives:
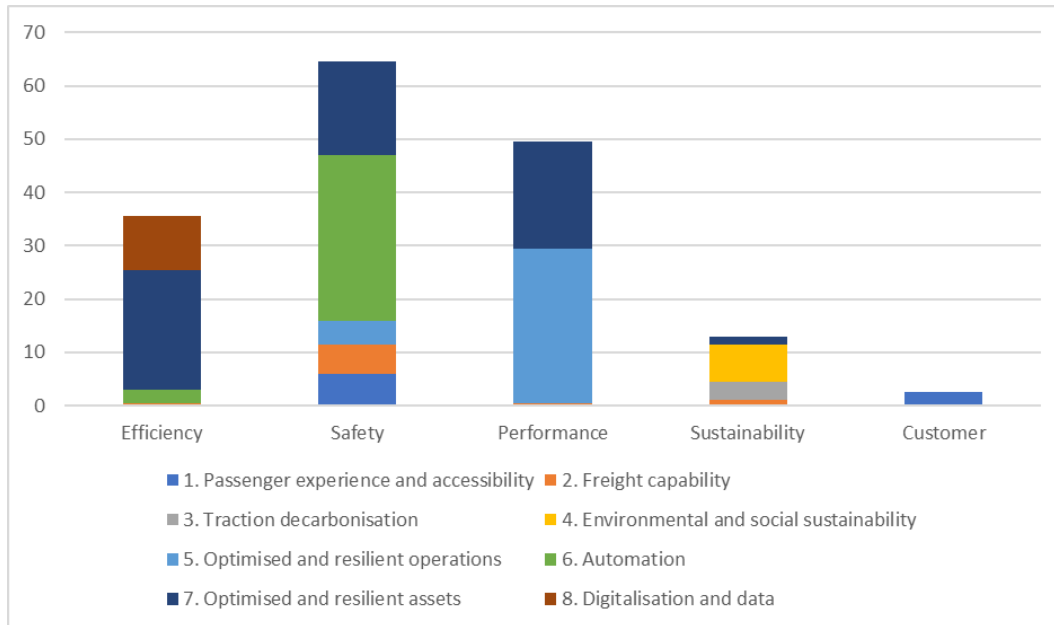
Figure 6. Level of funding (by industry RD&I theme) allocated to projects delivering primary benefits of efficiency, safety, performance, sustainability and customer experience.

A summary of the expected deliverables from the current high level CP7 RD&I work breakdown structure comprising the £165m is as follows:

- £76.5m targeted at efficiency and safety benefits CP7 onwards, enabling modernisation of core processes. Investment prioritised against higher-readiness technology which is proven via First-in-class funding, to deliver higher RoI.

- Delivers regional requirements for remote or automated asset inspections and monitoring, decision support tools and 'predict and prevent' maintenance.

- Further investment (£56.5m) in future control, command and signalling (CCS) technology, AXIOM (Target 190+ ETCS deployable elements, FRMCS) to mitigate risks associated with obsolescence from CP8 onwards.

- £16m to address current and future safety and performance risks linked to weather resilience and climate change adaptation, and to meet environmental and social sustainability targets.

- £6m to address level crossing safety risks and physical and cyber security.

- £2.5m to improve the safety of freight operations (e.g. lineside monitoring, heavy axle risk validation to release more paths).

- Smaller allocations of funding to support contributions to co-funded cross-industry and multi-sector research targeting:
  - Freight growth (£1.5m)
  - Traction decarbonisation (£3.5m)
  - Passenger experience (£2.5m)

Performance Improvement and Innovation Fund

ORR's PR23 draft determination sets out the case for including £40m in our E&W CP7 plan for a 'performance improvement and innovation fund' (PIIF)', and that this should be include in the System Operator's plan. This is consistent with the current approach to managing the CP6 performance innovation fund (PIF) which was established in CP6.

Whilst the CP6 PIF has provided seed funding to over 100 innovation projects with 65 being completed to date, there are opportunities to build on the CP6 use and management of the PIF. This includes how we can most effectively manage cross-industry investment in schemes which are innovative and / or seek to improve performance on the network.

As discussed in the previous section, our SBP included £165m funding for RD&I fund in CP7 (GB-wide), of which £147m is allocated to E&W, and £18m allocated to Scotland, contributing towards delivery of an outcome-focused, balanced portfolio. Improving the performance, reliability and capability of infrastructure comprises one of four key principles from our RD&I investment in CP7, enhancing operational performance and supporting freight traffic growth.

From an England & Wales perspective, there is a strong opportunity to align the management and governance of the RD&I funds and PIIF in CP7. We have considered the £40m proposed by ORR, alongside the other expenditure and income pressures set out in our response. Recognising these wider challenges, we have included an additional £20m in the Technical Authority's expenditure for E&W (taking total RD&I in E&W to £167m – with the £20m funded in OPEX and the remainder in RD&I renewals), which will include a commitment to invest not less than £20m on performance improvement and innovation initiatives proposed by E&W regions or passenger and freight operators (in addition to approx. £35m of infrastructure performance-focused schemes included in the RD&I pipeline allocated to E&W). Allocating the PIIF to Technical Authority CP7 expenditure in this way will allow us to draw on cross-industry collaboration and engagement with TOCs and freight operators (including innovation Boards), as well as benefiting from well-established Technical Authority RD&I governance arrangements.

While the £20m will be held in the Technical Authority's plan, it will be managed collaboratively with the System Operator, with allocation overseen through a new board (or separate part of an

existing board) chaired by the Chief Network Operator which is a System Operator leadership team role. Ahead of the CP7 delivery plan we will review / revise the governance structure which will enable us to communicate to industry what PIIF will look like and what initiatives would likely be accepted for funding.

Looking ahead to the start of CP7, the Technical Authority will work with the System Operator on opportunities to align approaches to tracking and communicating benefits and supporting the business change associated with deploying new processes and technologies. We will set out further information on our approach to governance of the £20m PIIF element of the RD&I funds prior to the start of CP7 and will keep ORR updated as this work develops.

We note ORR's proposal to also set up a targeted performance fund for Scotland's Railway, that would apply to Scotland only and should be funded from any remaining unallocated funding once Scotland's Railway has considered ORR's other proposals to increase expenditure on core renewals and sufficient risk provision. Our response to this is set out in Scotland's Railway overall response document, and for clarity Scotland's Railway would be accountable for the governance and day-to-day management of any such fund.

Electrical Safety

The Electrical Safety Strategy outlines Network Rail's plans to improve workforce safety for traction power and demonstrate increased compliance with the Electricity at Work Regulations (EaWR) by end CP8. The Electrical Safety Delivery (ESD) Programme enables the step change required by the strategy and this informs the programme's objectives and commitments for CP7. Further detail is included in the Route Services draft determination response, but we have included an update below as TA is sponsor of the programme. The ESD commitments are included in Annex C.

As part of the CP7 planning process Network Rail commissioned an independent review for ESD to assure CP7 delivery plans. As a result, a phased approach to devolution of funds to the Regions for technology deployment was recommended to ensure legal safety and compliance obligations are met and the remaining funding available for safer, faster isolations is only allocated based on the best business case given constrained funds available. The CP7 plan includes £334m for safety and improvements in legal compliance and the remainder of the fund, up to £95m, is allocated to safer faster isolation technologies.

Maintenance demand

Our modernising maintenance programme is still going through the safety validation process. Routes and regions have developed their plans for maintenance modernisation, and Technical Authority is carrying assurance on these plans through the safety validation process, to provide assurance that these proposals are sized adequately. As a part of this process consideration has been given as to how the proposed reduction in asset renewal will affect routes' maintenance

volumes, and whether their proposed resourcing levels can meet these requirements. Routes and regions are following the Common Safety Method for Risk Assessment and Evaluation, which provides a structured approach to considering the risks and mitigations of this organisational change and will provide assurance that these have been reduced to an acceptable level. The Technical Authority will continue to monitor this change, including through the Post Implementation Review process to facilitate the sharing of lessons learnt between routes and regions.

Worker Safety and Occupational Health

We welcome the positive encouragement from ORR on our progress with trackworker safety and continue to prioritise improvements in trackworker safety in CP7, as laid out in our Strategic Business Plan. In CP7 we are prioritising investment into technology that will remove the need for workers to access the track, and on automated trackworker warning and protection technology. Detailed plans are still in development for some of the new technology, for example the Technical Authority is developing a national strategy for geo-fencing technology by September 2023, and these will be developed as part of our delivery plans for March 2024, and in regional delivery plans. Many of our proposed technologies for use in CP7 such as Semi Automated Track Warning System (SATWS) and Remote Disconnection Device (RDD) are being trialled in this final year of CP6, and the proposed change to the rulebook to allow T3 possessions without the use of detonators will encourage take up of the new technology, realising safety and efficiency benefits. We will continue to refine and evolve the competence framework for track staff leaders.

We continue to work with the regions to improve our management of occupational health, particularly ballast dust and asbestos. Regarding occupational health our primary focus is the insourcing of our occupational health service, to reduce costs and deliver a service that reflects the needs of our business. Our medicals focus on overall health and wellbeing, and have targeted questions to pick up on potential occupational ill health as early as possible. We have developed a high level occupational health strategy, which is attached in Annex D of this document, and continue to work with the regions to develop detailed implementation plans for this strategy. These will be developed as part of our delivery plan for March 2024 and beyond.

Our strategy in introducing the requirements of the new fatigue standard has been to allow temporary variations (30+) to the new standard and give the regions and functions time to adapt rosters in a way that meets both the business needs and the need to effectively manage fatigue. Progress on compliance has accelerated and we are seeing reductions in exceedances, increased training and awareness and regular use of the fatigue assessments and fatigue management plans. We also have a clear glidepath to achieve a substantial reduction in the amount of TVs. This progress is tracked in our dashboard shown below: -

Fatigue Dashboard
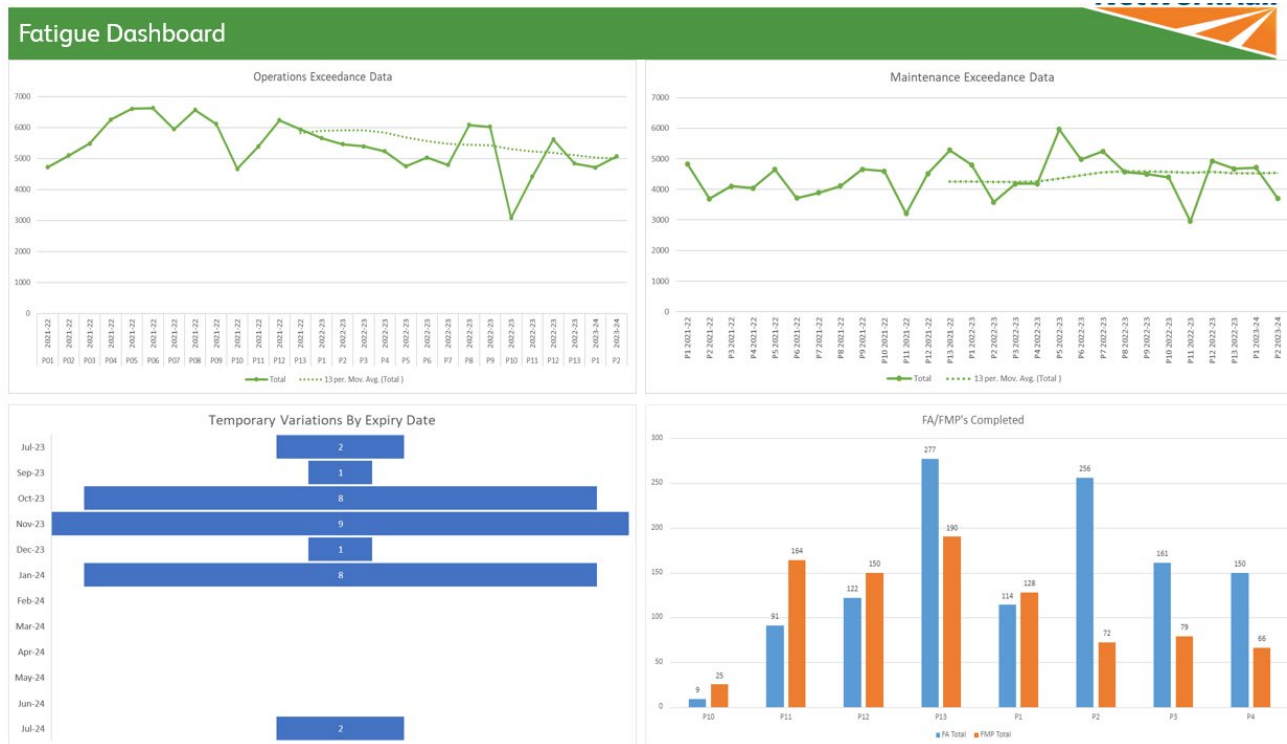
Our Blueprint for CP7 recognises that there is significant further work required even after compliance to the new standard has been achieved. This has been demonstrated in two recent road traffic accidents where the drivers fell asleep but the investigation shows both cases were compliant to the existing standard. Technical Authority's plan includes £750k in CP7 for further development of our control framework and the diagram in Annex E sets out our plan to maximise alertness and performance for all. This includes the development of a Fatigue Risk Management System, and requirements gathering for this is already underway.

Traction Electricity Costs

Our costs for traction electricity are currently predicted to be 56% higher in CP7 than in CP6 (noting that these costs are in turn passed through to train operators). This is due to rising market costs, with costs later in CP7 predicted to be higher than the early years of the control period. Electricity prices are made up of sixteen different elements, the most significant of which is the generation commodity cost which changes due to market conditions. We continue to monitor the costs of electricity for traction, and to work with train and freight operators to reduce costs where possible and lock in commodity costs in advance.

3. Governance and stakeholder engagement

Technical Authority works with a wide range of stakeholders, both internal to Network Rail, and industry partners.

Our standards change process, for example, is set up to engage with a wide range of stakeholders across the regions, both through their representation on Standard Steering Groups (SSGs) and through inviting regional participants to sit on the working group for standards updates. Prioritisation of asset standards updates is considered at the Asset Leadership Groups (ALGs). The project SPEED sponsorship has now been absorbed into the ALGs which has embedded the approach into the BAU process for standard updates.

Each ALG attends the National Engineering and Asset Assurance Meeting (NEAAM) twice a year and shares their prioritisation of standards with the Chief Engineer and Directors of Engineering and Asset Management from the regions.

SSGs have all been targeted to look at their forward portfolio of standard publication and identify Efficiency Opportunities and look to prioritise these where possible. SSGs have also been requested to challenge themselves to come up with ideas to mitigate the impact of standards on cost on their own and other groups standards. These will be reviewed and prioritised.

We will actively be pushing the Standards Challenge process to try and increase the impact on Efficiency generation. This provides a mechanism for both regions and our contractor community to challenge a requirement in a standard, and provides opportunities to realise efficiencies and better partnership working with our supply chain.

We are participants and stakeholders in industry governance group, both for asset safety and strategy (such as the Train Protection strategy group), public & passenger safety (such as the Trespass Prevention Group), and workforce safety (such as the Infrastructure Safety Leadership Group, the Railway Industry association via their National Railway Contractor Group (NRCG), and the Rail Industry Contractor association).

Weekly meetings take place between the Technical Authority and the regional Safety, Health & Environment Directors, to discuss emerging issues, project updates and to actively seek feedback on Technical Authority priorities and workstreams. Additional meetings with regional representation review our Home Safe Plan progress. Our governance structure for safety also includes regional representation at regional managing director level on the National Strategy Committee for safety. These groups provide constructive challenge to the Technical Authority to ensure that regional priorities and needs are taken into account.

We continue to work with RSSB to refine how to measure train accident risk as well as ORR and others to enable well articulated rationale regarding train accident risk.

Our work with ORR, RSSB, BTP, charities such as Samaritans, Scouts and Learn Live remain very strong. The work is backed up by extensive media campaigns such as Small Talk Saves Lives, You-vs-Train and Brighter Journeys. We will continue to improve links to TOCS and LUL to give consistent messaging on alcohol restraint.

Our extensive engagement means that we are confident that our Strategic Business Plan submission has the support of regional and industry stakeholders. We will continue to engage extensively with stakeholders throughout CP7 to provide opportunities for continued challenge and engagement with our projects and standards. We are pleased to note ORR's positive comments on Technical Authorities regional engagement in the draft determination and intend to continue to make progress in this area.

Annex A: Updated financials

Technical Authority

£m in 2023/24 prices	Direct costs			Allocated costs			Total costs		
	CP6 (RF3)	SBP	DD Response	CP6 (RF3)	SBP	DD Response	CP6 (RF3)	SBP	DD Response
Maintenance	21	0	0	-21	0	0	0	0	0
Support	235	254	278	-235	-254	-278	0	0	0
Industry costs and rates *	70	74	74	-70	-74	-74	0	0	0
Electricity for traction (EC4T)	3070	4492	4964	-3070	-4492	-4964	0	0	0
Total operating expenditure (excl. EC4T)	**326**	**328**	**352**	**-326**	**-328**	**-352**	**0**	**0**	**0**
Other capital expenditure	484	356	340	-484	-356	-340	0	0	0
Total capital expenditure	**484**	**356**	**340**	**-484**	**-356**	**-340**	0	0	0
Total Expenditure (excl. EC4T)	**811**	**684**	**692**	**-811**	**-684**	**-692**	**0**	**0**	**0**
Input prices moved to risk funding			15			-15			0

£m in 2023/24 prices	Direct costs			Allocated costs			Total costs		
	CP6 (RF3)	SBP	DD Response	CP6 (RF3)	SBP	DD Response	CP6 (RF3)	SBP	DD Response
Electricity for Traction (EC4T)	-6,170	-4,492	-4,964	6,170	4,492	4,964	0	0	0
Total Income	**-6,170**	**-4,492**	**-4,964**	**6,170**	**4,492**	**4,964**	0	0	0
Total Income (excl. EC4T)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Annex B: Safety bow tie risk assessment for asset management

Please see below our safety bow tie risk assessment.
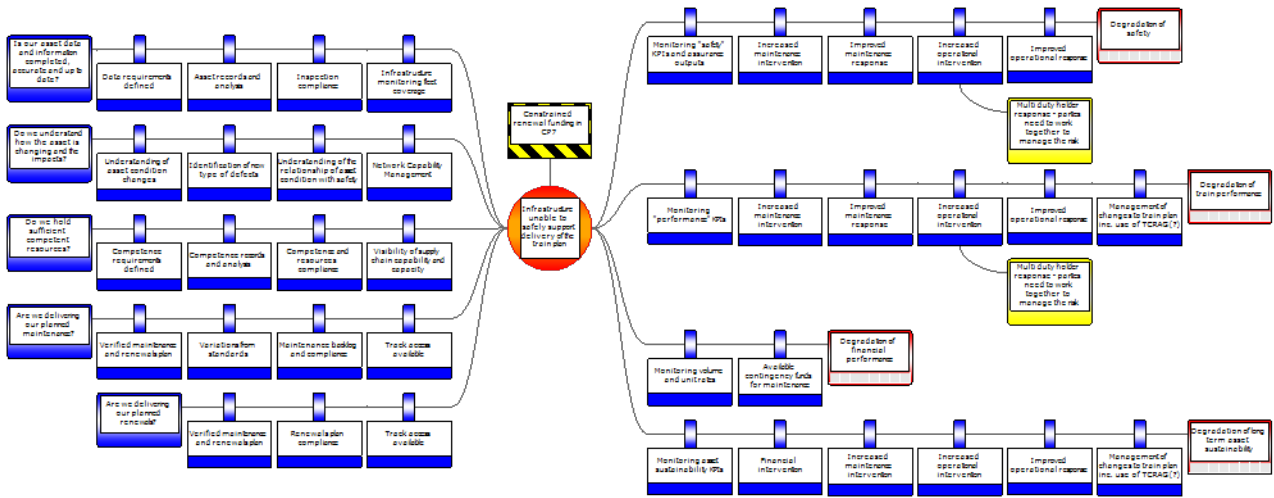
Annex C: Electrical Safe Delivery Programme commitments

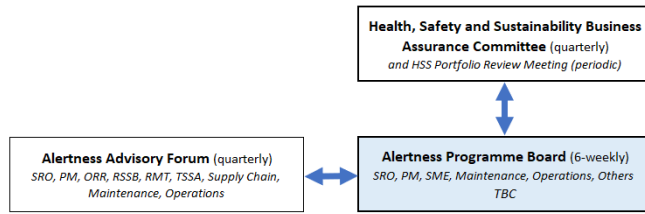| Electrical Safety Strategy commitments					
Strategic Principle	**Electrical Safety Strategy**	**CP6 Exit**	**CP7 Commitment**	**CP8 Commitment**	**Leading Indicators**
Step changes in electrical safety improvements on existing systems shall be considered where there is a clear safety or regulatory requirement This scope is funded by the Electrical Safety Delivery (ESD) programme	By end CP7 deploy Single Approach to Isolation on Overhead Line Equipment	Phases 0, 1 and 2 deployed Phase 3 and 4 deployment commenced Phase 4.5 to 8 planned and early development commenced W&W Optimised Earthing trial complete	Conclude deployment of OLE phases, close workstreams and transition to business as usual	N/A	• Number of variations to standard compliance dates
	By end CP7 deploy Single Approach to Isolation on Conductor Rail	Scope of phases agreed Phases 0, 1 and 2 development commenced	Conclude deployment of Conductor Rail phases, close workstreams and transition to business as usual	N/A	• Number of variations to standard compliance dates
	By end CP7 complete improvements to electrical safety competence	Deployment underway of training and competency improvements for OLE Phases 3 and 4	Conclude deployment of competency improvements for OLE and Conductor Rail and embedded changes into business as usual training and briefings	N/A	• Number of people upskilled in single approach to isolation • % of ESD training and competency improvements embedded into BAU training
	By end CP7 enable sustainable improvements to electrical safety culture	Culture workstream mobilised Choose to challenge and Step Up deployed CP7 priorities agreed	Deliver CP7 priorities, close workstreams and transition to business as usual	Embedded into business as usual Regional targets	• Feedback from culture climate surveys
	By end CP8 all points of isolation are secured (existing OLE infrastructure)	Remote Securing trials in progress for App and Trapped Key	100% control rooms using remote securing 100% isolations on electrification authorised in CP5 and CP6 are secured Close workstreams and transition to Business as usual	100% isolations are secured (including legacy)	• % control rooms using remote securing • Volume of isolations using Securing
	By end CP8 all points of isolation are secured (existing Conductor Rail infrastructure)	Negative Short Circuiting Device and Track Feeder Switch deployment underway NW&C 100%, Kent 32%, Sussex 41% Wessex 75% Southern avoids 34,000 straps in CP6	80%* coverage on Conductor Rail *to be informed by Regional plans given challenges on CP7 funding	100% coverage on Conductor Rail	• % network coverage of d.c. local securing
	By end CP8 deploy safer, faster isolations technology where there is a business case	Feasibility studies complete for Next Generation technology, asset management Product development underway for remotely operatable switchgear OLE lineside switch installation to enable App2i trial in progress	Conclude development of App2i and OLE substation switchgear capability Deliver priorities from CP6 feasibility studies	Conclude technology deployment where there is a business case	• Bespoke to workstream

Annex D: Occupational Health CP7 plan

CP7 Occupational Health and Wellbeing

NetworkRail

1. **Implement and embed the national in-house occupational health services**

2. **Respond systemically to mental ill health**
   - Work focused therapeutic interventions (beyond EAP) that sustainably restore and optimise colleagues' health

3. **Be more inclusive in our approach**
   - Remove medical barriers to work
   - Be able to undertake more in-depth assessments to establish physical tolerances, e.g. postural tolerances, strength, endurance, speed, flexibility and psycho-social limitations so that people can work safely

4. **Health risk management framework**
   - Understand our health hazards and the risk to the individuals and the organisation (e.g. silica, MSK, HAVS, noise, weld fumes, psychological) and create a framework to eliminate, mitigate and control them using exposure monitoring (may need to be established) to monitor compliance
   - Understand opportunities to optimise health through lifestyle medicine and address ill health (preventative medicine)
   - Raise the capability of the regions and functions to access effective healthcare interventions against a common, scientifically robust strategy

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Annex E: Fatigue Improvement Plan

Aim: 'to maximise alertness and performance for all'

Health, Safety and Sustainability Business Assurance Committee (quarterly)
and HSS Portfolio Review Meeting (periodic)

Alertness Advisory Forum (quarterly)
SRO, PM, ORR, RSSB, RMT, TSSA, Supply Chain, Maintenance, Operations

Alertness Programme Board (6-weekly)
SRO, PM, SME, Maintenance, Operations, Others TBC

Management System	Competency	Data, Measurement & Reporting	Planning	Culture
23/24 - Regional review	23/24 - Roster Clerk training	23/24 - KPIs/targets for Fatigue	23/24 - II Rostering Tool delivered	23/24 - Hybrid Working Policy
23/24 - FRMS requirements gathering	23/24 - Key roles upskilled		23/24 - Review contract pricing/hours	23/24 - Roster changes
23/24 - Fatigue Standard updated	23/24 - eLearning updated			23/24 - Comms/engagement re. Alertness
	23/24 - Fatigue Video			23/24 - Understand shift preferences
CP7 - Build and implement FRMS	CP7 - Qualifications	CP7 - Replacement FMP/FRAs tools	CP7 - II Rostering Tool optimisation	CP7 - Action on Presenteeism
CP7 - Assurance model for FRMS		CP7 - Biomathematical Model	CP7 - Planning tools for non-Rostered	CP7 - Supporting self-declaration
		CP7 - SPI driven Fatigue reports		
		CP7 - Alertness measurement & KPIs		

Annex F: Sign-off

Job Title	Name	Date
Group Safety and Engineering Director	Martin Frobisher	30/08/2023