

# **CP7 Delivery Plan**

**2024-2029**

**Technical Authority**

**March 2024**

## Foreword

Technical Authority has developed an ambitious Control Period 7 (CP7) delivery plan which will be objective focused on reducing costs, improving health and safety, developing environment and sustainability outcomes and meeting the needs of our regional customers. Building on the success of our CP6 modernisation our organisation has been right sized and is fit for purpose from day one of CP7.

Control Period 7 offers an opportunity for the Technical Authority to define the railway for a generation to come. The investment made within research, development & innovation (RD&I) within CP6 will see the delivery of long-term dividends that can be used as a platform to build from into CP7 and support regions to deliver the innovations and technologies which drive the successful modernisation of operations, maintenance and project delivery.

The railway's journey towards modernisation can only be delivered if Technical Authority creates an environment in which challenging the way we work becomes easier and more accessible. Streamlining standards will create improved operational performance and significant financial efficiency for Network Rail and the wider rail sector, by creating an environment which is able to respond to the rail industry and to respond to the technological challenges which are emerging for all industries, especially in cyber security.

Cyber risks are emerging at an accelerating rate. The Technical Authority's role is to support regions in strengthening their securities protocols to protect critical national infrastructure and our passengers. Without Technical Authority leadership the risk to the UK rail infrastructure of significant prolonged outage, created by cyber-attack, is increased due to a piecemeal approach to security.

The safety task force has successfully delivered improvements to reduce risk for our track workers and remove boots from ballast in CP6. Building on the success of the programme Technical Authority will move forward with plans to remove the need for detonators, to protect track workers.



Martin Frobisher OBE

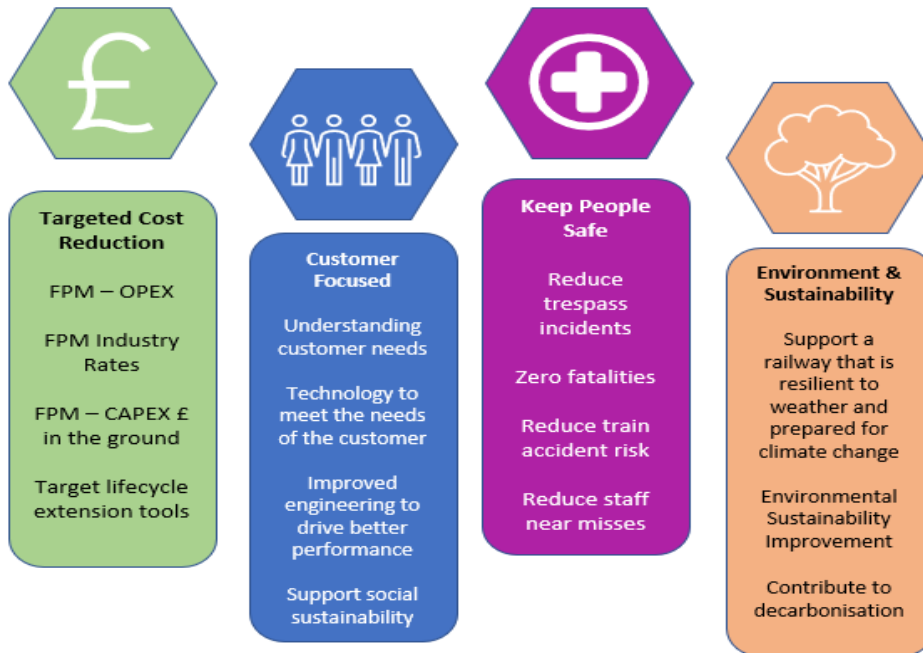
Group Safety and Engineering Director

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## Our 2024-29 plan on a page

Our delivery plan has 4 key themes:



Our top priorities in CP7 are:

-  Delivery of infrastructure that is resilient to weather, adapted for climate change and with zero asset failure.
-  Continuation of Safety development including reduction in trespass and level crossing risk, zero workforce fatalities, lowering train accident risk to keep our passengers safe, fewer staff near misses and reductions in workforce injuries.
-  Delivery of sustainable asset strategies aligned to the requirements of the customer, removal of legacy risk, and sustainable cost reductions, including earthworks, bridges and Buildings / Civils.
-  Technology Enabled Future aligned to industry common requirements with 30 % RoI within control period.
-  Carbon footprint reduction across the business including road fleet, fleet, worksites and the built environment.

## Who we are

The Technical Authority was established during 2020 as a centre of expertise, accountable for setting technical guidance for Network Rail and the railway system. We cover safety, health and wellbeing, environment and sustainability, security, engineering, technology, capability, compliance and incident investigations:



Technical Authority teams and accountabilities

We are building an expanding portfolio of practical solutions to support regions: from modernising the way we manage the railway through safer ways of working, to managing the railway in an increasingly uncertain and changing world including managing the impact of climate change and extreme weather on our network and operating under terror threats. We carry out these activities whilst engaging with external bodies from the ORR to the international railway community, to learn and improve.

## Our strategy and outcomes

The Technical Authority has developed an ambitious but deliverable plan for CP7, supporting Department for Transport and Transport Scotland objectives, as outlined below. This section will cover the plan we have developed but also how we plan to deliver it and realise the benefits for the rail industry.

The role of Technical Authority is crucial in delivering Network Rail's strategic objectives, by driving innovation and supporting our regions and functions to constantly improve their performance. We also support the regions and functions to manage their risks and have developed a bow tie model to support the regions in demonstrating their understanding of the change in safety risk profile in CP7 in a way that mitigates any increases in passenger and workforce safety risk.

In CP7 Technical Authority will build on the benefits of the research & development which have been delivered in CP6. We will deliver a continued programme of research & development, implementing lessons learnt including using benefits tool to assess RoI and setting up communities of practice to engage the business on scale up and deployment. This will support the regions and functions to implement the outcomes of the research & development completed in CP6. We will harness matched funding in the industry to increase the benefits delivered.

Technical Authority also plays a crucial role as the centre of expertise for health & safety, security, and sustainability. Technical Authority will continue to drive forward improvements in these key strategic objectives, simplifying our standards and processes, leading key improvement projects, and bringing together regions and functions to deliver benefits through the 'power of six'.

Technical Authority's CP7 delivery plan will deliver benefits for passengers and freight, deliver reductions in rail's carbon footprint, and drive down costs for the rail industry to deliver a financially sustainable railway. The following sections will set out our detailed delivery plan through each of Network Rail's strategic themes.



Health and Safety is at the heart of Network Rail. It is critical that we keep our staff, passengers and the public who interface with our railway safe and this drives the work across the Technical Authority.

A key area of focus is to improve our Health and Safety Management System (HSMS). We will deliver a clear, simple, and accessible Health and Safety Management System for use across the business, supported by policies and strategies across passenger, public and workforce safety that are aligned to the RM3 model and the safety framework.

Additionally, we will develop a new safety events system to simplify the reporting and analysis of safety data, as well as developing the technology used to write and publish standards to improve the effectiveness of our controls.

We introduced Railhub to systemize the creation of Safe Work Packs and Line blockage requests in accordance with the '019' standard. In CP7 further enhancement work is required to drive and sustain our efforts linking key risk control guidance to the Railhub system to be safer on track in a digital age that evolves at a forever faster pace.

The health and wellbeing of our staff at Network Rail is a key element of the Technical Authority plan, in line with regional teams. Our primary emphasis of this effort lies in identifying opportunities to achieve 'boots off ballast' and safely automate asset inspection and monitoring processes, incorporating advanced data techniques, and facilitating the integration of drone technology across the industry.

A key aspect of this activity involves collaborating with train operators to leverage technology such as drones for minimizing disruptions during incidents and expediting the resumption of services.

## Occupational Health and Wellbeing

The strategic approach to Health and Work will introduce a paradigm shift in the way that the Technical Authority has traditionally advised on health management across our national infrastructure. The shift will transition from a one size fits all approach to one that, when embedded, will enable us to measure sustainability of worker health and optimisation of workforce health performance – ultimately enabling us to 'run the railway'.

Being in work, staying in work and returning to work are all associated with improved mental and physical health, provided the work undertaken has security, realistic demands and a level of personal control – known collectively as 'good work'.

A Strategic Approach to Health and Work:

- Will enable us as an organisation to consider work as a health outcome, enable targeted intervention toward a desired health support or improvement.
- Will enable the use of health outcome data to be central to assuring our health performance and onward management of health risk within the workplace.

- Will enable effective health risk management – through the adoption of standardised awareness, measures of detection, monitoring and control, setting a level of zero tolerance to health harm caused from hazardous exposure within our workplaces.
- Will enable effective evaluation of ‘intervention’ to determine value, in support, adaption and or recovery of health challenge.

In CP7 we are planning to spend £13.5 million on improving our management of occupational health through a number of programmes, including occupational hygiene improvements.

In the last year of CP6 we brought our Occupational Health (OH) service in house. By doing so Network Rail will provide OH services that meet the needs and requirements of our colleagues and understands the work environment and job roles of our workforce. This service is delivered by a multidisciplinary team some of whom are experienced and qualified OH practitioners. The new in-house operation has 22 inhouse clinics located strategically around the country. Our focus in early CP7 is working with regions on embedding and creating a high-quality in-house service across the business.

### Workforce safety

Analysis of the workforce safety trends shows that the number of high potential incidents have been on a steady decline, mainly due to key safety improvements to reduce ‘strike by train risk’ where we have seen a 20 % reduction in Maintenance Scheduled Tasks (MSTs) and a 95 % reduction in unassisted lookout working (UAL). In CP7 our focus will be on three areas for improvement; they are insufficient Safe Systems of Work, working outside the limits of the plan, and signalling error.

Eliminating work activities is the preferred choice. Our plans include removing the need for Possession Support staff to lay detonator protection and continued implementation of remote monitoring for assets.

We will also support the introduction of innovative technology for Line Blockages (e.g., Remote Disconnection Devices), developing geo-spatial technology options for the improvement for fencing, tagging, sensing and management.

45 % of all workforce injury events are slips, trips, or falls and a key focus is to upskill our managers and supervisors on the effective actions that can be undertaken.

The two recent contractor fatality events at Gatwick and Glasgow have highlighted the need to maintain a robust assurance of the supply chain and collaborate closely through the Infrastructure Safety Leadership Group network. We will also coordinate with the regional Safety, Health & Environment Leadership Teams (SHELTS) to ensure efficient and focussed improvement working groups.

Our new Fatigue standard was published in CP6 and has increased the requirements above and beyond the Hidden recommendations. However, we have recognised that further maturity in fatigue risk management could be delivered by a modern fatigue management system. A detailed fatigue strategy and programme plan has been developed, and £675k of funding has been allocated to deliver improvements including replacing fatigue management tools, updating the fatigue standard, and creating a fatigue risk management system by December 2028.



## Public safety

Public safety within the accountability of Technical Authority includes monitoring level crossing risk, and community safety including trespass and suicide prevention.

- We continue to refine our level crossing controls, utilising the COVTEC system, and overlay miniature stop lights. Alongside this we will also continue with our educational campaigns to help the public understand the risks associated with level crossings.

Trespass and suicide remain national issues. We will continue to work in partnership with organisations with similar aims to expand the reach of our campaigns. Technical Authority will continue to develop innovative methods to target trespass and suicidal behaviour through CP7, with plans for research into behaviours, and exploration of how AI and machine learning can help us to tackle trespass and suicide.

## Passenger safety

It is vitally important for us to operate a safe network and continue promoting train travel as one of the safest forms of travel. Analysis of safety incidents shows that there has been an increasing number of train accident risk high potential events, in two broad areas:

- Earthworks events due to increased exposure to adverse weather events.
- Objects on the line (flooding and trains striking trees and other objects on the line) events – in particular storms resulting in objects blocking the line, including fallen trees, and flooding. The other category that remains persistently high is larger animals (cattle, horses, and sheep) being struck by trains due to fencing failures.

Technical Authority has made substantial progress toward answering the recommendations in the aftermath of the Carmont tragedy in August 2020, including updated national policies, and a new drainage technical strategy providing regional asset engineering teams clearer guidance and support for managing their earthworks, drainage systems and lineside assets.

To continue this progress into CP7 funding has been included in the Technical Authority's plan for the ongoing activity aligned to the Carmont Action Plan. Assurance of Regional plans for CP7 has sought to identify sufficient resources are being applied to risk mitigation across earthworks, drainage and lineside.

## System Authority – speed management system

The following changes have occurred since the draft determination to the current position:

- The original submission had within the scope the development of onboard systems in parallel with further work on the business case – this involved a number of challenges and risks. An alternative approach of developing a minimum viable solution is being pursued which could then be further developed should further business case elements be identified that enhances the industry business opportunity through enhanced system capability.
- The minimum viable solution is being developed such that it:
  - Supports ETCS
  - Supports key stakeholders in delivering their business aspirations.

- Can form the foundation for enhanced capability.
- For the minimum viable solution, the development work for the onboard systems is looking at utilising existing systems such as Drivers Advisory Systems as the initial interface with drivers. It is recognised that further development of these systems will be required but we are working with the supply chain to leverage this development within their own product lines.
- Further enhancements to system functionality could occur if the business analysis highlights a positive business opportunity including the use of external funding for development and implementation.

The changes identified above have facilitated the following changes to the position we set out in our draft determination response:

- R&D Funding: Reduced from £21.6m to £2-5m (depending on Axiom scope – minimum Axiom scope will support Speed Management and T190).
- System Authority: Reduced from £21M to £19m (but including elements of the SRMS development originally in the R&D portfolio). Scope no longer includes development and product acceptance of onboard systems.

Recognising the changes to the approach in the Speed Management development, the milestones shown on the recent presentation are still considered valid, as they currently reflect the current understanding of the steps to understand the minimum viable solution plus the business case that would provide the development path for potential capability enhancements.

### **Safety Milestones**

The table below shows the key health & safety milestones during years 1-4 of CP7. These will support the delivery of regional milestones as set out in their delivery plan documentation.

## Technical Authority CP7 Delivery Plan

Activity	When	Improvement area	Scope
National deviation enabling Possessions with signalling disconnections etc (T3A, T3D and T3T)	Year 1	Workforce safety FWI/LTI + efficiency	National
Health risk management framework	Year 1	Improve health compliance (reduce FWI)	National
Fire risk assessment tunnel methodology	Year 1	Train accident risk reduction	Operations and Tunnel assets
Incident response packs (Q1)	Year 1	Workforce Near miss reduction	National
New suicide partnership contracts (Q3)	Year 1	Reduced FWI + performance improved	National
LCM 5 – upskilling of current LCMs	Year 1	Level crossing risk – train acc and pedestrian (+legal)	LCMs
SEQOSH accreditation	Year 2	Enables compliance framework	OH service
Signaller workload tool	Year 2	<ul style="list-style-type: none"> <li>• Workforce near miss reduction</li> <li>• Train accident risk reduction</li> </ul>	National
COSS – design of modular	Year 2	Workforce safety FWI/LTI + efficiency	National
Implementation of FRA tunnels – training modules + emergency plan (Q1-4)	Year 2	Reduce fire risk	Ops and asset team
Complete stage 1 of fatigue standard update (Q3)	Year 2	Workforce, passenger FWI reduction	Industry wide
Metabolic education health programme (obesity / diabetes)	Year 3	<ul style="list-style-type: none"> <li>• Reduce sickness absence</li> <li>• Improved productivity</li> </ul>	Ops – control rooms
COSS modular Q3 deployed	Year 3	Workforce safety FWI/LTI + efficiency	National
Utilise our new H&S reporting system, removal of IRIS and CMO legacy systems	Year 3	Strengthen assurance regime	National
Publication of possession limit controls in rule book (Q3)	Year 4	Workforce FWI reduction + efficiency	Industry wide
ALCRM upgrades delivered ie new ALCRM system (Q4)	Year 4	Reduce train accident and Lxing risk	National



## Train Service Delivery

Excellent train service delivery is enabled through the development and deployment of sound engineering and asset management that delivers a safe and sustainable rail network for passenger and freight operators. The policies, procedures and guidance produced by Technical Authority, together with advancements in technology, insights and competence play an integral part in enabling train service delivery. In combination these support regional teams in developing more relevant and robust infrastructure for 21<sup>st</sup> century challenges while also speeding up the return to service of infrastructure following incidents.

More frequent and more extreme weather conditions caused by climate change have an impact on our ability to run the railway safely and on time. Our Environmental Sustainability Strategy, agreed with DfT, commits to our Standards being:

- continuously improved to reflect long-term climate change projections.
- updated to accord levels of service for extreme weather conditions planned to be agreed with Government and regulators by 2027.
- accommodate resilience into the way that we design, build, operate, maintain, and replace our railway assets.

Improved insights are available to regions from the CP6 Technical Authority project that provides criticality and vulnerability mapping of our assets for climate change. Moving forward we will be supporting regions to develop long-term adaptation pathway strategies and, by 2029, identify the level of investment required for different scenarios.

The management of the Industry Performance Improvement Fund (IPIF) by Technical Authority in CP7, working closely with System Operator, will bring together a benefits-driven governance structure aligned with the RD&I governance successfully implemented in CP6 to deliver value for industry performance that benefits passengers and freight customers. The fund will be a collaboration between Technical Authority and System Operator with input from a panel of senior industry stakeholders (passenger and freight operators) to assure and endorse initiatives presented.

The CP6 RD&I Portfolio has delivered tools which can be deployed into CP7 that have a focus on preventing failures which disrupt passenger and freight flows. CP7 will mark a turning point for next generation technologies such as new signalling capabilities (Target 190) for low-cost in train cab signalling systems and the development of next generation point operating equipment enabling more reliable and resilient solutions that will minimise disruption to passenger and freight services.

The advancement in technologies will include improvements in systems engineering, data and the technical knowledge of both staff and leaders during the development of infrastructure to respond to the challenges of climate change, severe weather and safety incidents.

CP6 has seen significant change in the way that security in the railway has been viewed. Continuing into CP7 Network Rail should expect to see a decrease in the number of security

losses occurring within our routes and regions that disrupt the train service that we can deliver to our customers. Regional security plans developed with support and assurance of Technical Authority expertise will protect route assets (including people, property, systems, infrastructure, equipment and information), from loss, damage, theft or compromise.

### Freight

Our vision is to serve the nation with the cleanest, greenest mass transport. We want to help freight users to make green choices. Through the delivery of the 2020 Environmental Sustainability Plan Technical Authority made a commitment to support Network Rail's long term [Traction Decarbonisation plan](#), which includes a proposed project to carry out low carbon feasibility studies for the transition away from diesel traction.

To support and enhance the sustainability credibility of rail freight the RD&I team within Technical Authority have worked alongside industry partners, such as RSSB, to develop a framework of RD&I in which rail freight is a core element moving forward. While not a core part of Network Rail's direct RD&I investment, we are committed to working with the wider Great Britain rail industry to deliver an efficient, available, and sustainable freight network.



## Customers & Communities

### Environment and Sustainability

To support the return of passengers to the railway in a post covid environment improving the customer experience is critical. Technical Authority is committed to supporting regional teams in improving the customer experience through policy, procedure, and development of new technology.

Working within, and externally, customer experience has been identified as a key theme for focus within the CP7 RD&I portfolio. Examples of the type of technology identified for RD&I over CP7 are Mobility as a Service (Maas), end to end journey planning, digital payment and ticketing, advanced gate lines and the deployment of infrastructure products with the aim of increasing accessibility, such as technology to improve wayfinding accessibility in stations. Sharing information on the RD&I planned for CP7 with industry groups, such as the TOC innovation group, will ensure that investment, and the returns on this investment, is maximised across the rail industry.

Utilising and building on key external groups such as academia will also enable long term research to be done in emerging customer experience areas such as: provision of customer information, accessible information, and routing through the network and 5G utilisation and new/novel forms of last mile transportation.

Network Rail has a responsibility in every community. This includes reducing carbon emissions, sourcing reliable green energy, and improving the air quality for our passengers and lineside neighbours. The Environment and Sustainability team have laid out ambitious targets to complete the transition of our fleet (cars and vans) to zero emissions vehicles by 2027. This is

being delivered by the Route Services Road Fleet team. By the end of the next control period purchasing of non-traction electricity will be well advanced towards 100 % renewables through Corporate Power Purchase Agreements. Improvements in air quality will be sought through the deployment of dust suppression systems which will be put in place across Delivery Units and worksites. Air quality within managed stations will also be addressed with a 25 % reduction in harmful pollutants, a target that will be tracked with improvements to Air Quality Monitoring.



## Efficiency

### Technical Authority Efficiency

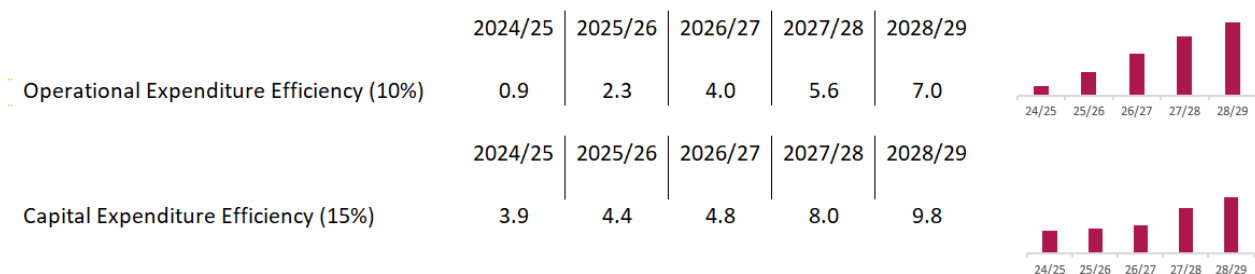
The Technical Authority recognises the need to demonstrate continued strong performance in achieving efficiencies throughout CP7. Our key challenge in terms of efficiency in CP7 is to continue to deliver under the financial constraints we all face. The regions, routes and wider industry are demanding more from us, so we need to deliver key productivity gains through our implementation of structured continuous improvement.

Technical Authority has 2 clear objectives for driving efficiency. The first is efficiencies that are driven and delivered within the function with the second relating to activity which drives and enables the delivery of regional and route efficiency.

#### Functional Target (Technical Authority)

Initiative	2024/25	2025/26	2026/27	2027/28	2028/29	CP7
Operational Expenditure Efficiency (10%)	0.9	2.3	4.0	5.6	7.0	19.8
Capital Expenditure Efficiency (15%)	3.9	4.4	4.8	8.0	9.8	30.8

#### Efficiency




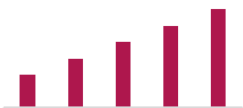

### Operational Expenditure Efficiency (£19.8m - 10%)

Efficiencies will be driven by managing headcount below our target operating model, whilst not impacting safety, reducing contractor and consultancy spend, reducing travel and hotel costs as well as reducing supplier costs through contract negotiation.

## Capital Expenditure Efficiency (£30.8m - 15 %)

Efficiencies will be driven through increased use of the Managed Service Framework, e.g., global contracting, more efficient capital delivery and programme maturity as we develop through CP7.

### Enabled Target (regions)

	Efficiency					
	2024/25	2025/26	2026/27	2027/28	2028/29	
Industry Reform Standards	23.7	46.1	46.1	46.1	46.1	
Research, Development & Innovation	6.7	10.1	13.4	16.8	20.1	
Engineering & Other	6.2	9.3	12.4	15.5	18.6	

### Industry Reform Standards - £221.7m

Standards govern how we design, deliver works, maintain, renew, enhance and operate our railway. They are essential ways of reducing risk and ensuring safety. However, there is an opportunity to take a more pragmatic, market-led and value-based approach to standards alongside a joined-up approach across the industry to deliver efficiencies without compromising safety and performance. Industry reform provides us an opportunity to work with stakeholders across the sector to improve both safety and delivery performance while being more efficient in the way we set, adopt and deliver standards.

### Research, Development, and Innovation - £71.8m

Network Rail’s Research, Development and Innovation portfolio is already driving savings for rail users with CP6 solutions already being deployed and driving improvement. The efficiency target of £71.8m will be driven by the continued deployment of the CP6 portfolio plus the efficiency driven by the CP7 Strategy.

The CP7 portfolio builds on the current success of RD&I focussing on Business Led Innovation to reduce costs. Business led themes were built on stakeholder engagement that created common requirements, benefits and support of implementation across business areas and assets, while supporting the transfer of ideas and technology to reduce cost.

### Engineering and Other - £66.4m

Technical Authority has challenged itself to drive additional efficiency in CP7. We have industry leading in-house engineering and programme expertise which we will leverage to deliver cashable efficiencies not just for Network Rail but for the industry as a whole, through centrally driven initiatives.



The rail technology team will have some specific objectives to support capital delivery to maximise funding available from supply chain and other sources to unlock efficiencies and benefits. Alongside capital delivery funding the Rail Technology team will also be responsible for identifying third party funding sources, such as governmental competitions, European funding and joint governmental funding. To-date in CP6 we have successfully gained £63m of third-party co-funding against £150m of direct investment. We aim to leverage an additional £70m of co-funding in CP7 through cross-industry collaboration.



## Sustainable Growth

The Technical Authority Environment & Sustainability team provide the overall strategic direction of the business for sustainability. The team exists to support the business in achieving its sustainability targets through providing the tools, systems, processes, and mechanisms required across the business in an efficient and consistent way. The team deliver work by building partnerships with professionals from both sustainability and other disciplines both within and outside of Network Rail. This enables us to support the Network Rail sustainability targets as well as the wider industry and UK Government targets as set out in the Rail Environment Policy Statement and the UK Government's 25-year Environmental Improvement Plan.

To support the achievement of the business objectives in CP7 the Technical Authority Environment and Sustainability Team will be working on initiatives across a number of key areas. These initiatives will be delivered through collaborative working across different disciplines within the Technical Authority as well as by working with the routes and regions, across wider industry by working with our supply chain partners, and beyond by working with partners from other industries and organisations.

- **A low emissions railway**
  - Create and update tools, systems, and processes to enable the business to measure and reduce scope 3 carbon emissions.
  - Support demonstrator projects and pilots to reduce our carbon emissions.
  - Conduct Feasibility studies for low carbon traction options.
  - Development of whole life carbon tools, including carbon-cost model, for infrastructure projects.
- **Minimal waste and the use of materials**
  - Create tools and systems for the business to support the embedment of Circular Economy Principles.
  - Increase competence and awareness of Circular Economy throughout the business.
  - Create circular closed loop systems for priority infrastructure materials.
  - Circular economy principles are embedded into standards and processes.



- Improved **biodiversity** of plants & wildlife
  - Embed nature-based solutions into standards and processes.
  - Create and update tools, systems, and processes to enable the business to measure improvements in biodiversity.
  - We will protect and maintain habitats on our estate. Any enhancement activity should look to establish the right habitat in the right place for the right reason.
  - Continue with research and development work on woodland and other habitat creation and management within the railway corridor.
- A reliable railway service that is resilient to **climate change**
  - Create and update tools, systems, and processes to enable the business to understand its vulnerable assets.
  - Climate change considerations are embedded into standards and processes.
  - National oversight of the Regional Adaptation Pathways Strategies.
- A railway that maximises **social value**
  - Embed the use of tools, systems and processes to measure impacts on social value.
  - Embed principles to support the maximisation of social value across the railway into standards and processes.
- Supporting the railway to be **simpler, better, and greener**
  - Create, update, and embed tools and systems to improve the quality of sustainability data reporting.
  - Increase competence and awareness of all areas of sustainability throughout the business and create a culture of sustainability.
  - Embed sustainability into existing business processes to support the railway to be greener by providing sustainable solutions.

## RD&I & Technology

Innovation is critical to the railway's future. The England & Wales HLOS noted that continued effective research, development, and innovation (RD&I), and adoption of technology, is 'essential to securing competition and innovation within rail' as well as improving 'efficiency and value for money of Network Rail's activities, including in how new technology can best support safety, workforce reform and modernisation.'

Over the next 20 years the CP6 RD&I portfolio is forecast to generate benefit opportunities of three times investment (£1.9bn NPV), by addressing current challenges. The direct investment acts as a catalyst for other third party and supplier investment, stimulating economic growth across Great Britain and supporting the levelling up of our economy.

We are pleased that the value of RD&I has been recognised and that £146m of funding has been granted and we aim to leverage an additional £70m of co-funding through cross-industry collaboration. The £146m direct investment has been distributed among various priority requirements. The increased emphasis on implementing technologies with a high readiness level

is expected to double the rate of return on investment during the Control Period, by creating a more balanced portfolio that will enhance our innovation capability, ultimately driving earlier and more sustainable benefits.

The use of partnerships and collaboration is a powerful accelerator of the RD&I portfolio in driving cost out of the rail industry, increasing value for industry and the supply chain and delivering a return on investment.

Examples of the partnerships which we plan to develop or continue are:

- With RSSB, developing freight operating improvements that support freight growth.
- Support existing supply chains and encourage new market entrants to identify cross-sector innovations to reduce Capex costs.
- With UIC, shaping remits for and contributing to projects with other European Infrastructure Managers (IMs).
- Bilateral partnerships with European and other international IMs.
- As part of the DfT Transport Research and Innovation Board, we will support the development of remits for and contribute towards research programmes that address common problem statements. For example, the proposed 'Net Zero Transport for a Resilient Future' research centre, started in September 2023.
- Increasing the utilisation of academic centres of excellence on rolling stock, infrastructure, digital systems and customer experience through UKRRIN to target research which can be developed into commercial products.

RD&I within the control period will be focused on delivery of regional requirements for performance improvement, remote or automated asset inspections and monitoring, decision support tools and 'predict and prevent' maintenance to remove boots from ballast. To support regions and routes in the delivery of innovation into a live environment the "First in Class" deployment model will continue to be deployed and enhanced over the coming control period.

The railway's contribution to national net zero targets will be delivered through decarbonising assets and operations, and modal shift from less sustainable forms of transport. We will support regions to work with the wider rail sector and its supply chain to progress towards achieving Network Rail decarbonisation targets. In parallel to cost reduction in CP7 we'll prioritise RD&I that reduces whole life cost and carbon, with both outcomes contributing to greater incentives for modal shift to rail.



## People

In order to meet its accountability for setting technical guidance for Network Rail and the railway system, the Technical Authority's people are fundamental to its success. Our vision is to make the Technical Authority a great place for people to do their best work, where employees feel engaged, valued, and cared for. A key priority for us remains to look after the safety, health and wellbeing of our workforce and drive-up diversity and inclusion.

The CP7 People delivery plan is aligned to the Network Rail strategic people objectives, to enable a great employee experience through an engaging, safe, and inclusive culture, have the right people, right place, right time, great leadership, and better work. To deliver against these as well as achieve our vision there are six people work streams that we will focus on, these are detailed below.

### Culture & Engagement

We will continue to listen to the feedback we receive from our Engagement surveys ('Your Voice') and implement action. In CP6 we launched our local recognition scheme which enabled us to recognise colleagues' outstanding achievements throughout the year. We will continue this and look at other ways we create a culture of recognition.

We will also continue to focus on creating a positive first impression and the effective integration of all our new starters by embedding our induction programme and build on the great work of defining our service catalogue, so colleagues understand how they/we contribute to Network Rail and the wider Rail Industry.

We will continue the work we started in CP6 of promoting and embedding several critical champion/ambassador groups; Everyone home safe every day, Health & Wellbeing, Equity, Diversity & Inclusion; and employee engagement. They will continue to work with the Leadership team to create and promote opportunities and initiatives that encourage collaborative working and increase engagement within Technical Authority.

Equity, Diversity & Inclusion (ED&I) – there will be a continued commitment on ED&I in which we will continually review and update our strategy adapting and responding to latest information and insights. As part of this we will review and develop the right metrics to measure what is working and where we may need to take action to further improve.

This will include reviewing our diversity aspirational targets, increasing the completion of Inclusive Leadership training for managers, and striving to deliver the allies for inclusion training to all our people. We will also broaden our recruitment approaches that attract diversity by removing gender bias from adverts, and advertising on diverse platforms.

### Great Leadership and Line manager capability

This is a pivotal part of creating our vision for our culture. Within the Technical Authority our leaders will be accessible and provide opportunities for our people to engage with them on a regular basis. In CP7 we will continue to invest in the development of our leaders so they can

support our people. This will be achieved via targeted Management Development initiatives for senior roles, focusing on both their management and leadership skills.

### Talent & Succession management

It is imperative that we not only attract and recruit the best people available for our roles but also retain and develop our colleagues. We will do this through robust talent management where our colleagues will be provided with opportunities for development and career progression. They will be encouraged to take personal ownership of developing their professional skills & expertise, their leadership & behavioural capability as well as competency management.

We will continue the roll out of the Empowered Talent tool and maintain regular talent forums to discuss our succession pipelines for our local critical roles and niche skillset development requirements within the Technical Authority.

In turn this will also support our Strategic workforce planning by identifying current and future resourcing needs and the skills required in the short, medium, and long-term. As the Technical Authority are seen as the experts it is therefore key to understand the business activities, having the right conversations and utilising good quality people data to bring insights and knowledge so we can ensure we have the right people, in the right place, at the right time.

A focus on developing an early engagement strategy has seen us introduce our refreshed Year in Industry roles which is focussed on developing the future pipeline for the Technical Authority. However, we acknowledge we need to do more.

### Organisational Design & Change

This will be enacted to create and embed the optimal operating model which will be reviewed, redesigned, and consulted as required which will enable us to do the right work in the right way (Better work).

To deliver change it is vital that our leaders are skilled to deliver change at pace, safely and with minimal impact to our people. During CP6 we delivered a number of change programmes where we invested in supporting our people through organisational change, beginning with transparent and timely communications delivered by the leadership teams and providing training to our line managers. This commitment will continue.

Type	Measure	CP6*					
		Exit	FY25	FY26	FY27	FY28	FY29
Scorecard Metric	Employee Engagement	48 %	49 %	50 %	51 %	51 %	51 %

\*CP6 exit positions are based on a forecast as at February 2024.

## How we have developed our plans

### Introduction

Technical Authority has developed our CP7 plans over the past two years using an iterative approach, to give time for extensive stakeholder consultation and made changes in response to consultation. We have worked within the national Network Rail framework, and used engagement with our regional teams, the wider industry and our regulator to refine our plans.

Since we published our strategic business plan, we have made changes to our plans to adjust to further funding pressures including the impact of higher inflation forecasts. Specifically, we have made a saving in our Other Renewals fund. In addition, we have re-scoped our train protection strategy to focus on defining the minimum requirements for development to meet business requirements while also delivering efficiencies in this area.

Technical Authority has used a customer led engagement model which supports the development of proposed strategies and portfolios which meet the needs of the regions and functions. This model has successfully utilised the identification of governmental policy drivers, engagement with regional teams to understand requirements, and the development of leadership and governance tools which have supported the development of regional submissions such as:

- Renewals volume guidance
- Safety Task Force Estimating tool.
- Health & Safety CP7 development Criteria
- CP7 Weather Resilience and Climate Change Adaptation (WRCCA) Guidance
- Updated guidance on the impacts of reducing renewals activity and expenditure in CP7, asset reliability, train services and maintenance requirements.

Technical Authority has considered the industry, its customers and stakeholders within the development of its plan and will continue to do so through CP7. The Market Led approach within the Renewals and Maintenance portfolio has been supported and assured by Technical Authority in conjunction with the regions. Technical Authority's CP7 plan is set to drive improvements through its strategy; for example RD&I, IPIF and Environment and Sustainability are set to drive improvements for Network Rail and the wider industry with a Market Led focus.

Technical Authority's approach to CP7 plan development will also support the relevant aspects of industry reform.

### Stakeholder engagement

Throughout the development of the CP7 Delivery Plan Technical Authority has utilised a customer led engagement model which supports the development of proposed strategies and portfolios which meet the needs of the regions, functions, and external stakeholders, such as Rail Industry Association, the Railway Safety Standards Board (RSSB), International Union of Railways (UIC) and government departments. The priorities of our stakeholders are broadly consistent across the following 4 key areas:

## Technical Authority CP7 Delivery Plan

- Keeping People Safe - with new programmes to remove people from risk, improved competencies and the ability to manage and control security threats.
- Targeted Cost Reduction – with the rationalisation of standards, development of engineering process support for the implementation of RD&I and improvements to occupational health services.
- Environment and Sustainability – leading the GB railway’s environmental sustainability strategy and social value framework, providing guidance on strategy implementation to support our ambitions for net zero carbon by 2050 (2045 for Scotland), net positive biodiversity, circularity of materials, a resilient railway, and a railway that delivers net positive impacts on society.
- Greater Collaboration – lead Network Rail in the creation of cross industry collaboration which delivers value for money and sustainable relationships.

The feedback has identified that regional, and stakeholder teams, view Technical Authority as the leader of key industry priorities, such as engineering, safety, RD&I and environment and sustainability. The business however identified that there is an opportunity to increase the return on investment from Technical Authority initiatives in CP7. Regions and external stakeholders have made it clear that support from Technical Authority would be necessary through CP7 to implement the outputs of Technical Authority’s CP6 portfolio which would enable the industry to achieve the significant efficiencies available. This support does not need to be a project delivery workforce within Technical Authority but could take the form of increased guidance, implementation funding or partnerships to enable successful completion of workstreams.

In providing the business with this key short-term support to realise benefits in areas such as weather resilience, RD&I and Asset Management, Technical Authority has provided a number of leadership and governance tools to support the implementation of R&D outputs.

The Technical Authority plays a key role in supporting Network Rail in delivering against our funders and industry’s objectives. Through the delivery of the strategy outlined in this document Technical Authority will support Network Rail in becoming ready for rail reform and supporting the further devolution of accountabilities into regional teams in line with business priorities. To do this the Technical Authority team has developed a financial submission that delivers the relevant core requirements of the England and Wales HLOS, alongside that of Scotland, and consistent with the overall level of CP7 funding. We will continue to engage with Scotland’s Railway and Transport Scotland on how this plan aligns with their HLOS throughout CP7. This has required some outputs and responsibilities to be prioritised, such as Research, Development & Innovation recognising the overall CP7 affordability context. We have taken an iterative approach to developing our plans, responding to feedback from the draft determination and identified further efficiencies in our plans. At each round of planning for CP7, we have re-prioritised our plan to meet business requirements. Through each round we have reviewed the funding and reductions have been made. In particular, we have reduced our funding for other renewals and reduced our headwind by 50 % to accommodate higher inflation/input price impacts. In the latest rounds of planning a further reduction of £32 million has been made across Technical Authority.

Technical Authority has a key role in developing tools which are optimised for the whole industry and can create end market demand. Examples of this can be seen in the effective development of the RD&I portfolio which will aim to secure £70m of third-party funding. Working with industry partners, such as RSSB and RIA, to create a collaborative RD&I framework will support the rail sector in maximising the investment the government makes. Alignment with other governmental arms lengths bodies is already in place across Highways, aviation and DfT.

Small contributions to RD&I into complex cross industry risks can create large long term returns on investment that would not be possible with Network Rail's singular outlay. The use of partnerships and collaboration is a powerful accelerator of the RD&I portfolio in driving cost out of the rail industry, increasing value for industry and the supply chain and delivering a return on investment.

Building on the success of modernisation within CP6 there is broad support for Technical Authority plans within regional plans, including for safety, security, RD&I and Environmental Sustainability, and at a regulator level.

### **CP7 asset management**

Network Rail's infrastructure assets support train services by providing highly reliable and available assets. Renewals and Maintenance activity sustains this service offering.

Throughout the CP7 planning process Technical Authority has applied network level models and analysis to evaluate the impacts of various funding models in support of the regions. From this work estimates have been derived for the impact to service affecting failures, additional maintenance costs and additional disruption to train services. This has played a key part in helping regions reach the most effective asset management decisions within the funding envelopes.

Each year there are around 25k incidents (referred to as service affecting failures) that create disruption to train services equivalent to around 1/4 of all delays. We have gathered learning from incidents over the past 20 years and have shared these through tools and dashboards. These insights have provided support and guidance to regions, together with benchmarks of good practice which has supported regions in forming their plans and the Technical Authority assurance of the forecast impacts. The Technical Authority has undertaken significant and detailed assurance to support the development of regions' CP7 renewals plans throughout the iterative CP7 plan development process. Work to support CP7 delivery plan development has been strengthened through the use of a safety risk bow tie framework that tests more explicitly how proposed renewals and maintenance plans work in harmony to retain and strengthen safety controls. The safety risk bow tie work has also enabled the improved sharing of practices across regional teams; this work will continue to be improved across CP7, with the Technical Authority supporting regions to lock this approach into their own planning and assurance activities.

## CP7 financial summary

The Technical Authority is trusted as an innovative leader on engineering, safety, sustainability and security matters, as well as leading research and development that delivers substantial efficiencies across the rail industry.

Our CP7 submission supports an increase in our support and operations costs, to deliver the improvements that the industry needs. We have delivered our headcount reform targets for CP6.

The following tables show our forecast expenditure and income in CP7, as compared to our CP6 exit figures. They are broken down to show each year of the delivery period.

### CP7 expenditure

£m in cash prices	CP6 exit	CP7 baseline					CP7 total
	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	
Support and operations	46	62	63	63	66	64	319
Maintenance	3	0	0	0	0	0	0
Industry costs and rates (excl. BT Police) *	14	15	15	16	16	17	78
Renewals	120	74	65	67	56	54	316
Risk Funding	0	0	2	3	4	4	13
Allocated Expenditure	-183	-150	-145	-149	-142	-139	-726
Electricity for traction (EC4T)	0	0	0	0	0	0	0
<b>Total expenditure (excl. EC4T)</b>	<b>0</b>	<b>-0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

\* Industry costs and rates include Cumulo Rates, ORR subscription, Rail Delivery Group subsidy, etc.

As part of finalising this delivery plan, as agreed with ORR, there has been a reclassification of some expenditure between operations, maintenance and support which means that these categories cannot directly be compared to our Draft Determination response or our CP7 Strategic Business Plan.



## Risks and opportunities

Technical Authority is responsible for the management of significant business risks which impact our ability to deliver our strategic priorities of Train Service Delivery, Sustainable growth and Safety. Our plans have been developed to support and contribute to the management and mitigation of these risks and opportunities. Technical Authority has developed a mature and layered approach to risk management which not only includes executive level ownership of risk but also delivery of operational level risk mitigations throughout the organisation.

Technical Authority manages a broad range of risks, many of which could have significant consequences for Network Rail and wider industry partners. For example, a cyber-attack could cause significant passenger delay, a loss of confidential data, or a loss of life through malicious action. Technical Authority constantly monitors and updates risk profiles for the risks it manages on behalf of Network Rail, meaning that key risks are understood going into CP7 and have informed the development of the core of our plans for the control period. Technical Authority also undertakes an assurance element of the controls being devolved to regional and functional teams.

Through this consultation process some emerging future key risks have been identified and are being mitigated by the delivery plan:

- Environment strategy – Delivery of the initial environmental strategy elements have been devolved to regions and included within plans. Additional longer term funding requirements have been identified as part of the RD&I plan.
- Fire Safety – Regional teams have developed a response, and included funding, to the Technical Authority strategy and requirements around fire safety.

Unlike regional plans, we have not identified activity in our CP7 plan that we would expect to defer or de-scope if risk materialised in CP7. This is because there is very limited scope to decrease opex in response to risk materialising, and we plan to manage within our capital budgets during the control period. Where risk materialises, during CP7, to the extent that we cannot manage within our existing budgets, we will discuss this with our regions and Group Finance to agree how we respond.

Potential financial risks have been considered throughout the development of our CP7 plans and below are what we believe to be the key drivers:

- Compliance – In order to develop an affordable CP7 plan a prioritisation exercise took place to highlight legal and regulatory obligations, and safety and performance-based objectives. Through this prioritisation exercise our CP7 plan seeks to mitigate non-compliance related financial risk going into CP7, although there is a risk that we have made incorrect assumptions about the impact of the reductions on delivery of our commitments.
- Inflation – There is a financial risk that different elements of costs within our plan vary from the forecasted inflation rates.

Our CP7 plan reflects our best estimate of the cost of delivering the outputs we set out in our plans. 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; Technical Authority has reduced the headwinds target by 50 %.

### **Emerging Opportunity**

GBR integration – Additional consideration to Technical Authority’s plan may be required under the proposed Plan for Rail reforms. This may provide opportunities to consolidate current disparate processes into single, industry wide processes, with common systems providing efficiencies for the industry.

## Governance and assurance

The framework for development of the Technical Authority CP7 submission has been based on regional engagement and collaboration at a departmental level. This has resulted in the inclusion of Technical Authority requirements into regional plans, where necessary to improve devolution and push accountability closer to the operational railway.

Our plans have been developed with deliverability in mind. Each of our functions has ensured that:

- Regional sponsors for workstreams are in place, or will be identified before work begins,
- Delivery teams for Technical Authority elements will be in place for planned activity,
- Key resources are identified and available.

### Research and Development governance

Governance of the portfolio will be developed with a flexibility to meet the emerging needs of the rail sector as GBR's requirements become more apparent. It is envisioned that the CP7 governance framework for RD&I will be based on the current CP6 framework, which has been positively endorsed by the ORR. This framework features a multi-sector independent advisory board and strong regional and discipline involvement through idea generation, project remit development, technical peer review of proposals, authorisation of funding and tracking of project delivery. A key part of this framework is the continued use of the Rail Industry Readiness Levels to assess not only technology maturity but also key dimensions of business and supply chain readiness.

### Assurance

We have confidence in our plan for CP7, as it is built on our successful delivery in CP6, and we have developed and matured the processes we had in place to deliver throughout CP6. We have multiple case studies of our successful delivery in CP6, which have been used to develop our plans. In CP6 Technical Authority has matured and developed excellent processes for programme management, stakeholder engagement, and internal assurance, as well as put in place an organisation with the capabilities to deliver our plans. This has allowed us to successfully deliver major programmes in CP6, whilst reducing our use of external consultants. Building on, and evolving from, our delivery in CP6 leads us to have confidence in the robustness of our CP7 plans and their deliverability.

Our assurance in CP7 will be layered, with each project governed through project and programme management boards, as well as reporting to the wider business through our stakeholder engagement meetings. Formal assurance will be carried out through the financial re-forecasting cycles every 6 months, including engagement with the wider business to understand how any changes to plans impact other parts of the business. Between these times there will be constant dialogue through steering groups and other meetings, including with our internal and external stakeholders.

## Delivery for the year ahead (2024-25)

### Overview

Each business unit in Technical Authority has set out their Year 1 priorities. Each programme identified has funding allocated, and progress will be regularly monitored. The priorities for each business unit have been set out below.

### Research, Development & Innovation

For CP7 business requirements were agreed to address regional challenges. Following the overlay set out for Technical Authority, prioritisation of activities in all disciplines was required to meet the revised budget.

Programme managers have been working with Network Technical Heads to re-prioritise the priority 1 projects. All disciplines have completed prioritisation to deliver on budget.

Priority themes for year 1 include a focus on:

*Asset resilience and automation* – vulnerability and asset criticality robustness against extreme weather, panoptic bridge management and Solid State Interlocking life extension

*Optimised assets and operations* – “Target190” outputs such as synthetic environment and cost-efficient electrification.

*Data and digitisation* – lifts and escalators, Digitised Lineside Inspection next phase, trespass management (using drones)

*Freight capability* – enabling low-cost intelligent wagons.

One-page summaries for each of the priority 1 projects have been developed with benefits cases provided to support the RD&I portfolio.

We are also reviewing the priority 1 projects against RSSB’s list of research subjects to align these for co-funded opportunities.

### Industry Performance Innovation Fund (IPIF)

The new IPIF panel has commenced with current plans focussed on closing out CP6 projects. Three projects have been identified for rollover into CP7 associated with completion of Dual Variable Rate Sanders fitment on Northern trains.

We have commenced communication with routes, TOCs and Network Rail Freight teams to publicise the availability of this fund and we are compiling a list of innovation and performance initiatives that can be included in Year 1.

### Engineering

*Competence* – this will deliver missing routes to competence, risk-based competence frameworks (reducing the number of competencies staff need to hold and so time spent on associated courses and annual review paperwork) and improvements for key roles through role-based competence (RBC); the Infrastructure Maintenance Engineer and Infrastructure

Maintenance Delivery Manager roles are targeted in yr 1 of CP7. Expansion of updated Signalling Maintenance Testing Handbook (SMTH) competence approach across industry -the internal SMTH recert programme shows the power of good competence interventions to transform business performance.

*Engineering Programmes* – 75 projects across all disciplines addressing safety, efficiency and performance. Highlights of what we will deliver:

- standard updates to enable efficiencies across all disciplines and improved media for briefing,
- System Control and Data Analysis (SCADA) replay hardware update (supports regional insight into traction power performance),
- improved tools for workbank modelling supporting decision making in CP7 and CP8 business planning (all assets),
- earthwork monitoring using satellites and drones,
- buildings thermal efficiency improvements in line with hot weather review,
- 290re reliable design for double junction designs to meet route requests,
- structures site data capture – to achieve accurate defect capture to reduce risk of wrong defects being addressed,
- continue to fund supplier support to routes for complex signalling systems.

### **Safety**

*Improved Occupational Health control* – Our focus will be on preventing and reducing exposure to weld fume and silica dust through engineering controls and strengthening our assurance activity.

*Level Crossings* – our focus is to continue to improve the level crossing risk management framework by upskilling our level crossing managers so that they can make high quality risk assessments to drive improved decisions as to when and how we improve our level crossings. Make continuous improvement to our All Level Crossing Risk Model System and processes to make risk assessment quicker and easier as well as updating the level crossing inspection protocols within the MyWorks App. We will also develop improved costs for the purpose of Cost Benefit Analysis as well as complete works to identify potential efficiencies in the installation of technology to reduce the cost of upgrading passive crossings.

*Trespass / Suicide prevention* – we will continue to work with our key partners to produce strong focussed campaigns to prevent people causing harm on the railway. We will continue ethnographic reviews of hotspot locations to inform future areas of focus. We will also complete a review of suicide and trespass signage to inform creation of guidance and new signage if required. We will also start to look at improving trespass and suicide prevention data, intelligence and insight, as well as completing phase two of the project to quantify the benefits of trespass and suicide prevention interventions.

*Rail hub* – we will update our staff permit system enabling them to access the infrastructure in a controlled manner. We will provide an incident response pack system, develop the possibility of an industry wide solution and provide geo-location for staff on the ground.

*Controller Of Site Safety (COSS) modular* – We will turn our attention to improving the skill of our COSS's, so they become stronger safety leaders with improved focussed training and assessment.

*Possession limit controls* – our ambition is to replace lamps and detonators at possessions by using our high integrity signalling system.

*Fire* – we will continue our programme to reduce fire risk across our estate, in occupied and un-occupied buildings, upskill staff and assess the risk of fire prevention in our railway tunnels.

*Fatigue* – We will propose a new programme to improve staff alertness toward the end of year one.

*Standards modernisation* – we are transforming our standards process by digitising them.

*Risk Assessment Management System* – toward the end of year one we will propose a project to modernise how we conduct and access risk assessments.

*Safety event reporting system* – having developed our new Close Call platform we will modernise how we capture and record all our health and safety incidents onto a modern IT platform. The benefits from this will bring significant improvement in how we can manipulate and analyse data to strengthen our targeting of controls. In addition, it will systemise our investigation process; this will improve the quality and assurance of the process.

## **Security**

*Security intelligence platform* - we will deliver an effective security threat intelligence platform to inform security risk management and decision making across Network Rail so we can prioritise security controls and initiatives where they are needed.

*Railway Crime Strategy, standards & guidance* - we will make it easier and more cost effective for Routes to effectively manage Railway crime by updating the railway crime strategy and associated standards and guidance and providing the tools they need to drive down crime.

*Cyber Risk Management* - regions and routes will be properly equipped to effectively manage cyber risks to the systems they own, by the Security team delivering the tools and support they need to take ownership.

*Detecting concealed weapons and explosives* - our work developing technologies that detect concealed weapons and explosives will continue, aiming to deploy a trial system at a managed station, and developing our approach to assessing risk from terrorist attacks to enable proportionate controls in the design of structures and buildings.

## **Environment**

*Whole Life Carbon (WLC) Archetypes* – Project to define the benchmark whole life carbon for railway asset types such that the business can drive down its scope 3 carbon and achieve its scope 3 and net zero ambitions and targets.

*Mobile wind turbines* – Project to support the use of mobile wind turbines to supply lineside welfare type facilities with power using wind energy, supporting the welfare of our teams whilst lowering our emissions and reducing noise impacts.

*Data Transformation Programme (with Route Services IT)* – Project to create a sustainability data system to enable better management of business information to make smarter decisions and make the management and integration of sustainability across the business simpler and better.

*Sustainability induction e-learning for whole business* – Project to create new and updated sustainability induction e-learning training to embed sustainability into our core business.

*Sustainability Impact Assessment Tool* – Project to develop a tool to enable non-sustainability professionals to evaluate the sustainability impact of their project be it a standard, investment decision or through the project lifecycle. Enabling a simpler and better way of making informed decisions and moving away from the existing Environmental Sustainability Appraisal Tool that is no longer fit for purpose.

*Improved biodiversity measurement* – Project to improve the granularity of our network wide biodiversity data to enhance our understanding of the lineside and to help us achieve our net gain ambitions.