England & Wales Strategic Business Plan

Control Period 7

19 May 2023

Foreword

In the next control period, we will celebrate 200 years since Britain's first regular scheduled rail service. This transformed the economic success of Britain, revolutionising mass public transport – which quickly became the envy of the world. Nearly 200 years later, our railways continue to play a critical role in connecting Britain, moving goods across the country, and supporting strong economic growth.

As we entered Control Period 6 (CP6), Network Rail faced a legacy of challenges including poor train performance, a failure to deliver on promised efficiencies, escalating costs of enhancements and low levels of public trust. Failures across the industry to properly implement the May 2018 timetable reinforced that our railways were fragmented and did not deliver for passengers or freight customers.

Against that background and despite the unprecedented challenges of Covid-19, which none of us foresaw, and the longer term impact the pandemic has had on the railway, we have much to be proud of in our delivery. Not the least of which is that we are on target to outperform our regulatory efficiency target by over £500 million.

As we look to the next five years and Control Period 7 (CP7), I am encouraged by the Government's commitment to invest £44 billion in the operations, maintenance and renewal of the railway in England & Wales.

However, with the impact of inflation and constrained public finances, our funding will need to go further than ever before. We have developed an ambitious Strategic Business Plan (SBP) for CP7 that responds to the objectives set by the Secretary of State in his High Level Output Specification. Our SBP also supports the delivery of the Government's five long term strategic objectives for rail and lays the foundations for the creation of Great British Railways (GBR).

There will be challenges ahead, known and unknown – but there is a strong commitment in Network Rail and beyond to seize on the opportunities and navigate uncertainty together.

I look forward to working across the industry to deliver this plan and reshape the industry as we rebuild from recent challenges.

Andrew Haines OBE

chief executive

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Executive summary

Purpose

Our Strategic Business Plan (SBP) for England & Wales sets out what we intend to deliver between 1 April 2024 and 31 March 2029. This five-year period is called Control Period 7 (CP7). This SBP for England & Wales consolidates and summarises our four region and six function SBPs to provide an overall England & Wales SBP. Also published alongside this England & Wales overview SBP we are publishing our region and function SBPs.

The SBP is a critical milestone in the Office of Rail and Road's (ORR's) assessment of our planned expenditure and income. ORR also determines the regulated outputs we need to deliver in CP7.

In this document we set out how we will deliver the Secretary of State for Transport's expectations for CP7 (set out in the [High Level Output Specification (HLOS)](#) published in December 2022) for the level of funding provided (set out in the [Statement of Funds Available (SoFA)](#). This includes how we will further the Government's five strategic objectives for rail: meeting customer needs; delivering financial sustainability; contributing to long term economic growth; levelling up and connectivity; and delivering environmental sustainability.

Consistent with the HLOS and SoFA, our SBP covers the planned activities, outputs and costs of operating, maintaining and renewing railway infrastructure in England & Wales. It does not include any enhancement expenditure or activity, but it is aligned with the wider rail network enhancement programme in so far as is known, given the changes potentially necessary as a result of the November 2022 Autumn Statement and known pressures. Nor does it include any Great British Railways (GBR) related activities and expenditure, although we have worked closely with the GBR transition team (GBRTT), reflecting our expectation that Network Rail will transition into GBR during CP7 and GBR will inherit the funding and output obligations resulting from PR23.

To support ORR's SBP assessment and the work towards its draft determination, we submitted our SBP to ORR on 24 February 2023. It was not published at this time, as publication requires approval by the Secretary of State for Transport, in accordance with the terms of Network Rail's [framework agreement](#) with the Department for Transport (DfT). While our CP7 planning continues to evolve in light of new information, such as new inflation forecasts, our SBP reflects the status of our plans at a point in time. We have not made any material changes to reflect new information in this document since our 24 February submission.

We have also made a separate submission to ORR for Scotland, in response to Scottish Ministers' HLOS and SoFA. As the Scotland HLOS and SoFA was only published in early February 2023, Scotland's Railway's CP7 submission has been made to ORR on an interim basis. We are continuing to align our plans for Scotland's Railway to the funding available and Scottish Government's requirements, and plan to publish an update in due course.

Our SBP reflects over two years of iterative planning work by our regions and functions, and engagement with DfT, HM Treasury (HMT), Office of Rail and Road (ORR) and stakeholders. Our SBP is underpinned by robust and detailed evidence. However, we have had significantly less time to reflect and update our plans following the England & Wales HLOS and SoFA compared with previous periodic reviews, with only 12 weeks between their publication and the submission of our SBP to ORR on 24 February 2023. This has impacted the extent to which we have been able to complete all our planning and consideration of all the necessary trade-offs to the level of detail and quality we want; and to carry out final assurance and reflect the findings in our plans. We will continue to work with ORR to support its SBP assessment and draft determination development.

Context

The last few years have been incredibly challenging for the railway. Since March 2020 Covid-19, and the associated lockdowns and restrictions, there have been radical changes in the ways that passengers use rail, and a significant reduction in industry revenue. Covid-19 and the Russian invasion of Ukraine have exacerbated already challenging economic circumstances in the UK, adding to the pressures on public finances and the availability of funding for rail. We have been, and will continue to be, impacted by the effects of the recent surge in inflation. While industrial action impacting Network Rail's activities has recently come to an end, over the last year train service performance has been severely impacted by the industrial relations disputes across the industry, as well as issues around train crew and service levels. We also continue to experience more frequent extreme weather events across the network associated with climate change, which our assets have generally not been designed to cope with.

Despite these challenges we have remained on a firm financial footing in CP6 and we are on target to make a further £500m of savings on top of our original £3.5bn five-year efficiency programme – exceeding the efficiency targets set by ORR for the first time in our history.

Looking ahead to CP7

The Government's £44bn commitment to funding the operation, maintenance and renewals of rail infrastructure over the next five years is a significant vote of confidence in the industry's future – but our funding will need to go further than ever before.

Our CP7 funding is an important recognition of the economic and social value of rail and its role in supporting the country's economy. This is increasingly important at a time of constrained public finances and as we aim to get the railway back on a more sustainable financial footing following the impact of Covid-19.

The certainty provided by five years of funding helps us and our supply chain to plan effectively and make investment where passengers and freight users tell us they need it most. Our SBP will lay the foundation for the biggest change to the railway since privatisation: rail reform and the creation of GBR. As such, CP7 should provide a significant opportunity to exploit whole industry delivery and cost efficiency opportunities, through even closer working with operators. In turn this will improve customer experience of the railway, reduce the burden on the taxpayer and enable a simpler, better railway.

With opportunity comes challenge. There will be a range of cost pressures in CP7. Managing infrastructure, that in some cases is nearly two centuries old, is a significant challenge, especially when combined with the impacts of a changing climate, and significant inflation risk.

Large parts of the rail network continue to depend on structures, buildings and earthworks assets that were installed as the railway was originally built between 1850 and 1920. A growing number of these assets are reaching 'end of life', as well as being exposed to changing weather patterns, which increase defects, failures and weather-related disruption to passengers and freight users. We have made resilience improvements to our assets over the last decade. However, we have seen a 50 % increase in adverse weather impacts over the past five years compared to the previous ten – a trend that we expect to continue.

Developing our plans for the next five years

This is the first periodic review and SBP following the organisational changes we made as part of our Putting Passengers First (PPF) programme in 2019. PPF resulted in greater responsibility and accountability for planning and delivery being devolved to the five newly established regions (including Scotland), which comprise 14 routes across the network. This has enabled more decisions to be taken closer to passengers, freight users, train operators and stakeholders.

Whilst our plans for England & Wales for CP7 have been developed as part of a single national framework there is no 'one size fits all' approach. Each region and function has responded to their own unique circumstances and challenges, reflecting the priorities of stakeholders locally. 'Bottom-up' plans have been developed for CP7 which are fully owned by our regions and functions.

Our planned expenditure

Our planned total expenditure in CP7 for operations, maintenance, support and renewals is £37.5bn, which is 2.5% higher than our projected CP6 expenditure. Once industry costs and rates, and the costs of ETCS enablers (principally cab fitment) are included, total expenditure is planned to be £40.0bn, which is 4.9% higher than CP6. Table 1 summarises our planned CP7 expenditure and income for England & Wales. Annex 1 to this document contains a more comprehensive breakdown (including by year).

Table 1: Summary of CP7 expenditure and income for England & Wales

£bn, 2023/24 prices EXPENDITURE	CP6	CP7	Variance
Operations, maintenance and support	18.24	18.81	3.1%
Renewals (core asset renewals and other capital expenditure)	18.39	18.22	-0.9%
Group risk	0.00	0.50	n/a
Post-efficient OMSR total*	**36.63**	**37.54**	**2.5%**
Industry costs and rates	1.53	1.67	9.5%
Traction electricity (EC4T)	2.64	4.06	54.0%
ETCS enablers	0.00	0.81	n/a
Post efficient total expenditure*	**40.80**	**44.08**	**8.1%**
Post efficient total expenditure (exc. EC4T)*	**38.16**	**40.02**	**4.9%**
INCOME			
Passenger track access charges	-7.11	-7.18	1.1%
Station and depots charges	-2.97	-3.02	1.6%
Freight and open access track access charges	-0.48	-0.46	-4.8%
Property and other income	-1.96	-1.73	-11.8%
Schedule 4 and 8 (inc. access charge supplement)	0.23	0.07	-66.9%
Traction electricity charges	-2.64	-4.06	53.7%
Network grant	-25.85	-27.7	7.1%
Total income	**-40.80**	**-44.08**	**8.1%**

*Includes 'contingent' risk of £1.48bn in CP7. Our approach to risk management in CP7 is summarised below.

Listening to our stakeholders

Our regions and functions have undertaken extensive engagement with customers and other stakeholders to understand their priorities for CP7. We have established regional challenge panels to provide external scrutiny of, and input to, our CP7 planning. We have also carried out a survey jointly with Transport Focus 'Britain's railway: what matters to passengers - Transport Focus' which asked 15,000 passengers about their priorities, and has helped inform our CP7 planning. Now that the level of CP7 funding has been confirmed and we have developed our SBP in response to that, we can engage more fully with our stakeholders on the detail of our plans.

Investing in what is valued most by our customers and wider society

Focusing our investment on what customers and wider society value most is fundamental to the success and financial sustainability of the railway.

Recognising the challenging financial context, we are continuing to focus on becoming a more efficient organisation. We have also had to make some difficult choices and trade-offs about how we allocate our spending in CP7 to provide the most value.

We have developed our plans with a principal focus on customer priorities of safety and train service performance and to support revenue recovery in CP7. This has involved prioritising our asset investment on areas which will provide the most value, to support key revenue generating areas of the network while providing an appropriate level of service to areas where revenue is typically lower. This is a more market-led and whole industry approach to planning than the traditional asset condition focused approach. We are also dedicating a significant level of spending on technology development and implementation and research, development & innovation. These activities are important as they contribute to the long term economic, financial and environmental sustainability of the railway.

We know that there are real opportunities to further reduce costs by targeting to an even greater extent maintenance and renewals activities in CP7, where they deliver most value and best reflect passenger and freight needs, reflecting a whole system view of costs and benefits. This could include aligning network capability better to passenger and freight need. We are working with operators to better align our business planning activity. However, to really maximise on the opportunities we need to take a much greater whole industry approach to planning and delivery.

We are currently working to identify additional opportunities, but these are not yet sufficiently mature to include in our plans, and we need industry, government and regulatory support to progress. We will continue this work over the remainder of CP6 and into CP7, with the intention of creating further financial headroom to support delivery of our CP7 objectives, whether this is investment to support train performance in CP7 or expenditure on enablers to support the development and performance of the network over the longer term.

What our plan will deliver in CP7

Our ambitions and objectives for CP7 have been developed within a strategic planning framework that seeks to best support the delivery of the Government's five strategic objectives for rail, as well as taking into account ORR's four stated periodic review objectives of safety, train performance, efficiency and asset sustainability – all within the funding available.

Table 2 below, summarises our forecasts for the 'Tier 1 success measures', which ORR has confirmed it will use in CP7. It sets out forecasts based on our ambition for CP7 assuming that risk does not materialise, as well as our 'risk-adjusted' forecasts, which take account of what we think we can deliver if a reasonable level of risk were to materialise during CP7. We expect these risk-adjusted measures to form the basis for our regulatory baselines in CP7.

Table 2: Summary of what our plan will deliver in CP7 against ORR's Tier 1 measures (plus safety)

			Measure	CP6 forecast	CP7 ambition (100% plan)	CP7 forecast (risk adjusted plan)
Meeting customer needs	Safety	↑	Train accident risk reduction	95 %	95 %	95 %
			Workforce fatalities and weighted injuries	0.0567	0.0472	0.0480
	Train Service Delivery	↔	Passenger On Time	65.2 – 67.2 %	65.2 – 67.5 %	
			Passenger Cancellations	3.0 – 4.1 %	3.0 – 4.1 %	
			Freight Cancellations	1.4 – 2.6 %	1.4 – 2.6 %	
	Freight growth	↑	Freight moved	7.5 %	7.5 %	7.5 %
Financial Sustainability	Efficiency	↑	Operational efficiency	-	£1.2bn	£1.2bn
			Capital efficiency	-	£2.2bn	£2.0bn
	Asset sustainability	↓	Composite Sustainability Index	-	-2.8 %	-3.1 %
	Financial performance	↔	Financial Performance Measure	0	0	0
Environmental sustainability & climate change adaptation	Environmental sustainability	↑	Carbon emissions	-25 %	-21 %	-18 %
			Biodiversity units	0 %	+4.5 %	+3.9 %

Note: ORR has not set out Tier 1 success measures for health and safety monitoring in CP7 (as health and safety legislation compliance takes precedence) although Train Accident Risk Reduction (TARR) and Fatalities and Weighted Injuries (FWI) for our workforce are both included as key supporting measures in our SBP. Environmental Sustainability measures reflect the forecast percentage point improvement through CP7 compared to the relevant baseline year, subject to change based on CP6 exit position. There are also no specific measures for Government's strategic objectives of economic growth and levelling up, although our overall investment, freight growth and other measures will contribute to this.

Alignment with Government's five strategic objectives for rail

We set out our ambitions for CP7 below, and how our plans deliver against each of Government's five strategic objectives for rail.

Meeting customer needs

<u>A safe plan</u>

We will deliver a safe plan in CP7 to support our vision to get 'everyone home safe, everyday'. Our safety strategy is driven by data, analysis and insights so that we can address the biggest risks to the safety and wellbeing of passengers, the public and our people. We will continue to identify opportunities to make best use of technology to reduce safety risk and will continue to invest in improving user safety on level crossings that require renewal works, suicide and trespass prevention, security, and trackworker safety.

Our passenger safety strategy for CP7 is primarily focused on reducing the risk of train accidents, and accidents in our stations. We will focus on the most significant precursors to train accident risk, including our earthworks assets, objects on the line (including reducing the risk of dead or dying trees and targeting high risk locations to improve boundary fencing) and improving personal safety and security at our stations. Our public safety strategy will focus on continuing to target level crossing closures and improvements, within available funding, and responding to emerging risks with lower cost proportionate

technology to make crossings safer, reducing trespass through targeting improvements at local hotspots, continuing the work we have done to date on suicide prevention, and continuing to educate the public on the risks associated with the railway.

The safety, health and wellbeing of our workforce is critical, in its own right, and in keeping the railway moving and meeting customer needs. In CP7 we will use technology to reduce the amount of time that our people are on track (e.g. continued investment in remote condition monitoring and drone technology), continuing to build on the risk reduction delivered by our Track Worker Safety Task Force in CP6, investment in our Electrical Safety Delivery programme and a range of other initiatives.

Whole system approach to train performance

We know that, second only to value for money, passengers place very high priority on a punctual and reliable railway. Getting passengers and freight where they need to be, on time, continues to be a top priority for the whole rail industry.

Train performance is a complex, whole system issue – everything needs to work well together to enable the best performance for passengers and freight users. This relates both to the planning of services as well as 'on the day' delivery. Current train performance is not as good as it should be. Over the last year, there have been challenges associated with industrial action, train crew, service levels and the increasing impacts of a changing climate on the infrastructure. We are aiming to improve performance over the remainder of CP6. That will take whole industry alignment and effort, recognising that some of the challenges are not easily or quickly resolved.

Based on past experience we know that it is almost impossible to forecast whole industry train performance accurately over the short term, given the complexities, inherent uncertainties and dependencies across the whole system to deliver performance. Over the last 14 years, every year as an industry we have not been able to reliably predict train performance – with the gap between forecast and outturn often being material. The idea of forecasting a central point value for performance at the end of CP7 at the current time, therefore, would be misguided. It risks establishing wholly inappropriate incentives – particularly given the huge uncertainties we continue to face such as continued industrial action for train service operations (at the time of finalising this document), inflation, passenger demand and future funding challenges for DfT which could result in tough choices for train operators over the remainder of CP6 and into CP7.

We expect a decrease in asset reliability in CP7, given the way we have had to prioritise and allocate available funding to deliver our objectives. Whilst we have sought to focus on train performance, we have had to balance our expenditure and asset interventions in order to protect safety, as well as focusing investment on those areas which will bring the highest economic and social benefits. The indication is that average asset age will increase and (other things being equal) have a small impact train performance, particularly in the later years of CP7. We are targeting our renewals to minimise the impact of this and are taking steps through other initiatives (e.g. through our Network Operating Strategy, 21st Century Operations programme and performance-focused research and development initiatives) to improve performance.

But we know that asset performance and Network Rail's actions alone are only part of the system and cannot compensate for impacts elsewhere in the system. We know what can happen when the industry does not work together closely to deliver train performance. The May 2018 timetable implementation failings and the Glaister Review following that demonstrated this. So it is all the more important that we work closely and constructively with passenger and freight companies to make the system work better and to provide for more confidence in forecasting.

In terms of what this means for CP7, our overall objective is to give passengers and freight users the highest level of train performance possible, so we get them where they need to be, on time. Recognising the uncertainty, and the risk of setting a forecast based on inaccurate assumptions, we have at this

stage in CP7 planning only forecast a range for train performance. This is based on the potential parameters that we do have a better understanding of, the level of risk in our plans, and the whole industry ambition to deliver good performance (for example through whole industry working and innovation). The creation of GBR will allow the industry to take a massive step forward in this respect.

We will need to work through more detail on train performance over the coming year. This requires a very collaborative approach with operators, DfT and ORR. The approach to monitoring in CP7 needs to recognise our ambition but also acknowledge the level of risk to delivery. This is particularly important in respect of how the performance regime (Schedule 8) is set for CP7. There is a risk that setting inappropriate baselines would limit our ability to invest in the network for better performance if we need to fund unjustified Schedule 8 payments, and this will be a key priority in our discussions with ORR over the coming months. It will be important for ORR's approach to take account of the evolving context over the remainder of PR23, as well as the need for continued flexibility during CP7 itself.

<u>Supporting freight growth</u>

Our plans have been developed to support stretching but realistic freight growth of 7.5 %. Our CP7 plan includes £72m funding to invest in the capability of high priority structures assets. This is so that they can continue to accommodate heavy construction traffic, which is expected to be one of the biggest drivers of freight growth in CP7.

<u>Delivery of key passenger improvements</u>

Our CP7 plans also include a number of initiatives focused on providing an accessible and inclusive railway, complementing the Plan for Rail's commitment to the National Accessibility Strategy for Rail. We will deliver key passenger improvements such as renewing lifts and escalators, refurbishing toilets and improving lighting at our stations. We will continue working with train operators and others during CP7 to further improve passenger experience, for example one-team working at our managed stations. More broadly, regions will continue to work with stakeholders, including local authorities, to improve passenger end-to-end journey experience.

Financial sustainability

Focusing our investment on what customers and wider society value most is fundamental to the financial sustainability of the railway in CP7 and the longer term.

We will also seek to build on our strong delivery of efficiencies in CP6. We have set ourselves ambitious yet realistic efficiency targets of 15 % renewals (capital expenditure) and 10 % operating expenditure (operations, support and maintenance) efficiencies in CP7. These amount to around £3.4bn over the control period. This includes our contribution to the £1.5bn industry reform savings identified in the Plan for Rail, as well as a range of other strategic initiatives covering technology, contracting and engagement with the supply chain, innovation, and smarter ways of working that will save time and money. Through our management modernisation programme, we have also taken steps to make our organisation leaner. Over the last 18 months we have reduced our headcount by 3,500 to a current level of 39,500 employees.

Our regions are delivering a wide range of efficiency initiatives across the network. For example:

- Eastern's implementation of a new procurement approach which involves procuring local, non-rail contractors to deliver work that does not directly affect our operational railway.

- North West & Central's work with train operators to install equipment on trains which monitors infrastructure condition remotely without our employees needing to access the network.

- Southern's implementation of a new delivery model to create commercial alignment and shared incentives for renewals activity with the supply chain.

- Wales & Western's plan to become a more intelligent client, working in closer collaboration with our supply chain to reduce duplication of activity and result in more efficient delivery of projects.

Reflecting the tough choices and trade-offs for CP7, and in particular the level of renewals activity in CP7, there will be cost implications for the longer term. Beyond CP7, to manage deliverability constraints, we consider that a phased increase in renewals would be required to hold asset condition, supporting improved weather resilience, managing safety risk and enabling improvements in train performance over the longer term. Ultimately this will be a funding decision, however assuming we were to take this action we estimate that the long run core asset renewals demand would require around £17.5bn in CP8 and £19.8bn in CP9, growth of £1.8bn and £4.0bn on CP7 levels respectively. By doing this we would expect to achieve a stable position from CP9 where we hold the profile of remaining life in our assets, thereby securing the basis on which to run reliable and safe train services into the future.

Economic growth and levelling-up

Our SBP, and the work we will undertake in CP7 to support the effective and efficient movement of people and goods across the country, is critical in sustaining and growing the economic benefits of rail.

Our people are central to achieving this. CP7 requires a highly proactive and strategic approach to change, to deliver our strategic objectives with our people agenda. We need to lead this transformation to become a fully mature, high-performing, service-led organisation with an engaged and skilled workforce. This will be underpinned by better designed work, better relationships, and our values.

We will support economic growth and levelling up through the deployment of technology. This includes around £0.15bn investment in research, development and innovation, based on an outcomes-focused approach and including schemes that are focused on improving train performance.

We will also invest up to £1.85bn in progressing signalling renewals through further deployment of ETCS (European Train Control System) technology and train cab fitment to replace lineside signalling with in-cab signalling – delivering against all of Government's longer term strategic objectives for rail. We will continue to work closely with our supply chain partners, aiming to provide visibility of our pipeline of work which allows suppliers to invest in retaining and attracting key skills, as well as maximising opportunities for efficiency. By committing to and supporting a long term plan to deploy ETCS, we can provide continuity to our supply chain, enabling them to invest in developing a digital skills pipeline improving capability in the UK workforce.

There are also key initiatives within each of our regions to further support economic growth and levelling up. Examples include North West & Central's plans to undertake vital works to life-expired infrastructure assets on the northern part of the West Coast Main Line which will also be critical to the successful introduction of HS2 services. Wales & Western will be releasing land and value on the current south side of Cardiff Central station, and leading the planning for a major new intermodal and commercial development in the city.

Delivering environmental sustainability

We will build on our work in CP6 and invest approximately c. £1.6bn in weather resilience and reducing environmental impacts over CP7. Of this expenditure, £1.0bn will be focused on weather resilience activities specifically, helping us to address the increasing challenges and impacts of climate change, in particular through earthworks and drainage renewals, and maintenance activity. We have also included investment in improvements to our internal capability and operational processes such as dedicated earthworks and drainage teams, operational weather expertise, climate change adaptation strategy investment and continued investment in the Weather Risk Task Force established following the Carmont tragedy, and the Lord Robert Mair, Dame Julia Slingo and Rail Accident Investigation Branch (RAIB) recommendations.

Within the available funding we have sought to prioritise investment in weather resilience where possible, however, the pace of improving asset and system resilience in response to extreme weather events is a continued risk into CP7.

Our plans also include investment in the reduction of emissions and targeted net-zero initiatives. We will also focus on meeting Government objectives for biodiversity, air quality and waste. Our plans enable us to continue to deliver our science-based targets to meet Government carbon and biodiversity commitments.

Approach to managing risk in CP7

We have set out our ambition for CP7, however, as with CP6, there are many risks to the delivery of our plan such as inflation, the delivery of efficiencies, our ability to secure engineering access, and train performance disruption (which has financial impact through Schedule 8). In the event that these risks materialise we will need to reallocate funding to deal with them.

Reflecting the funding context, we have made changes to our financial risk approach compared with CP6. This includes developing a 'risk-adjusted' plan whereby regions have identified around 5% of their total CP7 plans (£1.5bn overall) which would be de-scoped or deferred if risk were to materialise. Combined with £0.5bn held centrally to cover financial risk, total risk funds will be £2bn for CP7, compared with £3bn for CP6.

Consistent with the approach taken in CP6, our 'risk-adjusted' plan is intended to inform the outcome baselines for ORR's regulatory monitoring and Schedule 8 baselines (in respect of train performance) in CP7. This is because we need prudent and realistic baselines for regulatory purposes, particularly for train performance given the financial risk associated with Schedule 8. We have therefore also developed Tier 1 success measure forecasts based on the assumption that a reasonable level of risks will materialise in CP7.

More broadly, flexibility in how our outcomes are defined and monitored must be an essential part of ORR's determination and its approach to managing change in CP7. ORR must recognise the considerable uncertainty that surrounds CP7 delivery, as well as the transition to GBR in CP7 with GBR developing an integrated plan for infrastructure and service operation for the first time.

Governance and assurance of our SBP

Internal assurance activity has been fundamental to our CP7 planning, which has included our Technical Authority's review of regional asset renewals plans. Executive and Board review and challenge has taken place throughout our iterative CP7 plan development, in particular through our Executive and Board PR23 sub-committees. We have also sought external expert input in several areas.

CP7 plan focus following SBP submission

As explained earlier, our SBP has been developed against challenging timescales. This has impacted the extent to which we have been able to complete all our planning to the level of detail and quality we want, and to carry out final assurance and reflect the findings in our plans. We continue to work with ORR on a number of specific areas of our CP7 plan, including working through the implications of the latest inflation forecasts, further review and testing of certain elements of our renewals plans, and developing further detailed maintenance plans.

More broadly we will continue to engage with all our stakeholders as we look ahead to the CP7 delivery plan, which we expect to complete in March 2024. This will include closer working with train operators on train performance forecasts, the development of market-led initiatives, and aligning with their business planning processes, as well as GBR preparedness.

1.   Introduction to our SBP

Purpose of this document

Our five-year Strategic Business Plan (SBP) for England & Wales sets out what we intend to deliver between April 2024 and March 2029. This five-year period is called Control Period 7 (CP7). The SBP is a critical milestone in the regulatory process, called the 2023 Periodic Review (PR23), which will confirm the level of track access charges that we can levy on passenger and freight operators in CP7, based on the Office of Rail and Road's (ORR) assessment of our planned expenditure and income. ORR also determines the regulated outputs we need to deliver in CP7.

Our SBP has been informed by the Department for Transport's (DfT) decision on the level of funding provided to the railway in CP7 (set out in the [Statement of Funds Available (SoFA)](#)) and what it expects us to deliver (set out in the [High Level Output Specification (HLOS)](#)) that it published in December 2022. Our SBP seeks to further the Government's five strategic objectives for rail within the funding available: meeting customer needs; delivering financial sustainability; contributing to long term economic growth; levelling up and connectivity; and delivering environmental sustainability.

PR23 is an iterative process and our SBP will be assessed by ORR over the coming months. ORR will ultimately endorse our plans or make its own decisions on what we should deliver over CP7 and how the funding provided by Government should support this, through its Draft and Final Determinations, expected in June and October 2023 respectively. Following ORR's Final Determination, we will produce our five-year delivery plan which will set out what we will deliver in CP7 within the funding available.

Scope of this document

Our SBP applies to our planned CP7 activity in England & Wales. This document is our overarching SBP, based on the plans produced by our four England & Wales regions and our network-wide functions (Route Services, System Operator, Technical Authority, Corporate Services) – which are published alongside this document. This document is not intended to repeat the content of the regions' and functions' plans; rather, summarise them and set out our strategic response to the Government's HLOS and SoFA for England & Wales and our plans for the next five years.

We have produced a separate SBP for Scotland in response to the Scottish HLOS and SoFA. As these were only published in early February 2023, our Scotland's Railway CP7 submission has been made to ORR on an interim basis. We are continuing to align our plans for Scotland's Railway to the funding available and Scottish Government's requirements and will publish an update in due course.

Consistent with the SoFA and HLOS, our SBP covers the planned activities, outputs and costs of operating, maintaining and renewing railway infrastructure in England & Wales. Our SBP does not include our activities relating to Network Rail High Speed (NRHS). It does not include any enhancement expenditure or activity, but it is aligned with the wider rail network enhancement programme. Nor does it include any Great British Railways (GBR) activities and costs, although we have worked closely with the GBR transition team (GBRTT) so that our plan supports laying the foundations for GBR, and a simpler, better railway for everyone in Britain.

PR23 also includes a range of other elements, including the review of access charges and incentives and ORR's approach to regulation and monitoring in CP7. These elements are subject to separate processes and consultation and are not covered in detail in this document.

Financial values expressed in this document are in 2023/24 prices (using the Office for Budget Responsibility's November 2022 inflation forecast), unless otherwise indicated. Annex 1 provides a more comprehensive view of our assumptions. In some areas of the plan, tables may not sum due to rounding. Where CP6 values are expressed, these are predominantly based on CP6 forecasts as at November 2022.

To support ORR's SBP assessment and the work towards its draft determination, we submitted our SBP to ORR on 24 February 2023. It was not published at this time, as publication requires approval by the Secretary of State for Transport, in accordance with the terms of Network Rail's [framework agreement](#) with DfT. While our CP7 plan continues to evolve in light of new information, such as new inflation forecasts, our SBP reflects the status of our plans at a point in time. We have not made any material changes to reflect new / emerging information in this document since our 24 February submission.

Structure of this document

The remainder of this document comprises two parts. Part A provides an overview of who we are and context; our strategy and CP7 plan development; and the outcomes that we will deliver in CP7. Part B sets out more detail on the components of our plan; deliverability; key financial considerations (e.g. the management of financial risk and inflation); our approach to assurance and governance; and opportunities and next steps. A summary of each chapter in parts A and B is provided below:

Part A: Who we are, our strategy for CP7 and what our plan will deliver

- **Chapter 2: Context for CP7.** We provide an overview of our purpose, vision and strategic priorities, and describe our structure. We also summarise our performance over the past four years and the opportunities and challenges for the remainder of CP6 and into CP7.

- **Chapter 3: Our strategy and CP7 plan development.** We set out our approach to developing our strategy and plans for CP7, and how this aligns to the Government's five strategic objectives for rail. We explain how we have considered economic and social value in our approach to developing our plans for CP7.

- **Chapter 4: CP7 Outcomes.** We set out how we will support the delivery of the five Government objectives in CP7.

- **Chapter 5: Meeting customer needs**. We describe key initiatives that we will be delivering over CP7 focused on meeting customer needs (safety, passenger and freight train performance, and customers and communities).

- **Chapter 6: Financial sustainability.** We describe the key initiatives that we will be delivering over CP7 to make the railway more efficient and financially sustainable in the future.

- **Chapter 7: Economic growth and levelling up.** We describe the key initiatives in our CP7 plan which support the country's economic growth and levelling up priorities.

- **Chapter 8: Environmental sustainability and climate change adaptation.** We describe key initiatives that we will be delivering over CP7, focused on making the railway more sustainable and resilient.

- **Chapter 9: People.** We describe our People Strategy, setting out our CP7 strategic objectives, stakeholders' priorities, external and internal trends, and learnings from CP6. We also outline how we will deliver our strategy through cross-country workstreams and regional and functional plans.

Part B: The components of our plan, opportunities and next steps

- **Chapter 10: The components of our plan – asset management and other capital expenditure.** We provide more detail on our approach to asset management and planned maintenance and renewals activity.

- **Chapter 11: The components of our plan – operations, support, industry costs and rates.** We provide an overview of our operations activity in CP7 and summarise our planned expenditure on support activity and industry costs.

- **Chapter 12: The components of our plan – CP7 income.** We provide a summary of our expected income in CP7.

- **Chapter 13: Deliverability of our plan.** We set out our assessment of the deliverability of our plans for CP7, and key next steps in respect of deliverability ahead of our CP7 delivery plan.

- **Chapter 14: Management of financial risk in CP7.** We set out our approach to managing financial risk over the five years and how this approach impacts on delivery in CP7.

- **Chapter 15: Inflation, input prices, headwinds, tailwinds and scope drivers.** We summarise the assumptions in our SBP for inflation, input prices, headwinds, tailwinds and scope drivers.

- **Chapter 16: Allocation of network-wide function costs.** We set out the assumptions that we have made about the allocation of network-wide function costs to regions in our SBP.

- **Chapter 17: Assurance and governance.** We set out the assurance and governance process we have undertaken to ensure we are confident that our plan is deliverable.

- **Chapter 18: Opportunities and next steps.** We summarise where we consider there may be further opportunities in our CP7 plan and summarise our next steps to support the remaining work on PR23, and the development of our CP7 delivery plan.

PART A - Context, our strategy for CP7 and what our plan will deliver

2. Context for CP7

Purpose of this chapter

This chapter sets out our purpose, vision and strategic priorities, and describes our structure. We also summarise our performance over the past four years and the opportunities and challenges that we face over the final year of Control Period 6 (CP6), and throughout CP7.

Who we are

Who we are and what we do

Network Rail is a public sector arm's length body of the Department for Transport (DfT). We own, operate, maintain and develop the railway infrastructure in England, Scotland and Wales.

The rail network includes 20,000 miles of track, 30,000 bridges, tunnels and viaducts and thousands of signals, level crossings and stations across England, Scotland and Wales. We manage 20 of the country's largest stations, while all the rest – over 2,500 – are run by train operating companies.

Our purpose and role

While we are funded separately for England & Wales and Scotland, we are a single network company delivering for passengers and freight users across Great Britain. Our **purpose** is to get people and goods where they need to be, to support our country's economic prosperity and contribute to the objectives of the UK and Scottish Governments.

Our **role** is to run a safe, reliable and efficient railway, serving our customers and communities.

Our vision and values

- **Our vision: "Putting Passengers First".** Over CP6 we have implemented this vision to be a company that is on the side of passengers and freight users. We want to be considered efficient, dependable and a company people are proud to work for. We have begun embedding a customer service mindset across our business to support this vision. As we look ahead to CP7, we are focused on building on this vision and working even more closely with train operators to support laying the foundations for GBR – and the vision of a simpler, better railway for everyone in Britain.

- **Our values.** Our values bind us together as an organisation and guide how we act and the decisions we make. Our values are:

  - Always safe
  - Care about people
  - Teamwork is key
  - Empowered to ACT

How we are structured

We continue our journey to being more customer-focussed and service driven. In 2019, we made significant changes to the structure of our business with the creation of five geographical regions, with those regions sub-divided into 14 routes. These are supported by network-wide functions providing services required across the network. These organisational changes built on the increasing devolution of responsibilities since 2010. Establishing five regions and 14 routes has enabled many decisions that were previously taken at a network-wide level to now be taken at region or route level, much closer to customers and the communities in which we serve. This has supported us in being more responsive to our customer and stakeholder needs and delivering change more quickly.

It should be noted that our England & Wales plan does not cover our Scotland Region or Network Rail High Speed, which is our fourteenth route and provides dedicated operations, maintenance and renewals for the HS1 infrastructure and stations. Figure 2.1, below, shows how we are structured.

Figure 2.1: Network Rail's corporate structure
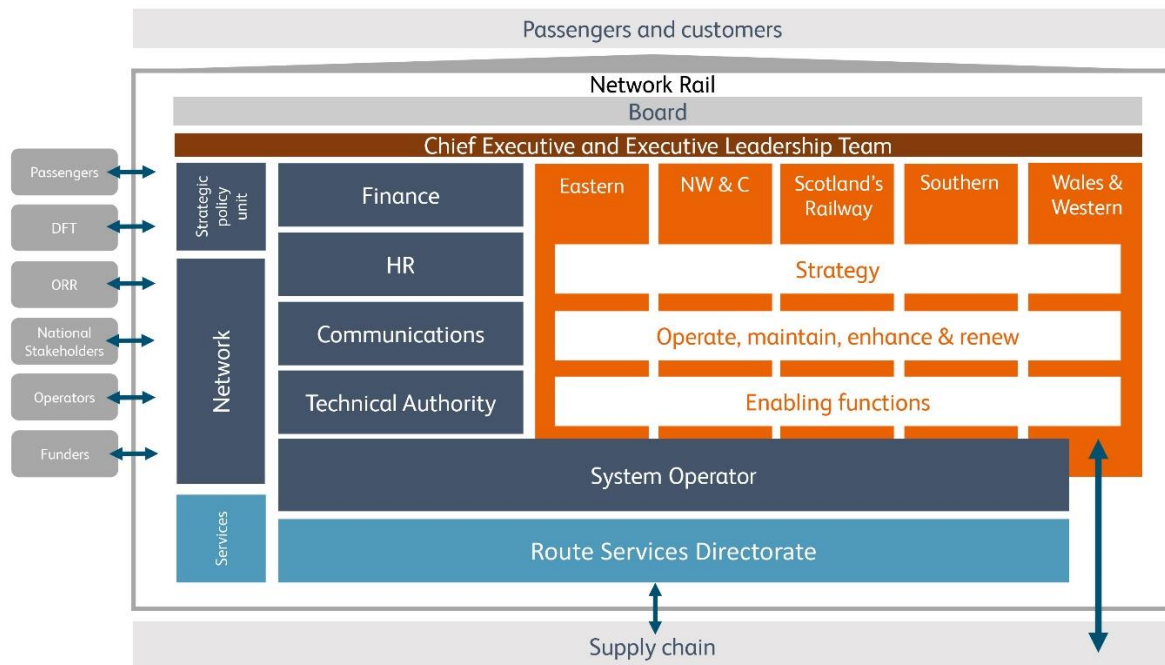
This is the first periodic review, and SBP, that has been developed following the organisational changes we made in 2019. In line with our devolved organisation, our regions and functions have developed and fully own their business plans, which respond to their local circumstances and stakeholder priorities as well as overall national objectives for rail. The region and function plans are developed within a network-wide framework so that they are aligned where necessary and common network-wide issues and requirements are addressed in a coordinated way. The region and function plans have been consolidated to form our England & Wales SBP.

Context

The past few years have been exceptionally challenging. During CP6, there have been a number of significant safety incidents on the network, some of which ended tragically in loss of life. We are constantly assessing our safety performance and risk using a data driven approach and are actively making changes and improvements to the way we operate to keep passengers, the public and our people safe.

Over the last two years have taken steps to further reduce the risk to the public and our passengers when using the railway. We have delivered a step change in our activities and resources to deliver greater levels of drainage inspection and maintenance across the network, so that we manage and reduce as much as practical the risk of landslips around our network. This is in response to the recommendations made by Lord Robert Mair and Dame Julia Slingo in their reviews following the derailment of a passenger train at Carmont in Scotland on 12 August 2020, and the Rail Accident Investigation Branch (RAIB) recommendations that followed. More detail on the work we have done to respond to these recommendations is set out in chapter 8.

We have also significantly reduced safety risk for our track workers, including removing the need for hundreds of thousands of manual maintenance tasks and so reducing risk. Unassisted lookout working has been reduced by 98 %. Despite the steps we have taken over the past few years to reduce the safety risk to our workforce, our passengers and the public when interacting with the railway, we always want to do more. Our SBP sets out the key safety initiatives we will implement over the CP7, with more information set out in chapter 5.

In CP6, we have experienced more frequent and extreme weather conditions which have a significant impact on the condition of our assets and train performance. Over the last four years, weather related delays and cancellations have accounted for 7 % of all delays and cancellations on the network. We are already taking steps to better understand the impact of extreme weather and climate change on our network so that we can implement targeted operational changes in specific high-risk areas, rather than across the whole network which causes unnecessary disruption to our passengers.

The rail sector has been severely impacted by Covid-19 since March 2020, due principally to the massive drop in passenger volumes and revenue. The impact from Covid-19 started when we were just one year into delivering our five-year plan for CP6. Passenger demand dropped almost overnight to c.5 % of pre-pandemic levels. Despite this, we kept the railway operating throughout three national lockdowns, so that key workers were able to get to and from work, and to ensure the movement of essential goods across the country. We also delivered five national timetable changes, each in a matter of weeks rather than the normal months of planning, to respond to the changing levels of demand during Covid-19. This demonstrated our ability to act quickly and in an agile manner to meet the changing demand.

As passengers have returned to the railway the pattern of demand has changed dramatically. Leisure travel has recovered well post Covid-19, with passenger numbers returning to over 100 % of pre-pandemic levels as of January 2023. However, business and commuter travel has not recovered to pre-pandemic levels, primarily due to the change in working patterns, currently at 40 % and 60 % of pre-pandemic levels respectively. Given the drop in passenger numbers, and the need to reduce unnecessary costs, the industry is running fewer trains than in 2019 (although many more than levels during Covid-19 which saw reductions by nearly a half, and still more than in 2011). There is still significant uncertainty around future passenger demand and the number of train services that will need to operate on the network to support this.

The rail freight market has recovered strongly after the initial impact of Covid-19, and we expect it to continue to grow in CP7. One of the biggest drivers of the expected growth is an increase in construction traffic, not least to deliver HS2. Construction traffic is heavier than most types of freight traffic and, therefore, as we look to the end of CP6 and over CP7, we will need to safeguard the capability of structures across the network to safely carry these heavier trains.

As passengers have returned to the railway, train service levels have increased and the freight market continues to grow, train performance has declined from the higher levels seen during the pandemic. The percentage of trains arriving on time has dropped from c.80 % in 2020/21 to c.68 % in Period 11 in 2022/23. This is in part due to the number of train services increasing since 2020/21, following the return of passengers post Covid-19, which creates a more congested network and has resulted in longer and more severe delays when incidents happen on the network. However, and as recognised in ORR's November 2022 letter to Network Rail on the delivery of train service performance, there are significant factors which are not completely in the industry's control that have contributed to this decline.

Train performance is a complex, whole system issue – everything needs to work well together to enable the best performance for passengers and freight users. We know that punctuality and service reliability are priorities for our passengers and freight users, and we are aiming to improve train performance over the remainder of CP6, working closely with operators. We discuss our ambition and approach to CP7 in further detail in chapter 5.

There has been progress…

Despite the challenges outlined above, and the current levels of train performance, we have achieved a great deal over the past four years. We have delivered strong efficiencies and are on track to deliver a further £500m of savings on top of our original £3.5bn gross efficiencies over CP6 – exceeding our regulatory target for the first time in the company's history. These efficiencies have largely been achieved through improving our approach to working with our supply chain; reforming our approach to taking access of the network to deliver maintenance and renewals work and modernising our management and maintenance activities to enable us to undertake our activities in a more efficient, effective and safe manner. To date, our management modernisation programme has reduced our headcount by around 3,500 employees. Our maintenance modernisation programme will be delivered in CP6 with the changes continuing to be embedded in CP7. This has been all the more essential given the material income headwinds from industrial action over the last year, and more extreme weather.

Our framework for tracking and reporting efficiencies, established in collaboration with the ORR, has allowed us to demonstrate all of our material cost movements to stakeholders, drive efficiency delivery through cross regional comparisons and knowledge share, and drive a culture which always seeks to identify and deliver cost savings through positive management action. Our record in delivering against our efficiency plans has also been publicly acknowledged by DfT and ORR.

Rail is a very environmentally friendly form of transport and we have delivered some key initiatives to support the Government in achieving its net-zero target for England & Wales by 2050. For example, following the introduction of a corporate power purchase agreement, a new solar farm will be built (and operational by 2024) that will provide about 15 % of our non-traction energy requirements. We have also worked with our supply chain to identify ways to reduce our carbon emissions (e.g. we have developed a low carbon solution for conventional concrete station platform-edge coping stones working with manufacturers which has delivered a 51 % reduction in embodied carbon emissions). Over two-thirds of our suppliers have now committed to signing up to science-based targets for achieving net-zero and we are continuing to work with the remaining suppliers to get their public support for these science-based targets.

We also play a vital role in improving the connectivity of passengers and the public across the country. We have taken steps in CP6 to deliver early work as part of the Transpennine Route Upgrade (TRU), which will transform connectivity in the North, bringing more frequent, faster and greener trains between Manchester, Huddersfield, Leeds and York on a fully electrified, more reliable railway. This early work included delivering major upgrades to our signalling and track infrastructure between Manchester and Stalybridge which should improve the reliability of services in this area and enable trains to run faster. We have also worked closely with Transport for London (TfL) and others to officially open the Elizabeth Line, and, for the first time, we have been able to directly connect the Great Eastern Mainline with the Great Western Main Line. This new railway line has already begun to transform travel across London and the south-east and demonstrates the important role the railway has in connecting people and places across the country.

Network Rail's c.39,500 employees are critical to delivering a safe, reliable railway and providing great service for passengers and freight users. We have taken several steps to improve the safety of our workforce, as described in the context section, above.

Looking ahead to CP7 – opportunities

As we look ahead to CP7, we need to build on the successes in CP6, maximising opportunities and addressing the challenges we have faced. The Government's £44bn commitment to funding the operation, maintenance and renewals of rail infrastructure in CP7 is a massive vote of confidence in the industry's future, and an important recognition of the economic and social value of rail and its place in supporting the country's economic growth. But our funding will need to go further than ever before.

Our SBP sets out how we will deliver on the Government's objectives for rail. The regulatory framework, the financial arrangements we have with Government, and the stability provided by five years of operations, maintenance and renewals infrastructure funding underpins this. Our SBP also supports the delivery of our customers' priorities. Identifying these priorities included a recent survey of 15,000 passengers which we carried out in conjunction with Transport Focus in summer 2022.

Our people are central to the delivery of our plans over the next five years and developing the capability of our workforce to drive the improvements and efficiencies we want to make in CP7 will be critical.

CP7 will see one of the biggest changes to the railway since privatisation with the expected creation of Great British Railways (GBR). In May 2021, the Government set out its proposal to reform the railway with GBR established to run the railway, bringing together track and train operations under a single guiding mind. GBR will bring the railways' finances together and be able to take a whole-system view, making trade-offs and choices around how best to use the funding available to meet customer and taxpayer priorities. This intent has been reinforced by the Secretary of State's recent [Bradshaw address](#). We have engaged, and continue to engage closely, with GBRTT throughout PR23 and the development of our SBP, to ensure alignment to its work. This includes development of the Long Term Strategy for Rail, development of customer information and experience measures and to prepare for a successful transition to GBR during CP7.

Ahead of the creation of GBR, there are significant opportunities to work together as an industry to improve customer experience, reduce the burden on the taxpayer and collaborate to manage some of the key challenges we face. For example, creating one-team working between Network Rail and train operator staff at our managed stations which will enable us to deliver consistent customer information and service to our customers at stations.

Looking further ahead, we will see some major changes to the railway over the next 10-15 years. The first phase of HS2 is the line between London and Birmingham, which will also link to the north-end of the west-coast mainline, and is expected to be completed by 2033, although as we have finalised this document there are discussions around the timing and scale of HS2. As part of our CP7 plans, we have included essential renewal work on West Coast Main Line (WCML) North which has the added benefit of helping readiness for HS2 and avoiding the disruption to passengers from doing the work once HS2 starts its operations. Alongside this, there will be opportunities to embrace new technologies, including remote condition monitoring of our assets and digital signalling, which will deliver improvements to the safety and performance of our railway over the longer term.

Looking ahead to CP7 – challenges

With opportunity comes challenge. There will be a range of cost pressures in CP7. Managing infrastructure, that in some cases is nearly two centuries old, is a significant challenge, especially when combined with the impacts of a changing climate, and significant inflation risk.

Our SBP has been developed at a time of significant uncertainty both within the railway and across the wider economy. For example, the change in travel patterns following Covid-19 has led to lower passenger numbers and reduced industry income, which combined with high and volatile general price inflation, has made it very difficult to assess the future path of our costs and income up to six years out. We will continue to review the latest information related to these uncertainties (e.g. new inflation forecasts and passenger demand forecasts) as we work towards our CP7 delivery plan. To provide a sense of scale of the inflation risk, if the latest inflation forecasts from the Bank of England (February 2023) are a closer reflection of outturn inflation, this could increase the cost of our plan by around £700m. Given that the majority of our income is fixed in cash terms, through network grants, we are exposed to changes in inflation, and it impacts our ability to deliver our CP7 plan. We explain our approach to managing risk in CP7 in chapter 14.

There are other challenges we face for CP7. The impact of climate change and adverse weather on our assets that we have experienced throughout CP6 will continue into CP7, and beyond. Around 90 % of our assets remain as installed before the year 2000 and have not been designed to contend with the aggressive weather we are experiencing now or could do in the future because of climate change. Our SBP sets out the steps we are taking to make the network more resilient to climate change over CP7, with the need for this work to continue into future control periods.

We have an ageing asset base and a growing number of these assets are reaching 'end of life'. Given how we have prioritised and allocated available funding to deliver our objectives, we expect that asset condition and performance will be impacted over CP7, particularly in the later years of the control period, which is discussed further in chapter 10.

There is still uncertainty around what we will deliver for the remainder of CP6. If further risks materialise, we may need to defer some planned asset renewals into CP7 which will increase our renewals workload over the next five years. There is also uncertainty around the level of train performance that we and the industry will deliver at the end of CP6.

There are also a number of more specific risks and challenges and / or risks within our regions' and functions' plans, reflecting local circumstances. For example, in our Wales & Western region, during the construction of HS2 Old Oak Common there is a risk to performance associated with a major construction site beside the live operational railway and as we shift the railway lines to make room for the new eight-platform station. We are applying learning from previous major projects and working with train operators to mitigate the impact of construction where possible.

In order to manage these challenges effectively, our funding will need to go further than ever before. We have made tough decisions and trade-offs to optimise our funding and deliver for customers and the communities which we serve. Additionally, these challenges result in risk and uncertainty around our ability to deliver the outcomes that we will be regulated against in CP7. Flexibility in how our outcomes are defined and monitored must be an essential part of ORR's determination, along with ORR's approach to managing change in CP7.

# 3.   Our strategy and CP7 plan development

Purpose of this chapter

This chapter sets out our overall approach to developing our SBP to deliver Government's HLOS objectives and its long term objectives for rail, and reflecting our stakeholder priorities, within the funding available.

How we have developed our Strategic Business Plan

Our devolved structure means that regions and functions own the development of their CP7 SBPs. These plans have been developed within a national planning framework which allows regions and functions to respond to their own unique circumstances and local stakeholder priorities, while contributing to national priorities. These plans have then been brought together to form our England & Wales SBP.

To support our regions and functions in the development of their SBPs, we have developed a national planning approach. This provides a framework for regions and functions to use to effectively reflect the Government's long term objectives for rail, CP7 funding and outcomes expectations, and stakeholder priorities in their plans. This framework is summarised in figure 3.1.

Figure 3.1: Our approach to developing our strategic business plan
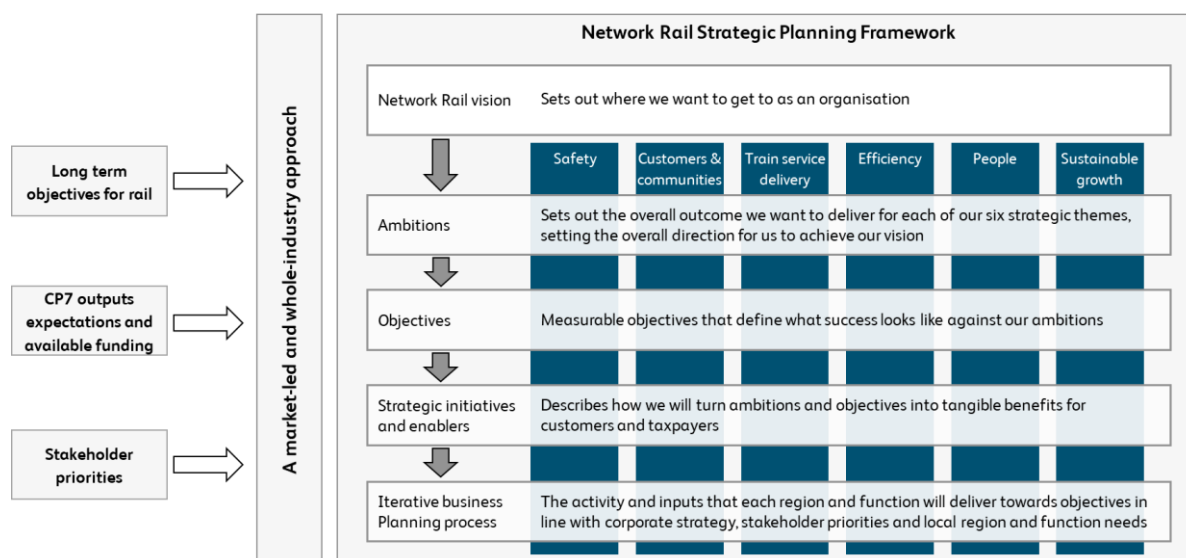
ORR has set out four objectives for this periodic review, identified in its [PR23 launch letter](). These are:

- Safety: the rail network must be maintained in a safe condition for all of its users, workers and the public.

- Train performance: the railway must be customer-focused, making effective use of its capacity to deliver passenger and freight services that are punctual and reliable.

- Asset sustainability: assets must be planned and managed to deliver their greatest value over the course of their operational lives.

- Efficiency: Network Rail (or Great British Railways as its successor body) must be subject to stretching yet realistic efficiency targets.

These priorities align with our own strategic planning framework and Government's long term objectives for rail, and have been factored into our ongoing planning work for CP7 – while noting that trade-offs are likely to be required to prioritise different objectives within the funding available.

The rest of this chapter is structured around the components of figure 3.1.

The Government has set out available funds and expectations on what we should deliver in CP7

In December 2022 Government set out the available funding for CP7 in its [Statement of Funds Available (SoFA)](#). The SoFA provides for the assumed operations, support, maintenance and renewals expenditure in CP7 for England & Wales of £44.1bn (including traction electricity (EC4T) costs but excluding BTP costs). In real terms (2023/24 prices using November 2022 OBR inflation forecasts) this is equivalent to £40.0bn. On a like-for-like basis, our view of CP6 expenditure as at November 2022 was £38.2bn, so our CP7 funding represents a small increase on CP6. However, we highlighted in our preparatory work for CP6 that there would be an uplift in required renewals expenditure in CP7 reflecting an ageing asset base, and we continue to face a number of other cost pressures as discussed in chapter 2, above.

The Government also set out its priorities for the next five years in its [High Level Output Specification (HLOS)](#). The Government's HLOS sets out what it wants Network Rail to deliver in CP7 – and that our plans should facilitate and advance its five objectives for the purposes of developing a long term strategy for rail, discussed in the next section.

The safe operation of the railway is set out as a continued priority in CP7, with a strong, sustained and effective approach to cost efficiency being critical, as well as a strong and resolute focus to be maintained on train service punctuality and reliability. The outputs specification sets out many other expectations, while also recognising that given the cost pressures we face, we need to appropriately prioritise what should be delivered across our plans, including how we use our asset management approach to prioritise our activity.

Our plan addresses the expectations and guidance in the HLOS set out by our funder (DfT). Our current view is that the expenditure within this plan is consistent with the funds available, as set out in the SoFA. However, we have identified some key risks that could impact the deliverability of our outputs in CP7 which are highlighted throughout this document and specifically in chapter 14.

The Government's five long term objectives for the railway

The Plan for Rail identified the need for a long term strategy to set the key strategic priorities for the railway over the next 30 years. The long term strategy is being developed by GBRTT. This will help to inform decisions on how the railway can improve and contribute to the British economy and society over the next three decades. As noted by the Secretary of State in his recent [George Bradshaw address,](#) the strategy will provide long term strategic direction to the sector. It will be shaped by five long term national strategic objectives set by the Government (see table 3.1) seeking to meet the needs of customers, taxpayers and wider society.

We have engaged with GBRTT as we have developed our SBP so that the long term strategy for rail, which we expect to be published later in 2023, and our infrastructure plans are as aligned as possible. We will continue to work with GBRTT as we look ahead to our CP7 delivery plan.

We will also continue to work closely with DfT, particularly in the context of the five long term strategic objectives, as we continue to develop and deliver our CP7 plan.

Table 3.1: The UK Government's five long term strategic objectives for rail

Objective	Description
Meeting customer needs	**Meeting the needs of future passengers and freight customers by:** a) Increasing value for money and improving the performance, reliability and convenience of rail, b) Meeting multi-modal expectations and reducing end to end journey time, and c) Maintaining a safe railway as part of a safe transport system and widening accessibility.
Delivering financial sustainability	**Ensuring rail is financially sustainable, efficient and value for money by:** a) Reducing costs to government, b) Ensuring a sustainable balance of fare/fee and government funding, and c) Increasing the efficiency of operations, asset management and capital investment – delivering on time and budget.
Contributing to long term economic growth	**Catalysing long term economic growth by:** a) Reducing total journey time and costs for transport users, b) Connecting labour markets and realising agglomeration benefits, and c) Connecting places to markets, directly investing in skills, innovation and digital infrastructure, crowding-in foreign investment and facilitating the housebuilding and place-making agenda.
Levelling-up and connectivity	**Reducing regional inequalities and improving connectivity between communities by:** a) Contributing to long term economic growth in areas in support of levelling up, b) Contributing to social benefits from improved connectivity, and c) Improving rail passenger and freight connectivity across the union.
Delivering environmental sustainability	**Supporting government's environmental sustainability objectives by:** a) Encouraging modal shift by increasing the attractiveness of rail, b) Delivering rail net-zero (traction and infrastructure), protecting biodiversity and addressing air pollution, and c) Protecting transport links by investing climate adaption.

While the Government's strategic objectives have a long term perspective, consistent with the expectations in the outputs specification, we have developed our plans to contribute to these priorities in the next five years within the funding available.

Recognising the funding challenges we face in CP7, we have also used the Government's long term strategic objectives for rail to inform trade-offs in our CP7 plans. This is so that we can balance investment between CP7 priorities, and investments that provide benefits beyond CP7, to support the future sustainability of the railway.

What our customers and stakeholders want

Our customers and stakeholders are central to our plan. As well as national Government expectations, development of our plans has been informed by engagement with a wide range of other stakeholders, including our passengers and freight users, our lineside neighbours, local communities, train and freight operators, our supply chain and local and devolved Governments. Understanding their priorities for the railway is critical to our business and we have undertaken significant stakeholder engagement through the development of our SBP.

As we are a devolved business, much of our stakeholder engagement has happened at a local level, led by our four England & Wales regions. Each of our regions and functions have developed their own stakeholder engagement strategies underpinned by their continued learnings from CP6, and worked with

their stakeholders as they developed their CP7 plans, seeking regular feedback and challenge. Our regions have established stakeholder engagement panels to support development of their CP7 plans, many of which are independently chaired, providing our stakeholders with a real opportunity to influence our plans at a local level. Our regional plans highlight how valuable these stakeholder engagement panels have been throughout the CP7 planning process. They have enabled us to put the customers and communities that we serve at the heart of our plans with their priorities informing our approach to CP7.

Across all four England & Wales regions, several similarities in stakeholder priorities have been identified, including:

- **Passenger priorities.** Priorities included the price of tickets and value for money, reliability and punctuality, sufficient frequency of trains and security. Improving the network's resilience to extreme weather and climate change and improving the accessibility of the network were also key priorities to our passengers.

- **Freight priorities.** Priorities included encouraging freight growth and removing heavy axle weight restrictions.

- **Supply chain.** Priorities included greater engagement with the supply chain throughout the life of a project and to provide continued visibility of our renewals and enhancement plans.

- **Devolved governments and local authorities.** Encourage the modal shift to rail and wider public transport and improving end-to-end journeys and intermodal travel connections.

Alongside this, specific regional priorities have also been identified reflecting local government and stakeholder priorities. For example, in North West & Central a local priority is to support tourism and the leisure market in Cumbria and we have included specific initiatives in our plan to support the delivery of this, working with local communities.

We have also worked with Transport Focus to undertake a national survey of 15,000 passengers, and people currently not using rail (across Great Britain)[1]. This research identified passengers' priorities and then asked how they think the railway is performing against those priorities. It highlights where passengers consider investment and effort should best be targeted. It includes consideration of passengers' views about punctuality and reliability, engineering works, the environment and accessibility.

The research findings were broadly similar across all regions and showed that value for money of train tickets and the punctuality/reliability of services is most important for passengers, well ahead of the next priorities. What's important to passengers varies according to journey purpose and demographics. For example and, not surprisingly, passengers travelling with a wheelchair or mobility scooter rank accessibility of the railway as their top priority. A further finding was that the ability for the railway to cope with adverse weather is the most important environmental concern among rail passengers, while cheaper fares are the most significant factor in encouraging lapsed passengers back to the railway.

The survey findings have informed our CP7 planning and will continue to support ongoing CP7 plan activity. Figure 3.2, below, sets out the findings from this research.

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[1] Available here: Britain's railway: what matters to passengers - Transport Focus

Figure 3.2: Transport Focus survey – key findings
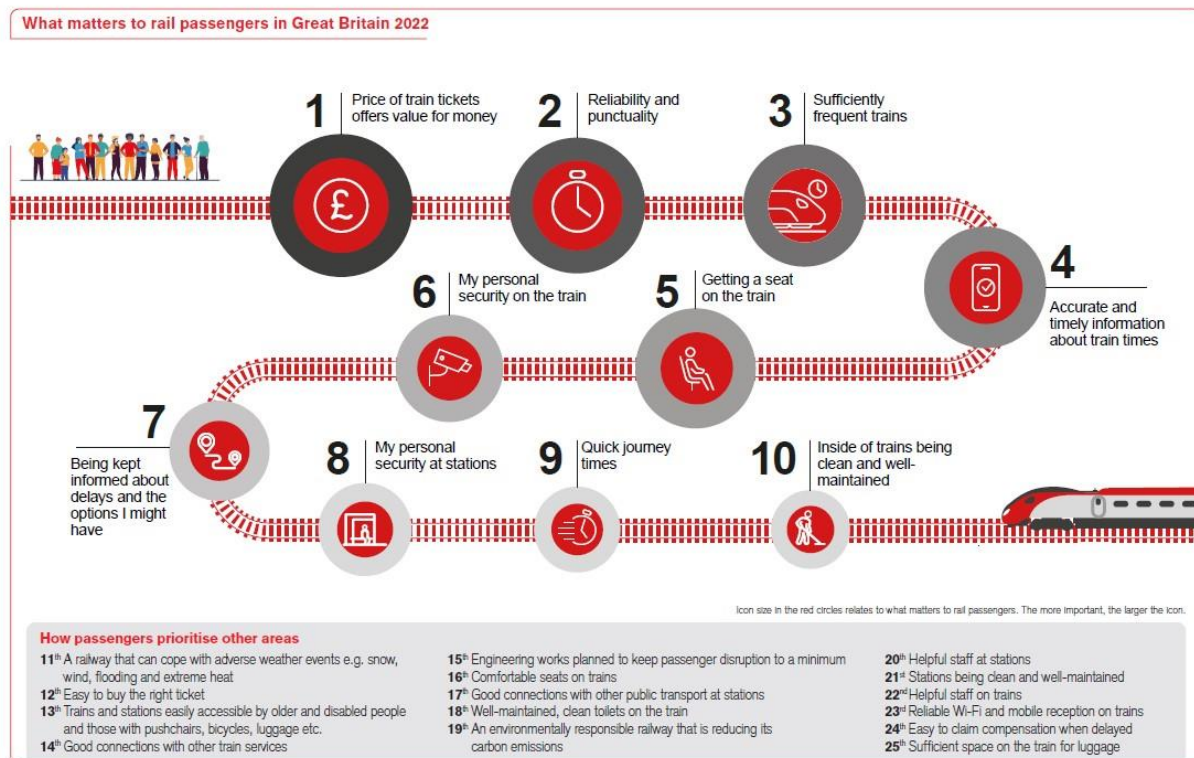
We have also engaged with our supply chain nationally through the Rail Industry Association (RIA), in addition to the extensive engagement between our regions and the supply chain. Through this engagement we have been able to share our broad priorities / challenges to help them plan for the next five years, as well as informing them of our plans to provide an efficient transition from CP6 to CP7. The supply chain is critical to the delivery of the efficiencies we are targeting in CP7, and these organisations are also important industry partners to support delivery of Government's long term objectives and CP7 expectations.

Now that the level of CP7 funding has been confirmed through the SoFA and we have developed our SBP in response, we can engage more fully with our stakeholders on the detail of our plans. Since CP7 funding was confirmed, we have been able to carry out more focused engagement. We will continue to engage with national organisations on the detailed aspects of our plan as we develop our CP7 delivery plan over the next year, and beyond, as our plans continue to evolve to reflect emerging priorities.

Each of our region and function plans sets out more information on their approach to stakeholder engagement to date and highlights key future planned engagement. Our System Operator will lead engagement with freight operators and national passenger operators, supported by region engagement on how local plans can reflect freight and national passenger operator priorities. Chapter 7 summarises how we will engage and work with the supply chain over the remainder of PR23, as well as CP7.

Adopting a market-led and whole industry approach to our CP7 planning

The financial context for CP7, and the industry, is challenging. Rail industry revenue remains significantly lower than forecast pre-pandemic, and the pressures on the sector and on wider Government financing mean Network Rail's funding for CP7 needs to go further than previous control periods. We are continuing to focus on becoming a more efficient organisation. We have also had to make some difficult choices about how we prioritise our investments to provide the most value.

We have developed our plans with a principal focus on customer priorities of safety and train service performance, and to support revenue recovery in CP7. We are also dedicating a significant level of

spending on technology development and implementation, and Research, Development & Innovation activity, all of which contribute to the long term economic, financial and environmental sustainability of the railway.

To achieve this within the funding available, we have prioritised our asset investment on areas which will provide the most value, to support key revenue generating areas of the network while providing an appropriate level of service to areas where revenue is typically lower. This is a more market-led and whole industry approach to planning than the traditional asset condition focused approach. We have also prioritised technology and programmes that contribute the most benefit to Government's long term objectives for rail. Focusing our investment on what customers and wider society value most is fundamental to the financial sustainability of the railway, and there is clear appetite from Government for us to take a more market-led and whole industry approach in our planning. Figure 3.3 provides more information on what these terms mean to us, as well as explaining how they differ from the efficiency delivery in our CP7 plans.

Figure 3.3: Defining market-led and whole industry planning

Market-led
Infrastructure plans reflect the end markets Network Rail serves (passenger and freight) rather than being solely asset condition based. This means OMR activity is undertaken with industry revenue and passenger and freight outcomes in mind and network capacity and capability is adjusted to reflect this.

Whole-industry
Plans consider the performance (financial and otherwise) of the industry as a whole when taking a decision and use whole industry levers to take the right action for industry outcomes. This, for example, means choices reflect the whole industry P&L, and that efficiency and improvement options are developed across organisational boundaries, to deliver greatest benefit.

Efficiency
Delivering the same output for less input by making changes that Network Rail is free to make without working across organisational boundaries.

While rail infrastructure investment has always reflected market needs to some degree, our regions have developed better analysis to target maintenance and renewals activities in CP7 where they deliver most value. By understanding the relative value of different parts of our network we can improve the outcomes we can achieve within the funding available, reflecting the value provided to passengers, freight customers, local communities, the environment and the wider economy.

We have developed a framework for identifying and categorising initiatives and opportunities. This framework is based on a set of levers that can be used to secure cost savings, as summarised in figure 3.4.

Figure 3.4: Market-led and whole industry planning framework

Market-led **Optimised for end-market demand**	**Maintenance and renewals** *Deliver market-led approach to asset maintenance and renewals*	Optimise network capabilities
		Differentiate asset standards
	Access and timetable *Optimise and integrate in-market operations*	Coordinate possession planning
		Optimise timetable and service offer
Whole industry **Optimised for whole industry benefit vs cost**	**Assets** *Leverage whole industry scale in assets*	Commercialise assets and estate
		Leverage buying scale
		Co-ordinate rolling stock leasing / management
	Operations *Co-ordinate operations delivery across industry*	Co-ordinate operations
		Reduce friction costs

Our regions have used tailored approaches to assess the relative value of different areas of their infrastructure, and allocate their funding accordingly within a value framework to enable trade-offs that optimise outcomes.

These tailored approaches include:

- **Eastern.** Adopting a whole system approach, balancing asset safety risks with performance and revenue outcomes to better serve customers and market needs. This is facilitated by Eastern's route asset management plan (RAMP) tool and renewals risk evaluation process, as opposed to previous approaches such as engineering standards focused interventions.

- **North West & Central.** Adopting a 'value of service' approach, categorising routes into four groups (based on train operating and Schedule 8 costs), with renewals and maintenance expenditure prioritised in the highest value groups. Other initiatives include looking at more efficient use of possessions.

- **Southern.** OMR expenditure is predominantly prioritised, beyond a minimum standard of safety, by actual, or potential net revenue. This means prioritising the radical and arterial lines from the south-east into London, while recognising that there is a core level of work for all lines to ensure their safe operation, now and in the longer term.

- **Wales & Western.** Also adopting a 'value of service' approach, with prioritisation of some activity to focus on the highest revenue generating lines of route, while also recognising the need to provide a good level of service across the region.

Overall therefore, regional asset investment is focused on the outcomes that the Secretary of State requires, and reflects what our customers and communities value, but we want to take this further than just targeting asset condition improvements to align to market demand.

We want to provide the appropriate level of outcomes – at the appropriate cost – to the markets and communities we serve. We believe that there are real opportunities to reduce costs with this approach, by targeting an even greater extent maintenance and renewals activities, and aligning network capability, in CP7 where they deliver most value and best reflect passenger and freight needs, reflecting a whole system view of costs and benefits. We are working with operators to better align our business planning activity, but to really maximise on the opportunities we need to be able to take a whole industry approach to planning and delivery.

We are exploring a number of more ambitious opportunities but have not embedded them in our plans yet as we need industry support to meaningfully progress this approach to planning. Decisions need to be informed by the whole industry context to make the most of these opportunities that will reduce long term costs for the rail industry. The Government's expectations for CP7 recognise the importance of this industry approach. The HLOS specifically references the need to work effectively with train operators to identify system-wide opportunities to improve whole-system outcomes and reduce cost. The HLOS also requires us, in considering market-led approaches, to ensure that appropriate levels of train service are retained on routes with higher subsidy. Aligning with operator business plans will be vital to doing this effectively, so our plans will need to evolve to take account of these as we work towards our CP7 delivery plan, and into the control period itself.

ORR's high level policy decisions for regulating Network Rail in CP7 recognises the importance of flexibility. We expect this to be even more important than it has been in CP6 so that we, and the wider industry, can make the right whole system decisions as we understand more of the opportunities.

Our strategic planning framework enables us to organise our planning and delivery

In Network Rail we have six strategic themes to guide our businesses planning and delivery decisions. Our framework is underpinned by our vision to 'put passengers first' and builds that out into company-wide ambitions and objectives for CP7. Our CP7 ambitions for each theme are set out in chapter 4, with measurable objectives so that we can monitor our progress. Our CP7 plans set out the initiatives, enablers and activity that will help us to meet these objectives.

Our strategic framework sets us up for success to contribute to Government's long term objectives for rail, ORR's PR23 objectives, CP7 outcomes expectations and stakeholder priorities. Our ambitions and objectives within each theme align to these various priorities for rail over CP7 and beyond, as highlighted in figure 3.5, below.

Figure 3.5: Government objectives and Network Rail strategic theme mapping

Regions and functions tailor their own planning activity within the wider company framework to align to their differing needs and stakeholder priorities.

Our iterative approach to developing our CP7 plan

We have an established continuous business planning process so that we can adapt our plans to changing circumstances and priorities and learn from past experience. Through CP6, this has enabled us to respond to safety incidents, adapt our plans to respond to the service patterns and working arrangements that came with the pandemic, and continue to support freight growth. CP6 will end in March 2024, so as we develop our CP7 plans, we are also continuing to evolve our CP6 plans to respond to challenges, opportunities and emerging stakeholder priorities. We have based our CP7 plans on a forecast CP6 exit position for expenditure and outcomes, as at period 9 of the 2022/23 financial year.

Figure 3.6: Network Rail iterative business planning process

To develop our SBP, we have completed six rounds of iterative business planning to inform the different stages of the periodic review and refine and improve our processes and evidence. Our iterative business planning process is summarised in figure 3.6. This document sets out our forecasts for what we will deliver across England & Wales (see chapter 4), built from the plans and forecasts developed by our regions and functions, which we will monitor throughout CP7.

Our Executive Leadership Team and Board have been integral to the development of our plans, providing guidance and strategic direction as well as challenging our plan so it is deliverable and stretching.

Dedicated executive and board sub-committees have overseen the production of CP7 plans and our work on PR23, and the Network Rail Board has endorsed this plan. Our continuous business planning process includes robust governance so that our evolving plans will continue to be subject to review and challenge throughout the remainder of CP6 and into CP7.

Our planning work for CP7 does not end with our SBP. Our CP7 funding and high-level outcomes for England & Wales were confirmed on 1 December 2022, so we have only had a relatively short time to reflect fully the HLOS requirements and the specific SoFA funding into all the detail of our plans.

We also know that we need to engage with train operators as they develop their business plans and work with them to align and integrate our respective plans as far as possible – particularly in respect of train performance. We will do this as part of discussions with operators on their annual business planning processes, and performance planning, for example the Joint Performance Strategy development.

Our CP7 plans will continue to evolve to take account of changing stakeholder priorities and better understanding of market demand and industry costs. This will continue to be the cornerstone for our continuous CP7 planning. We will keep ORR updated throughout the remainder of PR23 so they continue to have the most up to date information to inform their ongoing assessment of our CP7 plans.

Our CP7 delivery plan will include more detail on the inputs and activity we will carry out in each year of CP7 and forecasts for the output indicators that we will use, alongside the high-level measures of success in this document.

We use a broad range of tools to monitor and report on our progress including national, region and function scorecards, regular business review reports and executive and board level reporting. We are also developing improved benchmarking which will enable us to better understand the relative performance of our regions and opportunities for learning and improvement.

Our SBP sets out how we plan to use all of the funding available in CP7. Plans reflect our best estimate of the cost of delivering the outputs we set out in our SBP, and the income that we expect to receive. This is broadly based on a P50 estimate (i.e. that there is 50 % chance of delivering the outputs for the funding available). However, in chapter 14, we explain that to effectively manage this risk and uncertainty in CP7, our plans identify activity that we would defer or de-scope if the level of risk that materialised was higher than the average levels we have captured in our underlying plans (i.e. our risk-adjusted plan). We have, therefore, developed our forecasts of what we will deliver, based on both our 100 % funding plan and also our risk-adjusted plan. As we discuss in more detail in chapter 14 we consider that the CP7 success measures/outputs that ORR will establish need to be based on the risk-adjusted plan.

Prioritising our investment

We have taken a careful, structured approach to balance priorities within the funding available. While funding will be marginally higher than CP6 in real terms if the OBR inflation assumptions prove to be accurate, the different challenges we are facing means that we are not able to maintain the same outcomes as CP6 across all areas of the plan. It also means that there is less room in the funding envelope to absorb risks that may materialise throughout CP7.

The financial context means that some aspects of our plans will not be consistent with lowest whole-life cost and steady state principles, and that average asset age will increase over CP7 with a small impact on train performance (discussed in more detail in chapter 10). We are targeting our renewals to minimise the impact of this and are taking steps through other initiatives (e.g. through our Network Operating Strategy, 21st Century Operations programme and performance-focused research and development initiatives) to improve performance.

As well as the minimum operations and maintenance expenditure to operate our business, engineering experts in our Technical Authority have provided advice on renewals activity across our England & Wales

plans so that safety risk does not increase from CP6 and risk to train performance is minimised. This approach will increase the proportion of assets near or at life-expiry, with renewal required in future control periods. Our plans are built to minimise the risk of an undeliverable bow wave of renewals activity in future control periods, and on the assumption that we catch up on the backlog of deferred renewals over the next 10-15 years.

Investment in the development of enablers and technologies is important to support the future railway through safety, environmental, efficiency and performance improvements. A number of these are explicitly referenced in Government's HLOS. This investment needs to be justified with a clear and beneficial business case. We have assessed the benefits of these programmes against Government's long term objectives for rail to prioritise our expenditure.

We have allocated the overall England & Wales funding to our regions and functions based on the outcomes we want to deliver in CP7. Funding for national programmes and enablers has been allocated to the relevant network-wide function, while renewals funding has been allocated to our regions based on asset modelling, local factors not reflected in our asset models, consideration of revenue distribution and wider socio-economic benefits, and analysis of the performance impacts of varying asset renewals.

As we continue to evolve our business plans to reflect changing circumstances and priorities across the industry over the next year and into CP7, our prioritisation and allocation of funding will need to remain flexible. This may mean that the outcomes we prioritise on different parts of the network may change.

4. CP7 outcomes

Purpose of this chapter

For each of the Government's long term objectives for rail, this section sets out our forecasts for what we, alongside industry partners, will deliver in CP7. We explain how we have developed our plans to deliver our outcomes for passengers, freight users and the taxpayer, and the activities that will help us deliver them. The outcomes that passengers and freight users experience is a result of a wider and varied set of factors across the whole industry and wider environment such as climate and weather events, economic context, external events like trespass and work and travel patterns. Because of the interaction of these many moving parts, the best outcomes can be delivered by taking a whole-system view and exploiting whole industry opportunities to unlock additional value.

Overview of what we will deliver in CP7

Network Rail's plans are built to deliver the right outcomes for the markets and communities we serve, with a responsibility to taxpayers to do so efficiently and contribute to achievement of our net-zero goals. ORR will hold us to account to deliver against success measures across our plan:

Table 4.1: Summary of what our plan will deliver in CP7

			Measure	CP6 forecast	CP7 ambition (100% plan)	CP7 forecast (risk adjusted plan)
Meeting customer needs	Safety	↑	Train accident risk reduction	95 %	95 %	95 %
			Workforce fatalities and weighted injuries	0.0567	0.0472	0.0480
	Train Service Delivery	↔	Passenger On Time	65.2 – 67.2 %	65.2 – 67.5 %	
			Passenger Cancellations	3.0 – 4.1 %	3.0 – 4.1 %	
			Freight Cancellations	1.4 – 2.6 %	1.4 – 2.6 %	
	Freight growth	↑	Freight moved	7.5 %	7.5 %	7.5 %
Financial Sustainability	Efficiency	↑	Operational efficiency	-	£1.2bn	£1.2bn
			Capital efficiency	-	£2.2bn	£2.0bn
	Asset sustainability	↓	Composite Sustainability Index	-	-2.8 %	-3.1 %
	Financial performance	↔	Financial Performance Measure	0	0	0
Environmental sustainability & climate change adaptation	Environmental sustainability	↑	Carbon emissions	-25 %	-21 %	-18 %
			Biodiversity units	0 %	+4.5 %	+3.9 %

Note: ORR has not set out Tier 1 success measures for health and safety monitoring in CP7 (as health and safety legislation compliance takes precedence) although Train Accident Risk Reduction (TARR) and Fatalities and Weighted Injuries (FWI) for our workforce are both included as key supporting measures in our SBP. Environmental Sustainability measures reflect the forecast percentage point improvement through CP7 compared to the relevant baseline year, subject to change based on CP6 exit position. There are also no specific measures for Government's strategic objectives of economic growth and levelling up, although our overall investment, freight growth and other measures will contribute to this.

5.   Meeting customer needs

The railway serves a wide variety of customers. Passengers travel through our stations and on our network for work and leisure, with around 30 million passenger journeys every week. Every year, organisations across the UK and beyond move £30bn of goods by rail freight across the network and through freight terminals that link our network with Europe. We also have millions of neighbours who live alongside or close to the network. To meet customers' needs, we must maintain a safe railway, improve performance and reliability, and provide great service. This section sets out how our plans deliver in each of these areas.

Maintaining a safe railway is at the heart of everything we do. In CP7 we will continue to invest in keeping passengers and the general public safe on trains, at train stations, using level crossings and around rail tracks, as well as keeping our workforce safe and healthy.

There are more challenges than ever before to **improving the performance and reliability** of rail for our customers. We are investing our CP7 funding wisely in infrastructure reliability, weather resilience and data and technology to tackle these challenges and protect train service performance, while increasing value for money for the taxpayer by focusing investment where it will have the biggest impact.

We expect that the market demand for **rail freight** will increase in CP7. Through targeted infrastructure investment, providing a reliable network and continuous review of timetables to find capacity and balance passenger and freight usage, we plan to support continued freight growth.

Our regions will target improvements at **stations** that will improve passenger safety, security and end-to-end journey experience. This includes new toilets, seating areas, and customer information screens; better signage so customers can navigate our stations easily; a retail strategy that focuses on local needs; and continued investment in customer service training for our staff. We will also continue to play a leading role in the definition and delivery of the industry customer information strategy. Our plans include Passenger Operational Control Centres for some managed stations in CP7, which will integrate control with our operators to provide a more dynamic response for passengers affected by disruption.

We will also continue to focus on **widening accessibility** of rail in CP7, with a focus on passenger assistance services and addressing physical barriers. We will provide 'turn up and go' passenger assistance at all of our managed stations so that passengers with disabilities or mobility impairments can rely on station teams to assist them around the station and to get onto their train without the need to book assistance in advance.

Table 5.1: Meeting customer needs outcomes forecasts

		Measure	CP6 forecast	CP7 ambition (100% plan)	CP7 forecast (risk adjusted plan)
Safety	↑	Train accident risk reduction	95 %	95 %	95 %
		Workforce fatalities and weighted injuries	0.0567	0.0472	0.0480
Train Service Delivery	↔	Passenger On Time	65.2 – 67.2 %	65.2 – 67.5 %	
		Passenger Cancellations	3.0 – 4.1 %	3.0 – 4.1 %	
		Freight Cancellations	1.4 – 2.6 %	1.4 – 2.6 %	
Freight growth	↑	Freight moved	7.5 %	7.5 %	7.5 %

Note: these ranges capture both the 100 % plan and the risk adjusted plan (explained more in chapter 14).

Safety

Our Safety strategic theme focuses on getting everyone home safe, every day. Managing safety, health and security risk, as far as reasonably practicable, is at the heart of our CP7 plans. We have made careful investment choices to prioritise the ongoing safe operation of the network through CP7, by continuing to build and embed our safety culture and tackle the biggest risks.

Our safety strategy is increasingly driven by data, analysis and insights to make sure we can address the biggest risks to the safety and wellbeing of our passengers, the public and our people. The Risk Management Maturity Model (RM3), developed by ORR in collaboration with the rail industry, helps manage health and safety risks, identify areas for continuous improvement and provide a benchmark for year-on-year comparison. We use RM3 as the bedrock for measuring and assuring our safety performance.

Keeping our passengers, the public and our people safe

Background

In CP6, there have been significant safety incidents where passengers, colleagues or members of the public have been killed or injured. We are actively learning from these tragic events, and this learning is embedded in our plans within the bounds of affordability.

In the last year we have made a step change in how we are adopting RM3. We have assessed the maturity of all of our regions and functions, established a Community of Practice and undertaken a thorough national assessment with full business involvement for the first time. The baseline from this assessment shows that we operate largely between 'Managed' (some processes are repeatable) and 'Standardised' (defined and documented standard processes to establish consistency across the organisation). There are variations across regions and functions and opportunities to drive real change and strive for excellence.

What our funders and stakeholders want

The Government's long term objectives for rail recognise the importance of maintaining a safe railway as part of a safe transport system. CP7 expectations set out by DfT consider the safe operation of the railway to be a continued priority in CP7, specifically highlighting:

Retain improvements in suicide and trespass prevention	Improving user safety on level crossings that require renewals works	Strong and effective focus on supporting track worker safety	Continue to identify priority areas through risk assessment

Through the national passenger research we carried out with Transport Focus, passengers were clear that personal security is a priority. While safety was not captured as an explicit priority, we understand that a safe railway is a fundamental assumption of all stakeholders.

We continue to engage with the freight industry on our Freight and National Passenger Operator Safety Improvement Programme, which will continue in CP7, to identify and address the safety risks associated with freight operation.

Our CP7 Objectives

Our strategic objectives are to:

- Reduce passenger and public safety risk

- Reduce safety risks to our workforce

How our CP7 plans contribute to our objectives

A safety culture is core to our safety strategy for CP7. We will create a managerial and operational culture that puts safety at the heart of everything Network Rail delivers. Our CP7 plans include:

- **Improving our Health and Safety Management System (HSMS).** We will update our HSMS to be clear, simple and accessible, supported by robust policies and strategies.

- **Simplifying our Information Management System (IMS).** Our IMS is a central source for standards and policies. We will update this information to reduce complexity and provide simple, clear systems and processes to manage safety risks, with access to insights to inform decision making.

- **Using technology to tackle safety risk.** Relying on compliance with processes is insufficient to control risks with a high severity outcome. In a business with around 39,500 staff (and double that when the supply chain is included), we must mitigate human error through automation and technology wherever possible. Our CP7 plan includes £138m investment in technology to support safety.

- **Developing our safety leadership capability**. Through CP7 we will increase visibility of our safety leaders and celebrate safe behaviours and putting passengers first. Safety conversations and site visits to assure that we are working safely are an important part of our safety culture. In CP7 we will increase these and implement better recording of these visits so that we can monitor and recognise progress.

- **Implementing a complete competence management framework.** So that all our people have the skills they need to do their roles safely and effectively, we will establish competence management systems and embed required competencies at all levels of the organisation.

- **Assurance and governance framework.** We have introduced better management review processes to give oversight of how we are managing our key risks through a network-wide Business Assurance Committee for Health and Safety. We are continuing to develop our governance to align rules, roles and controls to provide clarification to front line roles in CP7.

Passenger safety is primarily about reducing the risk of train accidents, and accidents in our stations. Our strategy focuses on tackling the most significant precursors to train accident risk including earthworks asset faults, objects on the train line and trains passing red signals when it isn't safe to do so. Our plans include:

- **Understanding extreme rainfall events and managing our earthworks and drainage systems.** We have made good progress, as recognised by ORR, towards addressing the recommendations made by Lord Mair and Dame Slingo in their independent reviews following the Carmont tragedy in August 2020. Our CP7 plans include £18m to continue the work of the Weather Risk Task Force and the ongoing Carmont Action Plan, and c.£1.0bn investment in improving the resilience of our network to extreme weather and climate change (including investing in earthworks and drainage assets in our regions to mitigate the risk of train accidents).

- **Investment to reduce the risk of dead or dying trees falling onto the line**. Ash dieback (a fungus affecting Ash trees) will lead to the decline and death of the majority of ash trees in Britain. Dead trees are more likely to fall onto the railway and may lead to a train accident. There are around 3 million ash trees near to the operational railway. Our CP7 maintenance plans include increased activity to proactively manage this issue and mitigate the risk of dead trees falling onto the railway line.

- **Targeting fencing improvements to reduce the number of large animals getting onto the train line.** Our lineside strategy will target high risk locations to improve our boundary fencing, with £219m total investment in off track boundary renewals, to help reduce trespass and animal incursion, improving performance and safety.

- **Improving local insights and analysis.** In CP6 we have been able to analyse train accident pre-cursors at region and route level for the first time. In CP7 we will be improving our data and analysis to assess precursors at line of route level to target mitigations where they are needed.

- **Safety at stations.** We will continue to invest in the installation of tactile edges on our platforms so that all platform edges have tactile paving by 1 April 2025. This will provide a major accessibility improvement for customers who are blind or partially sighted, helping to keep all of our passengers safe. Slips, trips and falls are often related to the age, design or condition of facilities in our stations. We are investing £1.25bn in renewals across our stations.

- **Personal security at stations.** We are investing £35m in CCTV across our stations portfolio to improve safety and security for our passengers and staff.

Public safety encompasses level crossing risk, trespass and suicide prevention and community safety. Our public safety strategy focuses on the areas where members of the public are most likely to come into contact with the operational railway, and where our analysis shows there is the highest risk of safety incidents. Our plans for CP7 continue to focus on this through:

- **Continuing our strategy of targeted level crossing closures and improvements**. By any international standard, our level crossings remain the safest in world. We know we need to maintain our good work and continue to respond to emerging risks with lower cost, proportionate technology that will make crossing the railway safer for members of the public. Our CP7 plans include £501m investment in level crossings including:
  - State of the art CCTV and obstacle detection at level crossings.
  - Miniature stop lights at user-worked level crossings that indicate whether it is safe to cross the railway.
  - Investment in signage, to meet proposed new regulations, that will help get clear information to users and minimise the risk.
  - We also plan to adopt innovative, cheaper bridge solutions where appropriate to enable the public to travel over the railway safely rather than crossing the tracks.

- **Reducing trespass through targeting improvements at local hotspots**. Our CP7 plan includes a range of interventions including the installation of new platform end deterrents in collaboration with train operators, which provide a physical barrier to make it more difficult to access the live railway, alongside the fencing and boundary investments described above.

- **Suicide prevention.** In CP7 we will continue the work we have done with organisations such as Samaritans to reduce the risk of suicide on the railway.

- **Helping to educate the public on the risks associated with the railway.** In CP7 we will continue our national safety campaigns. We use data and analysis to identify risks and root causes to public safety, and to direct rail education and anti-distraction campaigns at the audiences that will benefit most, such as education for students before school holidays.

The **safety of our workforce** is critical to keeping the railway moving and meeting customer needs. Our analysis shows that the biggest risks to our workforce are being struck by a train, coming into contact with high energy electric systems, use of plant (on track plant and factory equipment) and driving. Our CP7 plans continue to focus on this through:

- **Using technology to reduce the amount of time that our people are on track.** In CP7 we will continue to invest in remote condition monitoring, including equipment and online tools so that we can check how our assets are performing without the need for our people to go out on track. We are also investing in the use of drone technology for assets that don't have remote condition monitoring and £472m in Infrastructure Monitoring (the use of measurement trains to assess track condition without our people going out on track). These investments will enable us to take a risk basked approach to maintenance.

- **Continuing to build on the risk reduction delivered by our Track Worker Safety Task Force in CP6**. Our regions have plans in place to continue the deployment of safety equipment, line blockage protection and further reduce 'unassisted lookout working' and 'lookout operated warning system' working where it still exists. The next generation of technology such as Remote Disconnection Devices (RDDs), Train Activated Warning Systems (TAWS) and Automatic Train Warning Systems (ATWS) will remain key focus areas.

- **Clearing cess walkways and access points**. Cess is the area either side of the railway where our teams can stand and walk so that trains can pass by them safely. Access points are where our teams gain access to the railway to carry out maintenance and engineering work. We have identified where the cess has been taken over by trees and plants or access points are obstructed that create risks for slips, trips and falls. Our CP7 plans include vegetation management as well as investment in repairs that will clear these areas to enable our colleagues to work more safely on track.

- **Improving electrical safety.** We are investing £323m in our Electrical Safety Delivery programme to support the safe operation and maintenance of our railway. This programme, which spans three control periods from 2019 to 2034, will also enable us to demonstrate improved compliance with Electricity at Work regulations and respond to ORR improvement notices. The programme will deploy new technology that means we can isolate the electricity to sections of the railway more quickly and more safely to reduce the risk of colleagues coming into contact with high energy electric systems. For CP7, we have prioritised the elements of this programme that will enable us to comply with relevant legislation, and further funding will be needed to complete the programme in CP8.

- **Identifying and addressing construction safety risks.** In response to safety incidents in 2022/23, our regional construction safety, health and environment leadership teams will focus on developing improvement plans related to construction safety risk (including 'working from heights' and 'struck by moving, falling, flying or rebounding object') to be delivered through CP7.

- **Improve plant safety.** In CP7 we will implement a plant operations improvement programme. This includes fitting anti-collision technology for on-track plant.

- **Continued roll out of vehicle speed warning systems across our road fleet.** Driver speeding incidents contribute to 75% of all our life saving rules breaches. In CP7 we will continue to fit our road vehicles with vehicle speed warning systems.

- **National fire safety improvement programme.** Our regions are undertaking resource analysis to determine the required type and magnitude of fire safety resource, and have included investment in their plans to carry out fire risk assessments and rectify any issues identified through that process.

Our **workforce health and wellbeing strategy** is being reviewed and updated to set us up for success in CP7. We recognise that we have more work to do across the company to translate our ambition on health and wellbeing into CP7 business plans – this is reflected in the feedback we have received on our region and function plans from subject matter experts in Technical Authority. As we work towards our delivery plan, we will develop further detail of the practical steps we will take on health and wellbeing, which will build on the revised company-wide strategy. Our plans currently include activity and initiatives to tackle significant workforce health risks which is one of our 14 network-wide workstreams underpinning our People strategy (discussed in chapter 9). Our plans include:

- **Bringing our occupational health service in house**. Our CP7 plan includes investment to bring our Occupational Health service in house. This will provide a service that aligns with the work environment and job roles of our workforce, delivered by experienced and qualified teams who demonstrate Network Rail's behaviours and professional integrity. With 22 in-house clinics located strategically around the country, this service will offer the flexibility to meet the evolving needs of our business whilst effectively managing the health of our employees. There may also be an opportunity to offer this service to our wider industry partners in future.

- **Develop enhanced medical assessments for our people** to support all our staff during their time at work, and reduce the risk of ill-health, which will reduce the associated safety implications of staff with ill health issues.

- **Mitigating the risks of using small tools.** Improved investigation around Hand Arm Vibration Syndrome (HAVS) is helping us to better understand the causes and improve our controls. Our investigation recording system will allow deeper data analysis to help routes focus on areas for improvement, such as progressive replacement of bespoke railway plant with battery-powered alternatives.

- **Reducing risks from manual handling**. With improved guidance and investment in new solutions, we will continue to reduce the risk of injury and musculoskeletal conditions through manual handling. In CP7 we will use new technology such as hoists and stair climbers and we will also be implementing an improved control framework and guidance.

- **Fatigue.** Through CP7 we will continue to focus on embedding our fatigue risk management standard which we updated in CP6 to change the way we manage fatigue, helping our people to understand the risks and causes, and identify solutions.

- **Training and support for mental well-being.** We will continue to provide support mechanisms for our employees' mental health including through our occupational health services and ongoing training such as mental health conversations and mental health first aid.

- **Improve the air quality at stations and train maintenance depots**. Through CP7 we will continue to assess air quality at our managed stations to improve the environment for our passengers and workforce. Our plans include investment in ventilation to target these improvements in our buildings.

We will continue to use data to inform our safety strategy to target investment where it's needed most as we approach CP7 and throughout the control period. This will be informed by improved analysis and insight and give due consideration to risks emerging from external factors and developments in technology. We will also continue to design and carry out assurance to manage our compliance with legislative and regulatory safety obligations.

Keeping the railway secure

Background

If Network Rail's assets were stolen, damaged, degraded or misused, it could cause serious disruptive and negative impacts to our ability to run the railway safely and reliably. Security is core to our culture and embedded in everything that we do. Every new development or change is considered an opportunity to review and, where necessary, improve railway security. Our strategy enables us to comply with the National Rail Security Programme (NRSP) and Network Information System Regulations (NIS-R).

We categorise our assets so we can plan our security measures effectively:

- Our people.

- The railway infrastructure.

- Cyber assets including data, devices and systems that allow us to operate.

- Buildings and property.

- Equipment, materials and money.

During CP6 we worked to close out deficiencies identified by DfT across our managed stations and Critical National Infrastructure (CNI). Building on the success of CP6, including the devolution of security accountabilities to our regions, the focus of CP7 will be on continuous improvement, providing more effective assurance that will lead to improvement of the national framework that guides our security decisions.

What our funders and stakeholders want

The Government has set a clear expectation for security in CP7, and passenger research highlighted that it is a continuing priority for our customers:

Have due regard to security threats including crime, terrorism, natural disasters, and physical and cyber security	Personal security while using the railway

Our CP7 Objectives

- Our strategic aim is that customers, stakeholders and asset owners are assured that threats to railway security are effectively controlled.

How our CP7 plans contribute to our objectives

Our security strategy for CP7 takes a risk based approach to mitigating security threats (where there is regulatory flexibility to do so), focusing our efforts on our most valuable assets, most significant weaknesses and harmful threats. Our CP7 plans include £55m investment in security including:

- **Protecting CNI sites**. Critical National Infrastructure comprises facilities, systems, sites, information, people, networks and processes that are necessary to allow a country to function and that daily life depends on. Our critical sites are those which would have major detrimental impact (safety, economic or social) if they were lost or compromised. In CP7, we expect that each of our routes will have one new CNI site and will need to provide the necessary investment to protect their security. There are also changes to security regulations that will require upgrades to security arrangements at existing and new critical national infrastructure sites and stations.

- **Investment in other important assets**. During CP7, we will improve security for important assets, that although not recorded as CNI are still key to supporting the rail essential service for our customers. We have included investment for these improvements to keep our assets at the standards required under security regulations.

- **Investment to reduce the risk of railway crime.** We will continue to focus on improving the safety and security of the railway boundary to prevent hostile trespass and reduce crime. This includes increased security patrolling, covert cameras, trembler alarms and forensic marking technology to reduce the risk of cable and metal theft. We are also introducing 'designing out crime' initiatives. These initiatives are used to deter and detect crime to try to reduce its impact on our services – like reducing cable theft. Our regions are also working to embed British Transport Police teams at key locations across the network to improve response times to incidents.

- **Hostile vehicle mitigation at key stations** is a way to prevent one of the current most likely terrorist attack methodologies where vehicles are uses as weapons. All of our stations have hostile vehicle mitigation in place, and it will be maintained and improved where there are vulnerabilities.

- **Investing in cyber security.** We are investing in upgrading our cyber systems to make sure we are consistently complying with new cyber regulations.

- **Technology to enhance security.** We will implement new technical security controls in CP7. This includes managed access control (which controls access to buildings automatically, like the ones we have in our offices – this allows us to know who is in the building and where they are in some of our critical assets), AI-CCTV (smart TV that can spot behaviours and incidents and help our CCTV operators to respond to incidents quickly) and platform end and edge (trespass reduction technology).

- **Continuing to embed our security culture**. Through CP7 we will build on the success of CP6 with region and route accountability for security, by continuing to build a culture of security through all levels of our business. We will achieve this through a series of security communications, culture and competence programmes in each of our regions.

- **Maintaining security in our buildings during engineering projects.** During planned projects at our stations and other buildings, we will invest in additional security measures to continue to keep our buildings secure even when there is engineering work. Our capital expenditure on buildings in CP7 has this investment built in. This generally equates to around 1 % of total forecast costs for each building project.

- **Implementing an accredited Information Security Management System.** Our plans include the development and implementation of an Information Security Management System aligned to ISO 27001 and certified to that standard by the accrediting body, to demonstrate a good level of security management to our management, partners and other stakeholders.

- **Fencing and trespass preventions.** Our CP7 plan includes a range of interventions to reduce trespass, including the installation of new platform end deterrents in collaboration with train operators, which provide a physical barrier to make it more difficult to access the live railway. Our lineside strategy will target high risk locations to improve our boundary fencing to reduce trespass and animal incursion, improving performance and safety.

Train Service Delivery

Our Train Service Delivery strategic theme focuses on delivering a railway that people can rely on, with trains that turn up and arrive at their destination on time, and can accommodate growth without sacrificing performance. Reliable train services are vital to support the economy and society and are key to the industry's ability to generate revenue for reinvestment.
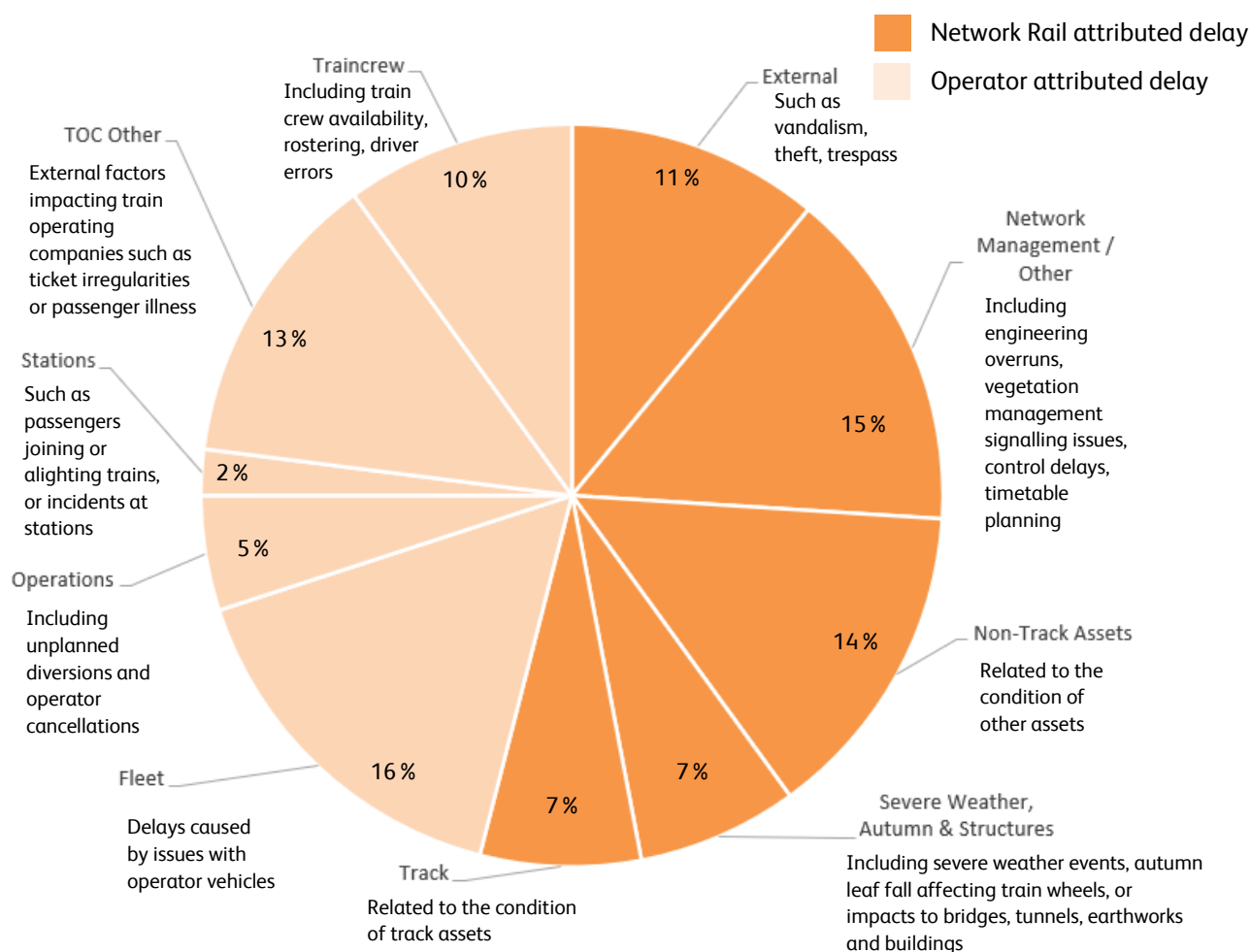
Our Train Service Delivery strategy is underpinned by collaborative industry action based on high quality data and insights. Train service performance is an outcome of many factors across the whole industry, so collaboration is essential to meet our ambitious CP7 targets. We are continuing to invest in technology and programmes to support a more dynamic railway that can respond to changing service patterns and external factors, while tackling the challenges in front of us to run reliable, punctual services.

Delivering reliable and punctual train services

Background

Current train performance is not as good as it should be. Over the past year, there have been challenges associated with industrial action, train crew availability, service levels and the increasing impact of a changing climate on infrastructure. We are aiming to improve train performance over the remainder of CP6. Figure 5.1 shows the main factors impacting train performance in CP6 and their relative contribution (based on CP6 to date). Tackling these challenges will take whole industry alignment and effort, recognising that some are not easily or quickly resolved.

Figure 5.1: Main factors impacting train performance (as at February 2023)

Legend:
- Network Rail attributed delay
- Operator attributed delay

Pie chart segments:
- **External** – Such as vandalism, theft, trespass — 11%
- **Network Management / Other** – Including engineering overruns, vegetation management signalling issues, control delays, timetable planning — 15%
- **Non-Track Assets** – Related to the condition of other assets — 14%
- **Severe Weather, Autumn & Structures** – Including severe weather events, autumn leaf fall affecting train wheels, or impacts to bridges, tunnels, earthworks and buildings — 7%
- **Track** – Related to the condition of track assets — 7%
- **Fleet** – Delays caused by issues with operator vehicles — 16%
- **Operations** – Including unplanned diversions and operator cancellations — 5%
- **Stations** – Such as passengers joining or alighting trains, or incidents at stations — 2%
- **TOC Other** – External factors impacting train operating companies such as ticket irregularities or passenger illness — 13%
- **Traincrew** – Including train crew availability, rostering, driver errors — 10%

During national lockdowns and the periods of Covid-19 restrictions, operational performance was artificially high with fewer trains, surplus crew and rolling stock, and fewer passengers. This manifested in fewer asset failures and a significant improvement in the ratio of primary to secondary delays. Since the easing of Covid-19 restrictions, timetables have been reinstated, crew availability is worse that it was pre Covid-19 and passenger numbers have increased, so the performance levels during the Covid-19 lockdowns and restrictions have not been sustainable. These issues have been compounded by particular challenges over the past year arising from the industrial action across the industry, which at the time of finalising this document is still yet to be resolved for train operators. The impact of extreme heat and drought has also had a significant impact.

Our forecasts are underpinned by assumptions developed alongside train operators, including that we expect operator cancellations to improve from current levels when train crew and industrial action issues are resolved. Recognising that train performance is a complex, whole-system outcome, we are focused on working across industry to address these challenges over the remainder of CP6.

What our funders and stakeholders want

Improving the performance and reliability of rail is central to meeting customer needs as part of Government's long term objectives for rail and our passenger research. DfT's CP7 expectations highlight several key elements to support this. In the HLOS, the Secretary of State has requested that we develop a 'realistic yet ambitious' performance plan for CP7. We know that second only to value for money, passengers place very high priority on a punctual and reliable railway. Our stakeholders' priorities are:

Collaborative industry approach to delivering train services	Strong train service planning expertise	More accurate and timely performance modelling and measurement	Strong and effective timetabling capability
Reliability and punctuality	Sufficiently frequent trains	Quick journey times	Effective asset management and incident response

Our CP7 Objectives

Our strategic objectives for train service delivery in CP7 are:

- Give passengers the highest levels of train performance possible so we get them where they need to be, on time (as measured through Passenger On Time and Passenger Cancellations)

- Improve planning of the train service and maintenance access to minimise disruption for passengers and freight users

- Minimise asset service affecting failures (SAFs) in line with our asset condition forecasts

- Prevent delays and minimise the impact of disruption

Achievement of these objectives will need continued collaboration with train operators to bring together the performance risks across track and train to address the issues that disrupt our customers.

How our CP7 plans contribute to our objectives

Our strategy for Train Service Delivery seeks to bring together our activities to manage the reliability of our assets and the operation of the wider system of train operations, in collaboration with the industry. We know what can happen when the industry does not work together well to deliver train performance. The May 2018 timetable implementation and the Glaister Review demonstrated this. The temporary train performance improvements during national lockdowns also positively highlighted that train service performance relies on the whole system working together across track and train.

No level of asset reliability can compensate for an unreliable train plan, and asset faults and failures will impact an otherwise reliable timetable. Each of our regions has developed a tailored approach to manage their local challenges, alongside national programmes and frameworks that will improve insights and operations across the network. Because of additional pressures impacting performance in CP7, achieving our CP7 train performance objectives requires significant investment and effort.

Our analysis shows that providing a reliable and punctual train service is likely to get more difficult in CP7 as there are more **challenges and uncertainty** than there have been before:

- **Service levels, service patterns and passenger numbers** can impact the level of delay to services and our ability to recover from incidents, impacting train performance. Returning passengers and revenue is vital to the long term sustainability of the railway and to support the economy, but performance has declined since the Covid-19 restrictions ended, as passengers have returned, and services increased. This is despite industry efforts to maintain it. Many passenger train operators are working with DfT to update their business plans in light of financial pressures across the whole industry, adding further uncertainty around the service patterns on the network over CP7. Our plan assumes that passenger numbers continue to increase in CP7 but that service levels will remain broadly flat at 88 % of pre-Covid 19 levels. We recognise that these levels are likely to fluctuate as operators and DfT vary their service offering. We expect rail freight demand to continue to grow in CP7.

- **Climate change and weather events** impact train services for passengers and freight-users as well as causing many of our assets to deteriorate more quickly (especially earthworks and drainage assets). We have seen a 50 % increase in impacts from weather events over the past five years compared to the previous ten. While we are investing in our assets to increase resilience, the extent of progress and mitigation against weather-related risks in CP7 will be impacted by other cost pressures we face during the control period.

- **Asset reliability** is a big part of delivering reliable and punctual train services, with asset faults causing 25 % of all delay on average. As discussed in chapter 10, many of our assets, such as structures, buildings and earthworks, were constructed as the railway was built between 1850 and 1920. As well as these assets, a higher proportion of asset faults impacting train services is seen on track and signalling assets. Due to available funding, our assets are ageing more quickly than we can afford to renew them in CP7, which means that a larger proportion of our core infrastructure assets will be nearing end of average life during the control period. We are forecasting that our annual SAFs will increase by 2 % by the end of CP7, and a further impact in our risk adjusted plans.

- **Enhancing the network:** We know from experience that large scale changes to the network such as HS2 on-network works, Transpennine Route Upgrade and the East Coast Digital Programme can be expected to be disruptive to performance during construction, before longer term benefits are realised. Our regions will mitigate this as far as possible in CP7, but this pressure, and the related negative impact on train performance, has been factored into plans and forecasts.

To tackle these pressures on performance, our plans include **targeted investment in our asset reliability and resilience**, although we expect a decrease in asset reliability in CP7. We have needed to make careful investment choices within the funding available. Whilst we have sought to focus on train performance, we have had to balance our expenditure and asset interventions in order to protect safety, particularly for key assets such as earthworks and drainage, as well as focusing investment on those areas of the network which will bring the highest economic and social benefits. However, the indication is that average asset age will increase and (all other things being equal) this will have a small impact on train performance, particularly in the later years of CP7. Targeted investments in asset reliability include:

- **More activity to respond to weather patterns and climate change.** Our current forecast is that the number of days impacted by adverse weather events will increase by 5-10% in CP7. However the deployment of improved information, technologies and processes are expected to result in a 10% improvement in delays caused by weather. We are also investing c. £1bn to improve the resilience of our network to extreme weather and climate change (including investing in earthworks and drainage assets in our regions, which are likely to be impacted most by changing weather patterns).

- **Investing in asset reliability**. In our regional plans, we have focused our asset renewals and maintenance expenditure on assets where the impact of asset failures is typically more widespread and longer lasting.

To mitigate the impacts of decreased asset reliability in CP7, we are taking steps through other initiatives including further improvements through even **closer working with train operators**. Rail reform and the creation of GBR must also provide a robust basis for better train performance. Our plans include:

- **Collaborative industry strategies.** Delivering the right outcomes within the funding available requires joined up working between Network Rail and train operators to enable the most effective whole-system performance solutions. Our regions have worked with train operators to inform CP7 planning priorities and will continue to develop Joint Performance Strategies with train operators for each year of CP7.

- **Operator cancellations and delay** are expected to improve after current challenges (including industrial action and staffing levels) have settled. Operator business planning is ongoing, so we need to be flexible to continue to align plans across the industry.

- **Fleet.** Large parts of the network are already benefitting from new operator fleet, but initial introduction of new trains on the network can cause a short term decline in performance as complications with the roll out are identified and addressed. There are some significant rollouts over CP7, most notably in Wales, which are expected to drive a noticeable drop in performance in the short term.

- **Preparing for expected changes in service levels.** While service levels are not expected to return to pre-Covid-19 levels, lessening the impact on performance outcomes, station dwell times are expected to increase as passenger try to crowd onto fewer trains. We will continue to work with operators to align to service changes through our respective business planning processes.

- **Timetable impacts.** We will continue to work with operators to reflect the impacts of potential timetable changes in performance forecasts as they emerge. We know that small changes to the timetable can have a big impact on performance, so agreeing timetables with operators through collaborative industry processes will be essential through CP7.

- **A Key Freight Corridor focus.** We will work with freight operators to help tackle performance challenges through key freight corridors. The aim of this is to generate better understanding across the routes in which key freight traffic moves by bringing regions together to understand issues impacting freight from its departure to arrival point, and working together where required

to improve punctuality and reliability. This will be underpinned by improved reporting and analysis, robust risk logs which span the corridor and strong governance.

Because of the additional challenges around asset condition, we are also targeting more improvement from **other categories of delay**:

- **Continuing to embed our Network Operating Strategy.** This will improve the whole industry's capability to manage the train service through the day and respond to the challenges presented by increasing levels of adverse weather.

- **Developing our workforce capability to respond and recover when delays happen.** As set out in chapter 11, our 21st Century Operations programme will build the skills and capability of those working in operational roles through CP7 to respond to incidents and recover service. Improved joint working and data and technology to optimise decision making for our people will also help to recover from delays.

- **Performance innovation.** Throughout CP6, we have sought to identify and implement innovative interventions to address long standing performance challenges through a national programme. While in CP7 we have not included funding for the continuation of a discrete performance innovation fund, we will seek to deploy the tools, technology and learnings for the work conducted in CP6 where there is a good business case to do so, as well as targeted initiatives arising from our Research, Development & Innovation programme, as discussed in chapter 7.

And we have targeted ambitious performance improvements from **national programmes**:

- **Better use of data and technology.** This will provide better measurement and analysis on the causes of delays, and continues to be a priority for CP7; and it is also an important objective identified in the Long Term Strategy for Rail. We will also continue to develop our performance modelling capability in CP7, using the better data we gather to inform our modelling to forecast future performance more accurately.

- **Implementing the Industry Timetable Technical Strategy.** The quality of the timetable is a foundation stone for both passenger and freight performance and the ability to recover services following incidents. It is also one of the areas ripe for better integration and collaboration between Network Rail and operators. We are investing £50m in ITTS in CP7, building on the work in CP6, to continue to build towards better underlying timetable performance and reliability through increased use of technology and the modelling of timetables ahead of implementation.

- **Better Timetables for Passengers and Freight.** We have learnt from the processes to change service patterns during the pandemic to make the base timetable more resilient. We are continuing the Better Timetables for Passengers and Freight, an ambitious industry-wide programme that is transforming the way the timetable planning is executed and managed to be more customer-centric. This seeks to provide opportunities to make locally driven timetable changes more quickly, to make decisions at the right time with the right information for the customers we serve.

- **Investing in digital capability.** The East Coast Digital Programme (that will lead to all trackside signals on the southern part of the East Coast Main Line being replaced by in-cab control) is a template for deploying technology to improve our day-to-day operation of the railway, making more data available to understand to-the-second risks to performance and the optimal response for the benefit of passengers and freight users.

In addition to the elements of our plan described above, our plans consider cross-region issues that are important to **National Passenger Operators** (transporting passengers across multiple regions and

typically over long distances). Our Freight and National Passenger Operators team within System Operator works closely with our network-wide customers that travel across regional boundaries to understand and represent their interests across our regions and functions so they can be reflected in our plans. These customers comprise the Caledonian Sleeper, CrossCountry, and operators of 1,000 charter services that operate across the network each year, and aspirant passenger open access operators. Our plan includes:

- **24/7 Operation**. Our Freight Service Delivery Managers in our control centre will continue to work closely with the regions to facilitate smooth journeys, including for overnight Caledonian Sleeper passengers.

- **A 'whole journey' approach**. Our CP7 plans consider a holistic approach to our passengers' journeys, aiming to provide a seamless service throughout. We will work with the operators to continue to support growing their businesses and encourage passengers onto the network, by enabling consideration and improvement in their 'end-to-end' journey experience. We are investing in stations to improve passenger information, facilities and accessibility as well as the continued adoption of the 'One Team' philosophy to provide great service to all passengers at managed stations.

- **Charter capability.** We will also continue to lead on and work closely with the regions to continue understanding of charter operators' and their guests' bespoke requirements, as well as appropriately maintaining capability of the network to support growth, building on the gauging and capacity programmes in CP6.

Forecasting uncertainty

Train service delivery is the outcome of a complex system of moving parts, many of which are unpredictable. In any control period there are inherent uncertainties in train performance forecasting. As shown in figure 5.2, below, over the past 14 years, every year as an industry we have not been able to reliably predict train performance – with the gap between forecast and outturn often being material.

Figure 5.2: Comparison of planned performance outcome vs. actual performance outcome (2010 to 2023)
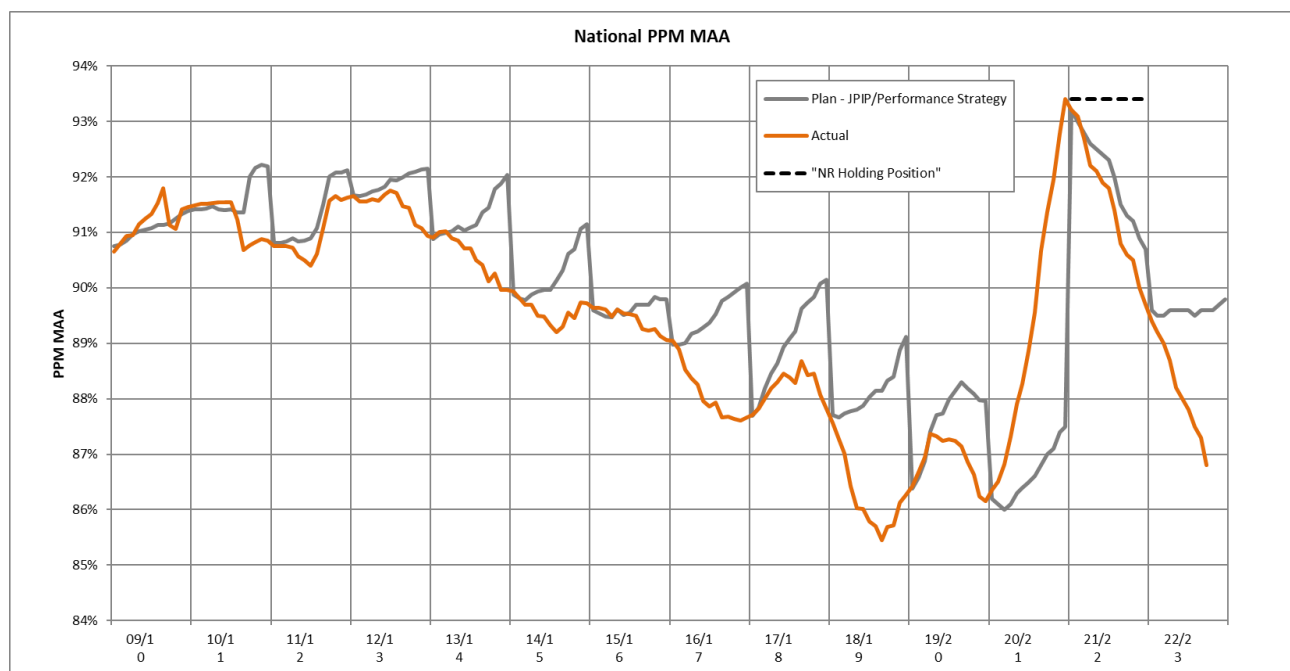
Note: PPM is the Public Performance Measure previously used to publicly report on train performance. JPIP refers to the Joint Performance Improvement Plans we develop with operators each year.

Further, train service performance has an inherent variability based on the uncertainty of external factors such as the severity of weather each year. We can factor this in, to an extent, but the predictability of the impact of different factors decreases over time, so that we are less certain of what performance will do at the end of a control period than at the beginning.

Our train performance forecasts for CP7 have been developed in an unusually challenging environment, with continued uncertainty about levels of demand and service provision, and difficulty understanding the underlying performance trends given the impact of industrial action. Coupled with a lack of a stable baseline, these factors have contributed to a reduced confidence in the performance community's ability to accurately forecast future performance.

We have built our CP7 plans around a number of key assumptions included in annex 2. Most notably for our train performance forecasts, there is uncertainty around the rate at which passenger numbers and services will return to pre-pandemic levels, the pattern of those services and how they will be resourced. If any of these assumptions need to change as more information is available, this will impact our forecasts.

Our investment choices are focused on the safe operation of the railway, with efficiency improvements so that we can make our funding go further to support investment in protecting train performance and future enablers in CP7. If risks materialise and investment priorities need to change over the course of the control period, we have made assumptions about how we would manage this in our plans (see chapter 14). We don't know if, when or where risk will materialise, so we need to remain agile. This adds further uncertainty to our performance forecasts.

Taking all these factors into account, setting out a central point value for train performance which forecasts out to the end of CP7, at this stage, would be misguided. It would also risk setting a forecast based on inaccurate assumptions. Our SBP train performance forecast is therefore presented as a range, based on the potential parameters on which we do have a better understanding of the level of risk in our plans, and the whole industry ambition to deliver good train performance in CP7 and beyond.

In summary we have forecast:

Table 5.2: Current view of CP7 train performance forecast ranges

		Measure	**CP6 forecast**	**CP7 forecast range**
Train Service Delivery	↔	Passenger On Time	65.2 – 67.2 %	65.2 – 67.5 %
		Passenger Cancellations	3.0 – 4.1 %	3.0 – 4.1 %
		Freight Cancellations	1.4 – 2.6 %	1.4 – 2.6 %

Note: these ranges capture both the 100 % plan and the risk adjusted plan (explained more in chapter 14).

We will need to work through more detail on train performance over the coming year, which will require a very collaborative approach with train operators, DfT and ORR. The approach to monitoring in CP7 needs to recognise our ambition, but also acknowledge the level of risk to delivery that we have described in our plans. Because of industry performance incentives (specifically the Schedule 8 regime), there is a risk that setting baselines against a stretching target would lead to a large financial outflow, through Schedule 8, which in turn would limit our ability to invest in the network for better performance. We will work with ORR to inform the setting of appropriate Schedule 8 baselines for CP7 as well as ensuring appropriate flexibility during the control period.

Delivering for the freight industry

Background

Rail freight is essential to Britain's environmental and economic wellbeing. It is central to the nation's supply chains, keeping supermarkets stocked, builders building and medicine moving:

- Rail freight contributes **£2.45bn** to the UK economy each year, supporting levelling up with **90% of the benefits outside of London and the South East**, and delivers £30bn of goods by value annually.

- A single freight train can carry enough fuel to **power a city the size of York for a day**.

- Rail freight produces **76% less CO_2** than the equivalent road journey. By carrying large quantities of containerised and bulk goods, rail freight removes the need for seven million lorry journeys each year. Annually, this **saves around 1.4 million tonnes of CO_2 emissions**.

- One jumbo train can carry **3,600 tonnes of aggregates** equivalent to 125 loaded lorries.

- A single freight train can carry up to **100,000 parcels**.

- Each freight train **removes up to 76 lorries** from the road network, which could result in around 1 billion fewer Heavy Goods Vehicles every year.

Eastern — Moves over one million tonnes of freight every week connecting 13 freight ports

North West & Central — Carries 40% of Britain's rail freight traffic on one of the busiest freight routes in Europe

Wales & Western — Over 800 freight movements a week carrying 500,000 tonnes

Southern — 32 active freight terminals linking the rest of the country and Europe through the Channel Tunnel

In CP6 the rail freight market has shown growth despite challenges. In the context of Brexit, Covid-19, industrial action, testing economic conditions and the Russian invasion of Ukraine, the freight sector has been dynamic and often unpredictable. In this context, changing consumer demands have required a flexible approach to enable growth across the industry such as reviewing train paths. By the end of CP6, the tonnage of goods moved by rail freight is expected to have increased by 7.5% compared to the start of the control period.

In CP7, our mission for freight is to accelerate the shift to rail by delivering better, faster, more sustainable services. As a devolved organisation, freight is a core component of each region's SBP; these plans detail the initiatives, interventions and investments that are required to deliver and grow safe and reliable rail freight.

We are developing, in collaboration with GBRTT and the freight sector, a 30-year freight strategy which has informed our CP7 plans. The core pillars of this strategy have shaped CP7 plans to drive modal shift to rail and innovation within the freight sector.

To help align our CP7 plans to expected market demand, we engaged consultants MDS Transmodal to update the long term growth demand forecasts for rail freight. A range of possible market scenarios were modelled, all indicating growth, especially in the intermodal (containers carrying consumer goods domestically and to/from major ports) and construction markets. The work was based on a range of

scenarios of different rail policy and macroeconomic environments, which combine to give different growth outcomes. The work, and the scenarios developed, include assumptions on practically available network capacity (i.e. there is no automatic assumption that all freight growth can be accommodated on the network given its existing capability and capacity and other services operating). From the work, we have used the demand forecast from the average of the four scenarios to inform our planning. This expects 7.5 % growth (based on the 'constrained' network) in demand for rail freight over CP7 in England & Wales.

Table 5.3: Freight demand growth forecasts 2024 to 2029

	Eastern	North West & Central	Southern	Wales & Western	England & Wales
Average scenario	7.5 %	8.6 %	2.9 %	6.9 %	7.5 %

What our funders and stakeholders want

Our Freight and National Passenger Operator (FNPO) team has conducted extensive external and internal consultation and engagement to understand the key priorities for freight so that our plans can consider them. The HLOS sets an expectation for a freight growth plan across the sector. We have started engagement with the freight sector on this and will continue to align our CP7 plans to reflect the collaborative approach. These priorities have been built into our planning assumptions and guidance throughout our iterative planning process, and we will continue to adapt our plans to consider the evolving priorities of our freight customers. The priorities of funders and stakeholders are:

Punctuality and reliability for freight customers	Rail freight growth during CP7 to secure environmental and economic benefits	Work with operators & customers to develop plans to support growth	Maintain freight reliability	Support the contribution to national supply chain resilience	Support freight safety

There is also significant untapped value in the freight estate, both held directly by Network Rail and under lease to operators and end users. We will pursue opportunities to release and recycle value arising from selected disposals of certain sites, within the regulatory framework, toward targeted tactical freight network and estate enhancements. The aim of this will be to generate new freight estate income and/or traffic volumes for routes and regions.

Our CP7 Objectives

To continue to support the freight industry in CP7, our objectives are:

- Investing in our structures to enable longer and heavier freight services
- Rolling out European Train Control System (ETCS) freight cab fitment
- Capacity and capability optimisation
- Fitting freight train cabs with ETCS equipment to enable digital signalling
- Delivering our freight safety strategy
- Protecting freight train service performance

To accelerate the shift to rail, our freight strategy focuses on safeguarding our freight critical assets while identifying new and more efficient opportunities for growth. Our CP7 plans include:

- **Investing in our structures to enable longer and heavier freight services.** Currently, most of our structures (bridges) can accommodate a heavier category of freight traffic (classified as 'RA9' or 'RA10'), even though this is above the published capability. As these structures age and deteriorate, without investment, they will no longer be able to safely carry heavier trains and will revert to the published RA8 capability meaning each service running would have to reduce the weight of materials carried by up to 200 tonnes. This could increase costs for end users by 20 % making many services unviable as well as undermining the security in long term business planning. We are developing a long term programme of engineering work to support heavier traffic. Our initial estimate of the work involved in this programme is £1.3bn. We are not funded for this in CP7. However, we have identified a list of high priority structures where capability to carry heavier traffic has already degraded, or is likely to degrade within CP7, and our plans include £72m investment to be spent on these highest-priority structures across the network. Without this investment, it is likely that those structures would not be able to continue to carry the heavier traffic the industry relies on for the whole of CP7.

- **Capacity and capability optimisation.** Reduced passenger demand following the pandemic provides an opportunity to reconsider timetables to allow for more freight capacity. Making informed trade-offs between passenger and freight trains in specific paths will be an important enabler of this. We will continue to work closely with the freight community in CP7 to identify further opportunities for freight paths and growth. This includes supporting new terminals going live (such as Stanton Gate, Northampton). To do this, we have produced plans with asset interventions prioritised on the basis of need and risk and invested to support freight growth; for example, improving traction supply flexibility on the West Coast Main Line through the Bushey programme, Wembley substation renewals and Crewe Hub enhancements. Similarly, critical routes carrying large tonnages are targeted. We will be continuing to support assessment of the feasibility of our major stations to accommodate the emerging 'parcels as passengers' concept, where parcels are transported using available space on passenger services. This is in addition to existing 'express freight' services which offer light-logistics using dedicated high-speed trains.

- **Fitting freight train cabs with ETCS equipment to enable digital signalling**. ETCS is an in-cab signalling system that allows trains to safely run closer together and can support additional improvements in safety, performance and capacity. In CP6 the first locomotives have been fitted with ETCS technology, and the fitment programme will continue into CP7 in support of the wider rollout of ETCS infrastructure.

- **Delivering our freight safety strategy.** Network Rail is working closely with the freight sector and groups such as the National Freight Safety Group (NFSG) to address key factors involved in train accident risk, as well as Lost Time Injuries (LTIs), trespass, security and operational risks. Key schemes such as the Condition of Freight Vehicles on the Network (CFVN) and the Freight and National Passenger Operators Safety Improvement Programme (FSIP) form part of the freight safety strategy, in conjunction with regional areas of focus. Key parts of the strategy include:

  o **Investing in resilience to climate change and extreme weather for freight critical assets.** Plans across the regions have laid out how this is either to be maintained or improved across CP7. These include an increasing application of remote condition monitoring, a specific £25m fund on Eastern and £19m for climate change adaptation on Wales & Western. Targeted drainage schemes will also reduce flood risk at key sites. Alongside this, vegetation management has also been a key issue identified by our

stakeholders. Our CP7 investment allows for more effective and proactive management of lineside vegetation, which will enable better signal sighting and clearance for freight vehicles, and includes the targeted removal of vegetation within falling distance, including management of ash dieback.

- o **Investing in operational resilience.** This will include improvements to lineside security to mitigate the risk of trespass, including the use of drones and other technological improvements. Schemes are also proposed to increase the resilience of overhead line equipment, traction power supply and other targeted operational improvements funds to flexibly exploit short term business improvements and 'quick wins'.

- o **Continuing the Freight and National Passenger Operators Safety Improvement Programme.** We have included £15m for continuation of FSIP in our System Operator plan for CP7. In CP6 this has funded over 100 separate schemes to improve local conditions. While the fund is lower than in CP6, in CP7 we intend to make the fund more strategic to address specific risks with network-wide relevance, which will provide the opportunity to realise improvements at a broader scale.

- o **Industry workstream on the condition of vehicles on the network (CFVN).** This is a vital area of focus throughout CP6 and CP7. Investigations into serious incidents on the network, such as the Llangennech derailment, have cited poor wagon and vehicle condition and maintenance as a major contributory factor. The CFVN workstream, collaborating with freight operators, aims to fully understand why safety incidents occur involving the condition of freight vehicles and find the best way forward to reduce risk. This will continue to be a key driver of improvement throughout CP7.

- **Implementing Regional Freight Safety Boards.** Following an initial pilot in the Southern region, these Boards will maintain preventative safety measures, such as the Wheel Impact Load Detector (WILD) systems, and operate at maximum capacity in CP7. We are also looking for more locations for installation on key freight routes. Similarly with Hot Axle Box Detectors (HABD), we are providing data and carrying out analysis on improvement programmes for their installation, and all routes have made allowances for renewal of older equipment at key sites. Regions are also making targeted investments at level-crossings, where incorrect use is a key driver of freight collision and train accident risk, and additional enhancement works such as the Transpennine Route Upgrade will also deliver improvements to the safety of the infrastructure.

- **Protecting freight train service performance.** The performance of the rail network is an important factor in customers' decisions to transport their goods by rail. Our plans for CP7 will:

- o **Protect freight critical assets.** There is a focus on refurbishment of existing assets rather than renewal and there is a risk that SAFs will increase. However, we are investing in targeted areas to support freight performance such as managing the risk of flooding.

- o **Provide analysis and insight on Key Freight Corridors.** This will continue into CP7 to support key freight services running through multiple routes. This can only happen if the assets remain reliable, and routes understand how their local decisions impact on other routes. By focusing on corridors and linking routes together, we can work with them to improve performance across large parts of the network.

Recognising the overall funding context, we have made careful decisions to invest in priorities for our freight customers and end-users and support an accelerated shift to rail which will contribute to economic growth, levelling up and environmental sustainability. As we develop our delivery plan for CP7, we will continue to work with the freight industry to consider their priorities in our plans, and FNPO will continue to bring together our regions on the issues that matter most to freight customers.

Customers & communities

Our customers and communities strategic theme is about how we can be better for our customers, passengers, freight users, and lineside neighbours.

It's being a dependable partner that puts safety and service at the heart of everything we do.

Background

With the Covid-19 pandemic and industrial action, CP6 was, and remains, challenging for our customers, passengers, and freight users. In CP6, we made progress on:

- Closer industry working on passenger information around Covid-19 and industrial action.

- Introduction of a new Accessible Travel Policy.

- Introduction of a more customer focussed approach to complaints handling.

- Completed 79% of tactile paving roll out.

- Increased the number of accessible step free journeys on the network from 55% to 65%.

- Rolled out enhancements to CIS screens to ensure there is a consistent minimum standard across all TOC and NR stations.

In CP7 we want to build on the progress we made in CP6.

What our funders and stakeholders want

Our customers and communities strategic theme is focused on delivering a number of priorities identified in our passenger research and the HLOS for CP7:

Accurate and timely information about trains, including being kept informed about delays and the options passengers might have	Trains and stations that are easily accessible by older and disabled customers, as well as those with pushchairs, bicycles, and luggage	Helpful staff at stations that are clean and well maintained	Consider inclusion and accessibility needs of current and potential users

In research conducted by Transport Focus on our behalf, 34% of disabled people said they would travel more frequently if accessibility on the network was improved. We have listened to our passengers with accessibility needs to understand what is working well and what is not:

Barriers to travel can often be physical, such as lack of access ramps, lifts, accessible toilets, hearing loops or audio information	Passengers don't always get all the information they need to plan and complete their journey in a way that's accessible	Sometimes, there is a lack of understanding among rail staff about how they should help passengers	The infrastructure we have provided to make the railway more accessible is not always reliable

Our CP7 Objectives

Our CP7 objectives for our Customers and Communities strategic theme are:

- To deliver inclusive and accessible service and facilities, improving the total number of accessible end to end journey opportunities

- Embed customer led thinking in current and future ways of working

- Drive a sustained step-change in passenger information in particular during disruption

- Make stations safe, secure and sustainable places while reflecting local needs and opportunities

- Improve relationships with our lineside neighbours

How our CP7 plans will deliver our objectives

We want to deliver **inclusive and accessible services and facilities** because we understand that the rail journeys we enable are for everyone. Our vision is to provide facilities and services to assure older and disabled passengers that they will complete their journey safely, with minimum disruption, and receive high quality service. Our plans include schemes and activity for CP7 that build on the progress we have made in CP6. These not only enable our legal compliance with mandatory design standards and our public sector duty under the Equality Act 2010, but also complement the Plan for Rail's commitment to the National Accessibility Strategy for Rail. Our key plans for CP7 are:

- **Accessibility by design.** We will design all new station schemes, including renewals, to be fully compliant with the DfT Design of Accessible Stations a Code of Practice (and other relevant accessibility requirements), and meet tactile edging and other mandated accessibility requirements. Designing our asset interventions with accessibility in mind helps to make our stations and facilities as a whole more accessible, and enables our legal compliance with mandatory design standards and our public sector duty under the Equality Act 2010. Accessibility by design will be supported by our new and improved Diversity Impact Assessment standard, which requires all of our regions to assess the impact of their plans on diversity and inclusion.

- **Building better data on accessibility.** We are developing a new step free prioritisation tool which is being used to inform our CP7 and longer term plans. This will help us understand and make informed choices between different types of accessibility improvement including the platform-train interface (the gap and stepping distance between the platform and the train) and other smaller scale interventions. Data and interactive maps provide regions with a richer understanding of their regional accessibility to help inform decision making. This tool is supporting strategic studies on station improvement opportunities and community infrastructure and other local authority planning decisions. We will work with industry to continue to build data so we can extend this methodology to other accessibility improvements and do further scenario testing to feed into the Long Term Strategy for Rail for the next 30 years and the National Rail Accessibility Strategy for the next five years. We will also integrate accessibility data (such as passenger assistance data and live lifts and escalator feeds) with our railway control systems which will support better decision making and information provision during major disruption.

- **Continued focus on training and awareness.** We will continue to deliver and improve our training programme to support accessibility and inclusion in CP7. All 39,500 of our employees are required to complete online training which includes disability awareness. For our management and leadership roles, we also provide classroom based 'inclusive leadership' training. All new Network Rail passenger-facing station employees will attend inclusive customer service training

co-delivered by disabled trainers in a classroom setting. This training emphasises treating everyone as an individual, and communicating with people in the most appropriate way to find out their particular needs. Our passenger-facing employees offering assistance are always trained on how to use equipment such as ramps, wheelchairs and induction loops. We are currently designing a new suite of training which will ensure that, through CP7, all passenger-facing employees receive disability awareness refresher training every two years, as a minimum.

- **Turn Up and Go passenger assistance.** Through continued staff training and improved processes within our stations, including collaboration with operators with each of our managed stations, we have committed to providing 'turn-up-and-go' passenger assistance available at all of our managed stations. Each Network Rail managed station has regular engagement with TOCs to agree and monitor the procedures for providing assistance at our managed stations.

- **Tactile surface installation provides an important accessibility and safety improvement at our stations.** Following the progress in CP6 (79 % of the roll out complete), we will continue to invest in installation of tactile edges on our platforms to ensure that all platform edges have tactile paving by 1 April 2025. This will help to keep all of our passengers safe at our stations and reflects the recommendations from the RAIB investigation following the tragic death of a passenger in February 2020.

- **Toilet refurbishments.** We are planning to provide Changing Places toilets (larger accessible toilets for severely disabled people, with equipment such as hoists and curtains and space for carers) at all of our national hub managed stations, as recommended in DfT's Design for Accessible Stations: a code of practice.

- **Renew station lifts and escalators.** We will implement improved response times when there are faults with lifts and escalators at critical locations in our stations. Our plans include £22m for renewal of lifts and escalators in our managed stations.

We know that Customer Information is a crucial driver for customer satisfaction. Three of the top 10 priorities identified in our passenger research are directly related to information and many of the other priorities can be supported by better information. Our key plans for CP7 are:

- **Industry customer information strategy**. Network Rail, Rail Delivery Group and train operators launched the Smarter Information Smarter Journeys programme (SISJ) in 2020. The programme's vision is to provide passengers with all the information they want, when and how they want it. Since the launch of SISJ midway through CP6, passenger satisfaction with information has increased by 10 percentage points. In CP6 Network Rail have provided resources but each area of scope has been subject to gaining funding through a business case through the Network Rail or Rail Delivery Group governance processes. Through CP7, Network Rail plans to play a leading role in the delivery of the industry customer information strategy. As we approach CP7, we will continue to define the resource requirement and funding to continue this programme, alongside wider industry. Key areas of the customer information strategy for CP7 are:

  o   Developing and enhancing the core information services.

  o   Enhancing the information passengers are provided when disruption impacts their journey.

  o   Providing passengers with better information about their station or the train they are taking.

  o   Enhancing the information our people on the network have access to, so they can provide passengers with more accurate, up to date information.

o   Identifying future information sources for passengers to utilise.

In addition, regions' CP7 plans will support the SISJ programme including:

- o   **Better screens at stations.** Our plans include £6m investment in customer information screens and equipment at stations.

- o   **Better information about station facilities.** We are working with industry to improve the availability of data about facilities in our stations that can be accessed in real-time in our control rooms.

- **Passenger Operational Control Centres.** These are being introduced for some of our managed stations in CP7, which will integrate control with our operators to provide a more dynamic response for passengers affected by disruption.

Network Rail is becoming a service organisation, where all colleagues in all parts of the organisation understand what great service is and have the skills to be able to deliver it safely. Service means more than getting passengers to their destination; to deliver great performance we need to be service-led individuals by the behaviours that we display to other people. It is about building relationships, listening to each other, and taking responsibility to deliver better service across the industry. Our CP7 plans support our customer service focus:

- **Continual service skills training.** This is included in our CP7 plans for our leaders and colleagues. The training will embed a great service philosophy. This will be owned by regions and functions as part of their training plans.

- **Stakeholder engagement.** This will continue to be central to developing and delivering our plans in CP7. Regions and functions will work with their customers and stakeholders to ensure we are meeting their needs, as well as learning from and working with industries outside of the rail sector.

- **Key service programmes.** These have been developed by our national teams that can be delivered at regional and functional levels, as well as across the industry, to improve the service that is delivered across the sector.

- **Service and cultural change programmes.** Programmes are being established in regions and functions to roll-out through CP7, focusing on skills for groups such as stations adopting a one team approach, leveraging City & Guilds accredited customer service training that has been tested across the industry and can be accessed by all:

  - o   Foundation Academy, a 3-hour introduction to delivering great service which can be used as part of induction, service enhancement and focussed in key service areas, example delivery to all station colleagues.

  - o   Advanced Foundation Academy, a two-day training experience which explores all aspects of great service in the rail industry, developing the skills, knowledge and insights to deliver better customer relationships and service. Network Rail is becoming a service organisation, so it is important that all colleagues in all parts of the organisation understand what great service is, and have the skills to be able to deliver it safely.

Our managed stations are a key and vital part of our customer journey and throughout CP6 we have seen considerable investment in many stations, bringing benefits and changes which will carry on into CP7 and beyond. Our vision is for Britain's railway stations to be places that are inclusive and welcoming and encourage everyone to travel by rail. Realising this will involve our station teams, careful asset investment, innovative use of technology, and quality engagement with the communities the stations serve. During CP7 we want to create spaces at stations that reflect the needs of customers using them

and make it easier and less stressful for passengers whilst getting them to where they need to be. To help make this a reality, our CP7 plans include:

- **A strategy for retail at stations.** This has been developed to inform our CP7 plans that focuses on local needs and providing exciting retail opportunities. The strategy aims to deliver retail environments and an overall station experience that exceed customer expectations. On average, 30 % of all station concourse footfall visits a retail store at one of our managed stations, so we expect this to be an important income stream to reinvest in the railway in CP7.

- **Investing in CCTV.** Across our stations portfolio, our CP7 plans include £35m investment to improve safety and security for our passengers and staff.

- **Wayfinding at our stations.** Wayfinding is reviewed regularly so passengers can find their way around quickly and safely. Based on feedback, we are changing signage at some stations in CP7.

- **Maintaining clean stations.** This will be achieved through our well-established auditing process.

- **Continuing to integrate station teams with operators**. This will provide customers with a better, more consistent service at our stations as well as efficiencies through alignment of teams.

- **EV charging points.** EV charging points have been installed already at some managed stations and we will identify further opportunities at other stations throughout CP7.

- **Reducing our environmental impact across our station estate**. Our CP7 plans include improvements to bring existing stations' Energy Performance Certificate ratings to 'B' or above through new energy efficient lighting, updated heating and ventilation and changes to building controls. Several stations will also benefit from enhanced ventilation to improve air quality, reducing exposure to emissions for passengers, the public and our teams.

We have a responsibility in every community that we work in to be a good neighbour by being open and honest, communicative and responsive and to behave in a way that any good neighbour should. We maintain the railway 24/7, and need to be active in the communities that we work in. Sometimes we need to make repairs at short notice for safety reasons. We do our best to keep noise and disruption to a minimum, as well as keeping the lineside tidy. Our CP7 plans support our objective to be a good neighbour:

- **Notification of engineering works.** Our works can be noisy, and late at night so we want to effectively notify our lineside neighbours. This will continue to be our priority through CP7. Our focus is to improve this by using technology and digitisation to streamline the process by which we notify neighbours of work. We have commenced the rollout of a pilot digital solution to alert our lineside neighbours through their preferred medium (SMS or email) of imminent work.

- **'Service Academy' training.** Focused on the best ways to engage with the public, as well as wider customer service, about how our work impacts upon them. It will also cover our approach to managing lineside neighbour feedback and how we should respond.

- **Effective reporting and monitoring.** Over the last 12 months we have successfully changed our metrics for customer and complaints. Before this, we measured quantitively. Enabling a customer focussed approach provides qualitative feedback, telling us what our customers really think of the service we are delivering. In CP7 we will continue to track metrics to drive the right performance, including quality assurance and customer surveys.

- **Our 24/7 365 day a year contact centre.** We are always looking at new, innovative ways to better serve our lineside neighbours. We are seeking to open more options for communication, and for the start of CP7 both WhatsApp and Facebook messenger will be live to contact us, as well as improving our chatbot service to allow us to be more responsive and give answers to the

public even quicker than we already do. We saw a real shift in the way people communicate with us during and after the pandemic, and we will continue to respond to what this data is telling us.

- **Our 'communicating with the public' standard.** This is currently being consulted across the business to be implemented in CP7, setting out best practice for communicating with the public. As we look forward to working as one industry the standard must be fit for the future to ensure that as an industry, we deliver a consistent level of service to all our customers nationally.

6. Financial sustainability

Focusing our investment on what customers and wider society value most is fundamental to the financial sustainability of the railway in CP7 and the longer term. Our efficiency strategic theme brings together our productivity and efficiency initiatives from across the business to share best practice and drive innovative solutions to reduce costs and support revenue recovery.

Our CP7 plans build on our strong delivery of **efficiencies** in CP6. We have set ourselves ambitious yet realistic efficiency targets of 10 % in operating expenditure (operations, support and maintenance) and 15 % in capital expenditure in CP7. When Project Reach is included (a partnership that will secure significant third-party funding for telecoms upgrades), these amount to around £3.4bn over the control period. This also includes our contribution to £1.5bn annual industry reform savings.

Our regions are delivering a wide range of efficiency initiatives across the network. For example the implementation of a new procurement approach in Eastern procuring local, non-rail contractors to deliver work that does not directly affect our operational railway; North West & Central's work with train operators to install equipment on trains to monitor infrastructure condition without our employees needing to access the network; Southern's implementation of a new delivery model to create commercial alignment and shared incentives for renewals activity with the supply chain; and Wales & Western's plan to become a more intelligent client, working in closer collaboration with our supply chain.

Our plans prioritise asset investment to support key revenue generating areas of the network while providing an appropriate level of service to areas where revenue is typically lower – this is a more **market-led and whole industry approach** to planning than the traditional asset condition focused approach. We have also prioritised technology and programmes that contribute the most benefit to Government's long term objectives for rail. We know that there are real opportunities to further reduce costs by targeting to an even greater extent maintenance and renewals activities where they deliver most value, reflecting a whole system view of costs and benefits. To really maximise on the opportunities, we need to take a much greater whole industry approach to planning and delivery.

Reflecting the tough choices and trade-offs for CP7, in particular the level of renewals activity in CP7, there will be cost implications for the long term. Beyond CP7, to manage deliverability constraints, we consider that a phased increase in renewals will be required to hold asset condition, supporting improved weather resilience, managing safety risk and enabling improvements in train performance over the longer term. Ultimately this will be a funding decision. However, assuming we were to take this action, we estimate that the long run core asset renewals would require around £17.5bn in CP8 and £19.8bn in CP9, growth of £1.8bn and £4.0bn on CP7 levels respectively. By doing this we would expect to achieve a stable position from CP9 where we hold the profile of remaining life in our assets.

Table 6.1: Financial sustainability outcomes forecasts

		Measure	CP6 forecast	CP7 ambition (100% plan)	CP7 forecast (risk adjusted plan)
Efficiency	↑	Operational efficiency	-	£1.2bn	£1.2bn
		Capital efficiency	-	£2.2bn	£2.0bn
Asset sustainability	↓	Composite Sustainability Index	-	-2.8 %	-3.1 %
Financial performance	↔	Financial Performance Measure	0	0	0

Efficiency

Network Rail's role is to run a safe, reliable, and efficient railway. We have a fundamental responsibility to spend public money entrusted to us as efficiently and effectively as possible, to better serve taxpayers and passengers, drive down costs and be a more dependable partner to government, our customers and the wider rail industry.

The financial pressures on the rail sector and the very challenging wider public finance environment have made this task even more urgent and important. Our wide-ranging efficiency activities will help to provide a solid bedrock for Great British Railways (GBR).

Background

Through CP6 we have laid the foundations for successful delivery of efficiency in CP7, including reductions to our headcount of 3,500 over the last 18 months. Using our efficiency framework we have proven our capability to deliver on our promises, as we continue to deliver against our original target of £3.5bn (in cash prices) of sustainable efficiencies, as well as react to a challenging financial climate and committing to an additional £0.5bn (in cash prices) of efficiency before the end of CP6. We have risen to the challenge of the Plan for Rail and rail reform, with a renewed focus on delivering efficiencies through closer cross-industry collaboration and maximising the opportunities of the reform agenda.

We now seek to build on the success of CP6 with an ambitious efficiency offering to reflect challenging financial times and pressure on the public purse. In CP7 we are targeting a further £3.4bn of efficiency within our operations, support maintenance and renewals expenditure in England & Wales. By the end of CP7, our delivery of renewals capital works will be 15 % more efficient than at the end of CP6, and our controllable operations and maintenance costs will be 10 % more efficient.

What our funders and stakeholders want

Our responsibility to reduce costs to government and increase the efficiency of operations, asset management and capital investment is reflected in the HLOS for CP7. Additionally, our passenger research shows that the railway's value for money continues to be a top priority. While Network Rail doesn't sell train tickets, the efficiency of the whole industry is essential to reduce the costs of running the railway so that we can provide better value for money to our customers.

Greater cost efficiency in CP7	A strong culture of efficiency and innovation in the railway over CP7 and beyond	Benchmarking to drive efficiencies and a better understanding of costs	Efficiency and productivity gains through rail reform and industry cooperation	A robust approach to commercial practices in contracting and delivering work

Our CP7 Objectives

Our strategic objectives build on our strong delivery of efficiencies in CP6. We have set ourselves ambitious yet realistic efficiency targets:

- Deliver 10 % efficiency on operational expenditure

- Deliver 15 % efficiency on capital expenditure

- Within those efficiencies, deliver Network Rail cash savings to contribute to £1.5bn industry efficiencies annually, and assist operators in enabling wider industry benefits

How our CP7 plans will deliver our objectives

Our CP7 efficiency plans reflect our devolved operating model. As a result, our CP7 efficiency plans reflect our most diverse approach to date in delivering cost savings. Our strategy for delivery of efficiency in CP7 can be summarised across four key areas:

- **Supporting the creation of a more unified industry, and maximising the benefits of rail reform**. Driving aligned and connected ways of working, using an improved understanding of whole industry costs to make more efficient decisions and improve ways of working, including smarter access decisions, tackling joint industry opportunities across our property portfolio, and developing industry standards that utilise the opportunities of rail reform.

- **Smarter and more efficient ways of working with our supply chain.** This will include development of more agile clienting models and deeper alliances to drive win-win commercial relationships. We will harness the benefits of innovative private-public partnerships, with examples such as Project Reach that will secure the funding necessary to upgrade telecoms infrastructure along the rail network without relying on subsidies from government or passengers.

- **Transforming our capital delivery capability.** We will do this through widespread use of our Project SPEED and PACE principles to cut the time and cost of delivery. A new, streamlined project lifecycle framework, which will leverage the advantages of our devolved organisation to provide the right tools and mindset to drive value.

- **Mitigating the impact of a challenging financial climate and the effect of inflation on our cost base**. Includes smarter, more aligned commercial approaches and continuing to develop a modernised approach to workforce pay.

Table 6.2 summarises the total England & Wales efficiency assumptions included in our SBP.

Table 6.2: Total England & Wales CP7 efficiency assumptions

£m in 2023/24 prices	2024/25	2025/26	2026/27	2027/28	2028/29	CP7 total
Renewals	-214	-359	-502	-536	-600	-2,211
	-5%	-8%	-11%	-12%	-15%	-10%
Opex	-88	-163	-250	-317	-381	-1,198
	-2%	-4%	-6%	-8%	-10%	-6%
Total	-302	-522	-752	-852	-981	-3,409
	-4%	-6%	-9%	-10%	-12%	-8%

In total, over the course of the ten years of CP6 and CP7 we will have driven robust, sustainable efficiencies that will have reduced the costs of running the railway by 23%. This reduction in costs is shown by the grey line in figure 6.1. In reducing costs by 23%, we will have delivered over £12bn of cumulative savings for taxpayers and farepayers, which is shown by the blue (CP6) and orange (CP7) bars.

Figure 6.1: Efficiency delivery over CP6 and CP7

10 Year Efficiency Plan
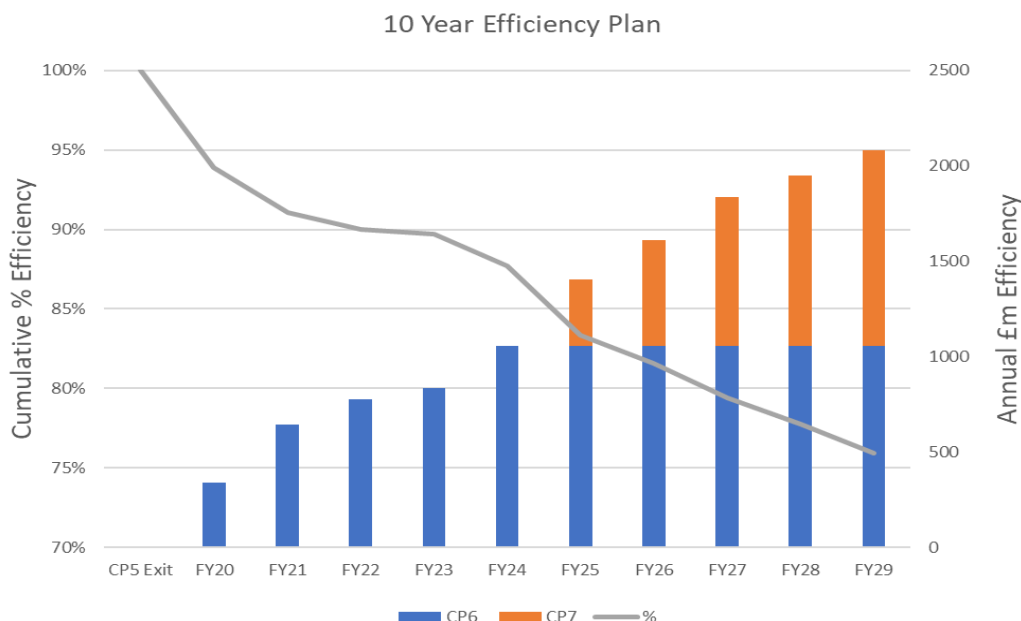
To help assess the appropriateness of our CP7 efficiency assumptions, we have reviewed recent decisions on efficiency by economic regulators in other sectors. Making comparisons across sectors is difficult as efficiency assumptions are largely context specific and a function of, amongst other things, a company's cost structure, their pre-existing level of efficiency and their future expenditure plans. However, our proposed headline CP7 efficiency assumption of 13.5 % across operating and capital expenditure is higher than comparable reviews, including our last periodic review (10 % over CP6), National Highways RIS2 (7.8 % embedded efficiency over RP2) and High Speed 1 PR19 (6.7 % operations and maintenance; 1.8 % renewals).

Ofgem's RIIO1 review of electricity transmission (6.2 % efficiency challenge over a 5-year time horizon) and Ofwat's PR19 (6.1 % efficiency challenge, including frontier shift) are less directly comparable as the reported efficiency challenge is over and above efficiency improvements proposed in business plans. Ofgem's RIIO1 review of gas transmission was the key outlier (17.5 % efficiency challenge over a five year time horizon, on top of efficiencies built into business plans).

Our framework to identify, monitor delivery and track efficiencies enables us to compare across regions, sharing best practice to develop deliverable efficiency initiatives. Our regional efficiency plans for CP7 include:

- In **Eastern** we will be building on the successful efficiency initiatives delivered through our enhancements portfolio in CP6, with an efficiency plan that will continue to evolve the principles of PACE, SPEED & MVP initiatives across our CP7 renewals portfolio leading to a reduction in renewals unit price, as well quicker delivery for our passengers, supported by our capex contracting strategy.

- In **North West & Central** we are seeking to build a more agile capital investment and delivery model, through an intelligent client strategy; moving to a regional asset focused structure to promote consistency, economies of scale and greater agility of resource deployment, supported by an internal enterprise approach to governance and assurance, and a CP7 contracting strategy designed to work alongside this revised operating model.

- In **Southern** we are working with supply-chain partners to create a renewals enterprise model. This will form an innovative performance-based alliance, merging the capabilities of Network Rail

and the supply chain, to deliver the Southern Region's renewals portfolio for the next ten years. The new enterprise seeks to make a transformational step change in how renewals work is delivered, to make the best use of resources, maximise efficiencies and be collectively incentivised to deliver value for our taxpayers and the right outcomes for passengers and freight.

- In **Wales & Western** we will be focused on delivery of an intelligent client strategy, with a leaner and more agile organisation which will focus on delivering value for money for the taxpayer. This will be achieved in partnership with our supply chain, which we will diversify with new suppliers to deliver innovation and to achieve our outputs and milestones.

Our CP7 efficiency plans include the following initiatives:

- **Project SPEED (Swift, Pragmatic, and Efficient Enhancement Delivery).** This sets out principles that will support us to reduce the time and costs associated with capital delivery programmes. It has initially been applied to enhancements projects in CP6. Our regions have identified over £50m of efficiencies from applying these principles across the renewals portfolio for CP7.

- **Our procurement strategy.** This will enable us to drive around £150m of efficiencies through our supply chain.

- **Plant, on-track machines and vehicles.** These are critical to our delivery of our engineering work. Optimising our usage and shifts to demand and capacity will provide efficiencies through our hiring and purchase decisions.

- **Reforming our technical standards.** We have made various standard changes through CP6, reducing requirements where it is safe to do so. This has driven over £60m of efficiency in OMR to date. Examples such as standard voltage clearance requirements have also driven significant savings across large capital enhancement programmes, reducing overall industry funding beyond OMR. We will drive over £100m of efficiencies in CP7 through a more pragmatic and value-based approach to asset standards. It will reduce the complexity of standards that may add unnecessary cost to running the railway, and develop a risk-based approach to standards where appropriate.

- **High-street principles**. Enabled by a change to standards in CP6, this initiative involves the effective and efficient use of 'non-rail' contractors for works that do not directly affect our infrastructure, particularly across the buildings portfolio.

- **Research, Development & Innovation.** This will continue to drive efficiencies in CP7 across operations, maintenance and renewals. Our Technical Authority leads the portfolio, developed in collaboration with regions and functions. Our CP7 RD&I plans (discussed in chapter 7) includes a dedicated 'first in class' fund of £54m to accelerate deployment of new knowledge, technology and innovation into business as usual, to enable benefit realisation as soon as possible.

- **Integrating station teams.** As discussed in chapter 5, this initiative will bring together Network Rail and train operator teams in our managed stations to reduce duplication, driving efficiency as well as providing a more consistent passenger experience.

- **Structural and commercial savings workstreams.** These workstreams will make the most of unlocking the benefits of closer collaboration across the industry, including more cost effective use of the network, more efficient possession planning, implementing industry standards effectively, more efficient operations at managed stations and control centres, and reduction of duplicated costs across industry bodies.

- **Engineering access to complete maintenance and renewals on the network.** This is an essential part of operating the railway. In CP7 we will be more productive and efficient in our access windows to minimise disruption to passengers and deliver £350m of savings.

- **Infrastructure monitoring.** On train measurement systems that assess the condition of assets will enable us to make savings through the modernising maintenance programme and more efficient delivery of asset information. This will enable us to target maintenance activity as providing safety benefits by reducing the amount of time our teams have to spend on track inspecting assets.

Industry reform is a key enabler for our CP7 efficiencies; not simply through structural and legislative changes to the industry, but through a more collaborative mindset which considers whole industry cost and seeks to make smarter decisions with better information on their overall financial impact. Industry reform drivers are enabling 30 % of our overall CP7 efficiencies. Some of our forecast efficiencies are dependent on the formation of GBR through industry reform. The delay to GBR's formation is likely to impact on our ability to deliver these efficiencies, but we are retaining them in our plan as an ambitious stretch.

We will continue to build on the successful launch of cross-industry regional efficiency boards (REBs) to identify and set in motion whole industry efficiency initiatives, ensuring we can clearly track our commitment to industry reform as a subset of our CP7 efficiencies.

Our efficiency plans for CP7 will continue to be planned and managed through our national framework, clearly communicating where the opportunities for efficiency will be found. We will continue to track our progress against our post-efficient plan using the Financial Performance Measure (FPM), as an assessment of how Network Rail has performed compared to the financial targets set out in our CP7 business plan. Cost knowledge is a priority for Network Rail in CP7 – particularly as our regionally devolved businesses deliver more diverse local strategies. It is crucial that we develop our capability to identify areas of best practice, both internally and externally, and make sure that we can share knowledge quickly and effectively throughout Network Rail and the wider rail industry. Benchmarking activity and improvement is an ongoing process. In the planning and assurance process for CP7 we have undertaken, and will continue to undertake, benchmarking. This includes review of support costs, unit costs, and comparing our efficiency plans with those of other industries' regulatory settlements.

In CP7 we will also take an increasingly focused approach to minimising waste in the development of project outcomes and the scope required to deliver those elements which drive value to our funders and passengers. This will be informed by 'minimum viable product' principles throughout the project lifecycle to define and deliver the most pared down proposition that can be delivered to meet the agreed outcomes specified by the client. It is not just about delivering the minimum cheapest option – it sets out choices for funders and must be viable to deliver the benefits sought.

These efficiency assumptions are based on what we plan to deliver against our plans for 100 % of available funding. If risks materialise that mean we have to divert some funding to other activities, this will impact our efficiency plans. In chapter 14, we show the reduction in efficiency that we expect under our risk-adjusted plans.

7.   Economic growth and levelling up

Our CP7 plans support the effective and efficient movement of people and goods across the country to support and grow the economy and help society develop. Rail provides essential and effective connectivity to provide travel opportunities for work, education and leisure.

Our CP7 investment will continue to support the economic and social value of rail and its place in supporting the country's economic growth. Good rail links help get people to work, unlocks new housing opportunities, gets goods to market and keeps our cities cleaner and less congested. When towns are well connected to cities, the jobs that knowledge-based businesses (which are vital to the UK economy) create increase disposable income, which people can then spend on local products and services in the towns where they live. In other words, knowledge-based businesses don't just drive national economic growth, they also keep British high streets in business. The continued economic success of the UK depends on our cities continuing to attract knowledge-based businesses and improving connectivity between our towns and cities.

Our people are central to achieving this. CP7 requires a highly proactive and strategic approach to change, to deliver our strategic objectives with our people agenda. We need to lead this transformation to become a fully mature, high-performing, service-led organisation with an engaged and skilled workforce. This will be underpinned by better designed work, better relationships, and our values. We discuss our People strategy in chapter 9.

We will also support economic growth and levelling up through the **deployment of technology**. We have also included around £148m investment in **Research, Development & Innovation**, and £811m in progressing ETCS. The direct investment acts as a catalyst for other third party and supplier investment, stimulating economic growth across Britain and supporting the levelling up of our economy. We will also continue to work closely with the **supply chain**, aiming to provide visibility of our pipeline of work allowing suppliers to invest to retain existing employees, create new job opportunities and provide training opportunities to broaden employee skillsets, as well as maximising opportunities for efficiency.

There are also key initiatives within each of our regions to further support economic growth and levelling up. Examples include North West & Central's plans to replace and modernise the north end of the West Coast Mainline, which will **support the effective introduction of HS2** and its operation on Network Rail's infrastructure. Wales & Western will be releasing land and value on the current south-side of Cardiff Central, and leading planning for a major new intermodal and commercial development in the city. As part of our initiative to create a safer, more modern and digitally-connected rail network, **Project Reach** aims to secure significant private sector funding towards upgrading trackside fibre cable and wireless infrastructure along the rail network, thus reducing reliance on subsidies from government or passengers. Not only does this provide economic growth and passenger benefits, through improved 5G connectivity for calls and internet browsing on journeys, but also signifcant levelling-up benefits through high-speed connectivity to rural communities next to rail infrastructure.

Research, Development & Innovation

Innovation is critical to the railway's future. As the England & Wales HLOS sets out, continued effective research, development and innovation (RD&I), and adoption of technology, is essential to securing competition and innovation within rail. RD&I plays a vital role in unlocking opportunities in Network Rail and the wider rail sector to improve safety, reduce cost and achieve net zero, to improve the customer experience and to deliver a more sustainable railway system for future generations.

Background

Over the next 20 years we expect to realise benefits of £1.9bn net present value (NPV) from the CP6 RD&I portfolio, over three times the amount that has been invested. The value of RD&I is clear, both for business improvement and supporting long term economic growth through the financial sustainability of the railway.

For CP7, our plan includes RD&I investment of £148m direct investment in England & Wales (£165m for GB overall). Our CP7 portfolio has been developed collaboratively across our regions and functions, focused on priority outcomes for the industry. We are prioritising RD&I investment in CP7 to delivering benefits in financial sustainability, safety and security, performance, reliability and capacity, and environmental and social sustainability.

Learning from our experience in CP6, more than a third of this funding will be targeted at a dedicated 'first in class' fund. Experience has shown that regions require additional support during implementation into business as usual. This fund will be used to accelerate deployment of new knowledge, technology and innovation into business as usual, enabling benefit realisation as soon as possible.

What our funders and stakeholders want

Government's expectations for CP7 set out in the HLOS recognise the value RD&I brings to the wider long term objectives for rail.

Continued effective research and development is essential to securing competition and innovation within rail	Progress research, development, and innovation plans, which deliver against the objectives in this HLOS, and improve efficiency and value for money	Research, development and innovation plans must be supported by robust monitoring and evaluation approaches

In developing our approach to RD&I we have consulted stakeholders across Network Rail and the wider rail industry, capturing more than 550 separate requirements. These have been consolidated into an aggregated set of business requirements that will be used to construct the detailed programme as we develop our CP7 delivery plan.

We are also working with industry stakeholders and partners to leverage our investment with £70m of co-funding through cross-industry collaboration, aligned to Network Rail's business and industry requirements. This will deliver value for money RD&I through collaborative programmes with other arms-length bodies, academia and the private sector.

Our CP7 Objectives

We are prioritising RD&I investment in CP7 to deliver the following objectives:

- Financial sustainability, targeting opportunities to modernise ways of working, improve efficiency and deliver returns on investment in CP7.

- Safety and security, in particular opportunities to take 'boots off ballast', address level crossing safety and continue to prioritise closure of safety investigation and Track Worker Safety Task Force recommendations.

- Performance, reliability and capacity, enhancing train performance and passenger experience, and facilitating freight growth on our network.

- Environmental and social sustainability, to improve the weather resilience of our assets and reduce whole life cost and carbon, with both outcomes contributing to greater incentives for modal shift to rail.

- Long term inclusive economic growth and levelling up, with greater visibility of our long term RD&I strategy and requirements leading to more effective supply chain engagement and collaboration (academic centres of excellence, existing supply chains, and new market entrants).

How our CP7 plans contribute to our objectives

To achieve our objectives, our RD&I portfolio is being built around four key principles:

- **Business priority-led and outcome focused.** Accelerating the rate of adoption of new ideas and technology created by the CP6 and CP7 RD&I programme.

- **Focused to the end.** Delivered within a robust governance and assurance framework providing evidence for, and scrutiny of, progress against benefit realisation, with overall strategic direction and oversight provided by regions. This will be essential to address lessons learned in CP6 related to regional take-up and embedding of new technologies.

- **Transparent and collaborative**. Building on our existing collaborative partnerships with other organisations who are addressing the same challenges to accelerate progress towards solutions, for example via the DfT Transport Research and Innovation Board, RSSB and train operator innovation boards. An industry RD&I framework has been developed in partnership with GBRTT and RSSB. This is designed to deliver on the strategic themes and broader Government, Transport Scotland and Transport for Wales objectives.

- **Innovation as business as usual.** Upskilling our people and providing the tools, organisational capabilities and techniques needed to take controlled risks to innovate in their part of the business.

We will deliver business requirements through a combination of direct and co-funded projects. Direct investment of £148m will be split between:

- Funding to progress priority business requirements so that innovative solutions are in operational transition, can be repeatedly produced to the required quality and there are realistic demonstrations in operation (referred to as Rail Industry Readiness Level (RIRL) 6. RIRL levels are a framework for assessing the maturity of new ideas or technology. Building on measures of technology readiness, the RIRLs include assessments of demand, market, supply chain and business readiness for integration and adoption as business as usual).

- First-in-class funding dedicated to achieving RIRL 7 and above, which means that innovative ideas are in initial deployment or being rolled out, for either regional innovation or the deliverables from CP6 and CP7 'core' RD&I programmes. We are developing a tool kit for first-in-class deployment in year 5 of CP6.

RD&I requirements have been prioritised based on two criteria: alignment with business and industry requirements and outcomes, and the type of benefits realised. GB-wide direct RD&I investment has been allocated across the priority requirements, as shown in figure 7.1.

Figure 7.1: Level of funding by RD&I objective
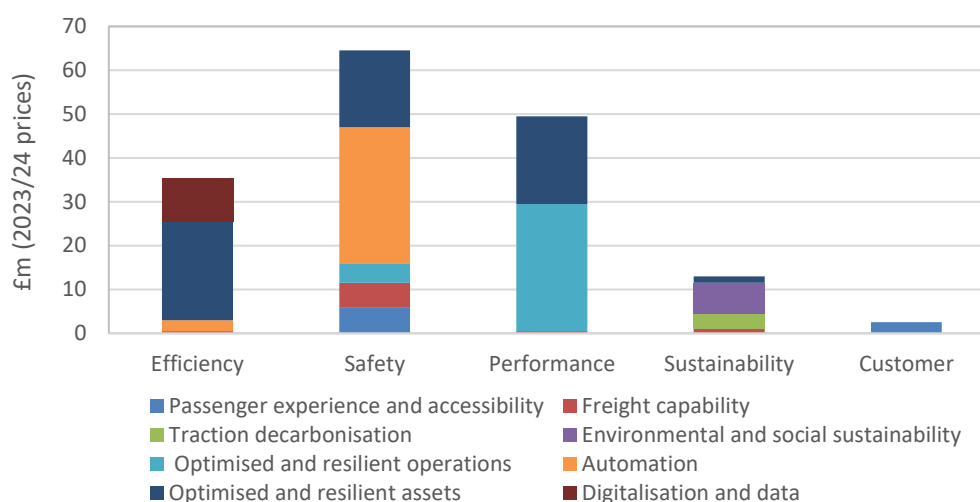
Our cross-industry framework to manage our RD&I portfolio has been developed directly with RSSB, to maximise the investment in RD&I. By creating a joint framework we can create one clear railway response to the challenges we face. In doing this we have also gathered feedback from, and continue to engage with, railway industry bodies, groups such as RIA, operators and others to identify specific areas of interest that could further increase value for money through pooling or collaboration.

By attending the train operator innovation group, along with GBRTT, we have been able to identify some key areas of alignment and have worked to identify a number of areas where there is the potential for collaboration to improve train performance beyond specific initiatives already in our plan, and addressing multiple industry needs. For example, better accessibility in stations to improve passenger experience, reduce dwell times and enable our station teams to be more flexible. We have also identified a requirement for improved camera usage on trains. Cameras have been proven to allow for more effective information transfer and decision making following a major incident, creating a quicker route to return to service.

Projects within the RD&I portfolio will be delivered through a variety of channels and models so we can find the most efficient, agile connection between requirement 'owners' around the business and the solution providers. We will implement a RD&I service provision, building flexibility to create agile delivery teams. We will monitor the success of the programme with key performance indicators and benchmarking, that are in development as we produce our delivery plan for CP7. The existing CP6 RD&I benefits calculator will be evolved to support auditable benefits tracking through technology deployment into business as usual.

We are forecasting in-control period efficiency opportunities of around £60m and a further £400m (NPV) of benefit opportunities in CP8-CP10.

We have identified the following workstreams required to deliver CP7 RD&I and complete the development of the Network Rail and industry framework for RD&I, as we finalise our CP7 delivery plan:

- Prioritisation of Network Rail's detailed RD&I requirements including deliverability testing.

- Developing benefits tracking methodology and tools within Network Rail and at industry level.

- Establishing a RD&I Communities of Practice model and membership.

- Developing delivery model definitions, processes and capabilities including procurement options.

- Producing technology and business capability roadmaps.

- Establishing our UK Partnerships programme.

- Establishing our third-party funding programme.

- Implementing our governance and assurance model within Network Rail and at industry level.

- Progressing our innovation culture change programme.

- Continuing to develop and deliver effective communication about RD&I within Network Rail and across the industry.

We are currently building detailed project plans for each of these workstreams, to enable a seamless transition from CP6 to CP7 and no loss or delay in RD&I activity. We will continue to engage with internal and external stakeholders regularly.

Investment in technology

Investing in new technologies is critical to delivering the objectives of the HLOS, to support the realisation of a more integrated, inclusive and efficient railway, which better delivers for passengers, freight customers, taxpayers, and the environment.

Background

The industry Rail Technical Strategy provides a clear vision for the future railway which the development and deployment of new knowledge and technology will enable. And meeting the challenges of an ageing infrastructure, an ageing workforce, competing modes of transport and climate change will also require the introduction of new ways of working, enabled by the deployment of new technologies.

What our funders and stakeholders want

Adoption of technology is essential to securing competition and innovation within rail	Investment in new technology to support safety, workforce reform and modernisation	Adopting low carbon technologies	Seek to deploy the latest safe technologies, materials and approaches

Our CP7 Objectives

The Rail Technical Strategy, developed in collaboration with RSSB and UKRRIN, has clear priorities for technology in the rail sector:

- Easy to use for all: Rail will deliver an excellent travel experience to regular and occasional passengers thanks to dependable real-time information, innovative payment methods, and improved solutions for accessibility.

- Low emissions: Carbon and air emissions will be minimised by cheaper and less disruptive electrification, zero-carbon diesel replacement, greater efficiency and removing emissions at source.

- Optimised train operations: train services will be highly reliable and the capacity of the network improved by real-time management, better train planning and simulation, and shorter headways together with new solutions at nodes.

- Reliable and easy to maintain: Reliability and availability will be maximised by design, remote and automatic inspection, and targeted interventions, while whole-life cost is reduced.

- Data-driven: Data, recognised as a highly valuable asset, will have fit for purpose governance, access arrangements, systems and technical skills.

How our CP7 plans contribute to our objectives

Many aspects of our CP7 SBP are focused on the adoption of technology. Our Industry Partnership Digital Railway programme is leading the strategy for the roll-out of digital signalling (ETCS) across our network (as discussed in chapter 10). Investment in RD&I (discussed above) is also critical in achieving financial, environmental and social sustainability targets, retaining the safety improvements of previous Control Periods and meeting customer needs.

In addition to investment in these areas, in our SBP we are planning to invest around £1.2bn in other aspects of technology:

- **Decarbonising Network Rail operations.** This will include our road fleet (which is the fourth largest road fleet in Britain), our offices and depot facilities.

- **Introduce the latest trainborne infrastructure monitoring technology**. Aimed at removing boots from ballast and providing asset managers with a step change in asset condition intelligence to support more efficient and effective interventions. We are investing £267m throughout England & Wales plan to roll out this technology.

- **Further improve workforce safety**. £66m investment in new technology, such as remote disconnection devices, geofencing and drone technology for inspections that can't be carried out using trainborne equipment.

- **Improve security**. £55m investment in security including cyber security and the security of Critical National Infrastructure.

- **Industry Timetabling Technical Strategy (ITTS).** Investment of £50m to improve asset data stewardship and address timetable change and performance risks by connecting industry timetabling systems with a modern technology architecture. This will enhance current capability and enable the delivery of a more reliable, more resilient, higher performing timetable that has fewer defects.

- **Renew and enhance our IT estate**. £364m investment, including £51m to support digital innovation: 'low and no code' capabilities for use by regions via the Digital Factory programme, giving the regions the toolkit needed to develop applications and sophisticated solutions to business problems in a simple and targeted manner.

- **Development of core Intelligent Infrastructure systems.** Supported by £104m investment in CP7 (in direct alignment with the strategic aims of the HLOS, specifically in the areas of predictive asset management, monitoring and the continued use of data to underpin decision making). The investment will also deliver the transformation in the buildings and civils asset classes, in response to several regulatory and statutory obligations and in mitigation to the level of risk Network Rail is currently exposed to.

- **The safer, faster isolations programme.** This includes £45m investment to deploy new technology so that electrical isolations can be made safely and efficiently, unlocking further opportunities to increase the productivity of teams carrying out work to the infrastructure and so reduce industry costs.

- **Innovative traffic and incident management systems**. £25m investment to reduce the impact of incidents on passengers and freight customers.

- **New technology at user-worked level crossings**. £27m investment to improve the safety of the public.

- **Improve the weather resilience of our assets**. £22m investment in technology, delivering future improvements to railway safety and performance.

- **Improve air quality at our managed stations.** £9m investment in improved monitoring and solution section, which will also enhance our response to railway-generated noise.

Project Reach

As part of our initiative to create a safer, more modern and digitally-connected rail network, our Reach programme aims to secure significant private sector funding towards upgrading trackside fibre cable and wireless infrastructure along the rail network, thus reducing reliance on subsidies from government or passengers. The project will provide significant economic growth and levelling-up benefits, through improvements to connectivity benefitting our passengers and communities who border the railway network.

Today, there are over 16,000 km of data cables next to the railway, each carrying essential information critical to safe operation of the railway network. This vital connection supports important services such as signalling for trains, trackside sensors which allow us to manage the safe operation of our routes, CCTV for security, and corporate circuits and internet services for depots and offices. This ageing fibre network is due for upgrade and replacement.

The existing GSM-R network that supports train communications will need to be upgraded within the next decade to the 5G based Future Railway Mobile Communication System (FRMCS) radio solution (a global system established by the International Union of Railways) to support high data volumes and the next generation of train signalling.

These upgrades typically cost billions – 100 % funded by the taxpayer. Project Reach is seeking to enter a long term partnership with a private sector partner that will secure significant third-party funding towards the necessary telecoms upgrades.

Replacement of this existing legacy infrastructure with new fibre optic cable will deliver a high capability, modern communications network suitable for our current and future rail operational needs, and with sufficient spare capacity for use by the private sector partner. Investment in mast infrastructure will address mobile coverage 'not-spots' along key lines and at main stations. The proposed network upgrade will help to improve connectivity for train passengers and track side workers. The project will also support government policy ambition to enhance connectivity to harder-to-reach locations across the UK (in alignment with the levelling up agenda).

Trains, signalling and level crossings will also be better connected than before, ultimately reducing delays and disruption. The enhanced network will allow Network Rail to monitor the condition of railway assets more effectively, meaning that faults can be identified and located in real-time. This reduces the number of manual inspections required and supports a more targeted approach to engineering (e.g. through the deployment of sensors to remotely monitor assets, land movement and water levels in areas at risk of extreme weather). It will also allow for easy, low cost rollout of new technology use where access to new fibre is required (e.g. CCTV applications to monitor sites that are at risk to vandalism or trespass).

In addition to the significant benefits outlined above, Project Reach will also de-risk signalling and future electrification (decarbonisation) projects as new high-count fibre will be pre-deployed, which will enable simple 'plug-in' design, leading to lower overall project costs. It will also enable a simpler network architecture (with fewer nodes and other trackside assets) resulting in a safer, more reliable, resilient and cost-effective network.

Our CP7 plans include investment in Project Reach, which reflects our share of the project deployment costs, with third party funding covering the rest. We have identified efficiencies related to the project, factoring in the net savings from the project that will accrue over the implementation period to CP8.

Working with our supply chain

Our commercial and procurement (C&P) teams deliver economic, efficient and effective commercial solutions, working with our partners across the supply chain. Across the country, we engage over 4,000 suppliers and are responsible for around £7.5bn of third-party expenditure annually.

Background

During CP6, C&P accountabilities have been streamlined to achieve greater efficiencies and savings. We have implemented an agreed common operating model between C&P in our Route Services function and regional C&P teams. Route Services C&P continues to work with the regional teams to devolve national C&P activities to give more local influence, where there is limited benefit to pooling requirements nationally. C&P has been consistently finding efficiencies in the headcount over CP6, whilst managing the same level of CP6 spend.

What our funders and stakeholders want

A resilient and productive rail supply chain that invests in skills and innovation will help reduce the overall cost of rail	Network Rail working collaboratively with its supply chain	One third of outsourcing spend, directly and indirectly, be through small and medium sized enterprises.

How our CP7 plans contribute to our objectives

We aim to become **easier to work with** by implementing a number of reforms to break down barriers. This will enable us to meet our commitment to achieving the Government target for one third of our annual expenditure to be spent through small and medium sized enterprises (SMEs). We will review and amend our procurement policies and practices reducing red tape, and involve the supply chain earlier into our procurement processes. We will also work more proactively within the business to update and streamline our technical standards to reduce both complexity and cost, and to encourage innovation. We want to make it easier to work with us. By moving to outcome-based requirements rather than specifying what and how to deliver requirements will encourage the supply chain to bring forward new and improved ways of working.

- **Our customers.** Within Network Rail, Route Services has listened to its customers across the organisation and has taken into account deeper devolution. Route Services will increase the use of digital procurement technology, including automation to help reduce procurement cycle times, reduce waste, improve customer accessibility and increase customer satisfaction. It will be a trusted and integrated business partner providing the highest quality and service standards.

- **Our suppliers.** Our aim is to provide visibility of our pipeline of work that can sufficiently allow suppliers to invest to retain and attract key skills. We will work closely with the supply chain to maximise opportunities for efficiency. This includes opportunities from sharing indicative volumes, looking at the access regimes, improving the governance of procurement frameworks and make procurement more accessible to a wider range of suppliers.

- **Efficiency and risk.** We will maximise economies of scale and skill by continually reviewing our procurement pipeline to decide whether it should be procured nationally or locally. We will focus on having robust supply chains in place that can deliver our company and passenger objectives. We will provide sufficient flexibility in the procurement policy to adapt to different situations while ensuring transparency.

- **The future.** We will expand our value propositions beyond traditional cost reduction and assurance. By working as a commercial community, we will further align with our customer and passenger objectives.

We are operating in an environment which is challenged with increasing volatility and risk. The supply chain is fragile, and the rail industry is changing as a result of Covid-19 and rail reform. Over CP6 C&P enhanced its approach to **supply chain risk management** mechanisms around proactive monitoring and management and control of supply chain risks. These will be further strengthened during CP7:

- **Supplier financial failure.** Our approach to manage the threat of disruption by supply chain failure is to conduct post-contract monitoring of the financial health of our suppliers. This will enable us to highlight vulnerable suppliers early and prioritise actions to prevent impact of supplier failure to meet contract requirements. The process is aligned to the company's corporate risk management process (based on ISO31000).

- **Supplier alignment.** To mitigate risks of misalignment with our supply chain, our supplier intelligence database (SID) will help improve supplier visibility and collect understanding of emerging risks. We will also use SID to collect information on social value, SME spend data, diversity data, visibility of critical tier 2 suppliers, sustainability and business continuity management. This will help us drive alignment with our suppliers and their values.

- **Economic events.** Our supplier financial liquidity model (SLM) has been developed to help identify companies we actively monitor who may need support (e.g. through the Covid-19 crisis or other negative economic events).

- **Materials/services availabilities.** We monitor the prices and availabilities of key commodities, including their associated inflationary rates, along with the services and products which are critical to ensuring the continued service of the operational railway. Each item is tracked on price trends, shortages and demand, and then assigned a risk level. To mitigate procurement risk, information on actions to secure the products and strategic long term approach to manage the use of the items are developed.

During CP7 and in line with HLOS requirements, we will be considering **alternative ways of operating and contracting**:

- **Partnership / 'Project 13' style commercial and delivery models.** All regions are proposing using an enterprise based approach for part or all their renewals activities for CP7. An enterprise based approach, such as the Institution of Civil Engineer's Project 13 model, brings together asset owners, suppliers, and other partners, to work in more integrated and collaborative arrangements, underpinned by long term relationships.

- **Robust assessment of contracting options in line with the CP7 HLOS expectation.** Assessment will be based on an evaluation of numerous considerations. This will allow us to evaluate the optimum business model and will be a key channel for discovering new ways of creating value with our supply chain. There will be greater consideration towards driving alternative approaches to contracting; rather than view outsourcing as a simple market-based decision (renewing or rebidding), it will be possible to view a 'continuum' of choices where no single model is better than the other. This will help secure value for money for the taxpayer whilst providing us the best opportunity to drive innovation to deliver better outcomes. The evaluation is about which business model can best meet the needs for what we are trying to achieve. During CP7, this approach will help unlock greater value, efficiency, innovation and reduce supplier risk.

Digital procurement technologies are a key focus area for CP7:

- **Digital tools.** These will enable us to automate processes, improve communications and generate deeper insights.

- **Automating and systemising tasks.** This will continue to be a focus to increase efficiency and reduce costs.

- **Better data analysis to find insights to deliver greater value.** This will allow us to get better oversight of the business, ultimately bringing more value back to our customers and passengers.

- **Harnessing innovations and technology.** This will improve ways of working and capabilities.

In line with the HLOS expectation, we are committed to achieving the Government target of 33 % of our annual expenditure to be spent via SMEs. Through focussed efforts, for the last five years we have been ahead of the Government SME spend targets and will maintain this throughout CP7. We are currently tracking at 36 %. Following recent SME focus groups and engagement with RIA, Railway Industry Contractors Association (RICA), the Civil Engineering Contractors Association (CECA), the Rail Safety & Standards Board (RSSB), DfT and the Department for Business Energy & Industrial Strategy, our 6-point action plan refocuses our activity on those things that the SME community has told us will make a difference. Some of the components of include:

- **Engagement.** Sourcing guide to assist SMEs, setting out clear escalation routes, providing easily accessible 'how do we...' answers.

- **Pre-procurement.** Establish meaningful pipelines for upcoming activity, simplifying pre-qualification questionnaires for new suppliers, and increasing early contractor involvement.

- **Procurement.** Reduce use of 'nil value frameworks', and simpler procurement processes to follow.

- **Contract Management.** Focus on timely payment to suppliers, incentivising Tier 1 (larger) suppliers to employ Tier 2/3 (small and medium) suppliers.

- **Supplier Management.** Improve supplier management behaviours and incentivise apprenticeships.

- **Innovation.** Increase use of performance specifications, improving the 'product acceptance' process and establishing 'fast track' for innovation.

Devolution has enabled regions to develop models relevant and appropriate for their specific work types and geographies. Across Network Rail, the C&P community has worked closely together to share best practice and peer review the emerging models. Commercial structures, procurement and incentivisation play a vital role in allowing new entrants, but also for existing suppliers to further build capability. Regional strategies provide routes to market and to open opportunities for established SMEs:

- **Eastern** will align workbank requirements across the region where supply chain capabilities are strongest. There will be one Eastern Route Partnership (ERP) across the region bringing together all asset types across the four routes that make up the region. There will also be level 2 contractors for simpler works to target smaller SMEs. The key is to form long term partnerships arrangements across individual disciplines which make up the rail system.

- **North West & Central** propose a commercial strategy in CP7 aimed at tailored work categorisations which seeks to match projects to contract and pricing mechanisms, supply markets and deliver assurance needs. The CP7 life extension asset policy drives a lower complexity works profile in North West & Central and so as a result, they require a simpler contracting model.

- **Southern's** commercial strategy will implement the Southern integrated delivery model which will be a fully integrated team bringing together the supply chain and Network Rail to jointly manage the renewals workbank at a portfolio level. This significant development will enable commercial alignment with the supply chain so that we share in success and work together in areas of improvement.

- **Wales & Western's** contracts will be based by asset type / specialism. These include individual asset supply chains for repeat and renewal works.

Social value

Social value is an increasingly important consideration in our investments, infrastructure projects and day-to-day operations. Social value is, in the context of Network Rail, about delivering a net positive benefit to society that's over and above the gross value added (GVA) that's the core purpose of the rail network. It's about adding value, not cost. The term 'social value' is sometimes used interchangeably with the terms 'social performance' and 'social sustainability'. It's the "S" in what the private sector refers to as ESG (environmental, social, governance). In Wales and Scotland it's typically referred to as "community benefit".

Our CP7 plans are underpinned by:

- Supporting regions, projects and national teams to apply the Social Value Framework in their plans.

- Use of the Rail Social Value Tool to forecast, monitor, evaluate and monetise our impacts.

- Social value benchmarking.

- Targeted interventions to address social risk (e.g. homelessness around the rail network) and social opportunity (e.g. facilitation of community rail activities).

- Charitable activities and employer supported volunteering.

Background

During CP6, Network Rail developed and launched a Social Value Framework. This defines our social priorities and ambitions. It enables us to work with partners and supply chains to proactively and positively manage our impacts on people, and maximise the net 'social value' we create. To apply the Framework, regions and national teams are supported to understand their local context, social risk and social opportunity, define initiatives and integrate these into plans. We can monetise many of our social impacts using the Rail Social Value Tool (RSVT), which we have also developed during CP6.

There is regulation and legislation surrounding social value, including the UK Government Procurement Policy Note on Social Value in Government Contracts (PPN 06/20) and the Wellbeing of Future Generations Act (Wales) 2015. Our Social Value Framework aligns with these and also the priorities of the Scottish Government. It provides a basis for us to respond to emerging governmental priorities including social mobility, levelling-up and community wealth building.

What our funders and stakeholders want

Net social value through public investment	Local community benefits in the areas we serve	Targeted interventions to address social risk and opportunity

Our stakeholder priorities, including those set out in the England & Wales HLOS, have informed our CP7 plans to deliver our objectives.

Our CP7 Objectives

Our Social Value Framework has four social value priorities. Working with our supply chains and partners our ambitions are:

- **Economic Prosperity**: To develop people's skills and support educational attainment and provide opportunities for employment and training. To enhance the resilience and capacity of our supply chain.

- **Equal Opportunity**: To work towards an inclusive rail network and promote workforce diversity and inclusion.

- **Wellbeing**: To promote community integration and enhance people's physical and mental wellbeing.

- **Covid-19 recovery:** To help get passengers back onto the railway and help local communities recover from the impact of Covid-19.

How our CP7 plans contribute to our objectives

Our plan will support regions, projects and national teams to build the social value that the railway provides, at local, regional and national levels.

Through CP7, we will use the RSVT to inform our planning and delivery decisions and evaluate our impacts. The RSVT enables data to be collected from teams and supply chain partner; aggregated, reported and monetised to appraise the net fiscal, economic and wellbeing benefits to individuals and wider society. It considers 500 different indicators organised across 12 social impacts:

Employment, training & skills	**Community & charity**	**Educational Attainment**	**Stakeholder engagement & customers**
Supply chain Resilience	**Safety, health, and wellbeing**	**Supply chain Capacity**	**Economic development**
Rail accessibility	**Climate & environment**	**Workforce equality, diversity, and inclusion**	**Covid-19 recovery**

We have already used the tool to forecast and maximise the social value of station redevelopments and infrastructure enhancements in CP6 and will continue to do so through CP7.

We are also seeking to integrate social value into wider assessment of asset needs, alongside revenue, wider economic factors and whole-life asset cost decisions. It will also be an important part of our market-led / whole industry approach discussed in more detail in chapter 3.

8.   Environmental sustainability and climate change adaptation

Our vision is to serve the nation with the cleanest, greenest mass transport. We want to put passengers first, help passengers and freight users to make green choices, support local communities and be a good neighbour.

Rail is efficient and seen as environmentally sound by the public. The busiest parts of the system have long been electrified. Rail can move millions of people quickly and cleanly over short or long distances, in cities and in the countryside. Rail freight can move huge loads with a fraction of the impact of road transport. No other form of mass transit can do this.

Climate change is having an undeniable impact on our infrastructure and the effects are forecast to be greater still in the coming years. More infrastructure failures would mean delays for passengers and our freight partners who move thousands of tonnes of goods across the country by rail. As the greenest form of large-scale transport, it is critical we can continue delivering low carbon travel to customers. While there is no silver bullet to making our railway more resilient to the effect of climate change, our plans commit to meeting this challenge to make our assets more resilient within the funding available.

Sustainability for us is about undertaking the operation, maintenance and renewal of the railway in a **sustainable** way so that the railway can continue to connect people and places now and in the future. This is broader than environment and climate change adaptation alone and we are looking to update our 30-year environmental sustainability strategy with this broader focus over the coming months.

As set out in our environmental sustainability strategy, one of the biggest challenges we face is the impact of more frequent and **extreme weather** conditions on our network. During CP6, we have taken several steps to improve our management of the impact of extreme weather on our network, in particular in response to the recommendations made by Lord Robert Mair and Dame Julia Slingo in their reviews following the derailment of a passenger train at Carmont in Scotland on 12 August 2020. We have also undertaken a detailed climate change risk assessment and enhanced our understanding of the risk climate change poses to the running of the railway.

Our CP7 plans continue to underpin our aims to support decarbonisation, air quality, biodiversity, waste reduction and resource efficiency, and resilience. In CP7, we plan to invest c. £1.6bn on weather resilience and sustainability initiatives.

More detail on the investment described above is set out in the following sections of this chapter. How our plans consider social value is set out in chapter 7.

Table 8.1: Environmental Sustainability and climate change adaptation forecasts

		Measure	CP6 forecast	CP7 ambition (100% plan)	CP7 forecast (risk adjusted plan)
Environmental sustainability	↑	Carbon emissions (reduction from 2019 baseline)	-25 %	-21 %	-18 %
		Biodiversity units (improvement from baseline)	0 %	+4.5 %	+3.9 %

Note: Environmental Sustainability measures reflect the forecast percentage point improvement through CP7 compared to the relevant baseline year, subject to change based on CP6 exit position.

Environmental Sustainability

Environment and sustainability are no longer about delivering 'nice to haves' but about 'must dos' to deliver our core business in a sustainable way so that the railway can continue to connect people and places whilst also decarbonising, improving air quality, improving resource efficiency, and having positive impacts on nature.

Background

We published our [30-year Environmental Sustainability Strategy](#) in 2020, in which we set out our vision to serve the nation with the cleanest, greenest mass transport. To deliver our vision, and supporting the Government's strategic objective of delivering environmental sustainability, we have four key priorities and ambitions:

1. **A low-emission railway** – we will achieve net zero carbon emissions by 2050 in England & Wales and deliver continual improvements to air quality so that our passengers, neighbours, and employees breathe healthier air.

2. **A reliable railway that is resilient to climate change** – we will prepare the railway infrastructure to minimise the impacts of climate change by 2050.

3. **Improved biodiversity of plants and wildlife** – we will continue to look after nature and protect, maintain and enhance biodiversity across the railway.

4. **Minimal waste and sustainable use of materials** – we will reuse, repurpose or redeploy all surplus resources, minimise use of resources, design out waste and embed waste life cycle/circular economy thinking into the rail industry by 2035.

The priorities align with the Government sustainability goals and tie in with legislation directing the country towards net zero emissions by 2050 (as well as the 2045 legislation in Scotland). The biodiversity priority spans our estate and is aligned with the legislation set out in the Environment Act 2021. Our internal management and asset policies and standards support these priorities. The Government has also recently published an update to its [Environmental Improvement Plan](#) which sets out the government's commitment to improving our environment. We are continuing to understand the full impact of any new targets from the Environmental Improvement Plan on the railway and will continue to monitor updates in legislation and government policy and evolve our strategy where necessary.

What our funders and stakeholders want

Delivering environmental sustainability is a priority for DfT, as identified in the HLOS for CP7 (within the bounds of affordability), as well as for passengers, as identified in our passenger research from summer 2022. Our stakeholder priorities are:

Make progress towards a low-emissions railway, alongside optimising social value	Conserve and enhance biodiversity	Make progress against cross-cutting government sustainability and environmental targets	An environmentally responsible railway that is reducing its carbon emissions

Our CP7 Objectives

Our strategic objectives for environmental sustainability are to:

- Reduce carbon: progress towards net-zero carbon emissions by 2050

- Improve air quality: reduce harmful pollutants in managed stations and 25 % by 2030, have dust suppression in place at all appropriate plant, worksites and depots by 2029

- Non-traction energy reduction: feed in 100 % of our non-traction electricity from renewable sources by 2030

- Weather Resilience and Climate Change Adaption (WRCCA): prepare the railway infrastructure to minimise the impacts of climate change by 2050

- Improve biodiversity: positive impacts on biodiversity and deliver biodiversity net gain by 2035

- Minimal waste and use of materials: reuse, recycle, or redeploy all our non-hazardous infrastructure materials by 2029

- Each of these ambitions is supported by a road map and key milestones which can be found in more detail in our Environmental Sustainability Strategy 2020-2050.

How our CP7 plans will deliver our objectives

Environment and sustainability activity varies across our regions and network-wide functions but largely comprises of decarbonisation, air quality, biodiversity, circular economy and social value. We set out below our proposed expenditure in each of these areas, below:

- **Decarbonisation.** In CP7, we plan to spend c.£290m on decarbonisation, which primarily comprises of the transition of our road fleet to electric vehicles. We are also exploring opportunities to use renewable energy sources, including using unused land and roof space to generate renewable energy.

- **Air quality.** Our plan includes monitoring of air quality at a number of our managed stations and any associated interventions that may need to be delivered as a result of the monitoring activity.

- **Biodiversity.** We will continue to identify more ways to protect, maintain and, where possible, enhance biodiversity across the railway when undertaking vegetation management, investing c. £49m in biodiversity in CP7. For example, in our Southern Region, we plan to identify under-utilised land across the regions to undertake biodiversity enhancements.

- **Circular economy.** In CP7 we plan to invest £27m in circular economy principles to reuse, repurpose or redeploy surplus resources, minimise use of resources and design out waste. This will support progress to embed waste life cycle/circular economy thinking into the rail industry by 2035.

To meet our strategic objectives we will also continue the enabling works started in CP6 to embed and further develop the tools, systems, processes, guidance, and policies to give us a firm foundation on which to deliver our strategic objectives. This will include:

- **Further development of data collection and analysis tools**. This will allow us to better monitor our sustainability performance and to enable better business decisions, embedding sustainability at the very outset of our infrastructure projects and in our day-to-day business operations.

- **Build the organisational capability for sustainability**. Continuing to embed sustainability competence within existing discipline frameworks and integrating sustainability considerations into training and professional development options. We will continue to enhance and improve

the way we communicate sustainability, challenging ourselves to simplify our messaging to make sustainability accessible to all and gaining further momentum in the business transition to sustainability as part of a caring culture.

- **Demonstrator projects and pilots in the low emissions and circular economy priority areas.** This will support our regions to demonstrate new ideas and technologies to achieve our strategic objectives.

- **Measure our positive impacts on biodiversity through our biodiversity units.** We will require enhanced resolution data. We will also continue to measure and monitor our progress against John Varley's independent vegetation management review published in 2018 ([Varley Report](#)).

We will continue to work with RSSB and industry partners during CP7 to develop the Sustainable Rail Blueprint for delivering on the sustainability objective set by the Government in the Long Term Strategy for Rail.

Our plans set out our commitment to supporting the Government to achieve its target of reaching net zero by 2050. We have key targets for the reduction of scope 1 and 2 carbon emissions, and we are forecasting to achieve a 46 % reduction in scope 1 and 2 carbon emissions by the end of CP7 compared to our 2018/19 baseline. We also have key targets for the reduction of scope 3 emissions, and we are forecasting to achieve a 28 % reduction in traction diesel by 2030.

A key focus for CP7 is to capture material / activity data for the components that make up our scope 3 emissions baseline so the benefits to invest in activities such as electrification can be accurately quantified. We are also working with our supply chain so that by 2025 at least 75 % of our suppliers, by emissions, will have set their own science-based targets. We expect to exceed this target as to date 73 % of our suppliers, by emissions, have done this.

During CP7, our regions have committed to maintaining and improving biodiversity. We are forecasting an approximately 4 % net biodiversity gain by the end of the control period with the eventual goal of 10 % by the end of 2035.

Weather Resilience and Climate Change Adaptation (WRCCA)

Our ambition is to have prepared the railway infrastructure to minimise the impacts of climate change by 2050. We want passengers and freight to get where they need to be so we can keep connecting communities and businesses and supporting the UK economy.

Background

The impact of the changing climate has been increasingly evident in recent years and is accelerating faster than our CP6 plans assumed, with the railway suffering more frequent and more severe extreme weather events. This is causing both acceleration in the rate at which many of our assets deteriorate (especially for earthworks and drainage assets), and increased instances of weather-related service impacts. Infrastructure that was designed to be resilient to the previous weather and climate conditions may no longer be so, especially considering that much of our network is over a century old. The latest evidence shows that the Earth has continued to warm. Climate change is here and affecting our network, so our CP7 plans seek to target investment within the funding available to mitigate the risks that climate change and extreme weather events present to our network.

What our funders and stakeholders want

Improving the railway's ability to cope with adverse weather was identified as the most important environmental issue for the railway by our passengers in the survey undertaken by Transport Focus last year. This was also identified as a priority for Government within the HLOS. We have summarised our stakeholder priorities below:

Maintain or improve the network's resilience to climate change and extreme weather	Develop long term plans for climate change adaptation and weather resilience	A railway that can cope with adverse weather events

Our CP7 Objectives

- Identify and address risks to train operations and our assets related to weather and climate change

- Develop long term climate change adaptation strategies and investment plans to help prepare the railway infrastructure to minimise the impacts of climate change by 2050

How our CP7 plans will deliver our objectives

In CP7, we plan to invest c.£1bn on improving our resilience to extreme weather and climate change across our four England & Wales Regions (this c.£1bn is a subset of the c.£1.6bn total for both weather resilience and sustainability activity in CP7). The c.£1bn of expenditure over CP7 comprises planned maintenance and renewals activities where improved resilience to extreme weather and climate change is a primary benefit of the activity. We have defined this as:

1. Pure weather resilience activity (i.e. activities that are being undertaken solely for the purpose of improving our network's resilience to extreme weather).

2. Business as usual activities with weather resilience benefits (i.e. maintenance and renewal activities which are driven by both poor asset condition, as well as extreme weather and climate change challenges).

Key areas of focus include maintaining and renewing drainage and earthworks systems in response to the Mair and Slingo recommendations, as well as some of our track and overhead electrical equipment renewals. We are also undertaking a few pure resilience schemes, for example the remediation of high-risk scour sites which suffer from erosion during flood events continuing in CP7 (applied to bridges and retaining walls only) in our Eastern region.

Each of our regions have developed a WRCCA plan which provides more detail on how we will improve our network's resilience to extreme weather and climate change. These documents set out how investment in asset management and climate change adaptation will enhance the resilience of the railway and assess the level of risk we face in CP7 due to extreme weather and climate change. The plans will continue to evolve over the coming months as we further develop key activities and align them to available funding, ahead of the CP7 delivery plan.

Alongside our regional maintenance and renewal activity to improve asset resilience to extreme weather, we will also undertake some network-wide enabling activities including:

- **Undertaking work to better understand the impacts of adverse and extreme weather on our network, led by our Weather Risk Task Force.** The outcome of the work our WRTF is undertaking will support future updates to our operating parameters and should enable us to apply weather interventions and operational changes in specific high-risk areas rather than across a whole area of the network so that we avoid unnecessarily disrupting passengers (e.g. by avoiding applying a blanket temporary speed restriction).

- **Development of long term climate change adaptation pathway strategies and investment plans at regional level.** This approach allows decision makers to plan for, prioritise and structure investment in adaptation options with trigger points and thresholds enabling us to take actions at the right time, avoiding the cost of acting too early or too late.

- **Undertaking research and development on weather resilience and climate change adaptation.** This will allow us to gain a better understanding of the vulnerabilities of our network and enabling us to make cost-benefit decisions on keeping our railway running reliably and safely as our climate continues to change.

As we look beyond CP7, our plans highlight the importance of increasing weather resilience expenditure in future control periods, recognising that climate change will increasingly draw on existing budgets to fund reactive repairs which means investment in other areas/renewals may need to be delayed or descoped. This allows deterioration of those assets which we can no longer afford to renew and creates a downward cycle if we do not proactively invest in climate change resilience activities.

We will continue to work with DfT on the development of the DfT Adaptation Strategy and are working to stay aligned to national activities on climate change adaptation, including development of rail/transport related outcomes and actions for the National Adaptation Plan.

Overview of the Mair and Slingo reviews and the Resilience of Rail Infrastructure Report

Following the Carmont train derailment on 12 August 2020, where three people tragically lost their lives, Professor Lord Robert Mair and Professor Dame Julia Slingo were appointed to head two independent task forces. Their findings and recommendations show the substantial challenge of managing extreme weather and climate change on the railway – which are confirmed by Rail Accident Investigation Branch's (RAIB's) March 2022 report on the Carmont derailment. Most earthworks alongside the tracks were built around 150 years ago and are poorly engineered by modern standards. They are overly steep and unstable with drainage of a similar age and installed to a pre-set design regardless of location. When combined with heavier rainfall, as has been experienced in recent years, and expected in the future, landslips and flooding can occur.

Lord Mair considered how Network Rail can better manage its earthworks (cutting and embankments) portfolio and improve understanding and response to severe weather events. Dame Slingo considered how Network Rail should procure its weather services and keep abreast of the latest developments in the future, so that it benefits more immediately from advances in science and technology.

The Secretary of State also commissioned a network-wide review of the impact of extreme weather on the resilience and safe performance of the railway, and in particular how earthworks are managed. The Resilience of Rail Infrastructure report, published in March 2021, alongside the Mair and Slingo Task Force reviews, shows the challenge of climate change on the railway is substantial. The reviews recognised it's not practical to rebuild nearly 200,000 separate slopes alongside the railway, and they recognise the work that has been done to upgrade the Victorian infrastructure where possible and manage risk across the network.

Investment in resilience work has increased in the past decade, and new systems, technology, standards, and practices have been introduced or updated. The reports also note that this work has accelerated further since the summer of 2020. This has included trials of new technology being rolled out more widely across the network, and new dynamic, route-based weather forecasts, using the latest science, trialled in cooperation with the Met Office. However, while acknowledging the significant amount of work being undertaken, the reports show that there is more that can be done and offered over 50 recommendations for Network Rail to look at in detail.

Many of the recommendations focus on the considerable progress that has been made with technology over recent years. Some technology has been trialled – including a system to provide detailed information on where intense, short term rain is falling, and monitoring sensors that can be adopted to potentially detect failure of critical slopes early on. However, the reports are clear that advancements happen quickly and more can be done to keep on top of latest developments.

Crucially, both Task Force reports recommend looking at culture and organisational change, upskilling the workforce to better access, interpret and use weather data and technology, to carry out inspections and examinations of earthworks and drainage, and to improve knowledge and competencies consistently across the organisation.

Our National Integrated Plan sets out our approach to delivering the recommendations that have been accepted from the Mair and Slingo reviews and the RAIB review. Recognising the impracticality and risk of implementing this breadth of change all at once, we have prioritised the recommendations included in our National Integrated Plan, delivering the highest priority recommendations in CP6 with provision to complete the remaining actions in early CP7 (noting the outcomes of some action plans – for example, updates to our asset policies, may be realised in future control periods). During CP7, we will continue to iterate our plan to incorporate future weather-related recommendations where funding allows (e.g. the Extreme Heat Task Force (EHT), due spring 2023) with a relentless focus on passenger benefit and value for money.

9. People

Introduction

CP7 requires a highly proactive and strategic approach to change, to deliver our strategic objectives with our people agenda. We need to lead this transformation to become a fully mature, high-performing, service-led organisation with an engaged and skilled workforce. This will be underpinned by better designed work, better relationships, and our values.

Through the latter part of CP6, our people faced unprecedented challenges including the global pandemic, industrial action, rapid changes in Government, the energy crisis and the increasing cost-of-living. The success of CP7 will depend on accelerating the changes that were hampered by these challenges, and also learning from, and leveraging, what we did well to overcome adversity.

We have developed a comprehensive strategy to deliver our objectives for CP7 and beyond. This chapter brings together our People Strategy in one place, setting out our CP7 strategic objectives, stakeholders priorities, external and internal trends, and learnings from CP6. We have also outlined how we will deliver our strategy through network-wide workstreams and regional and functional plans.

Our journey in CP6

In CP6, we started the path towards a service-led organisation through the PPF programme which aimed for decisions to be made closer to customers and to reduce the number of steps between CEO and customers, and to shift us from an engineering led to customer and service led organisation. We devolved into routes and regions, which are empowered multiskilled business units to make decisions in the interests of customers. Many central accountabilities were devolved, and the concept of the 'network' formed, with functions enabling and supporting the routes and regions. The role of assurance became increasingly important to deliver our corporate responsibilities in a joined-up way where needed.

The pandemic struck in March 2020, at the end of the first year of CP6, before the new structure had fully stabilised. The next two years were focused on keeping our people safe, keeping railway services running, minimising risk to health, and starting reform. The Rail Industry Coronavirus Forum (RICF) enabled effective working between trade unions and management, and gave confidence that we could work together to respond to the emerging financial challenges. We created the Rail Industry Recovery Group (RIRG) and signed the landmark Enabling Framework Agreement (EFA) which set the principles for working together to deliver reform. We protected job security and froze pay during 2020/21, established joint working groups and implemented four co-analysis groups with the trade unions: technology; planning; deployment and change.

The emerging financial challenge (following the massive drop in passenger numbers and farebox revenue), the clear requirement from stakeholders for reform, and the increasing cost of living created an even stronger imperative to modernise our business, improve performance and reduce costs. Through the RIRG and EFA we aimed to do this collaboratively with the trade unions. As the cost-of-living increased, we needed to fund the pay review from workforce reform savings as our financial challenges deepened. Our biggest operational cost base stems from maintenance and management, so our reform was focused on these two areas, as well as joint workstreams to integrate our stations' work design, improving passenger experience with less duplication and wasted work.

To reduce costs, we rapidly restructured management, leveraging the industry Voluntary Severance programme developed through RIRG. However, the innovative approaches such as co-analysis struggled to gain traction in maintenance and, in view of time pressures, we made a joint decision to start formal consultation. Consultations proved difficult and lengthy as we struggled to settle on an affordable pay

review or consensus on the scale and scope of reform. Unfortunately, we entered a period of dispute with the trade unions. Meanwhile, we implemented industrial action management and contingency training to maintain critical services. We pressed on with reform and concluded the pay deal in March 2023.

Meanwhile, we also worked collaboratively with front line managers in maintenance to redesign the work much more productively and safely which was done in an engaging, supportive, and developmental way using a whole system thinking approach.

Our achievements

While there have been challenges in CP6, our people enabled us to respond quickly while keeping our passengers and freight users at the forefront of decisions. Examples of our achievements are:

- We responded successfully during the global pandemic by reacting quickly, improving and adapting over 200 company policies, processes and guidance documents to keep our people safe.

- We developed an award-winning talent strategy, developing local talent forums and succession plans.

- We created cross industry leadership programmes such as our connected leaders programme and programmes for every future leader; middle management, senior and executive leaders.

- We developed the 'line management essentials' portal for frontline leaders to accompany local development programmes.

- We have 635 STEM (science, technology, engineering, and mathematics) ambassadors with 14,000 meaningful student interactions, reaching nearly half a million young people through Network Rail role models.

- We started to build the conditions for 'systemic inclusion' and made significant strides in our Diversity and Inclusion initiatives. Features of the work have been:

  - o Increased representation of women, Black Asian Ethnic Minority employees recruited.

  - o Increasing trend of women, Black Asian Ethnic Minority employees becoming leaders.

  - o Maintained 8 thriving employee networks and over 2,500 diversity champions.

  - o Named in the Times Top 50 Employers for Women 2022.

  - o Leaders in championing the White Ribbon campaign raising the issues of domestic abuse.

  - o Named in Stonewall's Top 100 list.

  - o Published our first ever disability pay gap report.

  - o Improved processes for making workplace adjustments rapidly.

  - o Becoming a Disability Confident employer and redesigned recruitment processes, launching award winning e-learning on 'inclusion by design'.

  - o Made strides on our Race Matters project with several industry-wide programmes to encourage women, Black Asian Ethnic Minority employees to develop as leaders.

- £195m annual saving achieved (GB) by implementing our management modernisation programme.

- Concluded national consultation on maintenance reform plans, allowing further discussions and local consultation relating to our proposals to modernise our maintenance organisation.

- Our System Thinking Interventions also have enabled an efficiency saving of c£16m in our maintenance organisation as well as enabled improvements in many parts of the business.

Our focus for CP7

As we look towards CP7 we want to build on CP6 and deliver transformation to become a high performing, service-led organisation. We will create better work, with better relationships for a better future for our industry. Several factors have influenced our plans:

Funders' and stakeholders' expectations	Our values	Service improvement for our customers and becoming service-led	Readiness for industry integration
Whole system approach	Rail Sustainable Development Principles	Regional and route priorities	A learning organisation
Industrial relations and employee engagement	Enabling continuous improvement	Building high performance teams	Reward parameters
Benchmarking and value for money	Social and technological context	Economic and labour market context	Cultural context

We set out in more detail below the impact of each of these factors.

Funders' and stakeholders' expectations

We have listened to our funders and stakeholders to help us understand their expectations for CP7. They have four key people priorities:

- Create more agility within the organisation through responsive organisational design, strategic workforce planning, talent, and succession planning.

- Continuously improve, delivering better work (including workflows, processes, job design, work-systems) to modernise and keep people safe.

- Build a more inclusive environment where individual differences are accepted, leveraged, and celebrated.

- Improve health and wellbeing.

Our values

Our values as set out in chapter 2, will continue to guide us in CP7 providing a framework for the right mindset and behaviours.

Service improvement for our customers and continuing to become more service-led

Much more work has to be done to truly put the passenger first, by inverting the pyramid of our organisational structure, to transition from a top-down 'command and control' operating model to better respond to customers' needs. Our aim is to do this through organisational design and improving our operating model, as well as deploying a whole system approach. This will enable workflows that are

designed to deliver what matters most to our customers. In this way we will increase customer value as well as efficiency and effectiveness.

Figure 9.1: Our organisational structure – transferring to an inverted pyramid to put passengers first
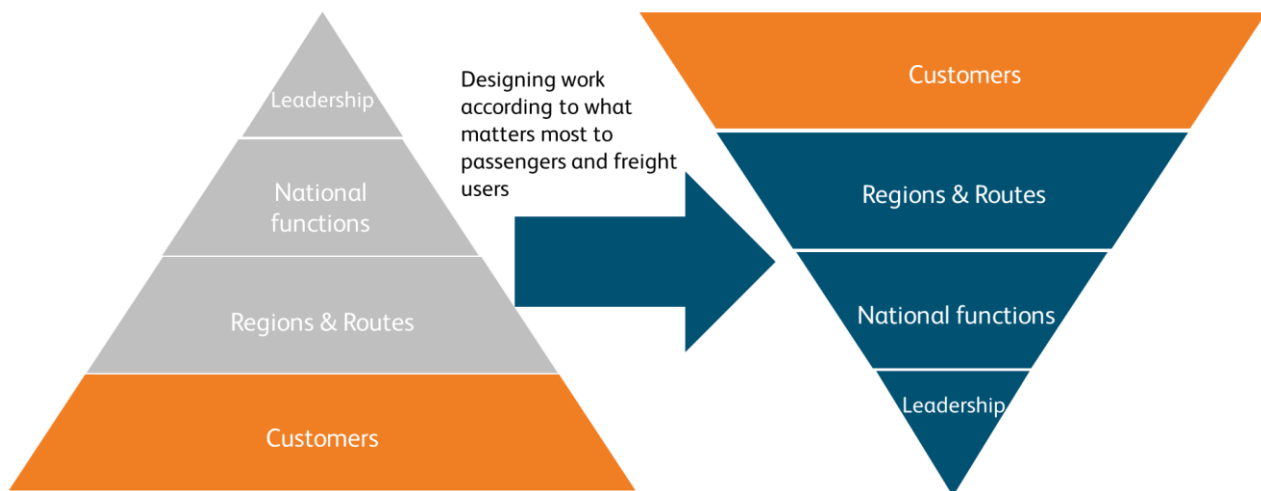
Readiness for industry integration

Delivering on the vision of PPF will prepare the organisation for greater industry integration when GBR is established, to enable a whole system approach to decision-making in the interests of the customer. Our HR transformation team are supporting industry readiness through a number of workstreams:

- Leading diagnostics and gap analysis to support GBRTT's development of a whole industry People strategy.

- Supporting GBRTT's work to define the role of the rail industry 'guiding mind' set out in the Plan for Rail.

- Moving from industrial relations to employee relations to foster high performing teams.

- Establishing an employee value proposition, discussed later in this chapter.

Whole system approach

By taking a whole system approach we will work together better as an industry, such as:

- Sharing programmes and resources.

- Joint problem solving from track and train perspective.

- Working together to deliver a redesigned service (such as stations).

- Identifying key touchpoints with customers in the whole system and designing an improved experience such as using system thinking interventions to help fix problems sustainably.

Rail Industry Sustainable Development Principles

Our strategy is informed by the 10 principles for Sustainable Development, developed by RSSB, in particular 'being an employer of choice'. The principles 'take account of whole-system and whole-life-cycle approaches to drive greater efficiency and better delivery'. The principles mean we need to:

- Respect, encourage and develop a diverse workforce, support its wellbeing and actively consider and address the challenges of the future labour market.

- Build a skilled, talented and motivated workforce making the railway an employer of choice.

- Be transparent and promote a culture of open and accountable decision making, and measure, monitor, and report publicly on our progress toward sustainability.

Apprenticeships will be key, as will a greater focus on leadership and management; driven by a cross-industry skills strategy.

We need to work with the wider industry so that is it a fair, safe, diverse and supportive place to work. Staff engagement is at the heart of this as we move to a sustainable enterprise through 'just transition' so that affected people are considered by those making decisions to minimise the negative impacts and maximise positive opportunities' of sustainability.

The principles of the International Labour Organisation's guidelines for a just transition is embraced in our strategy. Among other things this includes the creation of more decent jobs, including as appropriate: anticipating impacts on employment, adequate and sustainable social protection for job losses and displacement, skills development and social dialogue, including effective exercise of the right to organise and bargain collectively.

Regional and route priorities

While we have developed our overall People strategy to support the whole system, our routes and regions have unique and varying priorities locally which is reflected in their strategic plans. This chapter highlights some key regional priorities and sets out common 'cross-country' initiatives.

Learning organisation: diagnostics, review and learning during CP6

As part of our strategy to become a learning organisation, each phase of transformation begins with an in-depth diagnostic and ends with a post implementation review. The outcomes inform the next steps, so the detail of our CP7 plans may change to adapt to learning but the overall framework will remain.

Industrial relations and employee relations

We must learn from the recent industrial action and difficulty in engaging our workforce to adapt to changing needs. We need to involve people in the change that affects them and improve the level of participation and involvement during change and problem solving. Using joint problem-solving teams, systems thinking interventions and continuous improvement events and workouts, we plan to change our approach in CP7. In this way we anticipate that the workforce will encourage trades unions to engage with management and change in a more constructive way, focused on joint and shared interest problem solving rather than binary, power-based engagement. The instability in the industry means we must constantly work to build trust in management. Equally we recognise the importance of consultation mechanisms and the collective bargaining rights of employees. Our aim is to manage these effectively and fairly, retaining a focus on the overall purpose of the organisation.

Reward parameters

As a public sector body, our reward parameters create a challenging environment to attract and retain staff. This means that we need more innovative talent strategies and organisation design solutions to consider providing opportunities to new, up and coming talent or supplementing existing capability with temporary external perspectives. We also need to look for innovation and effective improvements to the overall employee value proposition (explained in more detail later in this chapter). The different reward approaches in Network Rail create a challenge for modernisation. Equity, trust and, at the right moment, the opportunity for a single integrated regime need to be reviewed.

Social and technological context

As we came out of the pandemic, we quickly turned to hybrid ways of working while adapting to a significant change in passenger numbers. Hybrid working is now the norm for much of the UK, and few office workers travel to the office five days per week. This brings new challenges on how to run hybrid, remote and virtual teams and changes the concept of local recruitment and location. We must seek opportunities to use technology to get everyone home safe every day. Continued advancements in technology, e.g. Artificial Intelligence, need to be harnessed to bring together technology and human in a positive, enabling way to create better work.

Economic and labour market context

Recent rises in inflation are impacting households and businesses through energy and commodity prices. Alongside this, we are seeing an ongoing shortage of people to fill available jobs. Additionally, the gap between CPI and RPI (and how it relates to pay) will continue to be a focus through our pay strategy.

Benchmarking and value for money

Our CP7 plans have also been informed by a benchmarking exercise through Gartner. While our HR efficiency and spend are in a strong position, we need to develop our maturity of service quality. The Gartner report confirmed overall maturity levels as an average 3 (on a scale of 1 to 5) and recommended Employee Value Proposition and Strategic Workforce Planning as our key areas of focus.

Cultural context

We need to recognise and address that cultural conditions can be a barrier to change or a positive lever. For example, highly localised cultures mean that devolved approaches work better, recognising that one size does not fit all. The systemic complexity means that simple, quick wins don't tend to work and need to be addressed at the root cause. The restraining and driving features of the localised cultures need to be understood to implement change and shift the culture to be more aligned to customer-centricity.

Our CP7 strategic objectives

We are building a high performing, service led organisation that provides great customer value, and this is central to how we've developed our People strategy. We have identified 4 strategic objectives for CP7, which underpin our strategy:

- **Enable a great employee experience through an engaging, safe, and inclusive culture**. A culture that encourages collaboration and a sense of belonging, one where everyone feels valued, safe and able to realise their potential.

- **Right people, right place, right time**. Our people are fundamental to the successful delivery of business objectives and depend on us having the right capability deployed to the right work at the appropriate time. This means having talented, appropriately trained, diverse workforce.

- **Great leadership**. Our future success is dependent on how we develop, empower, and enable our leaders. We need to provide the right structure and environment for them to thrive and enable them to create high performing teams.

- **Better work**. We will deliver better outcomes for our people and our passengers by taking a whole system and highly collaborative approach to delivering continuous improvement. This will result in better work in a modern and flexible organisation that is safe, high performing, efficient and sustainable.

Achieving our Strategic objectives for CP7

This plan sets out our focus now, in the future, and our priority initiatives to deliver our People strategy. These may change over the control period to reflect our continuous 'review, learn and adjust' approach. Our cross-country workstreams will help us deliver our objectives, supported by our business-as-usual activity, region and function plans, collaboration and partnership, enablers and industry readiness.

Network-wide workstreams

We have identified 14 network-wide initiatives which will enable us to deliver our business outcomes across all of our regions and functions. These are all significant, transformational, and cross functional – so will be delivered in collaboration with regions, routes, and functions. These workstreams are interlinked to deliver our business priorities.

Modernisation

This workstream will deliver the modernisation of Network Rail management and maintenance in particular, implementing and embedding the new organisation in maintenance and leveraging the benefits of new working practices. As part of this, we will improve maintenance and management effectiveness, delivering improvement in the three fundamental aspects that shape this – environment, capability and structure. We will modernise our maintenance organisation and create a fully skilled workforce with a high performing management structure.

Model Maintenance Delivery Unit

This workstream will build an ideal delivery unit as proof of concept where all aspects of the unit are improved systematically. The improvement will be done with those who do the work. Following the success of the tests to date in delivery units, we will create model delivery units in each route with a locally led approach recognising local needs. This workstream will enable us to create high performing teams, with great leadership within the right environment, with local decision making, creating collaborative relationships with our people, trade unions and industry partners. This will deliver better outcomes for our people and our passengers, improving productivity and overall performance.

Better work (continuous improvement and systems thinking)

We will transform frontline team engagement when we improve their work. As the work improves it will become more efficient but also more satisfying, their work will improve through a number of factors – the effectiveness of their frontline leader, the way change is implemented, technology and better design of their work.

As well as the model delivery unit workstream, we are planning interventions in areas where there are complex problems that need systematic solutions. By involving the teams who do the work, we will create better engagement and better outcomes. A programme to build internal capability is underway and a pipeline of activity (in addition to that already in play) will be built.

Building Trust and the Future

Following workforce reform and the challenges of industrial action we need to build an organisation that is more resilient in the face of change, where learnings are embedded. We intend to engage the support of a high-profile industry representative to build trust with trades unions and management, to help us review, learn and put down the foundations for working better together. There are two key principles; building trust, and building capability and acceptance of change.

In order to build trust, there are four key themes, practically and emotionally:

- Better work.

- A modern reward model to motivate high performance and knowledge sharing to improve

productivity.

- A chance to progress through better leadership.

- A commitment to care.

To build capability and acceptance of change we are focused on leadership development, high participation in change, empowering talent, engagement indicators and great communications.

We must build a much more engaged, inclusive workforce. This will enable us to be an organisation where leaders spend time communicating and engaging with our people to find creative, systemic solutions to current problems and future challenges, through participation and involvement.

We will need to invest in leadership capability, the design of work and participation by the people who do the work, with an increased focus on more participation in problem-solving and continuous improvement. We will develop opportunities for progression by building competence, capabilities, and skills to allow for individual progression. We will remove and reduce hassles and frustrations stemming from poorly designed workflows and focus on improvement with trade union participation.

We will work towards a pay strategy with longevity – combining productivity and role design to deliver progressive pay and great value for money. We will maintain and increase the level of contingency cover, continuing to recognise frontline management and build their core railway skills.

We will improve our operational resilience, focusing on trades union relationships through building trust and engaging the workforce to get Network Rail ready to embark upon industry reform.

Our Industrial Relations strategy will be another key workstream in creating the right environment for our people. To achieve effective modernisation and deliver our strategic objectives, we will review and improve our existing strategies and collective bargaining approaches. We will develop and deploy network-wide strategies to move from Industrial Relations to employee relations, to build better relationships with our people, trade union and partners for better outcomes.

Performance Management to performance improvement

We will move our culture from filling-in forms to a performance improvement approach to develop the mindset and behaviours of our people aligned to our values. Performance improvement will be focused on delivering business outcomes through learning, coaching, participation, and involvement to develop a continuous improvement culture. This will be enabled by the performance improvement process, alongside coaching and using data and analysis to understand problems and find solutions.

Leadership and Frontline management capability

Great leadership will be pivotal to the successful delivery of CP7 as we face a period of momentous change for the industry. Our plan will address all three elements to building leadership excellence: structure, capability and environment, to enable our leaders and frontline managers to be the best they can be and give our people the best leadership they have ever had. In CP7 we will focus on:

- **Structure**. Review our structure and framework to support competence, leadership behaviours and capability. Management structures and measures, workforce planning, Industrial Relations, Employee Relations and Reward.

- **Capability**. Develop great empowered leaders building and leading high performing teams. We will invest in the capability and mobilisation of our leaders and frontline managers through our leadership development programmes and apprenticeships. Delivered through various development options at a National and local level such as coaching, on the job training, a range of bite-size learning to develop new skills and practical knowledge involving real time activities.

  Change management is a core skill for our organisation. We need to invest in our people to build capability now and in the future. We will do this through involvement and participation in

change and transformation programmes. We will invest in our leaders and frontline management development, so they have the tools and skills needed to be able to lead and manage effectively, especially during periods of significant change and transformation. We will take learnings from industrial action and from our System Thinking Intervention Programmes to develop plans for stronger, more comprehensive engagement with our workforce and enable our colleagues to understand their role in the wider industry and their impact on our customers.

- **Environment**. We will continue to review and improve our design of work and the environment that our people work within so that it is fit for the 21st century.

To support our leadership and frontline managers we will lead network-wide engagement surveys and provide analysis and insights to our business leaders to drive improved engagement to improve business performance. Wales & Western have embedded their Cultural Insight Tool to provide the regional executive and leaders with visual understanding of engagement 'hot spots'. The tool will provide holistic insight and trend analysis for a number of leading indicators, enabling tailored interventions. This aims to improve the employee experience, increasing engagement and driving performance improvement at a local level. The tool has been shared across the business.

North West & Central will continue with the evolution of the All Aboard roadshows to build engagement through visible and trusted leadership. Upskilling leaders to articulate a clear and inspiring vision and actively listen to learn will be vital to success. Our overall approach will enable our leaders and frontline managers to be the best they can be and for people to have the best leadership they have ever had.

Systemic inclusion

We need our railway to be easier to use and more inclusive. Our plans and strategy take account of the diverse needs of our staff and the customers we serve, because a more diverse, inclusive, and accessible railway, which is reflective of the communities we serve, benefits everyone. Our plans will also deliver our duties as a Public Sector Body under the Equality Act 2010, not because we must fulfil these but because our plans are the right thing to do. Improved diversity and inclusion will drive greater engagement, improved customer experience, improved performance, safer workplaces, reduced absence, and reduced turnover. It will enable us to attract and retain a high calibre of people from all socio-economic backgrounds. Our strategy will focus on creating greater equity for our people, removing barriers within our culture and processes that prevent people accessing what they need to realise their full potential.

Our Intervention Programmes are critical to creating the right environment, through diagnosing complex root cause issues and by the people who do the work developing long term systemic solutions through a test and learn approach. This is a key enabler for our colleagues to be themselves at work regardless of gender, ethnicity, disability, age, or sexual orientation. We will provide equity and fairness for our people. We want our people to feel a sense of belonging, involved, developed, and empowered, which will naturally bring diversity of thought and experiences to our work and provide better outcomes for the railway and wider society. We are currently piloting a Diversity and Inclusion Intervention within Eastern which will inform the development of our diversity and inclusion strategy.

We will continue to focus on training and awareness to support accessibility and inclusion in CP7. All employees are required to complete online training which includes disability equality awareness. For our management and leadership roles, we also provide classroom based 'Inclusive Leadership' training. All new Network Rail passenger-facing station employees will attend inclusive customer service training co-delivered by disabled trainers in a classroom setting. This emphasises treating everyone as an individual and communicating with people in the most appropriate way to find out their individual needs.

We will develop our Accommodation Strategy to make our facilities more accessible and inclusive across the railway, for example changing areas, toilets, and walkways.

Delivering on our Diversity, Equity and Inclusion commitments will enable us to evolve our approach to engagement, talent attraction, retention, recruitment, increasing utilisation of diverse and inclusive job platforms and early engagement work with schools. We are proud of the progress we are making, but we know there is more we can do to make the railway a more inclusive and attractive place for all.

Building HR capability

Our people are essential to the delivery and development of a safe and reliable network and a great service to passengers and freight users. They enable us to deliver what matters most to customers, funders, and wider society. Our people strategy will transition us away from tactical, reactive, human resources management to a whole system proactive people-centred but customer-led approach to deliver our business strategy.

HR is key to enabling our leaders and our people to feel proud to work for Network Rail and deliver great outcomes for our funders and customers. Feedback from our stakeholders tells us we have put the Human back into HR. This cross-country workstream includes:

- Investing in creating and developing our future strategic HR leader's capability.

- Developing our professional HR framework providing career pathways.

- Developing our change and transformation capability.

- Reviewing our HR data, processes, and technology to improve our overall effectiveness and efficiency for better business outcomes making our services easier to use and building the appropriate digital skills and processes in readiness for the work of the future.

We will continue to work in collaboration with GBRTT and key industry stakeholders to support industry readiness for reform. We will continue to identify integration opportunities to bring track and train together. We are trialling this within Wales & Western by introducing a People & Transformation Director supporting Network Rail and Great Western Railway human resources teams.

We will establish the leadership of HR (People & Transformation) in driving overall organisational effectiveness and efficiency whilst also delivering Group HR financial challenges. In this way we will continue to drive up the value-add of the People agenda in the rail industry through the CP7 plan. We will deliver our safety strategy commitments and continue to embed the Safety Framework to improve our safety, health and wellbeing culture and learning. We will drive up the industry reputation on social value, collaborating with all key parties and re-establishing a national-industry forum.

Strategic Workforce Planning (SWP)

High performing organisations have the right people, in the right place, at the right time. In CP7 we will take a collaborative, robust approach to SWP for a strong pipeline of talent and industry resilience by:

- Reviewing and developing our SWP strategy and delivery plan, working with the wider industry to achieve a long term skilled, diverse, talent pipeline, anticipating and meeting the future critical skills needs of the workforce, reflecting on the demographic of our existing workforce.

- Developing talent and resourcing strategies aligned to our strategic workforce plans to ensure we are fit for the future to attract and retain the right people for our industry.

- Continuing to reskill and deliver STEM engagement and early careers commitments to reduce the skills gap within our industry, including placements and targeted curriculum interventions.

- Increasing the number of apprentices, graduates, and placements for year in industry students. Our Apprenticeship Strategy will identify, design, and implement new offerings. This will include leading the industry in the development and implementation of industry wide apprenticeships which is a more inclusive approach to our talent attraction and recruitment as we engage with

sections of the community that we haven't done historically.

- Improving our training and development provision to create a learning organisation that engages whole-person and diverse learning styles. This will include coaching, learning by doing, e-learning, blended learning, review and learn and our approach to courses and programmes.

- Being more efficient in our approach to training. We plan to use a supply and demand approach to plan training needs in accordance with available budgets making sure we deploy the right training at the right time to achieve expected outcomes. Our approach to mandatory training will be simplified to be relevant to role rather than a one size fits all approach.

- Workforce Plans for professional, skills and technical training packages will need to be developed. Our commitment to higher education funding for our teams where this is beneficial both to the individual and the organisation will continue.

Competence and safety

We will implement an effective competence management system, which improves capability so people can safely and competently deliver work. Competence is hugely complex in the rail industry and our organisation. We are reviewing our existing approach to competence to improve how we manage, monitor, assure and improve our competence. We will develop a revised approach through collaboration with our wider business leaders and key stakeholders, enabling our people to have the right skills at the right time to do their roles safely and effectively.

The approach to assessment and verification of Operations competence is also a key priority, building on the trials that will take place in the last year of CP6. This will enable routes and regions to identify the right solution to deliver local competence and assurance outcomes, while providing a framework for internal or external review of operations tasks across assessment and verification activities. In turn this will unlock the potential of Local Operations Managers (our frontline operations leaders) to focus on the activities that add the most value, transforming outcomes for customers as well as enabling a greater quality of competence assessment and assurance.

In maintenance, an effective proof of concept has been established so we need to accelerate transformation of competence management using this as a springboard.

In CP7 we will continue to modernise our workforce to remove and reduce safety risks, as set out in our CP7 safety strategy in chapter 5 of this document.

Employee value proposition

We need an Employee Value Proposition that enables Network Rail to transition in readiness for industry integration and beyond. To do this we will:

- Define, build, and implement an employee value proposition that attracts the right people, in the right place, at the right time for our industry. We will review our candidate experience, rewards, and benefits package from both an attraction and retention perspective so that our approach remains current and robust in a competitive market and aligned to our business priorities.

- Review and refine our pay, reward, and recognition strategies in line with our industrial relations, talent, and performance management strategies.

Wellbeing and attendance management

- Our workforce health and wellbeing strategy is being reviewed and updated to set us up for success for CP7. As set out in chapter 5, our plans include activity and initiatives to tackle the most significant workforce health risks, to manage chronic ill health and reduce the burden of disease on productivity and performance.

- We will improve attendance management by simplifying and improving reporting, providing support to line managers and employees earlier and reducing overall sickness absence with a focus on reducing mental health related sickness. This will improve the lived experience of line managers and employees.

Talent

Developing our talent strategies will follow four phases:

1. Release potential to design and enrich work.

2. See potential, supported by how we communicate potential, matching skills development and interest with development and mobility forums.

3. Develop potential, with toolkits and bespoke support to take action, development programmes and signpost roles that change horizons at key career journey points.

4. Use potential in our improvement teams, dynamic careers and cross function/industry moves so we have the right people in the right roles at the right time building our internal capability.

Region functional talent review forums will continue to provide the mechanism for local review of talent to develop succession plans for critical roles and identify gaps that need to be addressed in the future, linking into our network-wide development and mobility forums. We will get to know our people and the market, release potential and grow organisational capability to meet industry needs. We will recognise that people are individuals and need different support as they progress through their career and take a situational approach. We will take a whole industry approach and build career pathways for track and train to optimise the system, so it is better and more effective. We will map the talent bench strength in the industry and make sure we have sufficient to integrate the industry effectively.

Industry Readiness

Network Rail is preparing for transition to GBR. As part of this, we will be supported by the Industry Readiness Group programme in defining an integrated delivery mechanism. This will support coordinated and timely delivery of Network Rail readiness activity. The aim of this is to firstly enable the HR function to drive readiness in a manner that best suits our requirements, and secondly to get ready for the move, and support future design while strengthening Network Rail's foundations. From a People perspective, there are key activities which we will be focusing on to prepare for Industry Readiness:

- Identifying what currently works well in our industry that would be beneficial to take forward.

- Network Rail's Industry Readiness through programmes of activity.

- Developing a People & Culture framework with industry partners.

- Design and delivery of cultural transformation in readiness for industry reform.

Our workstreams will focus on:

- Target Operating Model Design for the future needs of HR.

- Pay and Reward.

- Industrial Relations.

Region and function plans

A summary of the key initiatives that will support delivery of our strategic objectives in region and function plans are set out below. More information on our People plans across England & Wales regions and functions are included in their individual plans published on our website.

Table 9.1: Overview of key initiatives that support the delivery of our strategic objectives

Objective	Better work (Simplified, efficient, modernised)	Enable a great employee experience	Right people, right place, right time	Great leadership
Group HR	• Modernisation programmes • Delivery Unit engagement intervention • Systems Thinking Intervention programmes • Functional governance framework • Technology - HR Systems and software • HR service transformation; pay, policies and training • Competence	• Design D&I strategies & programmes • Develop & deploy network wide Industrial Relations and Employee Relations strategies • Reward and recognition strategies • Design Employee Value Proposition • Pension strategy in readiness for GBR • Occupational health & wellbeing interface, absence management	• Resourcing • Develop & Deploy network wide Talent strategy & Specialist services • Development of people analytics • STEM engagement & early careers • Strategic Workforce planning	• Leadership Capability programmes • Profession development of HR community • Management Charter • Performance management • Industry readiness • Industrial relations
Eastern	• Modernisation programmes • Systems Thinking	• Build a diverse workforce • Collaborative relationships with Trade Unions • Recognition, reward & performance management	• Talent & Succession plans for all leadership and BC roles • Develop Strategic Workforce plans to mitigate risk of not delivering on our regional plans	• Leadership Management Capability • Profession development of our HR community
Southern	• Modernisation • Technology - HR System and software • Service led • Improve HR Administration processes	• Recognition • Performance management • Diverse and inclusive job platform • Health & Wellbeing • Accommodation	• Talent management platform, comms, and support roles • Strategic Workforce Planning	• Leadership development • Profession (professional, skills, technical) • Frontline manager development programme
Wales & Western	• Modernisation & industry reform • Modernised technology • Accommodation strategy • Empowerment & Inclusion • Systems Thinking programmes	• D&I strategy embedded • Cultural insights • Effective performance management • Flexible and agile working • Recognition • Mental & Physical wellbeing	• High-performing talent pipeline utilising SWP • Talent attraction through our graduate, apprentice & fast-track schemes • Robust and diverse succession • Technology	• Great empowered leaders; tailored leadership development programmes • Localised culture, one team
North West & Central	• Deliver & embed modernisation • In-house HR Service	• Performance management & reward • talent management	• Strategic workforce planning • Talent management	• Leadership communications • Leadership community • Leadership Development
Network-wide Functions	• Modernisation • Technology & Innovation • Transform the value of work • Collaborative culture • Improving capability • Customer Centric organisation	• Local D&I strategies • Employee Engagement • Collaborative working with Trade Unions • Deliver safety vision • Competence & capability • Performance Management	• SWP integrated with Talent Management • Early Engagement with Schools & colleges • Developing careers within STEM industry • Upskilling for the future. • Develop competence and capabilities.	• Managers are equipped with the tools they need • Inclusive practices that are systemic • Training, building confidence and competence of line managers

Key enablers

<u>Brilliant basics</u>

- We will continue to improve the basics in terms of our policies, processes, data, and insights to enable our leaders to make better strategic and local decisions.

- Our intervention programmes are the key enablers for identifying and developing systemic improvements to end-to-end delivery of services for better outcomes.

- We will build on our great employee networks to educate and bring our people together as one to build relationships and trust to enable our people to bring their whole selves to work.

- We will continue to improve our training and development offerings to meet the current and future needs of our business supporting leadership and frontline manager capability.

- We will continue to develop our HR community to be pro-active and service led.

<u>Collaboration and partnership</u>

We will work with our people, trades unions, key stakeholders, and industry partners to improve our systems and processes taking a whole system approach to drive end to end improvement. We will continue to strive for improved value and make improvements to our supplier management partnerships. We will continue to develop our leaders and frontline managers to lead by example, demonstrating our organisation values and behaviours for better relationships and outcomes.

<u>Data and technology</u>

Legacy systems and processes need to be improved for a modernised workforce. Part of the Industry Readiness work will focus on these changes. We will advance our approach to how we use analytics, moving from insights into action, moving beyond tracking KPIs and producing dashboards.

More effective remote and hybrid working will be key and helping the organisation to embrace innovation will be important as work is reinvented with greater use of technologies. Enabling the combination of humanity and technology will be invaluable. For example, how we bring automation and people together in a positive way, ensuring it does not alienate people and the value for money is evident, how we use remote technologies to make work safer and better and more satisfying and how we use augmented, mixed, and virtual reality for training and more. A key factor for consideration will be how we bring psychology together with technology so that human and machines work together effectively, to optimise human needs and abilities alongside the benefits of technology.

<u>Better work and systems thinking</u>

Focusing on the design of work, structure, and environment is important to create a high performing organisation. Our Intervention Programmes are a key enabler for this and are designed taking a whole system approach. These improve the systems of work in collaboration with those who do the work, and are vital to fixing complex, multifaceted issues. They enable systemic improvements through better work design so that every activity adds value to the end user. The programmes help us to create the right environment for our people to learn and thrive in.

Designing better work is based on teams measuring their own performance, according to their purpose, to get insight on what they can improve. The majority of performance is driven by the system of work, not the individual, yet the majority of initiatives start with trying to improve the individual. By designing work in this improved way, in collaboration with those who do the work, we will relieve people of the (often well-intended) hassles and barriers that prevent them from delivering the best outcomes:

- Natural talent that is masked will be revealed, and greater potential for improvement will be seen.

- Leaders can be closer to the work, supporting, coaching, and improving.

- There will be greater control over outcomes and increased assurance.

- Industrial relations will be less adversarial with objective, collaborative and early solutions.

- A more inclusive culture with decisions driven by objective data and people are open to change.

- Change is welcomed because it improves work.

We will take a continuous improvement approach embedding the systems thinking methodology into the business, developing our own internal capability to review, learn and improve.

Key challenges

Our biggest people challenges that we continue to focus on in achieving our strategic objectives:

- **Industrial action**. This has been hugely challenging and detrimental for our people, our business, and our Industry not to mention wider economy. Our practices are outdated, and we must continue to modernise to deliver a service for our passengers.

- **Identified enterprise risks**. The fiscal constraints we face have impacted our organisation, our people, and our passengers.

- **CP7 funding.** We must continue to identify ways to remain effective and efficient in delivering the right outcomes. We will do this through our network-wide workstreams and carefully assessing our business priorities and adapting our strategies and approach.

The future of work beyond CP7

We expect continued change, challenges, and opportunities, so need to remain agile in CP7. Our organisation needs be ready to deliver our CP7 commitments, and transition successfully into GBR, and we will do this by continuing to modernise across our organisation to build the capabilities we need now and in the future. As we look towards the future beyond CP7 we will need to also consider our priorities for CP8 given industry changes and the key trends in the future of work:

- Enabling greater use of technology and automation.

- Continue to build a more efficient and effective HR function to deliver strategic value.

- Greater digitalisation to keep in touch with the latest technology and workforce needs.

- Making data enabled decisions and advancing our analytical thinking.

- Building a talent marketplace and looking at how skills are distributed for talent flow.

- Flexible and hybrid and working practice changes.

- Changing expectations of work.

Next steps

As we look towards the future, industry reform and the key trends in the future of work will further shape the focus for our People strategy. Looking ahead from the SBP to the start of CP7, we will build detailed implementation plans for our network-wide workstreams and drive progress through an effective shared governance approach. We will build the conditions needed for rapid and effective delivery in CP7 to take a whole system approach that really delivers value for its customer.

PART B - The components of our CP7 plan

10. The components of our plan – asset management and other capital expenditure

Purpose of this chapter

The purpose of this chapter is to summarise our approach to asset management in CP7, which includes our CP7 renewals and maintenance plans. We have also included a summary of other planned capital expenditure in CP7.

Asset management overview

Introduction

Our infrastructure assets would cost around £600bn[2] to replace. Each year we renew approximately £3bn (0.5 %) of our assets, supporting the asset performance required to meet customer needs, in particular maintaining safety and preventing disruption to train services.

Our £600bn infrastructure assets comprise:

- assets that were built at the same time as the railway, between 100 and 200 years old, (typically structures, earthworks, buildings and tunnels) – and would cost around £300bn to replace.

- assets installed in past modernisation programmes in the 1950s, 60s and 70s, between 45 and 75 years old (typically electrification, signalling and some track assets), costing around £100bn to replace.

- assets installed as prior assets came to end of life (all asset forms), shorter-life modern technologies such as our telecoms network that were last renewed more than a decade ago and now require mid-life investment, or assets that have been installed as part of recent enhancements. These would cost around £200bn to replace.

Asset management and meeting customer needs

To be able to meet customer needs and achieve financial sustainability, our rail infrastructure assets must be safe, reliable and resilient.

Over the past twenty years we have learned from half a million faults and incidents across the network, and millions of records from repeat condition surveys. We have also become more proficient in the management of our legacy assets. This has resulted in significant improvements in asset performance, halving instances of SAFs to the current level of around 25,000 SAFs annually as shown in figure 10.1.

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[2] Each year we produce an asset valuation for DfT which is also reviewed by the National Audit Office. We have used this work to estimate that it would cost approximately £600bn to replace our assets in a piecemeal way.

Figure 10.1: Asset performance – service affecting failures
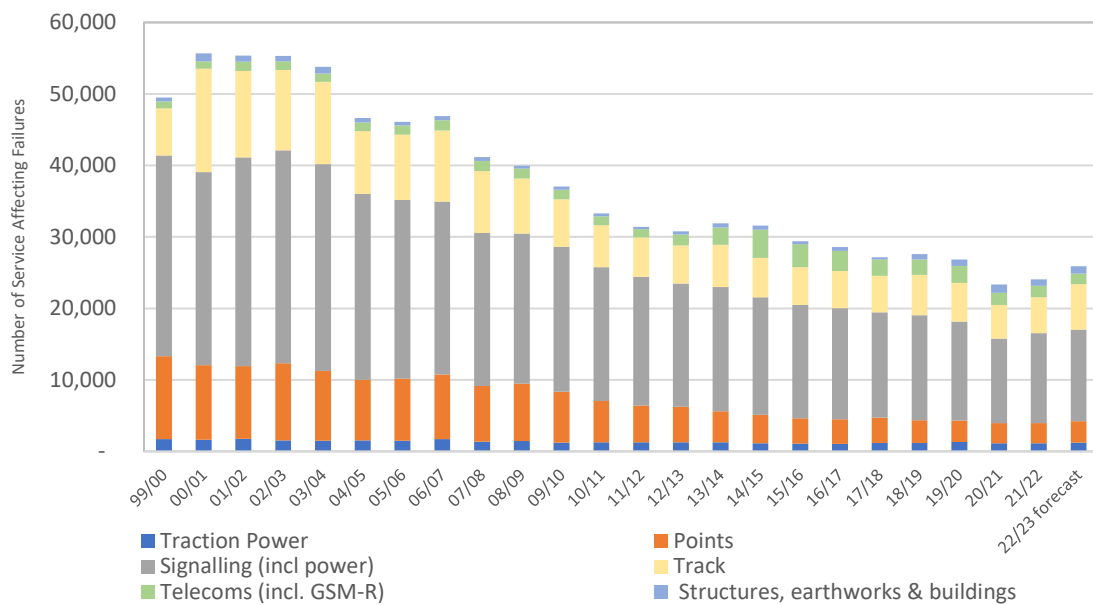
Asset contribution to safety

The Rail Safety and Standards Board (RSSB) publishes insights on the contribution to safety from our infrastructure assets. This shows that notable reductions in train accident risk were achieved during CP4 and CP5 and have held stable during CP6, but can be markedly impacted by extreme weather. The recent trend is highlighted in figure 10.2.

Figure 10.2: Infrastructure contribution to train accident risk reduction
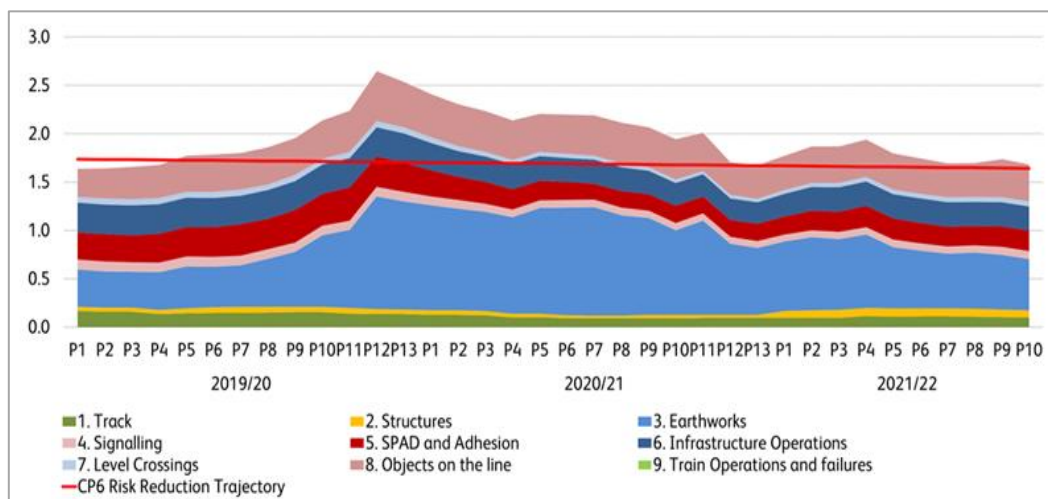
Measuring asset condition

Changes in asset condition will vary the performance we can achieve from the network. A measurable decline in asset condition will also increase potential safety risks. Asset condition will change as a result of negative degradation through use or environmental weathering, or improve through our interventions to maintain and renew assets.

During the past decade we have measured important changes in the distribution of remaining asset life. While we have only seen a small reduction in average remaining life, we know that more assets are also now close to life expiry. For example[3]:

- 80 % of our metal bridges were built before 1900. 15 % more of these are in poor or very poor condition compared with 2012, with a 60 % increase in volumes of defects and failures. Measured degradation shows that more will move to poor condition over the course of CP7.

- Structural defects in retaining walls have increased by 50 % since 2012.

- Our oldest 20 % of electrical transformers and switch gear were installed more than 60 years ago and as such are already beyond normal service life, requiring a phased programme of replacement.

- The ageing nature of our stations and buildings sites have led to an increase in defects by 10 % over the past five years. These have included some serious and high-profile incidents such as the roof collapse at Northwich station in 2021, and falling glass at Scarborough station also in 2021.

- The proportion of our signalling assets will grow to 15 % life expired by late CP7.

Data collected over the last twenty years has supported our understanding of where renewals are required, whether this be through full replacement, or necessary improvements are possible from lower cost replacement of components or refurbishment. This has also helped us to refine the basis on which we measure and model asset condition and asset life.

Since 2014 we have measured remaining life in an equivalent way across our asset classes through the Composite Sustainability Index (CSI). The CSI measure is reported on an annual basis and is accompanied with longer term forecasts. It measures the percentage change in asset remaining life (noting we have assessed that in aggregate our assets have around 40 % of residual remaining life).

After initial work to address data gaps, since 2017 it has become a reliable means to monitor changing asset condition and remaining life. The CSI measure suggests there has been a slow rate of reduction in remaining asset life since 2017 which is forecast to continue. This is despite us generally delivering the committed renewals that we had planned for CP6 (based on our CP6 exit forecast position as at November 2022), which points to a slow underlying rate of deterioration across the asset base since the measure was introduced in 2014.

In the 2018 Periodic Review (PR18) we highlighted that we would be marginally behind steady state. Since PR18, the impact of the railway suffering more frequent and extreme weather events has also increased this shortfall over CP6. These events have caused acceleration in rates of asset deterioration (especially for earthworks, drainage, and river and earth retention structures) as well as increased weather-related service impacts. Future weather trends point to periods of prolonged and extreme wet

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[3] Note these headlines are provided at a GB level although judged to be representative of the position in England & Wales.

weather, as well as drier summers with less frequent but more intense rainfall. The shrinking and swelling of earthworks as they dry and are subsequently saturated accelerate deterioration, and put pressure on drainage systems and other assets (for example retaining walls, structures foundations and lineside equipment housing). This increases the likelihood of critical coping thresholds being exceeded.

Approach to asset management in CP7

We must strike a balance between the needs of our infrastructure assets from a stewardship perspective and overall affordability in CP7 – maximising outcomes within the funding available.

We have considered what a 'steady state' approach to asset management in CP7 would look like in terms of achieving a sustainable overall risk profile and condition of assets across the network, giving no decline in safety, reliability and performance while ensuring undeliverable bow waves of activity are not created for future control periods. In PR18, we highlighted that, in line with a steady state approach, there would need to be an increase in renewals activity in CP7. This was on the basis that many of our assets were near or at life-expiry and would require renewal, as discussed above.

However, recognising the significant financial challenges facing the industry and wider economy, and the need for our CP7 funding to go further than ever before, our focus has been to develop a more affordable plan for CP7. This has included identifying opportunities to reduce our renewals expenditure in CP7, driven primarily by obtaining further life from our assets over CP7 where possible, while seeking to protect safety outcomes, and prioritising train performance on areas which will provide the most economic and passenger value. This approach has been supported by work that we have done since PR18, where we have continued to update and refine our asset models, building in improved insights. Improved survey and measurement techniques including our track insights tool (from our Intelligent Infrastructure programme in CP6) provides insights on condition changes and prompts preventative action ahead of an impact. These advances in particular, have helped to provide more accurate and up-to date data, in turn informing our planned interventions for CP7 and beyond.

In developing our affordability-driven approach to renewals expenditure in CP7, we recognise that there will be an impact on asset condition and infrastructure reliability, particularly in the later years of the control period. Our overall CP7 asset management approach therefore includes an increase of £331m in direct maintenance expenditure. This in part reflects the planned level of renewals activity in CP7, as discussed in the maintenance section below, to support the continued operation of a safe railway and reliable train services during CP7.

Our overall approach to asset management in CP7 will:

- **Give no overall decline in safety for customers and staff within CP7.** We will achieve this through more minimal viable product (MVP) type interventions and life extension schemes. Examples of this include plain line refurbishment, fixed plant life extension and enhanced maintenance and challenging abnormal costs in signalling work.

- **Associated investment in earthworks is being considered further to improve targeting of source risk.** This investment includes provision for earthwork failure detection (EFD) and remote condition monitoring (RCM) and a fit-for-purpose condition-driven drainage strategy. We continue to review our CP7 plan for earthworks as part of our iterative CP7 plan development and ahead of the CP7 delivery plan.

- **Advance the use of continually improving data and technology to become less reactive and increase capabilities to predict and prevent.** We will achieve this by adopting tools developed by the Intelligent Infrastructure programme and local investment programmes across our regions. There are many examples across the four England & Wales regions' plans including: 'PlanIt' for workbank planning and optimisation; remote condition and train borne monitoring; earthwork failure detection equipment and geotechnical instrumentation; geotechnical

instrumentation arrays (GIA) systems to enable more effective planning and prioritisation of intervention works; the replacement of obsolete telecoms assets with new, modern technology, including Remote Condition Monitoring; and the advancement of risk-based maintenance techniques.

- **Targeted large asset investments.** For example, the renewal of life-expired assets on the West Coast Mainline North which will also facilitate new network capabilities (i.e. introduction of HS2 services); the strategic prioritisation of investment in ETCS as a sustainable solution to addressing future signalling asset renewals, associated bow wave cost and delivery issues as described later in this chapter; and other location-specific renewals that require addressing for the long term stewardship of the railway and the mitigation of reliability and safety risks (e.g. Severn Tunnel rigid overhead contact system in Wales & Western).

Our overall asset management strategy in CP7 will not:

- **Provide a steady state level of asset reliability within CP7.** We are forecasting our annual SAFs will increase by 2 % by the end of CP7. However, across our assets, decisions have been prioritised to focus on areas that deliver the most value and align with the requirements of the HLOS, supporting key revenue generating areas of the network while providing an appropriate level of service to areas where revenue is typically lower.

- **Provide optimal asset stewardship or sustainability.** This will lead to a long term worsening in condition of some of our assets (e.g. plain line used life metric to worsen, ageing of electrical contact systems, increase in bridge assets close to life expiry).

- **Deliver the lowest whole-life cost to achieve a long term sustainable asset base.**

- **Avoid the creation of potentially undeliverable bow waves of activity in future control periods, dependent on future funding levels and the deliverability of the required activity.** The most acute concerns surround restatement of bridge and track activity allied with increased volume of signalling renewals that will be required in CP8 and beyond.

- **Fully remove heavy axle weight restrictions**. However, we have supplemented basic structures plans by including funding of £72m in our England & Wales plans to focus on the highest priority structures in CP7.

The remainder of this chapter provides further detail on our approach to renewals and maintenance activity across England & Wales in CP7, as well as what our plans include for other capital expenditure programmes.

Renewals

Introduction

Our Asset Policies direct renewals at assets that are either; worn out, obsolete, or have degraded to a state where safe operation and required performance can no longer be realised. At renewal, we also look to secure wider benefits such as improved resilience to extreme weather / climate change, carbon reduction and / or safer maintainability. The extent to which we are able to realise these wider benefits will be driven by the level of renewals activity and expenditure.

Context – renewals in CP6

We entered CP6 with both a committed delivery plan volume and the potential to add more by reinvesting risk funds that were not used during the control period. Our forecast outturn position for CP6 across England & Wales, as at November 2022, confirms that we will achieve slightly more than our

initial planned volumes. As we enter the final year of CP6, we will need to keep risks to the plan under review, particularly given the inflationary pressures and other challenges that we are facing.

As we develop our plans for CP7, while it is understandable to make comparisons between CP6 and CP7, there are a number of key factors that drive legitimate differences in renewals expenditure, even on a pre-efficient basis, between years and between control periods, which include:

- **The role of renewals cycles.** Once an asset has been installed, it will not need to be replaced for many years (e.g. structures). However, in many cases, groups of assets have been installed or renewed at similar times. For example, Southern has a large population of transformers and switchgear dating from electrification in the 1960s. At a network level we also carried out significant renewal and enhancement of our Station Information Security Systems in CP3 and CP4. This means that these assets will come up for renewal at a similar time, and increased volumes of work in one area will not necessarily be offset by reduced spend in other assets during a control period. As a consequence, we have to take account of the implications of renewals cycles on renewals volumes when making comparisons across years and control periods.

- **Work-mix.** In each year or control period, the mix of renewal activity will be different from the last. This can be due to spend being focused on different asset types or even different types of projects within asset types (e.g. due to differing levels of complexity of the work being planned or delivered). The work mix selected in times of funding prioritisation will also vary. This allows more assets to receive some treatment but generally at lower first cost, but greater whole life cost than would be our preference.

- **Atypical programmes.** There are some projects that we will do in a control period that are atypical and may require specific capital outlay to support renewals. For example, our expenditure on ETCS cab fitment in CP7.

- **Outturn vs. planned work.** Outturn or near term forecasts for CP6 spend include the impact of risks that have materialised, scope changes, efficiencies that have been delivered and the impact of input prices and inflation. But, for our CP7 forecasts, our plans relate to spend up to six years ahead of delivery and are based on a P50 likelihood.

Summary of CP7 renewals plans

Core asset renewals form a significant part of our CP7 plan, at £15.8bn (pre-efficient and excluding input prices to allow for better comparability across two control periods) across the four England & Wales regions. A summary of core asset renewals expenditure by region is provided in table 10.1, and it shows that planned CP7 renewals is 99 % of the CP6 level (although this does not provide for a steady-state network, as discussed further below).

Table 10.1: England & Wales CP7 core asset renewals expenditure - pre-efficient

£m, 2023/24 prices	CP6 total	CP7 total
Eastern	5,094	4,760
North West & Central	3,689	4,606
Southern	4,306	3,771
Wales & Western	2,792	2,639
Total	**15,881**	**15,775**

The risk approach described in chapter 14 explains that we have asked regions to hold 5 % of their plans for risk. This primarily sits in renewals.

Approach to building CP7 renewals workbanks

Renewals workbanks are developed in accordance with regions' asset management strategies and over-arching policies, as well as national and regional standards. Forecast activity volumes for CP7 have been prioritised based on a balance of risk and performance needs, with challenge to volumes focusing on areas where affordability and additional benefit do not align. Costing workbanks is also a fundamental part of the approach, specifically analysis of unit rates, as well as assessing deliverability which is further discussed in chapter 13.

Our CP7 renewals planning has used the renewals cost approach framework, with the costing methodology developed with the support of external advisors. This framework is supportive of regional differences (e.g. complexity or access challenges) and facilitates regions in deploying the most suitable methodologies and data to plan their renewals activities, and spend. The framework provides a consistent structure across regions and asset categories to describe why their forecast unit rates for CP7 business planning may differ from the base rates derived from historic data.

Framework base rates are based on historical spend of projects delivered in CP6 to a key cost and volume level of granularity and are presented in ranges. Regional teams have flexibility to use the most appropriate unit rates available for their forecasts, based on local conditions and needs. Regions can use the framework base rates, or make use of other available information such as live project estimates, discrete bottom up costing exercises, work bank estimates and adjusted unit rates.

Our renewals cost planning approach and unit rate assurance has supported the regions' plans and costing assumptions comparing CP7 rates with current CP6 rates. Our methodology has been assured independently by external advisors and most recently by ORR's Independent Reporters, where regions have provided evidence and rationale for differences. Key areas of variance to base rates are primarily due to the work mix underpinning key volume lines, and location specific challenges and opportunities, including complexity and access and specific scope requirements.

Approach to making trade-offs between assets

In making trade-offs across our asset base, renewals investment has been focused on the most vulnerable, and oldest assets.

As discussed in the section above, building on our work in PR18 and over CP6, we have developed better insights around the trends in changing asset state. We have also reviewed activity levels for some assets (in particular structures, earthworks and drainage assets) in light of the increase in severe weather events over CP6, and their expected continuation in the future.

These insights have a particular bearing on our civils assets (structures, earthworks, buildings and drainage systems)– many of which have not been fully replaced since they were originally built and are expensive to replace, requiring a long run pattern of increased funding in order to redress condition. Additionally these assets, when towards end of life, can degrade and be particularly vulnerable to extreme weather, therefore increasing assets under focus beyond earthworks and drainage to structures and building assets.

We are developing and adopting technology to obtain more life from our assets, even when many are approaching – or at – end of life. During the past decade we have undertaken technology development programmes in order to provide real time insights to our front-line staff, deploying up to date records and intelligence through handheld technology, new visualisation tools and predict and prevent tools. This technology means that the early onset of problems can be identified and plans to resolve can be implemented in the most effective way. Our ambition for the continuation of such advances continues through our RD&I pipeline.

We also need to manage safety implications from an ageing asset base. Our interventions in CP7 must reflect this. This is particularly the case for earthworks – where it is difficult to predict where movement / failure may occur, with these assets having been subject to natural weathering processes since the railways were built. As a consequence, earthworks assets have generally reduced capability against the growing pattern of weather extremes – both the shrinking of earth through pronounced dry spells and the swelling and washing out of soils bought about by either prolonged periods of rainfall or shorter intense rainfall. Our data shows a worsening trend of reportable earthworks failures, highlighting the importance of continuing to prioritise investment on those assets which represent the greatest safety risk. As part of our ongoing planning work for CP7, we continue to review and test the sufficiency of earthworks volumes across the network, which also needs to be considered in the context of investment in drainage and off-track (vegetation management).

Recognising the funding context for CP7, we have needed to make trade-offs with other asset renewals demand, which in turn has implications for asset condition and reliability, and train performance. Our overall approach to each asset, and any trade-offs we have made, is summarised in table 10.2, below (including any relevant local circumstances from our regions' plans). We are targeting our renewals to minimise the impact of this and are taking steps through other initiatives (e.g. through our Network Operating Strategy, 21st Century Operations programme and performance-focused research and development initiatives) to improve performance.

Table 10.2: Overview of England & Wales core asset renewals in CP7 (pre-efficient, 2023/24 prices)

Asset	CP6 expenditure £m	CP7 expenditure £m	Overview of CP7 approach for asset
Track	4,816	3,847	Life extension, lowest first cost interventions
Off track	163	350	Focus on lineside, boundary and safe worker access
Signalling	3,473	3,661	Life extension and development of ETCS capability (discussed later in this chapter)
Level Crossings	481	507	Life extension and wider use of miniature signalling lights at level crossings
Structures	1,998	1,971	Deferred work, with further testing of some regions' volumes ahead of the CP7 delivery plan. There are also risks to carrying heavier freight traffic across the network particularly towards the end of CP7, although £72m has been identified to fund highest priority structures where capability has already degraded, or is likely to degrade in CP7. Further information can be found in the freight section of chapter 5
Earthworks	1,284	1,115	Priority planned renewals plus response to find and fix failures as a result of local extreme weather. Through our continued planning and assurance activity we are reviewing the earthworks volumes in the plan
Drainage	444	553	Increased activity and focus following the Mair and Slingo recommendations (see chapter 8 for details)
Buildings	1,472	1,650	Address emerging structural & end of life risks
E&FP	1,455	1,776	Redress end of life power distribution risks
Telecoms	296	344	Life extension, network upgrades to improve connectivity

Use of high output in our CP7 plans

Over the last 15 years we have invested in and made significant use of high output track renewal and ballast cleaning systems across the network. In the context of prioritising funding and consequently the level of track and ballast renewal in CP7, regions have been reviewing their asset management strategies and planned asset interventions for the next control period. Because of this they have been reviewing the volumes of renewal that they would now want to undertake using high output systems.

Decisions on high output require alignment across the regions and Route Services (who own the systems and deliver the work procured by the regions). There are minimum volumes that are required to support the systems, and the planning needs to consider potential requirements beyond CP7 given the need for capital investment in the systems (refurbishment) and the replacement of systems in due course. We are continuing to review our high output plans for CP7.

Impact of CP7 plan on asset performance

We have analysed the impact of our CP7 renewals plan on asset age profiles and in turn asset performance. As discussed in the train performance section of chapter 5, based on our forecast CP6 exit position (as at November 2022), we expect to see an annual increase of 2 % in SAFs in England & Wales by the end of CP7, with the impact being felt particularly towards the end of the control period. In our risk-adjusted plan, as discussed in chapter 14, the annual increase in SAFs compared with CP6 exit increases to 4.5 % by the end of CP7.

Table 10.3: Forecast growth in annual service affecting failures in CP7 (% increase vs CP6 exit)

Regions	Growth vs CP6 exit
Eastern	0.4 %
North West & Central	0.1 %
Southern	3.0 %
Wales & Western	8.0 %
Total	**2.0%**

Operating proportionally more assets towards their end of life will have an impact on network availability and the reliability of train services, and increased risks to safety. While infrastructure failures drive only 25 % of delay, we would expect to see a small impact on train performance particularly in the later years of CP7 as discussed in chapter 5. As discussed above, we are targeting our renewals to minimise the impact of this and are taking steps through other initiatives (e.g. through our Network Operating Strategy, 21st Century Operations programme and performance-focused research and development initiatives) to improve performance.

Case studies from recent deferrals demonstrate that when continuing to operate life expired assets some mitigation of the risks to asset performance is possible. This requires additional management, maintenance and operational costs resulting from:

- Closer monitoring of changes by additional inspection, monitoring and analysis, typically costing from 5 % of the renewals cost for a one control period deferral.

- Holding repairs costing of between 3 % and 15 % of the renewals cost estimates.

- Additional operational consequences including emergency speed restrictions and increased SAFs of between 15 % and 60 % when compared with mid-life assets.

CP7 renewals assurance work has looked to test changes in work mix over CP7, and maintenance assurance work has considered provisions regions are making for additional coping or mitigating

activities. As discussed in the maintenance section below, we are undertaking further work to understand the implications of the lower levels of renewals activity in CP7 on our maintenance plans.

Long term impact of renewals plans

The impacts described above have been reflected in our calibrated models which simulate changes in remaining life for each asset class (e.g. track, signalling, structures, earthworks etc), as well as indicating the fraction of assets requiring attention now. These models are used to forecast changes in CSI and to provide advice to regions on renewals volumes for each asset, over the next 35 years.

These models undergo continuous improvement, including annual recalibration to the latest regional condition surveys, and average delivery costs. In addition, we provide updated forecasts of the impact on future renewals plans, and confirm an underlying rate of ageing equivalent per year. The models have varying levels of maturity and provide confidence at a total network level rather than an individual intervention level and were independently assessed in 2014 and 2020. On both occasions the models were assessed as valid, well calibrated, and applying a best practice approach.

Using these models and based on planned England & Wales core asset renewals in CP7, we have been able to analyse the funding profiles and modelled output on CSI up to CP13. In modelling these profiles, we have needed to make assumptions around activity in CP8 and beyond. This includes acceptance that we will not return to CP6 exit levels of asset performance in the near future due to the cost and deliverability challenges associated with the volumes of activity that would be required to close the gap; but that this can be mitigated through increased maintenance activity as well as improved management through technological advancements.

In CP8 it will also be challenging to maintain CP7 exit levels of asset performance given the future volumes of work that would be required. Ultimately, there will be choices about whether to accept the deterioration in asset condition (measured through CSI) and associated growth in risk to asset performance in CP8 and beyond, or whether we wish to progressively deliver greater volumes of work in order to retain asset performance levels equivalent to exit CP7. These decisions will be highly dependent on the funding and deliverability context at the time.

Maintaining CP7 exit levels of asset performance in the long run will be challenging from a funding and deliverability perspective, and likely prohibitively disruptive to our customers, but we also recognise that it will be important to take action to redress asset condition in CP8 and beyond. We therefore consider that it would take two control periods to achieve this (CP8 and CP9).

Assuming we take this action the long run renewals demand to CP13 is set out in figure 10.3 and would require around £17.5bn in CP8 and £19.8bn in CP9, growth of £1.8bn and £4.0bn from CP7 funds respectively. By doing this we would expect to achieve a stasis position from CP9 where we hold the profile of remaining life in our assets, thereby securing the basis on which to run reliable and safe train services into the future.

Figure 10.3: CP7 renewals plan and longer term expenditure
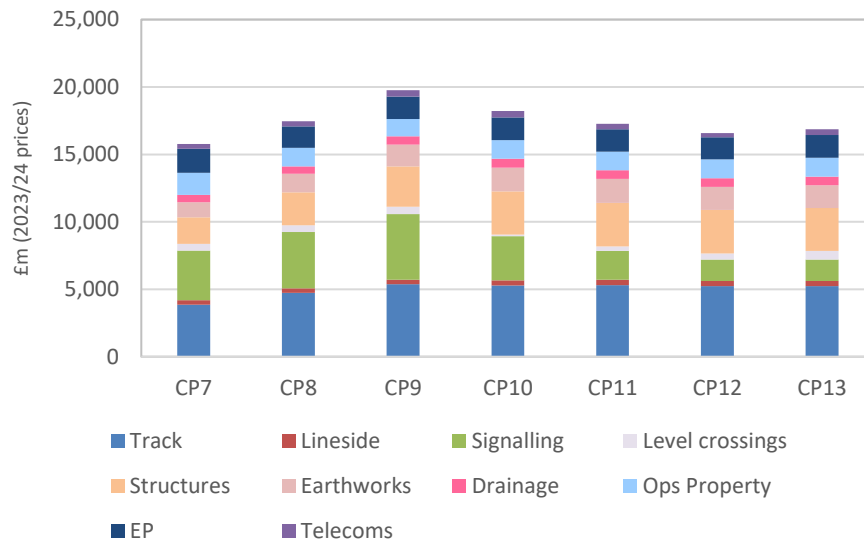
The forecast changes in asset remaining life as shown in figure 10.4 confirm the impact to future control periods due to lower levels of renewals in CP7. They take account of planned benefits to reduce costs of key replacement programmes (for example the reduction in signalling costs sought through our Target 190 programme in the RD&I portfolio). The forecast changes in asset remaining life are also calibrated to today's operating environment, which means that acceleration in the loss of life due to more aggressive future climates (compared with what we are currently experiencing) has not been factored in.

The plan continues the pattern of ageing broadly equivalent to that seen today, growing the fraction of the asset base in a poor condition. This means that risks to asset performance will grow and mitigating actions will be required.

Figure 10.4: Long term CSI impact (relative to CP6 exit)
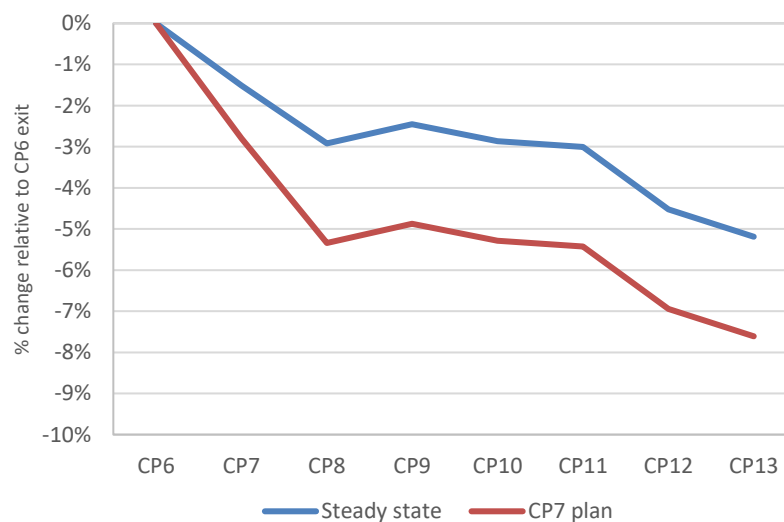
Maintenance

Introduction

Maintenance is the day-to-day upkeep of the network and is critical to keeping the railway safe whilst supporting a reliable train service. Our maintenance activities support our operations and project teams by making sure every part of our infrastructure assets are maintained and in good working order.

We regularly inspect our assets (either in person or through remote infrastructure monitoring systems) and intervene, when necessary, by undertaking a maintenance activity. There are two types of maintenance activity set out, below:

- Planned preventative maintenance – a task performed regularly to monitor the status or the condition of railway assets (e.g. inspections or cyclical tasks), to reduce the likelihood of the asset failing and causing disruption on the network. For example, vegetation clearance around our signals in order to keep them clear for our train drivers to see in all weather.

- Reactive maintenance – a task that arises during the day-to-day operation of the railway (e.g. pumping water after heavy rain).

We take a proactive approach to maintaining our assets, but this is balanced with necessary reactive work that arises throughout the day-to-day operation of the network.

Our regions and routes are accountable for the planning and delivery of maintenance activities. This includes prioritising asset maintenance activities and managing data and information to measure maintenance performance. This activity is supported by our Technical Authority which has responsibility for setting the company policy and developing the processes, standards and procedures, decision-support tools and monitoring technology for maintenance.

Context – maintenance in CP6

During CP6, we made several significant changes to our maintenance approach and activity to make the railway safer for the public, passengers and our workforce and to deliver some key efficiencies to the taxpayer. These are summarised below:

- **Increase in drainage inspection.** We have delivered a step change in our activities and resources to deliver greater levels of drainage inspection and maintenance across the network so that we manage and reduce as much as practical the risk of landslips around our network. This is in response to the Mair and Slingo recommendations following the Carmont derailment. See chapter 8 for more details.

- **Greater focus on biodiversity.** We have changed our approach to vegetation management during CP6 to include identifying more ways to protect, maintain and, where possible, enhance biodiversity across the railway. This is in response to the findings of the Varley Report which was an independent review of Network Rail's approach to vegetation management across England & Wales.

- **Improving track worker safety.** We established our Track Worker Safety Task Force to oversee a programme to reduce system, health and safety and wellbeing incidents to as low as reasonably practicable by focusing on minimising human error when work is being delivered. Almost all of the national maintenance workbank has been reviewed and refined, aligning tasks with safer access. A number of benefits have already been delivered including near elimination of lookout working (a reduction of 98 %) and a reduction in near miss events of 70 %. This programme was accelerated which has impacted the way we take access to deliver our maintenance activity and we are still working through the impact of these changes on our plans.

- **Implemented risk-based maintenance.** Our approach to maintenance has been predominantly based on historic time-based intervals but is gradually moving to a semi-predictive, risk-based approach for some asset types and geographic areas based on asset condition information and expected timings of asset failure. Therefore, risk-based maintenance supports a more effective approach to undertaking our maintenance activity and allows us to increase the reliability of assets by applying suitable maintenance regimes and targeting known areas of failure.

- **Modernising our approach to maintenance.** Ensuring safe access for employees to rail infrastructure is paramount, with the objective to deploy the right number of people, with the right skills, to do the right work, at the right time. Our maintenance modernisation programme is currently underway and includes several key changes to the way we undertake our maintenance activity so that we undertake maintenance activity more efficiently, effectively and safely. This includes:

  o Revising our approach to undertaking routine planned maintenance (i.e. Maintenance Scheduled Tasks (MSTs)) and the associated working practices. MSTs are determined by our engineering standards which are reviewed from time to time to improve the performance and reliability of railway assets, in line with advances in materials, technology and improvements in condition monitoring. For example, planned inspections within track maintenance have reduced in previous years with the inspection activities having been replaced and changed due to technology and material advancements.

  o Providing our people with overlapping skills so that they are better equipped to fix the most common faults and improve our response to incidents on the network.

  o Reviewing our team size guidance and rostering to ensure that we have the right number of people, with the right skills, on each maintenance shift.

  o Continued implementation of technology to support our maintenance activity, including remote condition monitoring, including equipment and online tools to give us more insight so we can assess how our assets are performing without the need for our people to go out on track and plan interventions further out in line with asset deterioration rates.

  To date, we have already delivered revised standards and specifications have been completed reflecting the equipment and technology now deployed.

- **Deployment of the Intelligent Infrastructure programme:** This programme involves improving our use of technology to plan and deliver our maintenance activity more efficiently and effectively. This includes:

  o Developing enhanced asset condition monitoring and analytics to predict when an asset might fail so that we can plan and undertake an intervention prior to disruption to train services. This will primarily be achieved by implementing systems, standards and processes that apply our understanding of the probability of individual asset failure and predict when failure will occur and the impact this could have on the operational railway.

  o Develop tools to optimise whole life cost for opex efficiencies in CP7, including increasing maintenance planning capability and provide frameworks and tools to optimise cost, time and quality of maintenance delivery.

Alongside these improvements to our maintenance activity in CP6, we have also commissioned an independent taskforce – the Extreme Heat Task Force – led by Sir Douglas Oakervee for engineering aspects and Simon Lane for operational matters, to review the impact of the extreme weather experienced in summer 2022 on our performance. The recommendations from this taskforce are due to

be published in spring 2023 and we expect the report to propose that we use technology more heavily in our maintenance activities, to enable efficient targeting of proactive maintenance activities across the network, alongside many other recommendations. We will need to work through the recommendations to consider what is affordable and deliverable in CP7 following publication of this report.

Whilst we have made a number of improvements to our approach to maintenance in CP6 and increased our activity in specific areas, we have also experienced an increase in the level of maintenance backlog across all four England & Wales regions. On average (and at the time of writing), we are seeing a backlog of c.11 % of all maintenance activities, with this varying by region.

The increase in our maintenance backlog has largely been the result of industrial action which has reduced the level of maintenance activity happening on strike days. Changes to working practices as part of our safety task force actions have also had an impact, in particular the near elimination of working on the track while relying only on a person to spot and warn of an approaching train. We will continue to work to reduce the CP6 backlog and will reflect this progress as we continue to iterate and refine our CP7 plan.

Maintenance in CP7

To develop our CP7 maintenance plan, we have used our Activity Based Planning (ABP) tool which was introduced at the end of Control Period 5 (CP5) and is a bottom-up maintenance resource planning process and cost estimating tool for our maintenance activities. Our CP7 plans are largely based on our CP6 exit levels of maintenance activities (including the implementation of risk-based maintenance in some regions) and are captured in the ABP tool. The CP6 exit levels of maintenance activity have then been adjusted for any anticipated changes between CP6 and CP7 to inform our CP7 plans.

In CP7, we plan to spend c.£9.8bn on maintenance activities across our four England & Wales regions (see table 10.4, below), which is a c.4 % increase compared to CP6. A critical enabler of the increase in maintenance activity in CP7 and to reduce the current backlog of maintenance activity is the implementation of our maintenance modernisation programme. This will enable us to undertake our maintenance activity more safely, efficiently and effectively throughout CP7 and future control periods.

Table 10.4: CP6 and CP7 maintenance expenditure

£m, 2023/24 prices	CP6 total	CP7 total
Eastern	3,176	3,390
North West & Central	2,277	2,333
Southern	2,444	2,492
Wales & Western	1,530	1,542
Total	**9,426**	**9,757**

The increase in maintenance expenditure in CP7 is largely due to the following key changes.

Managing the impact of an ageing asset base

As noted above, our affordability-driven approach to renewals expenditure in CP7 will have a small impact on asset condition and infrastructure reliability, particularly in the latter years of the control period and will result in the increased need for maintenance activity and operational restrictions so that safety outcomes can be protected. We have used our experience and judgement, supported by modelling, analysis and case studies, to estimate the change in maintenance demand as a result of more assets becoming at or beyond the assessed end of asset life (which will be contributed to by a lower level of renewal activity in CP7).

This has indicated that by the end of CP7, our maintenance activity for each asset type will need to increase by varying amounts to reflect an increasing number of assets becoming life expired, which in part reflects levels of renewals activity. Our estimates are provided in table 10.5.

Table 10.5: The estimated increase in maintenance activity by asset type as a result of delayed renewals and an ageing asset base

Asset type	Increase in maintenance required by end of CP7 (%)
Track	5
Signalling	10
Telecoms (SISS only)	10
Electrification	5
Off-track	5
Structures	0*
Operational property	10

*Note: Investment would fall under minor works (i.e. capex) rather than maintenance.

Whilst we have sought to understand the impact of lower levels of renewals on our maintenance activity, we will need to undertake work to fully align our planned renewals and maintenance activity in our plans – recognising that there has been limited time to fully work through the implications of the HLOS and SoFA. For example, for some asset types, whilst we are planning a reduction in renewals activity CP7, we may not be forecasting an increase in maintenance activity. We are continuing to further develop our detailed activity-based maintenance plans to better reflect the level of renewals volumes included in our plans following the HLOS and SoFA being published, and will provide further information to ORR on this ahead of its draft determination.

Weather resilience and climate change

As already highlighted, the impact of climate change and adverse weather on our assets that we have experienced throughout CP6 will continue into CP7. Extreme weather, like the hot weather we experienced in summer 2022, has a significant impact on our assets and causes an increase in the number of asset failures which in turn results in additional maintenance activity. This is illustrated in figure 10.5, which shows the impact of extreme temperatures on the number of SAFs for signalling, points and electrical power assets across the network.

Figure 10.5: Graph to show the impact of extreme temperatures on the number of signalling / points / electrical power asset failures
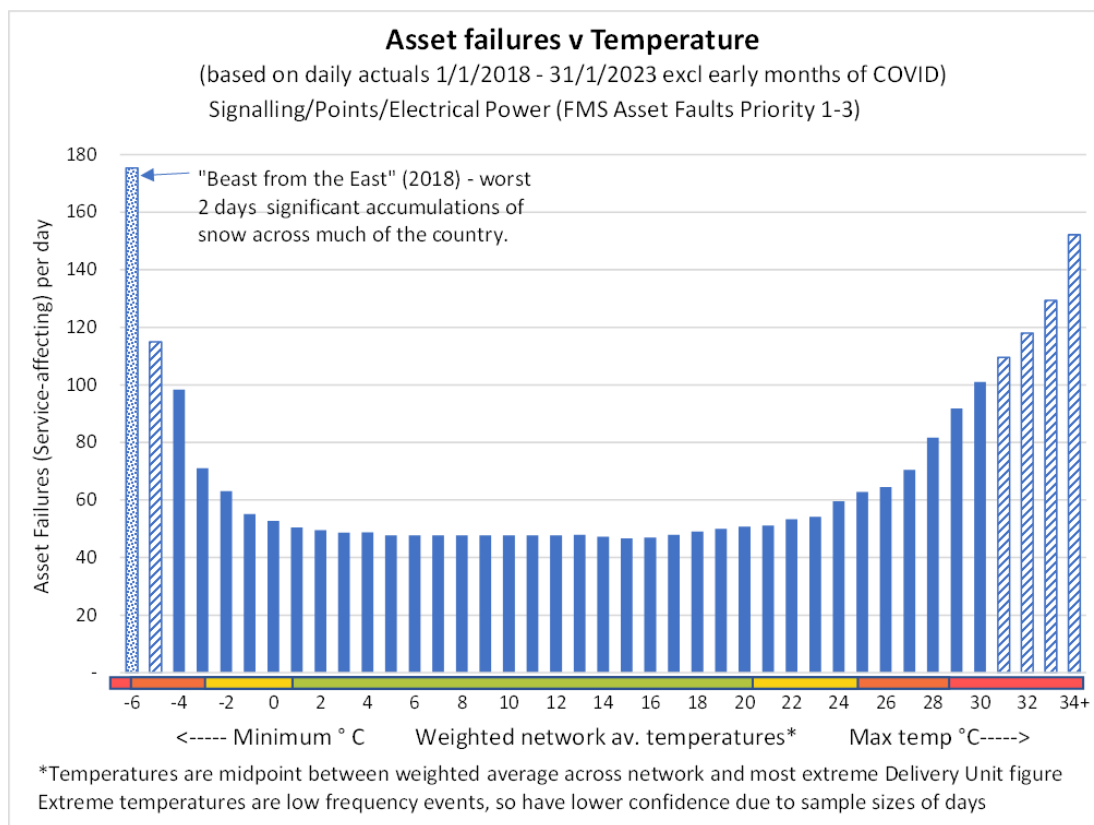
Our CP7 plans include a data-driven targeted increase to our maintenance activity to mitigate the impact of extreme weather and climate change on our network. In particular, we have increased our drainage maintenance interventions in line with the recommendations from the Mair and Slingo reviews, to deliver a safer and more reliable railway by reducing drainage related earthworks failures and flooding events. More information on the Mair and Slingo reviews is set out in chapter 8. The key additional drainage interventions we plan to undertake in CP7 include:

- Improved condition inspection and management (including capability building).

- Improved understanding of drainage performance, ability and need.

- Improved drainage maintenance and related drainage and vegetation management.

As noted above, we will also work through the recommendations of the EHT led by Sir Douglas Oakervee Simon Lane to consider what is affordable and deliverable in CP7 following publication of this report and, where possible, reflect this in our CP7 plans.

Increased vegetation activity, including management of ash dieback

Our plans include increased planned maintenance for vegetation management in CP7 to enable more effective and efficient treatment of lineside habitats. This includes managing vegetation for signal sighting, OLE clearance, leaf fall, biodiversity and earthworks stability.

Alongside our overall vegetation management plans, we have also allocated funding to mitigate the impact of ash dieback (ADB). ADB is a serious disease of ash trees and represents a substantial threat to forests and wider green areas across the country. ADB will lead to the decline and death of most ash trees in Great Britain and has the potential to infect more than two billion ash trees across the country. It was first detected in Great Britain in 2012 and is now very widespread. In 2020 a survey was compiled of

10km^2 areas in Great Britain and found ADB present in 73 % of the English and 92 % of the Welsh areas surveyed.

Dead and diseased ash trees pose a risk to the health and safety of our passengers, the public and our workforce. Across the network, we have an estimated 3 million ash trees adjacent to the rail network and c.400,000 mature trees in high-risk areas (that can fall onto the track) that require management. Figure 10.6 shows the potential number of ash trees that may die and pose risk to the operational railway across England & Wales (note this is based on Network Rail's previous route structure) based on a 60 % mortality figure, although experts have suggested use of a 75 % mortality rate which would further increase these numbers. It highlights the challenges of managing ADB over the next 12 years, with estimates of ash mortality increasing in several parts of England & Wales in CP7.

Figure 10.6: Estimate of ash mortality 2020 to 2034
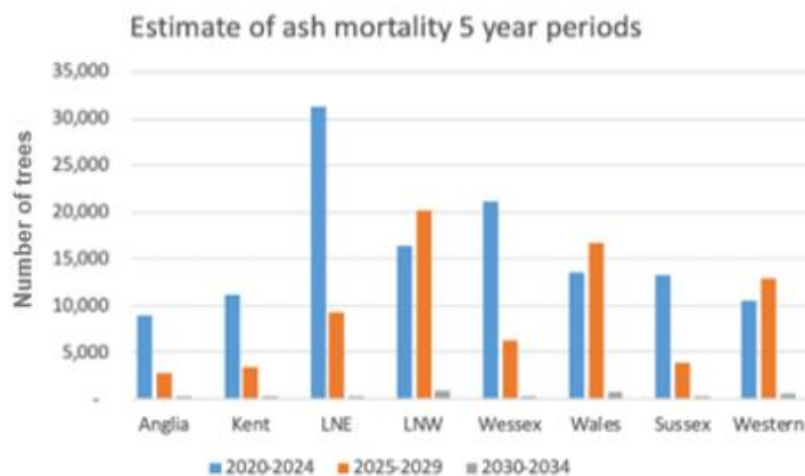
One of our key challenges is being able to predict where these ash trees will fall and this adds to the need to proactively manage dead, dying or diseased trees in the high-risk areas. In CP7, with new technology to be released through RD&I initiatives such as Digitised Lineside Inspections, we will be able to see where these high-risk trees are and work on proactive removal. Improved insights from aerial survey and other tools have built an improved understanding of the likely scale of lineside vegetation activity required during CP7 in response to ash dieback.

Maintenance costs associated with CP6 and CP7 enhancements

Our CP7 plan includes maintenance costs to support new assets delivered through CP6/CP7 enhancement schemes, including those delivered as part of the TRU, the Midland Main Line electrification and East West Rail (as examples).

Regional maintenance priorities

There are several similarities in priorities for maintenance activities across all regions, including:

- **Using existing and new technologies (e.g. Remote Condition Monitoring).** This includes the use of drones, to further improve intelligence of our assets and deliver risk-based maintenance.

- **Promoting the right capabilities and leadership in our teams.** This will embed data and technology-based maintenance approaches, building on the modernising maintenance programme.

- **Developing a robust plan, that optimises asset resilience and delivers the right quality of work with the right access footprint through continuous integration.** This includes delivering increased maintenance activity to improve the network's resilience to extreme weather

(particularly earthworks and drainage assets), increased vegetation management and the management of ADB.

- **Continuing to improve track worker safety**. Continuation of the working methods that have all but eliminated unassisted lookout working and are progressing with initiatives to back this up with additional protection measures and secure the right access for the volume of maintenance required.

Next steps / further work required to get to CP7

Whilst we have undertaken significant work to prioritise our renewals plan, our regions will need to undertake further work to fully understand the linkage between their renewals and maintenance plans. We are continuing to update and assure our ABPs to reflect planned renewals activity in CP7. The updated ABPs will be shared with ORR at the end of April 2023 to inform its draft determination.

Alongside this, as identified by our regions in the risk and uncertainty analysis, there are a few overarching risks to the deliverability of our maintenance plans (including the CP6 backlog and the availability of equipment), which we will continue to keep under review over the remainder of PR23.

Our approach to signalling in CP7

Overview

Signalling is a safety critical asset for controlling trains. Over the last hundred years, signalling assets and control systems have gone through many generations of change, from mechanical, electromechanical (relay), solid state interlocking (electronic), to the more recent and modern, digital technology – European Train Control System (ETCS).

Digital signalling (i.e. ETCS) is an in-cab signalling system that allows trains to run closer together, safely and to travel at their optimal speeds. To implement ETCS, it requires changes to our signalling infrastructure as well as the fitment of in-cab technology on passenger and freight trains. For example, it has already been introduced on the Cambrian line in Wales, as well as parts of Crossrail and Thameslink. ETCS delivers real improvements to the railway, including improving the safety and performance of the network as well as making the railway greener and more sustainable.

Currently, most of our train control systems across the network use conventional signalling, providing information to train drivers via colour light signals alongside the tracks. ETCS removes the need for trackside signals by providing continuous information to train drivers through screens inside train cabs.

As identified in the Long Term Deployment Plan (LTDP), which was published in 2019, many of our current signalling assets are reaching life expiry and the conventional approach to maintaining and renewing them will lead to an undeliverable bow wave in the 2030s as well as being very expensive. This is because we have already accumulated a build-up of delayed renewals, and our current stock of signalling assets is from two different generations with overlapping replacement dates (creating significant costs), as shown in figure 10.7 below. Therefore, even if we could deliver these delayed renewals, this option will lock us in with an expensive outdated technology for 30 years, significantly delaying the benefits of previous public investments in digital signalling.

Figure 10.7: Signalling major renewals volume history
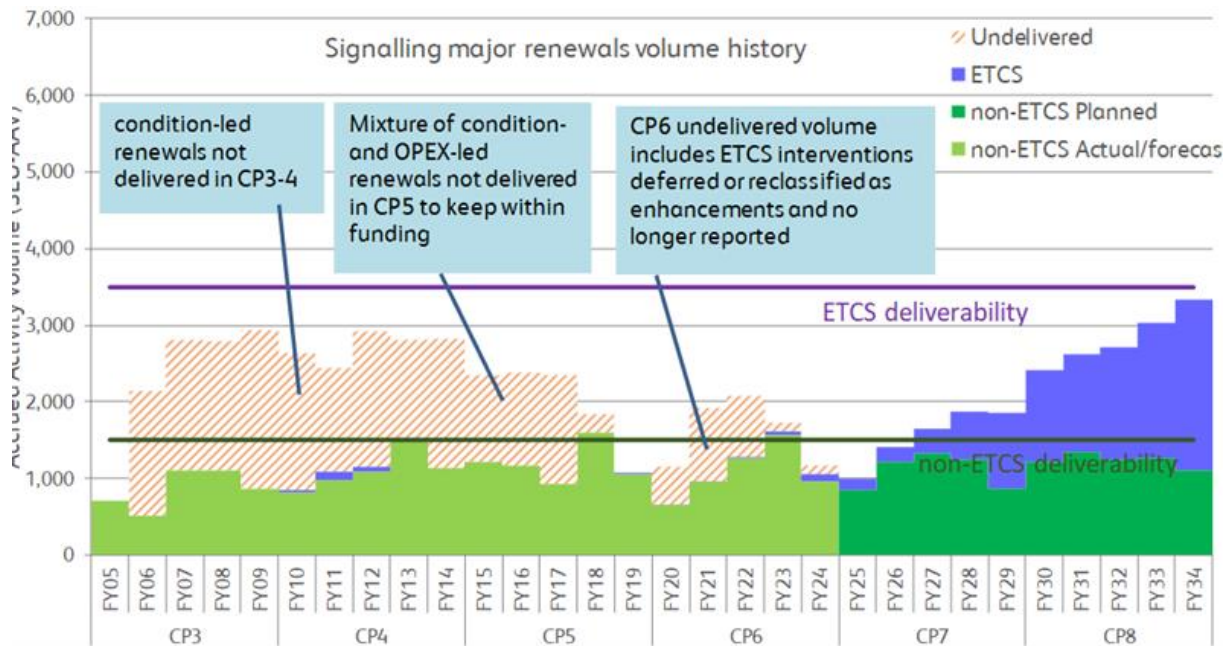
The LTDP identified that migrating to ETCS at the point of a signalling renewal offers a way to deliver the higher signalling renewals volumes needed at a lower unit cost. It can also be delivered by a broader range of suppliers than our current conventional signalling, leading to greater market competition and capacity. With around a third of the network likely to need some level of intervention in the next 12 years (another half in the ten years after that) the need to migrate to ETCS in CP7 is becoming even more critical.

DfT's HLOS recognises the opportunities that ETCS presents and states that, at the point of renewal, replacing conventional signalling with digital signalling, is the most cost-efficient option in CP7 and beyond. Our supporting document describes how the deployment of ETCS across the rail network (in addition to the fundamental enabling activities including train fitment) makes significant contributions to the Government's strategic objectives for rail.

Alongside this, by committing to and supporting a long term plan to deploy ETCS, we can provide continuity to our supply chain, enabling our suppliers to invest in developing a digital skills pipeline improving capability in the UK workforce.

CP7 priorities

Undertaking signalling renewals and implementing ETCS

Recognising the importance of ETCS to our funder and to the future of our signalling assets, our CP7 plans include £744m investment in ETCS renewals, as shown in table 10.6 below.

Table 10.6: Overview of our CP7 expenditure on signalling renewals (pre-efficient)

£m, 2023/24 prices	Eastern	NW&C	Southern	W&W	E&W total
ETCS renewal	307	428	8	0*	744
Conventional signalling renewal	644	1,024	785	459	2,911
Total	**953**	**1,451**	**791**	**459**	**3,654**

Our planned renewals activity in CP7 primarily comprises of:

- **Eastern region.** East Coast Main Line (ECML) South and Midland Main Line South.

- **North West & Central region.** Warrington-Wigan Warrington (part of the WCML North programme aligned to the introduction of HS2).

- **Southern region.** Brighton Main Line.

- **Wales & Western region.** c.£200k* for development of CP8 renewals at Paddington to Hayes.

With the exception of the ECML South, which is being delivered as part of the East Coast Digital Programme (ECDP) which commenced in CP6, other renewals begin in CP7 and complete in CP8 and CP9.

However, whilst we will plan to undertake signalling renewal activity to transition to ETCS in CP7, we will also be undertaking a significant number of conventional signalling renewals in CP7. This is in part due to the lack of funding that was allocated to passenger train cab fitment, which is a critical enabler of ETCS, within the successive Spending Reviews before CP7. In order to have time to complete fitment of the required train fleets with in-cab technology we had to revise our signalling plan with some ETCS renewals being extended to start later in CP7 and commissioned in CP8 or CP9 instead.

The delay to the wider rollout of ETCS has been made possible through additional targeted life extension to maximise value from ageing signalling assets. If this life extension strategy continues into CP8, the risk to performance and safety may increase across the network as a larger proportion of assets reach the end of their design life, as well as create a larger bow wave of signalling renewals in the future.

Additionally, as discussed in the core asset renewals section of this chapter, the CP7 funding context has meant that we have needed to make trade-offs and prioritise activity across the CP7 plan. This includes the volume of signalling renewals. It is likely that our signalling renewals plan, and plans for enabling ETCS activities may change further over the course of 2023 and prior to the CP7 delivery plan.

Whole industry approach to delivering ETCS, including enabling activities

Migrating to ETCS-based signalling is complex and requires industry-wide support. Therefore, we have established the Industry Partnership Digital Railway (IPDR) programme to lead the transition to digital signalling across the network, bringing together our funders, train operators, ORR, industry bodies, the supply chain and rolling stock companies to work together on this industry portfolio.

Consistent with DfT's HLOS, alongside our signalling renewals activity, we have also included, as part of the IPDR portfolio, c. £1.1bn in our plan to fund ETCS enabling activity to support the industry in preparing for the rollout of digital signalling in CP7 and future control periods. The c.£1.1bn of funding requires draw down from group level contingency in addition to the current allocation of c.£800m in our CP7 plan. These additional funds will be drawn down based on delivery progress and risk impact on the wider business.

Our ETCS enabling activity includes:

- **In-cab train fitment.** Our CP7 plan includes the fitment of ETCS onboard trains. We are prioritising the fitment of ETCS in passenger trains that will run in areas where digital signalling will be enabled. Fitment for freight, On Track Machines (OTMs) and heritage and charter trains and associated business change will continue through CP7, building on pathfinder train fitments for ECDP which, like the relevant passenger fitments, are funded from outside the regulatory settlement.

- **Network enablers and regional support.** We are planning to undertake a number of network-wide activities which should enable a smooth transition to ETCS in the future. These include:

o Developing the market by increasing the number of suppliers through supporting their product development to comply with GB specifications for ETCS. This expanded capability will enable more competition and greater capacity, as recommended in ORR's signalling market study.

o Developing solutions to allow drivers to maintain their ETCS competency once trained to support efficient migration to ETCS signals-away deployments in CP7 and beyond.

o Creating industry wide capability for the commissioning of train modifications across ROSCOs, operators and OEMs.

o Developing capabilities from the delivery of the ECDP migration to enable deployment to a no-signals configuration, improving validation, approvals and migration timescales.

o Developing network systems for the effective network management of digital signalling across track and train.

Alongside these enabling activities, we have research and development programmes which started in CP6 and are proposed to continue into CP7, and aim to support the rollout of ETCS.

There are also two workstreams being delivered by Route Services which started in CP6 to support delivery of ECDP. These workstreams will continue in CP7 and should enable the commissioning of the pathfinder scheme and support wider ETCS rollout (with more information available in the Route Services SBP):

- Fitment of ETCS on On-Track Machines (OTMs).

- Development of training capability in the maintenance, renewal, operation and enhancement of ETCS technology.

We have summarised our planned expenditure for each of these enabling activities in table 10.7, below. We set out total expenditure of £1.1bn to fund ETCS enabling activity, of which £0.8bn is allocated in our plan. We will look for opportunities to supplement funding for train fitment over CP7, including the use of risk provisions held centrally, if that funding is not required to cover risk or other emerging priorities that arise during the control period.

Table 10.7: ETCS enabling activities in CP7

£m, 2023/24 prices	Full ETCS plan
Cab fitment (all sectors)	929
Capability Development (Market Application Readiness, Driver Competence Retention, Parallel Proving development)	76
Industry Portfolio and Network Management Systems	74
Total ETCS	**1,079**
Total ETCS funding allocated in plan	**811**

At the current time all ETCS cab fitment costs are assumed to be borne in England & Wales (and hence funded by DfT). At this time Scotland's Railway does not have any plans for ETCS implementation. However, if Scotland's signalling strategy were to encompass ETCS then an appropriate proportion of the cost of cab fitment would be allocated to Scotland. We have discussed and consulted on our proposed arrangements for this with Scotland's Railway, Transport Scotland, DfT and ORR.

Next steps

As we look to the future, we will need to significantly increase our renewals expenditure and volumes on ETCS through CP8, CP9 and CP10. Additionally, alongside our enabling activity for ETCS in CP7, we are also working with industry partners and government to support the wider rollout of ETCS through major enhancement schemes, including the Transpennine Route Upgrade, East West Rail, and Northern Powerhouse Rail, which is part of the Integrated Rail Plan for the North and Midlands.

Other capital expenditure

Introduction and context

The purpose of this section is to set out our CP7 plans for a number of areas that are traditionally classified as 'other capital expenditure', covering capital investment that is not related to our core infrastructure asset base.

Beyond our core asset renewals as described above (incorporating investment in ETCS), we have a number of other important areas of capital expenditure that collectively support the delivery of the Government strategic objectives for rail and our strategic initiatives as described in chapters 5 to 8 of this document, and are critical dependencies for other areas of our submission.

Summary of other capital expenditure in our CP7 plan

Table 10.8 sets out what has been included in our CP7 plan for each of the key areas of 'other capital expenditure'. Where these have not been discussed in chapters 5, 7 and 8, the remainder of this section provides a summary of the planned expenditure for each of these areas.

Table 10.8: Summary of CP7 other capital expenditure in England & Wales (pre-efficient)

£m, 2023/24 prices	CP6	CP7	CP7 vs CP6	Relevant SBP section
Safety & Security	318	278	-12.6 %	See chapter 5
Environment & sustainable development	59	243	313.1 %	See chapter 8
Technology (inc. IT)	1,204	1,167	-3.1 %	See chapter 7
RD&I	225	153	-32.1 %	See chapter 7
Wheeled plant and supply chain operations	467	441	-5.5 %	See below
Engineering and asset management support	29	88	199.8 %	See below
Property	348	401	15.4 %	See below
Group risk provision	0	500	n/a	See chapter 14
Other (budgetary adjustments and insurance)	-702	-115	-83.6 %	See below
Total	**n/a**	**3,157**	**n/a**	**n/a**

Wheeled plant renewals and supply chain operations

This expenditure line mainly comprises fleet support plant, high-output plant, and intervention and materials delivery. The Supply Chain Operations (SCO) function within Route Services owns over 2,500 railway fleet assets and operates across almost 60 depots enabling nationwide movement of construction materials, railway components and spares. It also manages multiple rail fleet facilities where overhauls and maintenance activities take place enabling the delivery of:

- 2.5m tonnes of heavy construction materials annually into our track renewal worksites.

- 26,000 shifts annually of train borne engineering and construction services to support regional asset management plans.

- 1.2m miles annually of autumn railhead adhesion treatment, weed spraying and anti-ice to support operational train performance objectives across our regional customers.

- Timely distribution of critical components through our inventory, warehousing and road networks, supporting reactive and planned maintenance activities across the regions.

SCO investment in wheeled plant is a key enabler to maintaining our ability to run these critical services and underpins investment in our fleet assets and facilities, supporting regions to deliver their CP7 plans. The key areas of expenditure planned in CP7 include:

- £46m renewals spend, covering replacement of life expired stoneblowers to maintain capability and return performance levels to enable efficient service delivery. Investment in our maintenance facilities to improve fleet reliability and working conditions/safety for our teams and investment in other key fleet assets (e.g. our wagon fleet) which directly enables delivery of track renewals across the network.

- £223m covers mandatory overhauls/life extension to our fleet so we can retain capability which aligns to the demand from regions for the services and delivers our obligations under our entity in charge of maintenance (ECM) licence.

- £89m on renewals which include investment in electric vehicle charging points to support transition to ultra-low emission vehicles, reducing our carbon footprint and funding to deliver safety improvements across our facilities.

Engineering and asset management support

Our CP7 plan includes £88m of funding focused on programmes across the core asset base to support engineering standards, signalling support, compliance and capability. For example, this includes the development and deployment of standards and the management of designs. A significant part of this is also to provide direct supplier support to regions for complex signalling systems – during and after failure to reduce the risk of future incidents. This expenditure also includes a focus on 'business as usual' competence and provision of training materials and facilities across core assets.

Property renewals

Since 2020, property activities have been largely devolved to regions, which include the delivery of revenue generating renewals. These are investments in our property assets for the purpose of generating additional commercial income. The vast majority of schemes fall within Network Rail's managed stations, although there is spend in other areas. Examples of typical schemes include:

- Converting surplus operational space in a managed station to retail use.

- Upgrading a traditional fixed advertising panel to digital.

- Adding additional spaces to a car park.

Revenue generating schemes have historically generated an average return on investment (ROI) of marginally below 10 %. Ordinarily a ROI target of 10 % would have been set for CP7, however due to the long running impact of Covid-19 and the changes in passenger footfall, a value of 9 % is deemed more appropriate.

Revenue generating renewals also aim to improve the passenger experience at our managed stations. Our regions have identified £281m of property renewals, which are included in our CP7 plan with an additional £120m of property renewals funding within our Group Property function.

Other (budgetary adjustments and insurance)

This expenditure line comprises a number of financial adjustments so that our plan is in line with accounting standards (further discussed in chapter 16 on network-wide cost allocations), as well as £212m included for insurance. This reflects the premium paid to the Network Rail Captive Insurer for various insurance policies including employer's liability, motor, construction (including third party), property damage business interruption, and terrorism.

11. The components of our plan – operations, support and industry costs and rates

Purpose of this chapter

The purpose of this chapter is to provide an overview of our operations activity in CP7 and a summary of support activity and industry costs.

Operations

Introduction

Operations is at the core of our day-to-day activities and where all the component parts come together to deliver and meet our customers' needs – currently running around 22,000 passenger and freight services across the network each day. Our operations activities cover signalling trains in our regional Rail Operating Centres (ROCs) and individual signal boxes; train controllers; electrical controllers managing power supply; incident response teams that respond to incidents on the network and support service recovery; level crossing managers; and customer service teams in our managed stations.

Operations is crucially about people who require an increasingly diverse range of skills to meet changing needs. To operate the network, Network Rail employs around:

- 5,500 signallers – maintained through recruitment of approximately 500 new signallers each year.

- 1,200 Network Rail station staff – covering security, customer service and management of our direct interface with passengers.

- 750 mobile operations managers – key staff who lead our response to incidents.

- 600 controllers – who oversee the effective delivery and performance of the network in real-time.

- 200 electrical controllers – who manage the power supply to our electrified railway.

Our operations workforce uses a range of technologies, operating in across the country, and in a variety of operating environments. Following the implementation of PPF in 2019, operations is structured so that decision making is as close to the customer as possible. A small national team provides a service to regions, supporting activities including the development of the rules and standards by which the railway system is operated, the co-ordination of training for the operations community and the ownership of strategies across people, process and technologies.

Through CP6 the operations strategy has been predominantly Network Rail focused - incorporating operations training and development, review of command-and-control structures and operations leadership of systems and projects. This has expanded, with the second stage of our Network Operations Strategy (NOS) which is broader in focus and sets out a series of recommendations on how to better enable operational teams to deliver improved train services across the industry. These recommendations will be the core of our approach through CP7. Deeper integrated working with operators started in CP6 with scoping work on operations control integration, cross-industry competencies and shared training – and these will all be developed further into CP7.

Context – operations in CP6

In CP6 we set out to reduce train accident risk by 10 %, with improved operations playing a key part. This has included optimised plans for the management of adverse weather conditions and the implementation of the industry wide signal passed at danger (SPAD) risk reduction strategy. The

progress made throughout CP6 has been the culmination of people, process and technology improvements to deliver improved customer outcomes.

As discussed in chapter 8, the importance of weather management has become even more significant throughout CP6 and has presented some of the largest challenges to delivering a safe and effective network throughout the control period. The train derailment at Carmont, together with broader weather management challenges, led to the instigation of the Weather Advisory Task Force, comprising world leading experts. Their published report made a series of recommendations as to how the railway industry can better manage weather and climate risk, including the introduction of a weather academy. The academy enables a greater understanding of the risks of extreme weather to the railway system, in turn equipping staff with the skills to better support weather-related decisions and act quickly so that where possible, any storm risks to the railway can be reduced. The need for these changes was further underlined by weather events over 2022 (e.g. storms Eunice and Franklin and the extreme hot temperatures in July 2022).

A further commitment made during CP6 was to improve operational processes so that service recovery from incidents is rapid. This has come to life through the Integrated Train Service Recovery (ITSR) programme, which followed RSSB research into sub-optimal industry disruption management and train service recovery performance. ITSR sets out a framework for disruption management designed to improve performance, provide an optimised approach based on good practice guidance for the management of disruption, and improve the way in which we manage operations and customer processes together to achieve the best outcomes across the industry.

ITSR is one example of a project delivered by our System Operator's 21st Century Ops Programme. This programme is a CP6 highlight and is embedded in our CP7 plans. Designed to rebuild the operations capability at Network Rail its objectives include:

- Creating an improved organisational structure for operations.

- Increasing our operations capability by improving our career pathways and training.

- Supporting continuous improvement by sharing best practice and improving systems and processes.

This has crystallised in the delivery of critical and significant change programmes and the deployment and widespread rollout of Railsmart EDS – the new tool for managing operations competence which paves the way for greater adoption and benefit realisation into CP7.

In recognising the importance of incident management and response to performance delivery, in CP6 we sought to continue to professionalise the incident management training and competence arrangements, together with transforming the way training is delivered. This has included investment in learning technology and the provision of specialist incident management training, including more effective management of weather incidents, crowd safety and security issues at stations.

Throughout CP6 we deployed integrated traffic management solutions at both Didcot and Liverpool Street utilising the latest technology to enable performance and passenger benefits. This has been enhanced to integrate with train operator stock and crew systems in our Wales & Western region and enable a greater view of the railway system and through working collaboratively with Great Western Railway to facilitate better management of disruption. The last year of CP6 will see the expansion of traffic management in our Eastern and Wales & Western regions, together with early work on traffic management linked to the industry leading East Coast Digital Programme (ECDP) and ETCS deployment (discussed in more detail in chapter 10).

A further technological development delivering benefits for passengers in CP6 has been the progress with autumn management and innovations in rail head treatment, as autumn remains one of the biggest underlying systematic impacts on industry performance.

From a people perspective, the combined effects of Covid-19 and industrial action have impacted the ability to transform operations, including limiting the delivery of the 21st Century Operations programme. However, the challenges have also demonstrated what the operations community can deliver in truly challenging circumstances. The opportunity has been taken by non-front-line teams to mature our approaches to operations competence, incident management and operations training. The next step is to drive significant adoption and modernisation when circumstances allow.

Operations in CP7

National priorities for operations in CP7 will be founded in people, process and technology improvements – with all three priorities inherently overlapping and interdependent. CP7 will build on the foundations laid in CP6. Table 11.1 sets out our planned expenditure of £3.8bn for total operations costs and to deliver our operations activities in England & Wales.

Table 11.1: CP6 and CP7 operations expenditure

£m, 2023/24 prices	CP6 total	CP7 total	Variance
Eastern	1,105	1,075	-2.7 %
North West & Central	848	899	6.0 %
Southern	1,097	1,127	2.8 %
Wales & Western	560	683	22.0 %
Total E&W	**3,609**	**3,784**	**4.8%**

People

There are multiple and overlapping priorities which enable and unlock the enormous potential of the operations community. All operations colleagues will be onboarded to the Railsmart Employee Development System (EDS) so that they are able to adhere to ORR's competence framework. More broadly this competence management framework will lead to better safety and performance outcomes.

The approach to assessment and verification of operations competence is a key priority, building on trials that will take place in the last year of CP6. Consistent with the principles of devolution, this enables regions and routes to identify the right solution to deliver local competence and assurance outcomes, while providing a framework for internal or external review of operations tasks across assessment and verification activities. This will unlock the potential of local operations managers (our frontline operations leaders) to focus on the activities that add the most value and ultimately transform outcomes for our customers.

The operating model and resourcing approach for operations in CP7 will also be a key priority, combining the effective adoption of technology to provide effective strategic workforce planning, and recognise the overtime dependency and ageing workforce of the operations community.

Another key people priority in CP7 will be the development of licensing for operations roles, working closely with partners such as the Chartered Institute of Railway Operators (CIRO), to drive further professionalisation and recognition of operations as a career, and support the succession and development of operations capability across both Network Rail and the industry.

A specific focus in CP7 will be on incident response as a cornerstone of effective performance. This includes improving awareness that incident management is a professional competence that requires continuous professional development and ensuring there are learning resources to facilitate. There will be ongoing reviews of the suite of training programmes to strengthen the content on decision making, particularly where there are new decision-making tools to be integrated. Specific development opportunities include improving incident management leadership skills and refreshing the way we

systematically log information and decisions during an incident – key to continuous learning and feedback. In recognition of the importance of effective incident management, strategic crisis management development for executives and senior leaders in the business will be formalised into a structured executive development programme.

<u>Process</u>

CP7 will see continued focus on unlocking the potential of operations through risk-based and locally appropriate standards and processes to reflect the needs of the geographies and communities we serve. The approach to operations in CP7 increasingly reflects that one size does not fit all. There is a need to reflect the range of urban and rural railways with different passenger requirements and technologies. A specific focus will be the Electrical Control Room operations community. For this community we want to establish standardisation of processes which make the delivery of isolations as efficient and effective as possible and embrace the technology opportunities from the supervisory control and data acquisition (SCADA) programme for which £25m has been included in the Route Services plan.

<u>Technology</u>

CP7 will see the deployment of traffic management on the East Coast Main Line in conjunction with the East Coast Digital Partnership and the expansion of the existing deployment on Western route to cover the entire Wales & Western region. These deployments do not just focus on plan/re-plan capability but critically unlock the benefits of integrated stock and crew management, as well as the benefits of the connected driver advisory system (C-DAS) to optimise the delivery of the network.

Further technology deployment will see the automation and standardisation of contingency plans, critical to effective system operation both in terms of setting ourselves up effectively to deliver the train plan every day and restoring the plan as quickly as possible when things go wrong.

A third area of focus for technology in operations is to equip teams to more effectively manage the impacts of the changing climate on the railway system. This includes building on the success of the convective alert tool (CAT) and the wider roll out of remote condition monitoring of our vulnerable earthworks to minimise the impact to customers.

<u>Overview of regions' operations plans</u>

All regions' plans are built on the national operations priorities of people, process and technology. This places an emphasis on competence and capability in particular, with plans to deliver through organisational change and the use of technology.

Digital technology, and how this is deployed and implemented into our operational locations, is essential to systematically improve outcomes. Key to realising the benefits from technology will be the underpinning capability, resources, operating models and working practices.

As our work towards the CP7 delivery plan continues, regions will continue to focus on the linkage of operational strategic priorities to safety, performance and welfare outcomes.

Support

Introduction

Our network-wide functions continue to provide overall support across the business, with some activities devolved to our regions. The key activities of our network-wide functions are summarised below.

- **Route Services.** Provides essential services to support the routes, regions and functions in delivering a safe, reliable and efficient rail service. These include supply chain operations to deliver the logistics, components, and rail and road fleet that enable maintenance and renewal of the railway; IT services shaping, building and running the information technology and

connectivity services for the network; telecoms providing national fixed and wireless telecommunication services, shared services for finance and human resources; national training provision; centralised commercial and procurement; and engineering services to support design and development of engineering.

- **Technical Authority.** Defines and discharges network accountabilities for policy, strategy and the control framework in safety, engineering, asset management, security, health, technology, information management, environment and sustainability.

- **System Operator.** Identifies and delivers value across the network and supports the industry and regions through collaborative leadership and coordination, providing integrated and assured timetables, network and industry strategies, expert advice, and analysis the industry needs.

- **Human Resources.** Supports the business on employee terms and conditions, rewards, benefits and pensions, performance management and performance related pay, and graduate and apprenticeship schemes.

- **Communications.** Responsible for network-wide communications, establishing overarching processes for all internal and external communications, external engagement and a customer service mindset.

- **CFO Directorate (including Group Property).** Provides multiple core services to regions including Capital Delivery Centre of Excellence, business planning and performance management, regulation management, third party commitments advice, business development support, funding and financing advice, legal services, group control (accounting services, insurance and claims management) and property development and services, and retail management (especially in major stations).

Context – support activity in CP6

Reflecting devolution of certain areas such human resources, finance, legal and property in CP6, regions have a larger proportion of support costs than in CP5. Alongside this, we have implemented our management modernisation programme, which involved a review of our management structure to make our business more affordable and sustainable. This programme led to a reduction in headcount of c. 1,500 employees in our network-wide functions.

Support activity in CP7

As set out in table 11.2 our CP7 plan includes c.£4.7bn of support costs across regions and the England & Wales allocation of functions costs. Regions' support costs are expected to reduce by 6 % in CP7, with overall Network Rail support costs reducing by 9 %. This will contribute to the 10 % opex efficiency we are targeting across our support, operations and maintenance activity in CP7. We provide more information on our region and network-wide function support activity in CP7 below.

Table 11.2: CP6 and CP7 support expenditure

£m, 2023/24 prices	CP6 total	CP7 total	Variance
Eastern	411	414	0.7 %
North West & Central	684	554	-19.0 %
Southern	398	448	12.4 %
Wales & Western	198	175	-11.7 %
Network-wide functions	3,515	3,149	-10.4 %
Total E&W	**5,206**	**4,740**	**-9.0%**

All regions have included the cost of their support functions during CP7 within their plans. They continue to closely scrutinise the headcount and expenditure of their support functions to ensure that they are lean and provide value to their routes and delivery teams. The plan includes £1.6bn to be spent on support costs within our regions (excluding any allocation of national support costs), as shown in table 11.2. Headlines from each region include:

- **Eastern.** Support costs for CP7 have been forecast in line with CP6 exit rates. Eastern is confident it will deliver its full management modernisation plans within the wider workforce reform programme. Eastern has also increased expenditure in specific areas to support wider initiatives, including additional data teams to support digital signalling technology, headcount to deliver on environmental sustainability and support healthcare and security budgets.

- **North West & Central.** Support costs for CP7 have been forecast in line with CP6 exit rates, which include the full delivery of management modernisation. North West & Central has removed Project Alpha expenditure, which was a CP6 one-off initiative to improve train performance. It has included an increase in funding compared to CP6 exit levels, for activities including crime and trespass prevention, Civils Examinations Framework Agreement (CEFA) and environment and sustainable delivery to meet regulatory compliance.

- **Southern.** Support costs included in the plan cover all functional departments with Southern region. Southern has been forecast based on the CP6 exit position and then includes a number of regional-led initiatives including environmental and sustainable delivery and crime and trespass.

- **Wales & Western.** Support costs are in line with CP6 exit rates, which include the full delivery of management modernisation, with further efficiency targeted. The transition to the region's 'intelligent client' model for renewals activity should result in headcount reductions from the start of CP7. Additionally, there is a small increase in support costs in relation to biodiversity and decarbonisation to support the delivery of Wales & Western's environmental sustainability objectives.

Network-wide functions

As set out in table 11.3 our England & Wales CP7 plan includes £3.1bn of support costs within network-wide functions, which is a reduction of £0.4bn compared to CP6. We set out further information on the movement in network-wide function costs in chapter 16.

Table 11.3: Our CP7 network-wide function support costs

£m, 2023/24 prices	CP6 total	CP7 total	Variance
Route services	1,508	1,441	-4.5 %
System Operator	365	381	4.2 %
Technical Authority	229	223	-2.3 %
CFO directorate *	288	255	-11.5 %
Communications	89	79	-12.0 %
Human resources	155	103	-33.5 %
Group**	879	667	-24.1 %
Total	**3,515**	**3,149**	**-10.4%**

* Includes Group Property & Board Costs

** For the purpose of the table, we have included the support costs relating to our Group function separately from our CFO Directorate due to the level of pass-through costs to our regions.

- **Route Services.** Route Services' plan is net of any off-charges to regions, as the costs which are off-charged to regions are already reflected in our regional plans. The £1.4bn costs in table 11.3 above, covers our network-wide provision of corporate services such as IT, telecoms and infrastructure monitoring. Support costs (net of recharges to the regions in CP7) are expected to reduce by c.£70m due in part to a change in the scope of telecoms activity as well as efficiencies delivered through our IT activity and changes to telecoms licences.

- **Technical Authority**. Support costs in our CP7 Technical Authority plan are based on CP6 exit headcount and includes the recent insourcing of occupational health. Key activities include providing technical support to our regions and network-wide functions on asset management activities and standards, providing guidance on the delivery of key environmental and sustainability objectives, as well as providing broader support to the business on safety, health and wellbeing.

- **System Operator.** Support costs in our System Operator CP7 plan are based on headcount following implementation of management modernisation during CP6. It also includes funding for key programmes such as 21st Century Operations and the Weather Advisory Task Force as discussed earlier in this chapter.

- **Human Resources.** Our CP7 plan includes the continuation of our business-as-usual HR activities. Our Human Resources plan includes a 2% annual efficiency (totalling £7.1m over CP7), which will primarily be delivered through reductions in third party costs (e.g. subscriptions, administration of healthcare and pension schemes and reward and benefit offerings as well as professional consultancy advice).

- **Communications.** The plan includes the continuation of our business-as-usual communications activities (e.g. external affairs and media relations), alongside specific third-party support (e.g. campaigns and brand development). Our CP7 plan includes a 2% annual efficiency totalling £5.4m over CP7.

- **CFO Directorate (including Group Property)**. The CP7 plan includes the continuation of business-as-usual finance activities. Staff costs and headcount count are at CP6 exit levels. Our property function plans include efficiencies in CP7 through our workplace accommodation strategy (e.g. exploring sub-letting opportunities across our property estate in order optimise operational and financial efficiencies). Our CP7 plan includes a 2% annual efficiency, totalling £18.5m over CP7.

Benchmarking analysis

To support the development of CP7 plans, we have used external advisors to carry out external benchmarking on the efficiency and effectiveness of key functions. This included our IT, finance, commercial and procurement and human resources activities (with the benchmarking activities undertaken by Gartner, Hackett and Efficio Consulting). The benchmarking analysis compares our plans with companies who are of a similar size to Network Rail and are often from regulated industries. The findings of the benchmarking activities have been used to support the development and iteration of our CP7 plans (for example it identified that in some areas we should consider increasing our funding and resources, e.g. IT).

Traction electricity, industry costs and rates

The purpose of this section is to provide an overview of what has been included in our SBP for traction electricity, industry costs and rates (TEICR).

Introduction and context

Our SBP includes forecast electricity for traction (EC4T) costs, industry costs and rates of £5.7bn over CP7. These costs are largely outside of Network Rail's control. For example, our cumulo rates depend on the Valuation Office Agency's determination, and the costs of RSSB and ORR are determined by those organisations.

For cumulo rates, ORR economic licence fees and safety levy, and RSSB costs, we are required to manage any variance in these costs during the control period. However, British Transport Police (BTP) costs are covered by a separate grant from Government and EC4T costs are passed to train operators through EC4T charges regulated by ORR.

Our CP7 forecast

Table 11.4, below, sets out our CP7 forecast for TEICR.

Table 11.4: Summary of forecast industry costs and rates in CP7

£m, 2023/24 prices	CP6	CP7	Variance
Electric Current for Traction (EC4T)	2,639	4,063	54.0 %
Cumulo rates	1,346	1,498	11.3 %
ORR fees	112	106	-5.5 %
RSSB	63	67	5.9 %
Total	**4,160**	**5,734**	**37.8%**

EC4T

Out of the total £5.7bn of TEICR for CP7, £4.1bn relates to EC4T, based on current forecasts. This represents a significant increase of £1.4bn (54 %) compared with CP6. EC4T costs are driven by consumption and cost per unit. Consumption is based on vehicle miles and planned rolling stock changes, which are not planned to change significantly over CP7. The cost per unit has three main drivers: commodity prices (energy), levies and delivery costs. The increase in costs is reflective of the current volatility and rising costs of energy, which reached an all-time high in August 2022. Although costs have reduced in recent months, it is unlikely that costs will continue to fall to previous levels in the near term. Our CP7 plan assumes that EC4T costs are offset in full by EC4T charging income, as set out in chapter 12 (Income). Any variance from the EC4T forecast in our CP7 plan will be passed through to operators and therefore, we will not be exposed to movements in EC4T costs (albeit there would be an increase in total industry costs through the costs to the train operators paying EC4T charges).

Excluding EC4T (due to its treatment as a 'pass-through' cost), industry costs and rates are forecast to increase by 10 % over CP7.

Cumulo rates

Our CP7 plan assumes an increase in £152m compared to CP6. These costs are the non-domestic business rates that we are obliged by law to pay on our rateable assets. While the result of the next revaluation effective from 2023/24 is not yet agreed with the Valuation Office Agency, our forecasts are informed by our understanding of the likely outcome, based on advice from external advisors. We have also assumed a 15 % increase for the revaluation effective from 2027/28.

<u>ORR</u>

ORR fees are outside of our control as they are set as part a separate budgeting process with Government. Total ORR fees are forecast to increase by £4m between CP6 and CP7. However, as we are moving to allocating ORR fees based on the number of regions rather than the number of routes we had at the start of CP6, the England & Wales allocation reduces (87.5% to 80%). We, therefore, show a reduction in the costs to England & Wales of just over 5% as the change in allocation is offset by higher ORR fees. We will continue to work with ORR to identify potential savings in their own costs, based on more efficient, effective and proportionate regulation – which we can support, and which may also help to reduce costs in Network Rail. We will challenge ORR's proposed costs through their annual business planning processes and we are assuming that any inflationary risk will be absorbed by ORR and not passed onto Network Rail.

<u>RSSB</u>

Although we have representation on RSSB's Board, we do not have control of their budget. Our forecast of these costs is based on discussions that our Technical Authority has had with RSSB on their costs over CP7. We will continue to work with RSSB to identify potential savings in their own costs, and challenge through their business planning processes.

<u>British Transport Police</u>

BTP is not included in table 11.4, above as it is funded through a separate grant from government which is outside of the PR23 process. We have engaged with BTP to update them on the PR23 process and understand forecast CP7 costs.

12. The components of our plan – CP7 income

Purpose

This chapter sets out the forecast in our SBP of Network Rail's CP7 income in England & Wales.

Scope of Network Rail's income

Network Rail receives income from:

- **Access charges.** These are paid by train operators for using our infrastructure (track, stations and depots) and charges for traction electricity.

- **Government grants.** Network grants are agreed by Government through the periodic review process in lieu of fixed track access charges.

- **Other commercial income.** This is largely from retail, property rental and property sales.

CP6 experience to date

Covid-19 has significantly impacted our income in CP6. We have seen reduced income across property, station retail and car parking, and track access charges. The impact of Covid-19 on our income, particularly on property income is expected to be felt throughout CP6, and into CP7, due to lower passenger volumes on the network, lower footfall at our major stations, and fewer train services. For example, passenger traffic (measured by passenger kms) is projected to only be at 85 % of pre-Covid-19 level by the end of CP6.

During CP6, we have changed the way we manage our property assets. We have largely devolved accountability for property management and development from a network-wide function to a regional model, as part of our wider Putting Passengers First programme. In September 2020, we established five regional property teams, who are supported by a smaller group (national) property team. Group Property provides services and activities to the regions, as well as delivering some activities centrally for reasons of value and consistency. We made this change to better align the teams to regional objectives and local customer and stakeholder priorities. Our regional teams are doing this by optimising the use of operational land, generating capital receipts to reinvest in the railway, releasing land for new homes, and improving conditions and access for our frontline staff.

Overview of our CP7 income assumptions

We set out below the key assumptions that underpin our income assumptions. We have separately identified assumptions for access charges and property income, with the former dependent on traffic volumes and payments rates, and the later more affected by footfall and opportunities for asset sales.

There is still material uncertainty about the demand recovery post-Covid-19 and so we will continue to keep our income forecasts under review as we develop our delivery plan. For freight, we have carried out a study to update our CP7 traffic forecasts, which concluded in autumn 2022 and has been used to inform our freight income forecasts.

Access charges

Table 12.1 sets out the key underlying assumption for our CP7 access charges forecast.

Table 12.1: CP7 assumptions for access charges forecast in England & Wales

Category	Assumptions
Franchised passenger track access charges *(Variable Usage Charge, Electrification Asset Usage Charge, Fixed Track Access Charge)*	Regions have based their forecasts on 2023/24 charging rates. Given the uncertainty in future level of passenger services, regions have not assumed growth in passenger access charge income forecasts. For avoidance of doubt Crossrail Supplemental Access Charge income is included in FTAC in our numbers.
Schedule 4 Access Charge Supplement	Regions have applied CP6 ACS rates and flexed forecasts for changes in the level of renewals activity. We have included an adjustment in our Group plan to balance off national variances between Schedule 4 and Schedule 4 ACS.
Freight track access charges	Regions have based their forecasts on 2023/24 charging rates and flexed this for projected changes in freight traffic. Growth assumptions vary between regions but align to our national freight growth forecast for CP7. Regions haven't factored into these forecasts the expected further unwinding of the charges reduction that freight operators benefit from in CP6, which has been in place to phase in higher charges determined by ORR in PR18.
Passenger Open Access track access charges	Regions have based their forecasts on 2023/24 charging rates. Note that Eastern's forecast includes income from Lumo services that are currently in operation on the East Coast Main Line. Income from new services from London to Carmarthen operated by Grand Union Trains, due to start in 2025, is not included in our SBP at this stage.
Other open access income	Regions have assumed 2023/24 charging rates where current agreements are expected to continue into CP7. Notable movements vs CP6 include Eastern's reduction in income from Nexus of c.£6m p.a. as this charging arrangement comes to an end at the start of CP7, and potential changes in income in Wales & Western from ongoing discussions about the Heathrow Express Operating Company track access agreement.
Station Long Term Charge, Stations Lease, QX and Depots	Forecasts are based on 2023/24 charging rates, but are flexed for changes in activity where relevant(e.g.) Wales & Western QX assumes an extra £1m per year to cover additional mobility assistance costs being incurred in CP6.
Electricity for Traction (EC4T)	CP7 costs are based on traffic forecasts provided by train operators and latest price forecasts from our energy supplier. Our plan assumes that traction electricity costs are fully recovered from train operators. There is currently significant volatility in energy price forecasts and so we expect our EC4T forecast to vary over the next 12 months as we move towards our CP7 delivery plan. Whilst EC4T is a pass through it impacts on DfT's financial position and so we will continue to work closely on with DfT and train operators on EC4T forecasting and management.

Property income, development and sales

Regions have forecast property income on the basis that passenger demand (footfall) will return to 90 % of pre-Covid-19 levels by the end of CP6, and increase to 95 % by the end of CP7. This forecast is based on DfT projections produced at the end of May 2022. Recent trends, in particular related to industrial action and commuter confidence suggest that our current assumption is an ambitious target to achieve by the end of CP6, which will play through to CP7 and delay or dampen income recovery.

Our property income forecast is closely linked to property renewals assumptions that are set out in chapter 10, which shows the assumed investment in our property estate to grow property income. Total property renewals for CP7 across England & Wales regions and Group Property for renewals, revenue generating renewals and joint venture working capital is £401m.

Development and sales income consists of a series of unique transactions. We have forecast likely receipts taking into consideration opportunities in CP7. However, development and sales income is forecast to be lower than CP6, due to a reducing pool of disposal opportunities and because there were some large one-off transactions in CP6 (e.g. Cannon Place in Southern region).

Sensitivity analysis

We have carried out a high-level sensitivity analysis on the impact on our CP7 income forecasts from changes in passenger footfall. We have considered deviations from our forecast of growth of +/- 1 % in each year of CP7, and also the impact of outturn CP6 footfall deviating from our forecast by +/- 5 %. Our analysis suggests that a 1 % deviation in growth during CP7 would lead to a £22m (£19m) increase (reduction) in income, and a 5 % deviation in CP6 outturn footfall would lead to a £40m (£40m) increase (reduction) in income.

CP7 income forecasts

Table 12.2, below, shows the overall income forecasts for CP7, based on the assumptions described in this section. Comparisons between CP6 and CP7 are difficult, given the impact that Covid-19 has had on both traffic levels and passenger numbers.

Total England & Wales CP7 income from access charges and other commercial income (excluding any assumed network grant) is £16.4bn in 2023/24 prices. The high-level breakdown is summarised in table 12.2.

Table 12.2: Summary of England & Wales CP7 income

£bn, 2023/24 prices	CP6	CP7	Variance
Passenger variable access charges (VUC, EAUC)	1.30	1.36	4.8%
Passenger FTAC	5.81	5.82	0.3%
Schedule 4 access charge supplement	1.64	2.27	37.9%
Freight track access charges	0.33	0.40	20.9%
Open Access income	0.15	0.06	-59.6%
Stations and Depots: Station LTC, Stations Lease, QX and Depots	2.97	3.02	1.6%
Electricity for Traction (EC4T)	2.64	4.06	53.7%
Property income	1.89	1.39	-26.5%
Other (inc. TOC insurance premiums)	0.08	0.34	347.9%
Total	**16.81**	**18.73**	**11.4%**
Schedule 4 & 8 costs	-1.87	-2.34	25.3%
Total (including Schedule 4 & 8)	**14.94**	**16.38**	**9.6%**

Our CP7 income forecasts include a £272m overlay to reflect a gap between our latest forecasts and assumed income set out in the England & Wales SoFA for CP7, which we are continuing to review.

We also set out in table 12.3, below, the breakdown of property income across managed stations, property rental, managed station and roadside advertising and property development and sales.

Table 12.3: Summary of England & Wales CP7 property income

£bn, 2023/24 prices	CP6	CP7
Managed station retail income	0.55	0.67
Property rental	0.32	0.32
Advertising	0.16	0.22
Net development and sales	0.85	0.17
Total	**1.89**	**1.39**

Non-DfT income and impact on net funding requirement

In England & Wales, most of our income comes through network grant payments from DfT or from access charges paid by passenger train operators that are contracted by DfT. However, a small proportion of our income comes from external sources – from freight operators, open access passenger operators (including TfL and Merseyrail), and property income. This 'external' income reduces the net funding required for our CP7 plans provided through the SoFA. It has sometimes been referred to as 'Other Single Till Income' (OSTI) to reflect that it is separate from the income from DfT, either directly or indirectly. Total CP7 external income is forecast to be £2.7bn (in 2023/24 prices) for England & Wales.

CP7 third party funding

As part of Network Rail's Open for Business programme, we set ourselves a CP6 target of attracting £1.6bn of third-party funding. For these purposes we define third-party funding as any funding which is attracted into Network Rail that would not otherwise have been allocated to railway projects. It includes investment from the private sector and local and regional government, but not DfT investment. We are

on track to exceed this target in CP6. In CP6, there is a broad mix of projects either delivered or in the pipeline, both regionally and centrally generated, including new stations and station redevelopment, green energy projects, and private sector investment in telecoms infrastructure. However, the focus tends to be on enhancements rather than operations, maintenance and renewals.

We have similar ambitions for third party funding in CP7, and are discussing CP7 targets with our regions. Given our growing expertise in this area we would have looked to increase our target for CP7, but the current difficult financial conditions within government and the economy more broadly, make this challenging. Most third-party investment tends to relate to projects not sufficiently high up the list of priorities to be eligible for Network Rail/DfT funding. This is particularly the case for new stations, where there may be a strong local need and therefore the case for local authority or (more rarely) private sector funding can be made. These projects are relatively easy to secure but, while they help support local communities and economic growth, are outside of and additional to our control period plans.

We are also continuously exploring the potential to secure third-party investment (both funding and financing) to support delivery of our core plans – with Project Reach (third-party investment in renewing our telecoms infrastructure) as discussed in chapter 7 being a good example of this. Other proposals being actively explored include supplier-funded models for the delivery of electric vehicle charging infrastructure, private financing of new depots and private investment in electrification.

Even where value for money structures exist, there are significant challenges to securing an off-balance sheet treatment for such projects. Without this, while such projects may deliver benefits they still require budgetary cover from Government. We will continue to seek to maximise the benefits of third-party funding and financing in CP7, but cannot assume that we will be able to reduce our CP7 funding requirements as a result. Therefore, we have not included a specific value of third-party funding for CP7 in our SBP, but will continue discussions with Government and ORR about the opportunities we are exploring for CP7.

13. Deliverability of our plan

Purpose of this chapter

We recognise that it is important to develop a deliverable plan and to be able to demonstrate this not only for our business but also for our stakeholders and customers. Through our iterative planning process we have placed increased scrutiny on the key areas of our plan which help us to demonstrate that our plan is deliverable. We have also incorporated feedback we have received from ORR to ensure we have the correct coverage across our plans.

Assessing the deliverability of our CP7 plans is key in helping us build confidence in the volumes and activities included in the SBP for our core infrastructure assets. We have undertaken deliverability assurance (at regional level, as well as nationally) which considers both capital delivery renewals and our CP7 maintenance plans. This is underpinned by close engagement with key stakeholders throughout our supply chain, which will continue as we further develop our plans prior to the start of CP7.

Lessons learnt from previous control periods have identified the need to have an early understanding of the volume of work that can be delivered within the available access, and the need to integrate the work from different delivery organisations in order to maximise the access opportunities available. Key to this is how critical national resources are managed effectively, and early resolution of any apparent conflicts where national resources are limited (e.g. Kirow cranes, signalling testers).

Assessing deliverability of our CP7 plans – approach

Renewals

The vast majority of the asset renewals portfolio will be delivered through our regional capital delivery teams and external suppliers. For these renewals, our Rail Investment Centre of Excellence (RICoE) team has carried out national reviews of regional submissions, at each of our iterative planning rounds. This is in addition to regions' own 'level one' assurance processes (more information on our overall assurance and application of the 'three lines of defence' model is provided in chapter 17), The national reviews have considered the following questions:

- Is the work sufficiently developed (remitted, designed, planned etc) to execute delivery?

- Are there sufficient and competent resources in the supply chain (internal and external) and paths to market in place to deliver the planned works?

- Is there sufficient access in the plan to deliver the works?

At a national level, supply chain sentiment on the high-level risks to delivering CP7 renewals has been gathered through consultation with RIA and CECA. Consultation has been going, although since the confirmation of CP7 funding in the SoFA in December 2022 we have been able to start more detailed engagement on our CP7 plans. We will continue to work with national supply chain organisations and the supply chain more broadly, as our plans continue to iterate over the remainder of PR23 – recognising the importance of a clear approach to promoting supply chain visibility.

Maintenance

Assessing the deliverability of CP7 maintenance plans has considered the following questions:

- To what extent has each region been able to fully define the maintenance activity required to be undertaken throughout CP7?

- To what extent has each region been able to determine where and when maintenance activities are required to be undertaken?

- To what extent has each region developed a strategy that adequately defines how these maintenance activities will be delivered in terms of resources required, capability and capacity of both direct workforce and the wider supply chain?

Assessing deliverability of our CP7 plans – findings

In respect of renewals, our assurance has found that regions are in a credible position overall. Each region has a clear steer as to how to instil further confidence in their respective capability, so that they can deliver their capital delivery renewals portfolios for CP7. Key framework agreements will provide important pipeline visibility for the control period and are already in place for Wales & Western and Southern regions. North West & Central procurement is underway and due to complete in late summer 2023. Eastern is currently refocusing their approach to market, in order to gain maximum value from their supply chain with completion anticipated well in advance of the start of CP7.

Overall, regions demonstrate that they have carried out effective workbank complexity reviews, together with a mature and progressive contracting model showing strong supplier engagement on deliverability, volume and unit rate validation. As would be expected at this stage, detailed, key resource plans for each region are not yet fully developed for all schemes in CP7. This activity will mature as part of the development of our CP7 delivery plan and will be subject to further ongoing review and assurance. National assurance activity has identified some key risks that will require consideration from regional delivery teams, as we work towards the CP7 delivery plan:

- **Electrification and plant assets.** the availability and cost of copper with increased demand from electronic consumables and the growth in electric vehicle technologies.

- **Structures and earthworks assets.** Construction material affordability and availability has been impacted by the war in Ukraine, with lengthening lead times and pre-agreed allocation rather than on-request supply. Increased fuel prices and driver shortages are impacting haulage capacity.

- **Signalling.** There is constrained supply chain capacity, with only two major suppliers of conventional and European Train Control System (ETCS) renewals. ETCS demand is high in Europe.

- **Track material capacity.** This is manageable if sufficient lead time is provided but could be impacted by competing demand from HS2.

Addressing these risks will be a priority going forward. More granular work-bank publication will be encouraged to identify potential threats to delivery and provide greater visibility of short and mid-term future resource profiles and pipeline.

In respect of maintenance, the network level insights available to scale maintenance need have generally been based upon the activity carried out through CP6, with specific adjustments for additional activity required in CP7. As set out in chapter 10, whilst we have undertaken significant work to prioritise and finalise our renewals plan following the publication of DfT's HLOS and SoFA, our regions need to undertake further work to fully set out the implications of planned renewals activity on their maintenance plans. Our maintenance plans also account for passenger and freight service level changes and tonnage impact.

In CP6 we have applied risk-based maintenance principles to our plans. This approach tests asset form and condition and allows variable frequency for maintenance, based on our understanding of the current requirement, while securing the asset performance we require and not accelerating loss of life. These changes can be significant when considering more modern, robustly designed assets that require less active management and intervention than historical designs.

In order to estimate need in CP7, we have considered the anticipated exit position achieved by implementation of risk-based maintenance in CP6. Against this we have identified additional needs created by areas of focus (drainage and vegetation management), and the impacts of an ageing asset base. The impact of ageing has been tested at both top-down portfolio level and through the development of insights from previous deferred renewals.

External consultants have supported the review and development of CP7 maintenance delivery plans by working closely with regions and Technical Authority. We will continue to work up further detail as we iterate our CP7 plans over the remainder of PR23.

Assessing deliverability of our CP7 plans – further considerations

CP6 exit position and further challenges

There are some challenges for renewals that will require close monitoring, such as the impact of any further CP6 slippage on workbank stability, particularly in the Eastern and Wales & Western regions. More generally, industry-wide budget and inflationary pressures on labour and material costs are risks which have been highlighted in region plans and will continue to require monitoring through our iterative CP7 plan development, and into CP7.

In respect of maintenance plans, assurance has indicated robust examples of planning with respect to CP6 exit positions and transitioning into CP7. There are provisions in place for the decrease in renewals activity, to mitigate against a forecast increase in SAFs. As noted in chapter 10, a critical enabler of the increase in maintenance activity in CP7 and to reduce the current backlog of maintenance activity is the implementation of our maintenance modernisation programme. This will enable us to undertake our maintenance activity more efficiently, effectively and safely throughout CP7 and in future control periods.

Supply chain

We have a well-established supply chain for all workbank items, as well as a solid understanding of the supply chain contractual landscape. Suppliers have expressed interest in the opportunity to work closely with Network Rail at both regional and national levels, as we work towards the CP7 delivery plan. As the CP7 workbank is similar in size to CP6, the initial view is that the CP7 workbank should be fully deliverable from a supply chain perspective. Suppliers will also continue to deliver enhancements alongside maintenance and renewals activity, as they have in CP6.

Key supply chain risks that have been identified are to inefficiency, rather than overall deliverability. Stakeholders within our supply chain have indicated that this could be mitigated through efficiency opportunities such as improved ways of collaborating with the private sector. An example is to provide long term certainty where possible, as well as visibility over the pipeline of work. This allows suppliers to anticipate certain levels of variation in volumes and alleviate risks associated with skills shortages in the industry, so that suppliers can invest in attracting and retaining key skills. In response, we have plans to increase efficiency in our procurement processes, such as devolving accountabilities to regions, which is discussed in more detail in chapter 7. This is also supported in a recent external benchmarking review which concluded in August 2022.

Broader deliverability considerations

Other considerations include competing demand outside of the CP7 renewals portfolio, which will generally come from HS2, with work currently set to peak around 2025 to 2027. This will place additional pressure on the availability of key raw materials including steel, ballast, sleepers and overhead line equipment (OLE) cabling, as well as highly skilled resources across capacity and capability constrained strategic categories.

Growing market activity, an ageing workforce, and the reduction in labour from the EU means that there are also increasing difficulties in recruiting staff and operatives. Rail based supplier sentiment from CECA's members shows that 75 % of organisations are struggling to recruit the skilled operatives that they need to meet their current and short to mid-term business demands. In addition to competing demand to service infrastructure workstreams, there is an increasing level of attrition with the exit of skilled and experienced resources. The National Skills Academy for Rail (NSAR) believes an estimated 7,000 to 12,000 people will be required every year over the next 5-10 years. In addition, double the number of apprentices are required each year – from 1,000 to 2,000.

For Network Rail, specific challenges associated with the wider pipeline of infrastructure spend will be competing demand for a number of key competences and skills, including project and commercial management, site management and supervision, skilled and unskilled operatives, civil engineers, project controls, plant operators and fitters.

Longer term deliverability considerations

There are longer term deliverability considerations associated with our planned CP7 renewals activity. As discussed in chapter 10, ultimately there will be choices for CP8 and beyond on whether to progressively deliver greater volumes of work in order to retain asset performance levels equivalent to exit CP7. These decisions will be highly dependent on the funding and deliverability context at the time.

Strategic investment in ETCS train fitment is pivotal in supporting the roll out of ETCS signalling infrastructure renewals in CP7 and future control periods. ETCS technology supports a more sustainable delivery approach for signalling renewals, with a greater number of Signalling Equivalent Units (SEUs) able to be delivered within comparable access and the potential for significantly lower delivery costs.

Next steps

Future activity for renewals will include addressing recommendations highlighted during cross regional assessment reviews, and identified through our broader assurance activity. To bring further maturity and demonstrate deliverability, key themes to focus on ahead of the start of CP7, include:

- Remit development.
- Workbank remitting.
- Securing of engineering access.
- Resource planning.
- Awarding the last set of framework contracts.

For maintenance, sharing of best practice between delivery units, routes and regions will be key to improve the deliverability of plans nationally. Regions continue to develop the detail within their activity based planning (ABP) tools, and mature the linkages associated with lower than steady state renewal volumes.

14. Management of financial risk in CP7

Purpose of this chapter

In this chapter, we summarise our assessment of the financial risk and uncertainty that we face in CP7. We also set out the approach that we plan to take during the control period to manage these risks, and describe the implications that our approach would have on our plans if risk materialises during CP7.

Benefits of a structured and proactive approach to managing financial risk

Assessing financial risk and establishing appropriate arrangements to manage it is a significant topic for every periodic review, as it is in every regulated company. Network Rail differs markedly from other regulated companies in two main ways. First, the majority of our funding is set in cash terms, meaning that we bear inflation risk (or benefit from lower inflation compared to forecast) during the control period. Secondly, as a public sector arms-length body we have no recourse to private capital (equity or debt) in the face of more challenging financial circumstances.

It is impossible to forecast with certainty how the risks and uncertainties will bear out between now and the end of CP7 in 2029. Our experience in previous control periods has shown that circumstances during a control period have varied significantly from original expectations. This has been due to events like storms, floods, landslides, the impact of Covid-19 and more recently the impact of industrial action. It does not make sense to plan or lock in all funding at the outset at region level, and where there is no efficient insurance market. There are also performance factors such as the difficulty of forecasting train performance accurately, real-time service disruption and uncertainty over the network access we can secure to deliver engineering works. These can all have significant cost implications but cannot be planned into the base business plans without creating planning slack, unless adequately controlled.

In CP5, our regulatory funding settlement proved to be insufficient. Over-aggressive efficiency targets were set for Network Rail, with no explicit consideration of headwinds. Train performance did not hit target and Schedule 8 costs were nearly £1bn higher than the regulator expected. Being unable to achieve the efficiency targets, our CP5 funding shortfall led to renewals workbanks being reduced to save money, extra maintenance activity to compensate, a backlog of work for future control periods, damage to the wider supply chain, and constant re-planning and misdirected management effort.

Learning the lessons from CP5, in CP6, the level of funding available from government meant that we were able to hold back money from our core plan. This has meant that when risks have crystalised, over and above an average level of risk which is already reflected in core plans, we have been able to direct funding to address those issues without wasteful re-planning, inefficient delivery of outputs and work deferrals. The value of risk funding was based on the wedge between P50 and P80. During CP6, this risk funding has been released for new activity where risks have not materialised. Our approach has been successful in maintaining lean region and function plans that protect core outputs, and giving stability to the supply chain, supporting efficient contracting relationships.

Figure 14.1 below shows that, to date, we have used our £2.7bn risk funds in CP6, which is a result of £1.5bn of risk materialising (orange blocks), £1.0bn of new activity (green blocks), partially offset by the re-alignment of Cross Rail Supplemental Access Charge income of £0.3bn (included in £0.2bn of 'other' in the grey block).

Figure 14.1: Use of CP6 risk funding (in cash prices)
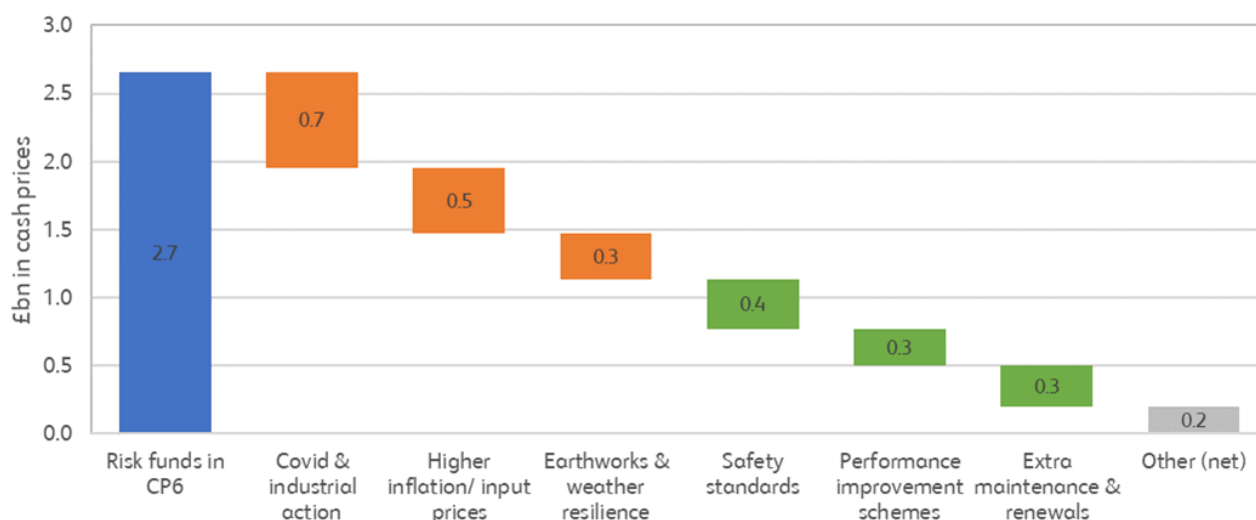
Our assessment of risk in the CP7 plan

Our CP7 plan reflects our best estimate of the cost of delivering the outputs we set out in our plans, and the income that we expect to receive. This is broadly based on a P50 estimate, which is informed by the use of average baseline unit rates from CP6 as the starting point for our costing. These estimates, therefore, include the average level of risk that we expect to materialise during the control period. Our plans also include provisions for an average level of headwinds that reflect our CP6 experience (adjusting for Covid-19) of additional activity / cost that has not been specifically budgeted for in plans at the start of the control period (discussed in more detail later in this chapter). We consider that our plan is challenging but achievable and that we have a 50/50 chance of doing better/worse.

We have gained confidence that our plans are robust through several rounds of review across regions and functions, including assurance from subject matter experts across the business (chapter 17 provides a high-level overview of our assurance process). Our pre-efficient renewal unit rates are based on CP6 experience, which are P50 unit rates (average of high/low scenarios). Regions have also done a significant amount of work on understanding variations in costs between regions, supported by our CFO function.

To accompany our P50 submission, we have also estimated the additional funding required to increase the likelihood of delivering the outputs to 80 % (P80) and to 95 % (P95). P80 is the level at which we set our CP6 business plans. We have carried out this type of analysis to estimate the financial cost of providing a greater level of certainty of delivering the outputs in our CP7 plans. We will not receive additional funding for risk from Government. However, our analysis supports our understanding of the risk in our plans, and helps to inform our approach to managing risk during the control period.

Our approach to assessing CP7 financial risk is similar to the one we took in support of our CP6 planning activity. Regions and functions provide their own assessments of the level of risk and uncertainty associated with the delivery of the outputs in their CP7 plans. We then bring this information together to assess the financial risk in the overall plans. We use this information to inform simple analysis of risk drivers, as well as statistical modelling (Monte Carlo analysis) of the likelihood of costs being higher than we have forecast in our SBP.

Review of key risk drivers

Regions and functions have identified the main drivers of risk and uncertainty that they expect to face during the control period. These include the impact of abnormal or extreme weather and other serious

incidents, potential costs from the performance regime (Schedule 8), higher than forecast inflation, and the risk of missing our stretching forecast efficiencies. Based on our high-level assessment of each of these key drivers, we assess that in total these drivers of risk could lead to over £4bn of additional cost in CP7. Table 14.1, below, summarises the main risk drivers and provides an approximate financial impact if that risk materialised in CP7.

Table 14.1: Drivers of CP7 financial uncertainty in England & Wales

Risk	Description	Indicative value
Inflation and input prices	Inflation in CP7 is materially higher than assumed in the SoFA, leading to higher costs	c. £1.5bn+, based on the difference between inflation assumptions used in this plan and the higher, November 2022 Bank of England forecast. Noting this could be even higher if inflation remains stubbornly high across CP7
Train performance and Schedule 8	Train performance is lower than forecast and/or ORR set unrealistic performance regime (Schedule 8) benchmarks. Alongside reputational risk there is a financial consequence through Schedule 8	c.£500m Schedule 8 costs if performance is 1% less than plan across CP7 and additional £150m-£250m cost to Network Rail if inaccurate TOC Schedule 8 benchmarks are set
Efficiency	Efficiency plans not delivered in full. Opex efficiencies targeted are 10% (£1.1bn) and capex 15% (£2.1bn) over CP7	c.£500m if efficiencies are 2% lower than plan
Weather resilience and climate change	Weather related incidents cause high levels of service disruption, cost (asset repair, Schedule 8) and reputational impact	Costs assumed captured in other lines in this table
Workforce reform	Objectives not achieved (given initial aims on maintenance modernisation in CP6) with adverse impact on delivery, cost/efficiencies, industrial relations	c.£100m-£200m based on delivering less than half of the benefits
Safety	Unanticipated safety issues arise in CP7 that we have to divert funding towards – for additional opex/capex	£250m - £600m for potential additional opex/capex (including any 'task force') or standards changes driven by ORR - based on CP6 experience
CP6 exit	Failure to exit CP6 as planned (e.g. maintenance backlog, train performance) puts extra pressure into CP7 plans (financial and outputs)	c.£100m for additional Schedule 8 and maintenance (impact from CP6 feeding into CP7)
GBR transition	Funding, outputs and wider regulatory framework decisions in PR23 hinder the smooth transition of Network Rail into GBR in terms of regulatory obligations for infrastructure	Captured by other lines, e.g. train performance if impact on operational performance; efficiencies become more challenging to achieve; and reputational impact if it leads to delays in transition

Our current view is that the most significant driver of financial risk for CP7 is inflation, which could lead to additional cost pressures of £1.5bn across CP7 (net of increases in our inflation linked charging income). We have highlighted this risk to Government and ORR. We will continue to update our plan to reflect the latest view of inflation to understand the scale of any funding gap and implications for our risk management approach and CP7 plan.

Statistical analysis

As noted above, we have used the information from regions and functions on their risks and uncertainties to assess the overall risk in our plans using Monte Carlo analysis. This estimates the additional funding for a P80 plan to be around £3bn (in cash prices) over CP7 and around £5bn at the

P95 value. The results of our Monte Carlo analysis (i.e. risk at P80 of c.£3bn) are lower than the simple combined value of the risk drivers, above, (risk of c.£4bn) because our statistical analysis recognises that it is unlikely that every one of these risks will materialise to their full extent during CP7.

Approach to managing financial risk and uncertainty in CP7

The key benefits of our CP6 risk and uncertainty approach are:

- **The flexibility provided by holding back risk funding in 'resource' or (RDEL) budgets.** Government budgeting rules only allow transfers from RDEL to capital budgets (CDEL), but not the other way around, so holding risk in RDEL provides flexibility to respond to risks if they materialise in either opex or capex.

- **The ability to set CP6 outputs on a risk adjusted basis (P80 basis for CP6)**. This provides realistic baselines against which we have been monitored in CP6.

- **Not having to commit all spend into asset management plans at the start of the control period.** This has provided the scope to quickly re-prioritise our plans as risks or new information materialised during the control period.

Our latest analysis of financial risk and uncertainty suggests that we could incur up to £3bn of additional costs (in cash prices) from risks that could materialise during CP7, on a P80 basis. For CP7, within the funding available, we are not able to separate out and hold risk provisions in our plan equal to the P80 position (i.e. £3bn). In order to maintain network safety, deliver an acceptable level of train performance, deliver the HLOS requirements, and not push undeliverable renewals volumes into CP8/CP9, there is not the same headroom available as there was in CP6. However, we plan to take an approach for CP7 that seeks to retain as many of the benefits of the CP6 approach as possible. This means that:

- **We will hold a provision in Group of £500m for overall financial risk in England & Wales.** If this provision is not required for risk, then it would be used to deliver activity that has been de-scoped in plans such as nationally delivered programmes and the full ETCS cab fitment programme (our approach to ETCS funding is explained further in chapter 10).

- **Regions have identified around 5% of the value of their CP7 plans that they would defer or de-scope if more risk materialised than expected.** This totals c.£1.5bn across the four England & Wales regions. This is slightly different from CP6 where we held risk funding in regions that was not aligned to specific activity in plans.

- **We have identified output forecasts consistent both with funding including (100% plan) and excluding (risk-adjusted plan) the £2.0bn of funding associated with risk in our plans.** (i.e. including / excluding £500m group risk provision and £1.5bn of activity earmarked in region plans). This is broadly consistent with our CP6 approach, which set outputs on a risk adjusted basis (P80 was used as the basis for this in CP6).

- **To provide flexibility within our CP7 budget to manage risk, and consistent with our CP6 approach, we will hold a proportion of funding that would otherwise be allocated to renewals as 'resource' budget (or RDEL).** We take this approach because we are subject to government budgetary controls and cannot move capital budget (or CDEL) to RDEL during the control period.

In the rest of this section, we set out our latest and most informed view of the activity that we would defer or de-scope, if funding was required to cover additional costs related to risk (i.e. our risk-adjusted plan). We also show the impact on the outputs of our CP7 plan under the risk-adjusted plan. An important feature of the approach for CP7 is that as new information emerges during the control period we expect that our view of the activity that we would defer or descope would change.

Our mitigations against risk

We have assessed the level of financial risk and uncertainty in our CP7 plans, and we have an approach to managing risk when it arises. However, we do have mitigations already in our CP7 plans that, to a varying degree, help to minimise the likelihood of risks arising. For example, these mitigations include:

- Ongoing cost control and our commercial and procurement strategy to maximise value for money from our funding.

- Headwind provisions in our plans to reflect expected, but as yet unidentified, activity during the control period.

- Monitoring the latest inflation forecasts and continued discussion with HMG/DfT on arrangements for risk management and financial flexibilities (which have not yet been agreed for CP7).

- Developing a robust and resourced CP7 Delivery Plan with effective governance.

- Strong industry alignment and collaboration, to underpin meaningful Joint Performance Strategies with train operators.

- Working with ORR ahead of CP7 starting to set realistic regulatory baselines for ORR's monitoring and for Schedule 4 and 8 parameters (in particular Schedule 8 benchmarks), drawing on our output forecasts based on our risk-adjusted plan.

- The timely delivery and implementation of necessary enablers (e.g. technology programmes) across regions and network-wide functions.

- Better weather forecasting, operational capability, and asset information to help us make more informed decisions about where to focus resources.

- Rapid and effective response to incidents on the ground to recover train service and repair infrastructure.

- Continued close working with GBRTT over the course of PR23 and into CP7 to identify key framework and transition issues ahead of them arising.

Impact of risk-adjusted plan

Costs and volumes

Working with our regional teams, we have currently identified £237m of opex and £1,242m of capex that would de-scope or defer in the event that risk materialised above assumed levels, which is equal to around 5 % of our total plan. This means that our risk-adjusted plan includes a lower volume of work than our total plan. We set out the cost impact of our risk-adjusted plan in table 14.2, below, based on our current assessment.

*Table 14.2: Forecast CP7 co*sts in our risk-adjusted plan (post efficient)

£m, 2023/24 prices	Risk-adjusted plan	Contingent (current view)	Total plan	Contingent as % of total
Support, operations and maintenance	**18.576**	**237**	**18.814**	**1.3%**
Track	3.479	262	3.741	7.0 %
Off Track	320	20	340	5.8 %
Signalling	3.275	347	3.622	9.6 %
Level Crossings	451	50	501	9.9 %
Structures	1.780	148	1.929	7.7 %
Earthworks	1.057	38	1.095	3.4 %
Drainage	515	29	544	5.4 %
Buildings	1.490	146	1.636	8.9 %
Electrification & Fixed Plant	1.563	107	1.670	6.4 %
Telecoms	762	21	783	2.7 %
Other capital expenditure	2.289	575	2.864	20.1 %
Total capital expenditure	**16.983**	**1.741**	**18.725**	**9.3%**
Total opex and capex (excl. TEICR)	**35.560**	**1.979**	**37.538**	**5.3%**

Our current view of our risk adjusted CP7 plan suggests reductions in activity across our plan. The largest reductions are currently proposed in signalling, level crossings and structures. The smallest reductions are in drainage and earthworks, reflecting our approach to protect spend in these areas of the plan, and opex, where we think we have limited ability to make reductions. As noted above, this analysis may evolve as we progress through CP7.

Outputs

We provide our CP7 forecast of our key output metrics for both our risk-adjusted plan and our total (100 %) plan, in chapter 4. The main impacts on our forecasts from our risk-adjusted plan are:

- **A further 0.3 percentage point reduction in asset condition (measured by CSI).** This results from lower volumes of renewals activity.

- **SAFs annual increase by the end of CP7 of 4.5%.** This compares to an annual increase of 2 % by the end of CP7 under the total (100 %) plan. This reflects the further deterioration in asset condition from lower renewals volumes.

- **We expect On Time train performance during CP7 to be lower in our risk-adjusted plan than the 100% plan, which reflects the relationship between train performance and asset condition.** We would anticipate the On Time reduction to be relatively modest, and expect the impact to worsen towards the end of CP7 and into CP8. Given the uncertainty on forecasting train performance, and that at this stage we are setting out a range ahead of further work, we cannot provide a value for this impact.

- **A decrease (£200m) in efficiencies.** We would continue to aim for our 10 % opex and 15 % capex efficiencies under a risk-adjusted plan, but the absolute value of savings would be reduced as we would undertake lower volumes of works.

We assume that ORR will make its determination of our CP7 Tier 1 outputs on the basis of our risk-adjusted plan, as was the case in CP6. We consider this is appropriate because it is important that ORR sets us stretching yet achievable targets. With significant uncertainty particularly around the future path of inflation and also train service levels and passenger demand, we think that it is prudent to set outputs on our risk-adjusted plan. Setting appropriate baselines has not only a reputational affect but also has financial consequences, for example, through the performance regime (Schedule 8).

15. Inflation, input prices, headwinds, tailwinds and scope drivers

Purpose

In this section, we summarise the assumptions in our SBP for inflation, input prices, headwinds, tailwinds and scope drivers. These are all key components of the fishbone framework that explain the pathway from CP6 exit through to post-efficient costs, as shown in Figure 15.1, below.

Figure 15.1: Fishbone framework
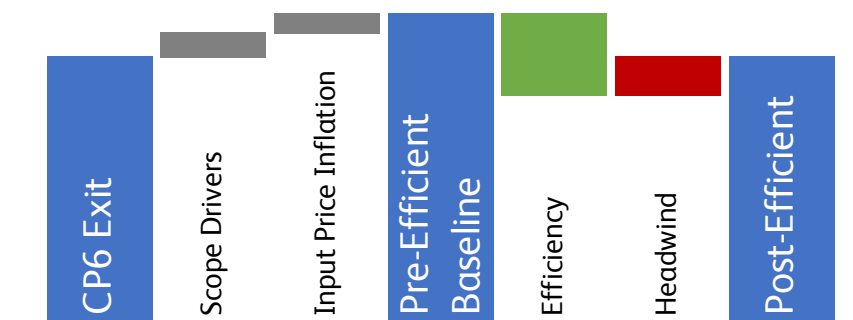
Inflation

Context

Historically, Network Rail's regulated charges and government grants were adjusted for outturn inflation in each year of a control period. This is the conventional approach taken by most economic regulators, which recognises that companies have limited control of the price inflation they face. However, following the reclassification of Network Rail in 2014, around two thirds of our income is fixed in cash prices through the SoFA (the remainder being index linked, principally through the income we receive from passenger and freight train track access contracts). This approach means that we are exposed to significant financial risk during the control period if inflation is materially higher than the forecast used when the SoFA is set. The converse is that we would make a windfall gain if, all other things were equal, inflation was materially lower than assumed.

To give a sense of scale of inflation risk for CP7, we estimate that where annual inflation is one percentage point higher in each year of CP7 than the forecast used in the SoFA, this equates to higher net cash costs, or a further efficiency stretch, of c.£1.0bn over five years.

The SoFA used the Office for Budget Responsibility's (OBR) inflation forecasts from November 2022. These forecasts were produced alongside the Chancellor's autumn statement during a period of significant economic uncertainty towards the end of 2022. OBR's November 2022 forecast suggested that inflation at the start of CP7 (i.e. in 2024/25 and 2025/26) would turn negative, meaning that general prices in the economy would fall. This was a material change from Bank of England forecasts during 2022. Using OBR's November 2022 inflation forecasts to calculate SoFA funding had the effect of reducing our cash funding settlement by £1.6bn (in cash prices), compared to using the Bank of England's November 2022 forecast, which was published just before the autumn statement.

Analysis of inflation uncertainty

Our SBP, uses inflation assumptions consistent with OBR's November 2022 inflation forecast. However, the Bank of England's February 2023 forecast suggests that inflation will not fall as low as OBR predicted in November. At the time of making our SBP submission to ORR in February 2023, and given the short period of time before the finalisation of our SBP, it was not possible to flow through the latest

Bank of England forecasts into our detailed planning. However, based on our high-level analysis, we estimated that the impact on our costs (net of income) would be an additional £700m if the latest Bank of England forecast is a more accurate reflection of CP7 inflation.

OBR subsequently produced an updated inflation forecast to accompany the Government's 2023 spring budget. We are, and will continue to, closely monitor inflation forecast updates, and their impacts on our CP7 plans.

To help quantify the exposure to general price inflation risk for CP7, we have run scenarios based on the impact on the net costs (i.e. change in costs less change in inflation-linked income) based on inflation being +/- 1%, 2% and 3% in each year of CP7. Our analysis shows that the increase in net costs could be between £1.0bn and £3.5bn over CP7. Our analysis of overall financial risk, described in the previous chapter, also assesses inflation risk alongside uncertainty in our underlying costs and income.

Input prices

Context

Our forecasts of CPI inflation are important, but the basket of goods and services that Network Rail buys is not well reflected by general price inflation (e.g. CPI or RPI) so we also assess how the specific inflation Network Rail faces (or 'input prices') tracks CPI.

The recent high and volatile levels of general price inflation have raised challenges in forecasting how our own costs will respond, for example, how we estimate the speed and extent to which high inflation from 2022/23 and 2023/24 will feed through into costs in the early years of CP7. The deflation in the early years of CP7 suggested by OBR's November 2022 forecast also complicates the analysis. This situation has few recent precedents, but we have to make assumptions about how our costs will vary with CPI over the next five years to support our business planning activity.

The short timescales between setting the SoFA in the OBR November 2022 forecast (which included forecast deflation) and the production of our SBP, meant that our region and function plans have taken a relatively simplistic view of input prices (i.e. the bottom-up plans have assumed the relationship with CPI as under normal circumstances). However, in parallel with our CP7 planning activity for the SBP, and as part of assurance of the bottom-up region and function plans, we have reviewed our experience to date of how inflation is working through our costs in CP6. We have also carried out further analysis of the expected future path of our costs. This has allowed us to identify a more realistic assessment of the likely impact of input prices on our CP7 plan. We set out our analysis and the impact on our plans, below.

Our approach to assessing input prices

We have an established methodology for identifying our input prices drivers, which builds on the work undertaken in PR18. We assess input price inflation by analysing our different cost lines and then applying specific indices to each of these costs.

Our input price analysis uses historic data to understand how indices have previously moved with CPI to inform likely future input prices movements. This approach assumes that future trends will be in line with historic trends, which clearly may not be the case. Historic data is used because many indices do not have credible forecasts and even those that are produced (e.g. CPI, RPI) can have a range of different rates depending on forecast sources. Our analysis is done separately for each of the main categories of renewals and opex.

Our approach to input prices has been reviewed by external advisors, who concluded that the current approach was reasonable and logical. They identified alternative methods that could be used to assess input prices, such as using fewer indices, using shorter compound annual growth rate (CAGR) cycles, or

using forecast indices. However, their analysis suggested that applying these alternative approaches provided a broadly similar outcome to the current methodology.

Our analysis shows that Network Rail has historically been exposed to input price pressures in excess of headline CPI (renewals: 1.8 % and opex: 0.5 %). However, these conclusions were based on a five-year period when CPI was broadly stable and so we have revisited them in the context of the current volatility we are seeing.

The factors causing much of the recent high inflation, such as food & beverages and domestic fuel, have a limited impact on Network Rail's direct costs. This means that our input prices are not rising as quickly as the headline rates of inflation in CP6. Similarly, the factors influencing OBR's expected future deflation are not likely to benefit Network Rail's cost base in CP7. This means that we will see a flatter trajectory of input costs compared to the more volatile headline CPI movements. In addition, the impact of inflation on our costs is lagged as many of the goods and services that we buy were contracted prior to the increases in headline inflation rates.

The overall impact on our cost base is lower input prices in the latter years of CP6 compared to the headline inflation rates, but higher input prices in the early years of CP7. We explain, below, how we think our input price assumptions for CP7 are impacted by our revised input price inflation assumptions.

Key drivers of input price inflation

Opex

Our opex costs are made up of c.50 % staff costs, which are largely market driven, but also reflect the industrial relations environment in the rail sector, which until recently has been challenging. The other half of opex costs include contractor costs (10 %), plant and materials (c.15 %) and property, accommodation and IT (c.13 %). These are largely driven by market rates, although multi-year contracts in these areas can limit the impact of input price inflation in the short to medium term. Figure 15.2, below, sets out the key indices that we use to forecast opex input prices.

Figure 15.2: Indices used to assess opex input prices
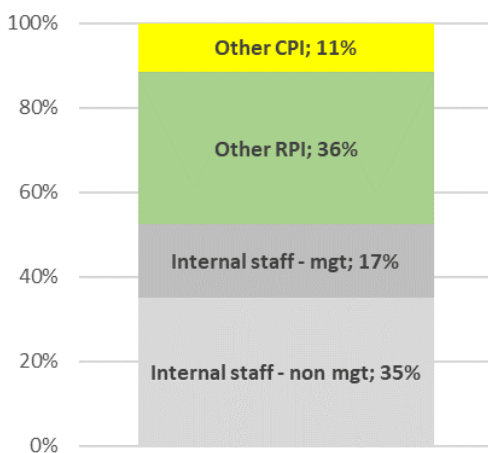
Regions and functions have used their 2023/24 cash-based plans as the starting point for their CP7 opex plans, which includes CP6 pay awards in line with current expectations, rather than applying normal RPI or CPI uplifts. They have then included scope adjustments, headwinds, efficiencies and an input price adjustment of CPI+0.5 % (reflecting normal inflationary circumstances).

However, our opex costs are unlikely to move by CPI+0.5 % in the early years of CP7 as we do not expect to reduce pay in cash terms in years of deflation, and we expect to see the lagged impact of high inflation from 2022/23 and 2023/24 working its way into our costs.

We have revised our input price assumptions, shown in table 15.1, for the early years of CP7 by looking at each part of opex and estimating revised rates that better reflect the likely movement in our costs. For example, we have used our own analysis of staff costs and the BCIS materials index.

Table 15.1: Revised opex input price adjustments

Input price assumption	2024/25	2025/26	2026/27	2027/28	2028/29
Baseline	0.48 %	0.48 %	0.48 %	0.48 %	0.48 %
Revised	2.70 %	2.96 %	0.15 %	0.50 %	0.50 %
CPI	-0.15 %	-1.27 %	1.25 %	1.90 %	2.00 %
CPI + revised assumption	2.55 %	1.69 %	1.40 %	2.40 %	2.50 %
Adjustment %	2.22 %	2.48 %	-0.33 %	0.02 %	0.02 %
Adjustment (£m)	84	184	171	172	175

The adjustments shown in table 15.1 total c.£786m. They represent our best estimate within a range of c.£500m to £900m, compared to the assumptions in region and functions bottom-up plans.

Renewals

Contractor costs account for more than 50 % of renewals spend, which are impacted by wider market pressures and demand both from other major rail projects (e.g. HS2) and also from the wider economy (e.g. demand from general construction). Plant and materials account for 20 % of renewals, the cost of which are heavily dependent on wider market prices (such as the price of steel or concrete). As we have seen in the past the prices of these inputs can fluctuate materially – current macroeconomic uncertainty and the impact on energy prices are impacting many areas of our supply chain, particularly in steel and aggregates. Network Rail's own staff costs make up less than 10 % of renewals spend.

Whilst competition across suppliers can limit price increases in some areas of spend, in others competition is limited. For example, the signalling supply market is largely concentrated in two major organisations – Siemens and Alston. Whilst we have been taking steps to encourage other suppliers to enter the market and develop their competencies we are still reliant on these two main suppliers.

Figure 15.3, below, sets the main indices used to assess input prices for the cost components within renewals. This shows that the tender price index is expected to have a significant impact on the overall renewals portfolio. Materials, plant and external labour all use a variety of indices to build up the position for each asset category.

Figure 15.3: Indices used to assess renewals input price effects
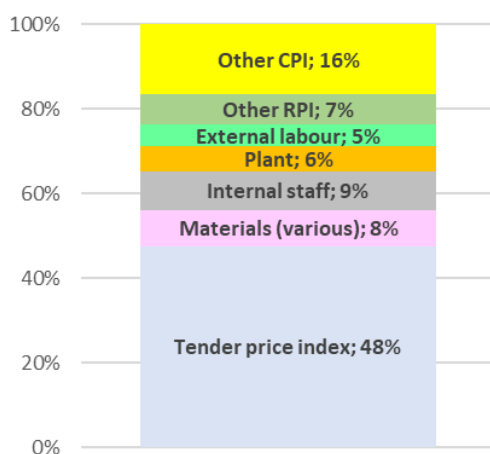
In CP6, we can now see that renewals input price increases are lagging headline inflation (i.e. the full impact of higher CPI is not yet being seen in our own costs). Using forecast data for contractors (tender prices – BCIS), materials (BCIS), and pay (see the opex section above), we have modelled how we expect renewals costs to move. This 'saving' in CP6 is predicted to largely reverse in CP7, although we expect permanent savings in our own staff costs. Figure 15.4 shows the potential path of input prices currently in region and function plans (orange line) compared to our view of a more realistic and smoother trajectory (green line), which reflects our revised assumptions.

Figure 15.4: Cumulative renewals input price increases since 2021/22
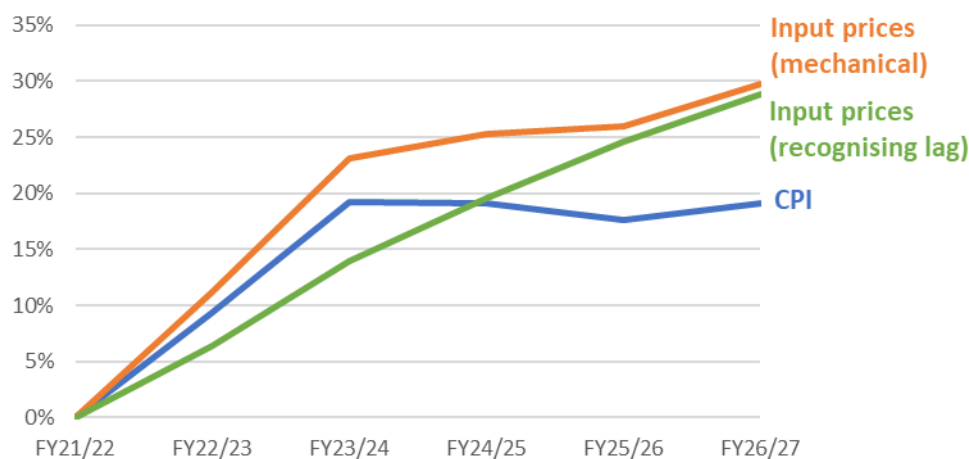
CP7 renewals workbanks have been costed bottom-up, with pre-efficient costs in part informed by unit cost analysis that draws on data from the first three years of CP6. The inflation that we have applied to arrive at values in 2023/24 prices takes the full CPI inflation for 2022/23 (i.e. 11 %) and so we think that this overstates the costs that we will experience in the first year of CP7. Our latest analysis suggests a lower input price adjustment for 2024/25, offset by a higher adjustment in 2025/26.

Table 15.2: Revised renewals input price adjustments

Input price assumption	2024/25	2025/26	2026/27	2027/28	2028/29
Baseline	1.74 %	1.92 %	1.89 %	1.90 %	1.74 %
Revised	0.41 %	3.27 %	1.89 %	1.90 %	1.74 %
CPI	-0.15 %	-1.27 %	1.25 %	1.90 %	2.00 %
CPI + revised assumption	0.26 %	2.00 %	3.14 %	3.80 %	3.74 %
Adjustment %	-1.33 %	1.35 %	0.00 %	0.00 %	0.00 %
Adjustment (£m)	-53	0	0	0	0

The adjustments shown in table 15.2, above, total c.£53m (i.e. a lower overall cost) and represent our best estimate within a range of c.-£100m to +£150m, compared to the assumptions in region and functions bottom-up plans.

Reflecting input price impacts in our CP7 plan

Our analysis identifies an increase in opex costs of between £500m and £900m based on our revised input price inflation assumptions, which are partly offset by a saving of up to £150m on capex. Whilst we have not updated our region and function plans for our latest analysis, we have set out below the overall financial impact on our plans in table 15.3.

Table 15.3: Updated CP7 input price inflation assumptions – England & Wales

£m in 2023/24 prices	2024/25	2025/26	2026/27	2027/28	2028/29	CP7 total
Change in opex assumptions (revised less initial)						
Input prices	84	184	171	172	175	786
Efficiency	-1	-7	-9	-13	-16	-46
Headwinds	-25	-26	-44	-56	-65	-217
Post-efficient	58	151	118	103	94	523
Change in capex assumptions (revised less initial)						
Input prices	-53	0	0	0	0	-53
Efficiency	0	-4	-8	-6	-5	-23
Headwinds	-20	-28	-27	-33	-37	-145
Post-efficient	-72	-32	-36	-39	-42	-221
Change in total cost assumptions (revised less initial)						
Input prices	32	184	171	172	175	733
Efficiency	-1	-11	-18	-19	-21	-69
Headwinds	-45	-54	-71	-89	-103	-362
Post-efficient	-14	119	82	64	51	302

To mitigate the impact of the additional costs we have identified in our plan, we have put a 50% stretch on headwinds to adjust these down from £736m to £374m, which is described in the next section. We have also included a provision in group for the remaining £302m, which we will seek to cover through stretch across the opportunities in our plan (e.g. market-led and whole industry initiatives to make savings in running the network through adjusting asset management and network capability to better reflect passenger and freight demand, and if necessary drawing on our contingent risk funds in region plans).

Headwinds, tailwinds and scope drivers

Headwinds

Headwinds in our CP7 SBP have been calculated at £736m in CP7 for England & Wales. Given their nature (unforeseen events) and the difficulty in identifying potential headwinds ahead of the control period, we have used our CP6 experience to inform our CP7 planning assumptions.

In CP6, we faced a number of significant headwinds, which were not reflected in plans before the start of the control period. These include:

- **The Track Worker Safety Task Force.** Set up in July 2019, this programme aims to embed a new safety culture to improve track worker safety. It also responded to legal improvement notices issued by ORR in relation to protection of workers on or near the line. This reflected a significant investment in processes and technology and represents a headwind of over £200m in CP6.

- **Access constraints or reductions in access**. These account for around £75m of CP6 headwinds. The majority of this relates to enhancement prioritisation as a result of Crossrail works and electrification.

- **The impact of Covid-19**. This increased costs by over £275m, largely in 2020/21, although this was partially offset by tailwinds of c.£50m where travel-related costs in particular were reduced.

- **Implementation of a revised fatigue risk management standard**. This began in the early part of CP6 to reduce the risk of fatigue-related incidents and ill-health within Network Rail and its supply chain. Compliance incurs additional cost where additional resources are required to mitigate fatigue risk. During CP6, our estimated headwind from this standard is just over £50m.

Including headwinds in our submission is consistent with the development of a P50 plan as we are reflecting the average value of headwinds that we have experienced over CP6. We have stripped out the impact of Covid-19, as we do not think that this would represent an 'average' control period experience.

Whilst we are not assuming that the headwinds we experienced in CP6 will necessarily occur again in CP7, we do expect there to be headwinds in certain areas, such as safety (such as we experienced in CP6 for fatigue management or Track Worker Safety), the risk of additional taxes (e.g. payroll or NI) and / or other unforeseen legislative or standards changes.

As a result of our latest, more detailed analysis of input prices, and overall levels of funding, we have put a 50 % stretch on headwinds and so have adjusted these down from £736m to £374m. This does not change our underlying view of the size of headwinds. By reducing these provisions for expected, but as yet unidentified, activity, we will have to work with ORR to manage expectations on our ability to take on large improvement schemes (e.g. similar to the Safety Task Force in CP6) or other additional activity from more stringent standards.

Tailwinds

We have not identified any material tailwinds in our SBP, with any tailwinds assumed to net off against headwinds. However, our more detailed analysis of input prices has identified an expected tailwind in CP6 from the lagged impact of inflation working through our costs. This impacts our CP6 exit position and, therefore, the input price assumptions in CP7, as the lagged impact feeds into higher input prices in the first two years of CP7.

Scope drivers

Scope drivers reflect changes in our workbanks compared to the exit year of CP6 (2023/24), before any efficiencies or headwinds are applied. Regions and functions have identified scope drivers for CP7 of £3.3bn for England & Wales.

The main opex scope drivers include: our response to ash dieback, investment in weather resilience and climate change adaptation, increases in maintenance in response to the planned levels of renewals activity, maintenance of new assets delivered by major enhancements projects, and activity to comply with new and emerging standards.

For renewals, scope drivers include investment in weather resilience and climate change adaptation (including implementation of Mair and Slingo recommendations), implementing environmental sustainability requirements (e.g. decarbonisation), and the scope of Project Reach. However, these are offset by lower activity in some areas (e.g. track) compared to CP6.

16. Allocation of network-wide function costs

Purpose of this chapter

This chapter sets out the assumptions that we have made about the allocation of network-wide function costs to regions in our SBP. In this section values relate to England & Wales regions' share of network-wide function costs and so are lower than total function budgets as around 10 % of these costs are allocated to Scotland's Railway. Where we identify costs that are for Great Britain as a whole, we explicitly state this.

Scope of network-wide functions

The costs of network-wide functions are allocated to regions and are over and above their 'direct' expenditure. These allocated costs are an important part of regional budgets as they relate to activities that support the delivery of regional outputs and the running of Network Rail as a whole. They cover both operating and renewals costs and fall into four broad categories:

- **Pass through costs.** These are charged to Network Rail as one company and cover items such as costs for electricity for traction (EC4T), property Cumulo rates and other industry fees. We are funded for these costs on behalf of the industry but recognise we have very little or no control over them.

- **Shared costs.** It is more efficient to manage some activities nationally rather than in each of the regions, for example our IT estate, logistics and shared services. Shared costs also include significant national investments proposed for CP7 that will support and provide benefits to all regions (e.g. investment in systems by Route Services, System Operator or Technical Authority).

- **Central overheads.** These cover the provision of activities such as HR, finance and legal services.

- **Group costs.** Group costs cover major one-off or non-linear items including insurance, restructuring accruals and other provisions.

Changes to network wide function costs during CP6

The proportion of costs and income directly managed by regions has continued to increase during CP6. There have been key transfers of network-wide activities devolved to regions, including Infrastructure Projects, Group Property, Telecommunications and various teams from Human Resources, System Operator, Legal and Engineering. This resulted in over 3000 heads being devolved from network-wide functions to regions. In addition to the devolution of these accountabilities to regions, network-wide functions have reduced their headcount by around 1,500 heads since 2021/22. The combination of these two changes means that network-wide functions are much smaller than in previous control periods.

Region and network-wide function engagement in CP7 plan development

Engagement between regions and functions is an important part of our process to develop robust and integrated business plans. This alignment is important because network-wide functions deliver a range of critical services on behalf of regions that support the efficient and effective delivery for our customers, with the costs of these functions allocated to regions.

As network-wide functions have developed their CP7 plans over the last 12-18 months, there has been significant engagement between functions and relevant subject matter experts from across the business to review, test and challenge the content of functions' plans. To supplement the ongoing discussions with subject matter experts, from August 2022, we carried out a number of deep dive reviews of national

programmes for regions to challenge and assess the benefits of key elements of network-wide function plans, including nationally delivered programmes, at different levels of funding.

These reviews included Intelligent Infrastructure, Infrastructure Monitoring, Electrical Safety Delivery, Information Technology, Industry Timetabling Technical Strategy, Operational Data programme, ETCS and RD&I.

Following deep dives on specific areas of cost, we also carried out reviews in December 2022 at function-level for Route Services, System Operator and Technical Authority. These function reviews had representatives from each region's executive leadership team, where there was an opportunity to review and challenge the overall CP7 plans of each function, particularly where difficult choices had to be made about where to prioritise funding. We also presented network-wide function plans to Transport Scotland and DfT.

There was positive engagement across the review sessions with significant challenge placed on functions to justify spend, which has led, in many cases, to functions reducing the size of their plans in response.
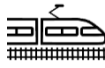
Approach to allocating the costs of our network-wide functions

Network-wide function costs are allocated to all regions using a consistent methodology that was established as part of PR18. That methodology was reviewed and approved by ORR as part of PR18.

During CP6 there has been a significant amount of work to develop the reporting of allocated network-wide function activity, and the process has been endorsed by ORR and Government.

Allocating costs to regions is somewhat subjective. However, our key principle in selecting the allocation methodology is to take each activity and decide what the most appropriate driver for that cost is. The relevant cost drivers need to use data that is readily available, which is easily understood and is consistent with how we will allocate actual costs in CP7. The main allocation drivers are summarised in table 16.1.

Table 16.1: Main allocation drivers used in our allocation methodology

	Measure	Definition
	Headcount	Average headcount during the year
	Train miles	Number of miles travelled by train services in a region
	Track miles	Length of track present in a region
	Even split	Each region bears the same % of central activity cost
	Planned capex	The level of Network Rail funded renewals and enhancements planned for CP6
	Property Analysis	Based on forecasts for specific property locations

For our SBP, network-wide function costs have been allocated using the same methodology and allocation drivers that we have used in CP6. The only exception is the change in approach for the allocation of ORR fees, which was previously done on a route basis. For CP7 it is moving to a region basis

to better reflect changes to the structure of the company during CP6. We have also updated the information on allocation drivers (e.g. headcount) to reflect our latest forecasts in CP7 plans.

Summary of allocated costs

Network-wide function opex costs that are allocated to England & Wales are shown in table 16.2.

Table 16.2: Allocation of network-wide function opex costs

£m, 2023/24 prices	CP6	CP7	Variance
System Operator	365	381	15
Route Services	1,509	1,974	465
Technical Authority	229	223	-5
Group Property	48	56	9
Corporate Services	485	380	-105
Group	879	667	-212
Total Functions	**3,515**	**3,682**	**167**

Chapter 11 provides further information about network-wide functions' support costs. In this chapter, we focus on overall opex and key movements between CP6 and our CP7. Network-wide functions' CP7 opex is higher in CP7 by £167m, compared to CP6. The main movements are:

- **Route Services (£465m increase).** Increase is due to additional infrastructure monitoring spend (£152m for Great Britain), IT headwinds related to licensing and support costs where in CP6 there has been above inflation increases in the market, and an increase in costs from onboarding intelligent infrastructure capabilities implemented in CP6. These increases are partially offset by efficiencies.

- **Group (£212m decrease).** This is largely due the lower cost of workforce modernisation provisions from CP6 that will not continue into CP7 (for example, redundancy and voluntary severance), offset by an increase in insurance costs because of the rising costs of claims.

- **Group Property (£9m increase).** The increase reflects the CP6 comparison including other income (e.g. car parking and excess baggage) in the first year of CP6 (2019/20) that was then devolved to regions in 2020/21, which skews the comparison.

- **Corporate Services (£105m decrease).** The reduction in costs is largely the benefit of workforce modernisation and further efficiencies planned for CP7. HR shows the highest reduction from CP6 of over £50m for Great Britain, but this reflects the major organisational changes it has seen in CP6 (e.g. absorbing new functions, launching new initiatives, and delivering workforce reform).

- **Technical Authority (£5m decrease).** Reflects changes in scope and activity (e.g. safety programmes moving to renewals that were previously shown in opex and increases from clinic rents) with efficiency more than offsetting headwinds.

- **System Operator (£15m increase).** Increases include 21st Century Operations, which is held in North West & Central in CP6, but offset by lower scope on GSM-R, and activity that has been removed or reduced following funding prioritisation activity, such as the Performance Innovation Fund (PIF), mobile data network, freight and customer and network operations programmes.

Network-wide function capital expenditure in CP7 is £2.6bn in England & Wales. The majority of spend is covered in chapter 10 (components of our plan). Therefore, in this section, we focus on the overall movement in network-wide functions' capital expenditure between CP6 and CP7. The allocation of network-wide function capital expenditure to England & Wales is shown, in table 16.3, below.

Table 16.3: Allocation of CP7 network-wide function capital expenditure in England & Wales

£m, 2023/24 prices	CP6	CP7	Variance
System Operator	152	96	-56
Route Services (incl. Project Reach)	2,104	1,804	-300
Technical Authority	480	320	-160
Group Property	128	123	-5
Corporate Services	0	0	0
Group	-565	269	833
Total Functions	**2,299**	**2,611**	**312**

Our CP7 plan includes a reduction in capex, excluding Group movements, of £312m below CP6 levels for network-wide functions. The key variances include:

- **System Operator (£56m decrease).** ITTS and Freight Safety Improvement Portfolio (FSIP) have been reduced as part of our funding prioritisation activity. Weather resilience expenditure is under review pending the findings from the Extreme Heat Task Force. Train Service Delivery capital programmes are also completing in CP6.

- **Route Services (£300m decrease).** We are increasing investment in the Electrical Safety Delivery programme, funding for Project Reach and increasing spend on infrastructure monitoring, and we will continue to renew our core IT and telecoms systems, which enable the critical flow of data around the rail network. However, these increases are offset by fewer IT improvements and a focus on asset life extension across our supply chain operations and digital portfolios, where appropriate. We are also reducing spend on our Intelligent Infrastructure programme, retaining only the capability to fulfil safety and regulatory requirements.

- **Technical Authority (£160m decrease).** Reductions reflect a minimal viable portfolio to achieve statutory, legislative and contractual commitments. This has been informed by reviewing requirements with regions and engagement with the System Operator and regions to align programmes within RD&I, ETCS and occupational health. For example, RD&I spend across Great Britain is £104m lower than CP6, with further savings in environmental, health, security and the system authority making up the total fall in spend compared to CP6.

- **Property (£5m decrease).** This reduction reflects the devolution of property assets to regions. Group Property has followed some pre-devolution revenue generating schemes through to completion in CP6, but further expenditure in CP7 sits in regions. Also, there is a net decrease in development working capital in CP7 in line with anticipated joint venture requirements. However it is possible at this stage in the planning process that some spend could move out from 2023/24 to CP7.

- **Group (£833m increase).** This is largely due to holding £500m of risk funding in Group, and also due to lower opex to capex movement (this line is included for statutory accounting purposes and there is an opposite and offsetting value included in the opex plan), and insurance savings from the first year of CP6 not being repeated in CP7.

The allocation of network-wide function TEICR costs to England & Wales are discussed in chapter 11 so are not repeated here.

The allocation of network-wide function costs to each England & Wales region is shown, in table 16.4.

Table 16.4: Allocation of CP7 network-wide function costs to England & Wales regions

2023/24 prices, £m	CP6	CP7	Variance
Eastern	**3,195**	**4,057**	**862**
Opex	1,069	1,237	167
Capex	766	876	110
TEICR	1,360	1,944	585
North West & Central	**2,433**	**3,087**	**654**
Opex	839	970	131
Capex	650	649	0
TEICR	944	1,468	523
Southern	**2,969**	**3,241**	**271**
Opex	1,049	853	-195
Capex	524	641	117
TEICR	1,397	1,746	349
Wales & Western	**1,382**	**1,643**	**261**
Opex	558	622	64
Capex	360	445	85
TEICR	464	576	112
Total network wide functions	**9,979**	**12,027**	**2,048**
Opex	3,515	3,682	167
Capex	2,299	2,611	312
TEICR	4,164	5,734	1,569

17. Assurance and governance

Purpose of this chapter

In this section, we summarise our approach to the assurance and governance we have used to develop high quality plans for CP7.

Developing our plans

Our CP7 SBP has been built up over the last two years with regions and functions moving through a series of six iterative planning rounds. This has proven to be an effective framework to embed best planning practice across the business following the company-wide reorganisation in 2019, and providing regions and functions full ownership of their CP7 plans. The overall framework is developed and managed by our Planning & Regulation function, who have provided guidance at each planning round on the form and content of regions' and functions' planning so that there is appropriate consistency. Our iterative approach has also allowed us to adapt plans and respond to the latest information, which has been particularly important given broader uncertainty and the evolving financial context.

Our planning framework has allowed us to move from plans developed on a 'top-down' basis, through to a robust well evidenced 'bottom-up' strategic plan in 2023. We will continue to iterate our plans further as we work towards the start of CP7. We have created robust assurance and governance processes to supplement our planning framework, meaning at every iteration of our plan we have provided assurance, feedback and scrutiny. This has enabled us to embed continuous improvement and adapt our plans to meet our stakeholders needs.

Our assurance framework

As we progressed through the planning framework to produce bottom up, well-evidenced plans, we increased the level of scrutiny and assurance of our plans, in turn providing confidence to our executive leadership team and our Board. To do this we aligned our assurance approach to Network Rail's 'three lines of defence' assurance model, which is also adopted through our business-as-usual annual business planning process. Each step is described below.

Level one assurance of our strategic plans

Undertaken in each region and function allowing them to develop local assurance processes so that they have the right coverage, review and sign-off of their plans. To further support region and function ownership, for each planning round we have included 'executive reviews' where each region and function has met with our Chief Financial Officer to discuss their plan.

Level two assurance of our strategic plans

Our planning process has been built to focus on including the right content in our plans. Specifically, that we have coverage of the key building blocks on how we would build and cost our plan, but also key subject areas which are important to the content of our plan and how we run our business. These areas allow us to create planning guidance to the business, and provide a clear description of assurance criteria that will be used to review each plan.

As part of our level two assurance, internal subject matter experts have reviewed plans and provided feedback. As our plans have developed and become more detailed, so has the breadth of content areas we have asked our central experts to review.

This approach enabled us to identify a number of priority areas for improvement during the iterative planning rounds. We also reviewed the needs of our funders and ORR so that any of their key focus areas had sufficient coverage. This was built into our final planning guidance although given the challenging

timescales, we have identified areas which require further work and development, as described in chapter 18.

<u>Level three assurance of our strategic plans</u>

Taking a risk-based approach, findings from internal assurance, feedback from our Executive and Board, and progressive assurance of our CP7 plans with ORR, we identified a number of areas of the plan where we wanted to provide a further layer of evidence to support and justify our plan. This has involved carrying out third party assurance, using independent experts on targeted areas of our CP7 plans.

Our governance framework

Our SBP is a key deliverable during the periodic review, which has been endorsed by our Executive and Board. To support the development of our SBP we established a governance process that extends up to Board level. This has enabled us to progressively engage, identify key risks and seek decisions and agreement on the programme direction and products when needed. These arrangements will continue through to the CP7 delivery plan.

To support the decisions required in the planning process we set up a specific ELT PR23 sub-committee. This has enabled regular and focused engagement with members of ELT on PR23-related matters. We also established a Board PR23 sub-committee as part of our formal governance structure which has played a key role in supporting the whole Board's endorsement of our CP7 SBP.

18. Opportunities and next steps

Purpose of this chapter

The purpose of this chapter is to summarise the main opportunities we have identified in our CP7 plan, and set out our next steps.

Opportunities in our plan

Our SBP sets out what we plan to deliver in CP7. We consider it to be an ambitious but realistic plan, reflecting the funding available and the challenges we expect. Throughout this document we have highlighted challenges and uncertainties we currently face, which we expect to continue to in CP7. We recognise that there are significant opportunities in CP7 too – particularly as we expect GBR to be established as the industry's 'single guiding mind'. Bringing together decisions about infrastructure and train services under GBR, taking a system-based approach and focusing on 'simpler and better', will be transformative for the industry and improve the service we provide to passengers and freight users.

In our plan we consider that there are various opportunities that, if realised, would further support the achievement of the Government's long term objectives for rail – particularly financial sustainability and providing a better service to passengers and freight users, ultimately laying even stronger foundations for GBR in CP7 and beyond. The creation and purpose of GBR will help these opportunities be realised and could facilitate the identification of wholly new ones. In the meantime, the key areas of focus are:

- **Focusing activity based on a market-led and whole-system view of costs and benefits.** There are real opportunities to further reduce our costs by targeting to an even greater extent our maintenance and renewals activity, and aligning network capability, to where they deliver most value and best reflect passenger and freight need. As discussed in chapter 3, realising this opportunity hinges on a whole industry approach to planning and delivery – as well as broader industry, government and regulatory support to progress.

- **Efficiency**. We have set ourselves what we consider to be ambitious, yet realistic, efficiency targets of 10 % for our operating expenditure and 15 % for our capital expenditure in CP7, as discussed in chapter 6 (financial sustainability). But this is not a ceiling. As we have done in CP6, we will actively look for further opportunities to exceed these targets, although there are none identified at this time and we have not yet identified in detail how the 10 % and 15 % targets will be achieved. This will include using the Regional Efficiency Boards established in CP6, and increased industry collaboration on whole-system opportunities. We will continue to look for opportunities to work with our supply chain more constructively and productively, as our Southern region has done by bringing together the supply chain and Network Rail to jointly manage the renewals workbank at a portfolio level, discussed in chapter 7.

- **Income**. Our CP7 plan assumes £1.4bn property income from retail, property rental and property sales, as discussed in chapter 12 (CP7 income). In the current railway and wider economic context we believe this is a realistic forecast, however, through a whole-system approach and the transition to GBR, we believe there could be opportunities to grow this income further and realise more value from the industry's property portfolio.

- **Third party funding.** Throughout CP7 we will actively seek further third-party funding opportunities. Third party investment in renewing our telecoms infrastructure (through Project Reach) is a good example of this – but as discussed in chapter 12 other proposals are being actively explored such as supplier-funded models for the delivery of electric vehicle charging infrastructure, private financing of new depots and private investment in electrification. These take time to realise and have numerous dependencies so it is not prudent to include funding in

our SBP. There are other possible opportunities too, for example building on the current view of £70m co-funding for RD&I initiatives, as discussed in chapter 7.

Next steps

Our SBP has been developed against a very challenging backdrop. We have had significantly less time to reflect and update our plans in light of the England & Wales HLOS and SoFA compared with previous Periodic Reviews, with only 12 weeks between their publication and submission of our SBP to ORR on 24 February 2023. This impacted the extent to which we were able to carry out final assurance in particular, and reflect the findings in our plans. We continue to work with ORR on a number of specific areas of our CP7 plan, including working through the implications of the latest inflation forecasts, further review and testing of certain elements of our renewals plans, and developing further detailed maintenance plans.

More broadly we will continue to work with train operators on train performance forecasts for CP7, including reflecting any changes to projected CP6 exit position, annual business planning decisions and other key assumptions that may affect CP7. We will continue to engage with all our stakeholders as we look ahead to the CP7 delivery plan, which we expect to complete in March 2024. This will include closer working with train operators on the development of market-led initiatives, and aligning with their business planning processes, as well as GBR preparedness.

Annex 1: Our financials

The purpose of this annex is to set out the headline financials for our plan. All figures shown are in £m in 2023/24 prices, inclusive of input price inflation, headwinds and efficiencies.

Table A1.1: Summary of CP7 England & Wales expenditure

£m, 2023/24 prices	2023/24	CP6 Total	2024/25	2025/26	2026/27	2027/28	2028/29	CP7 Total
Operations, maintenance, support	**3,641**	**18,242**	**3,796**	**3,794**	**3,761**	**3,739**	**3,724**	**18,814**
o/w Operations	714	3,609	769	761	752	745	738	3,765
o/w Maintenance	1,843	9,427	2,041	2,026	2,019	2,003	1,993	10,082
o/w Support	1,084	5,206	938	959	942	945	947	4,730
o/w Contingent opex	0	0	48	48	47	47	46	236
Renewals	**3,451**	**18,390**	**3,624**	**3,738**	**3,762**	**3,768**	**3,334**	**18,225**
o/w Core asset renewals	3,114	16,490	2,925	3,055	3,071	3,046	2,597	14,695
o/w Other capital expenditure	337	1,900	510	497	467	419	396	2,289
o/w Contingent renewals	0	0	189	185	224	302	341	1,242
Group risk	**0**	**0**	**63**	**84**	**106**	**120**	**127**	**500**
Post efficient OSMR total	**7,092**	**36,632**	**7,483**	**7,616**	**7,629**	**7,626**	**7,185**	**37,539**
Industry costs and rates	311	1,521	312	312	349	349	349	1,670
Traction electricity	609	2,639	992	938	805	673	655	4,063
ETCS enablers	0	0	125	170	169	183	164	811
Post efficient total expenditure	**8,012**	**40,792**	**8,912**	**9,036**	**8,952**	**8,832**	**8,353**	**44,084**
Post efficient total expenditure (exc. EC4T)	**7,403**	**38,153**	**7,920**	**8,098**	**8,147**	**8,159**	**7,698**	**40,020**

Table A1.2: Summary of CP7 England & Wales income

£m, 2023/24 prices	2023/24	CP6 Total	2024/25	2025/26	2026/27	2027/28	2028/29	CP7 Total
Passenger track access charges	**-1,437**	**-7,107**	**-1,437**	**-1,437**	**-1,437**	**-1,437**	**-1,437**	**-7,185**
o/w Passenger variable access charges (VUC, EAUC)	-271	-1,300	-272	-272	-272	-272	-272	-1,362
o/w Passenger FTAC	-1,166	-5,807	-1,164	-1,164	-1,164	-1,164	-1,164	-5,822
Freight and open access track access charges	**-101**	**-482**	**-91**	**-91**	**-92**	**-92**	**-93**	**-459**
o/w Freight track access charges	-74	-328	-78	-79	-79	-80	-80	-397
o/w open access charges	-27	-154	-12	-12	-12	-12	-12	-62
Stations and Depots: Stations LTC, Stations Lease, QX, Depots	**-601**	**-2,973**	**-604**	**-604**	**-604**	**-604**	**-604**	**-3,021**
Electricity for Traction (EC4T)	**-609**	**-2,644**	**-992**	**-938**	**-805**	**-673**	**-655**	**-4,063**
Property and other income	**-296**	**-1,963**	**-360**	**-336**	**-339**	**-346**	**-350**	**-1,730**
o/w Property income	-284	-1,886	-291	-267	-270	-277	-281	-1,385
o/w Other income	-12	-77	-69	-69	-69	-69	-69	-345
Total income	**-3,044**	**-15,169**	**-3,484**	**-3,406**	**-3,277**	**-3,153**	**-3,138**	**-16,459**
Schedule 4 and 8 (inc. ACS)	**125**	**225**	**15**	**15**	**15**	**15**	**15**	**75**
Total income (inc. Schedule 4 & 8)	**-2,290**	**-14,943**	**-3,469**	**-3,392**	**-3,262**	**-3,138**	**-3,123**	**-16,383**

Table A1.3: Summary of CP7 England & Wales net costs and network grant

£m, 2023/24 prices	2023/24	CP6 Total	2024/25	2025/26	2026/27	2027/28	2028/29	CP7 Total
Total costs	8,192	40,792	8,912	9,036	8,952	8,832	8,353	44,084
Total income (exc. network grant)	-2,920	-14,943	-3,469	-3,392	-3,262	-3,138	-3,123	-16,383
Net costs (i.e. network grant)	**5,272**	**25,849**	**5,443**	**5,644**	**5,690**	**5,694**	**5,230**	**27,701**

Annex 2: Key assumptions

In developing our SBP, we have made a number of key assumptions which are set out in table A2.1 below:

Table A2.1: Key assumptions that underpin our CP7 plan

Area	Assumption
Price base	Our plan is expressed in 2023/24 prices. In some places where it is more relevant to provide a cash value, this is indicated.
Inflation	We have based our CP7 plans on inflation assumptions using the CPI forecast published in November 2022 by the Office for Budget Responsibility (OBR).
Input Price Inflation	Our region and function CP7 plans use the average input price rates of 0.49 % p.a. for opex and 1.9 % p.a. for capex. However, we also set out our latest analysis in chapter 15, which explains that we have updated our view on expected input prices in CP7.
Efficiency	We have based our CP7 plan on efficiencies profile which assumes: • Opex: 10 % savings by year 5 of CP7 • Capex: 15 % savings by year 5 of CP7
Headwinds	We have based our CP7 plan on a headwinds profile which assumes 0.6 % p.a. for opex and 0.4 % p.a. for capex over CP7. However, reflecting our latest analysis on input prices we explain in chapter 15 that we have applied a 50 % stretch on headwinds.
Income	We have based our CP7 plans on CP6 income charge rates (in 2023/24 prices).
CP6 exit	We have based our CP7 plans on a forecast CP6 exit position for expenditure and outcomes, as at period 9 of financial year 2022/23. Our forecast for CP6 exit will evolve over the next year.
Enhancements	Our CP7 plans only assume enhancements past Final Investment Decision (FID). Any enhancements included that are not past FID will be clearly identified.
Freight traffic	Our CP7 plans are based on our CP7 Traffic Forecast FY23 (freight outputs) issued in January 2023 by the traffic forecasting team. The CP7 Traffic Forecast FY23 outputs are based on the freight market projections provided by the freight team in May 2022, with a 7.5 % growth forecast for CP7 consistent with the MDS Transmodal report.
Passenger Traffic	Our CP7 plans are based on our CP7 Traffic Forecast FY23 (passenger outputs) issued in July 2022, which is based on the passenger inputs (passenger service changes or % uplifts by Trains Service Code (TSC), Service Group (SG) or TOC) from the regions supplied to the traffic forecasting team in May 2022. This forecast assumes that national cumulative passenger train miles in England & Wales by the end of CP6 (2023/24) are 88 % of the equivalent traffic forecast issued at the end of CP5.
Passenger Demand	Our CP7 plans assume that passenger demand (footfall) is as follows vs. pre-pandemic values (2019/20): 23/24 = 90 %, 24/25 = 89 %, 25/26 =91 %, 26/27 = 91 %, 27/28 = 95 %, 28/29 = 95 %. This forecast is based on the 'medium-minus' projection from DfT's Covid-19 Forecasting Tool v18.2, which was released at the end of May 2022.
Great British Railways	Our CP7 plan assumes no funding that relates to spend by Great British Railways (i.e. Network Rail's CP7 plan should only include funding for Network Rail's OMR activity and not for additional spend being proposed by the GBR Transition Team).

Annex 3: Glossary

ABP	Activity Based Planning
ACS	Access Charge Supplement
ADB	Ash Die Back
ATWS	Automatic Train Warning System
BTP	British Transport Police
C&P	Commercial and Procurement
CAT	Convective Alert Tool
CCTV	Closed-circuit Television
C-DAS	Connected Driver Advisory System
CDEL	Capital Departments Expenditure Limit
CECA	Civil Engineering Contractors Association
CEFA	Civils Examinations Framework Agreement
CFVN	Condition of Freight Vehicles on the Network
CIRO	Chartered Institute of Railway Operators
CNI	Critical National Infrastructure
CP	Control Period
CPI	Consumer Price Index
CSI	Composite sustainability index
Cumolo	Tax on commercial property
DfT	Department for Transport
DVRS	Dual Variable Rate Sanders
E&W	England and Wales
EAUC	Electrification Asset Unit Charge
EC4T	Electric Cost for Traction
ECDP	East Coast Digital Programme
ECM	Entity in Charge of Maintenance
ECML	East Coast Main Line
EDS	Railsmart Employee Development System
EFD	Earthwork Failure Detection
EHT	Extreme Heat Taskforce
ELT	Executive Leadership Team
ERP	Eastern Route Partnership
ESD	Electrical safety delivery
ESG	Environmental, Social, Governance
ETCS	European Train Control System
EV	Electric Vehicle
EWR	East West Rail
FNPO	Freight and National Passenger Operators
FOC	Freight Operating Company
FPM	Financial Performance Measure
FRMCS	Future Railway Mobile Communication System
FSIP	Freight and National Passenger Operators Safety Improvement Programme
FSIP	Freight Safety Improvement Portfolio
FTAC	Fixed Track Access Charges
FWI	Fatalities and weighted injuries
GB	Great Britain
GBR	Great British Railway
GBRTT	Great British Railway Transition Team
GSM-R	Global System for Mobile Communications-Railway
GVA	Gross Value Added

HABD	Hot Axle Box Detectors		**OMR**	Operations, Maintenance, Renewal
HAVS	Hand Arm Vibration Syndrome		**OPEX**	Operational expenditure
HLOS	High level Output Specification		**ORR**	Office of Rail and Road
HMT	HM Treasury		**OTM**	On Track Machines
HR	Human Resources		**OTTO**	Optimised Train Track Operations
HS2	High Speed 2 Limited		**PACE**	Project Acceleration in a Controlled Environment
HSMS	Health and Safety Management System		**PPF**	Putting Passengers First
IMS	Information Management System		**PR**	Periodic Review
IPDR	Industry Partnership Digital Railway		**PR23**	Periodic Review 2023
IRP	Integrated Rail Plan		**RAIB**	Rail Accident Investigation Branch
ITSR	Integrated Train Service Recovery		**RBM**	Risk-based maintenance
ITTS	Industry Timetabling Technical Strategy		**RCM**	Remote Condition Monitoring
KFC	Key Freight Corridors		**RD&I**	Research Development & Innovation
LGBT+	Lesbian, Gay, Bisexual, and Transgender		**RDD**	Remote Disconnection Devices
LTDP	Long-term Deployment Plan		**RDEL**	Resource Department Expenditure Limit
LTI	Lost Time Injuries		**REB**	Regional Efficiency Boards
MMA	Monthly Moving Average		**RIA**	Rail Industry Association
MVP	Minimal viable product		**RICA**	Railway Industry Contractors Association
NFSG	National Freight Safety Group		**RIRL**	Rail Industry Readiness Level
NIS-R	Network Information System Regulations		**RM3**	Risk Management Maturity Model
NOS	Network Operations Strategy		**ROCs**	Rail Operating Centres
NPR	Northern Powerhouse Rail		**ROI**	Return On Investment
NR	Network Rail		**RSSB**	Rail Standards and Safety Board
NRHS	Network Rail High Speed		**RSVT**	Rail Social Value Tool
NRSP	National Rail Security Programme		**SAF**	Service Affecting Failures
NSAR	National Skills Academy for Rail		**SBP**	Strategic Business Plan
OBR	Office of Budget Responsibility		**SCADA**	Supervisory Control and Date Acquisition
OLE	Overhead line equipment			

SCO	Supply Chain Operations
SEU	Signalling Equivalent Units
SG	Service Group
SID	Supplier Intelligence Database
SISJ	Smarter Information Smarter Journeys programme
SLM	Supplier Financial Liquidity Model
SME	Small and Medium size Enterprise
SoFA	Statements of Funds available
SPAD	Signal Passed at Danger
SPEED	Swift, Pragmatic, and Efficient Enhancement Delivery
STEM	Science, Technology, Engineering and Maths
TAWS	Train Activated Warning System

TCO	Total Cost of Ownership
TEICR	Traction Electricity, Industry Costs and Rates
TfL	Transport for London
TOC	Train Operating Company
TRU	Transpennine Route Upgrade
TS	Transport Scotland
TSC	Trains Service Code
UK	United Kingdom
UKRRIN	UK Rail Research and Innovation Network
VUC	Variable Usage Charge
WILD	Wheel Impact Load Detector
WRCCA	Weather resilience and climate change adaptation

A fully accessible version can be requested by [contacting us](#) through the Network Rail website or emailing us at PR23Communications@networkrail.co.uk