Anglia Route Strategic Plan

March 2019

Contents

1. Foreword and summary

Anglia route runs some of the most important rail infrastructure in the UK. Our services connect millions of people to city, town and country in a fast-growing region which is vital to the City of London, and a gateway to three major UK ports and airports in London and the South East.

Between 2019 and 2024 we will invest £2.7bn* in running, maintaining and improving Anglia's railway for passengers and freight users. A high performing railway is a key driver to economic growth, making the region a place where people want to live, work and invest. Our investment during this time, known as CP6, is critical to achieving this.

CP6 will bring tangible benefits for passengers, with the opening of the Elizabeth Line, the complete replacement of Greater Anglia rolling stock, new stations, and an increase in services across the region supported by new timetables.

However, this will pose challenges to the route, with even greater capacity demands on the network. Over the next 5 years, the Anglia route is expected to see a continuation of the growth in passenger numbers that we have seen over the last 5 years. This means that the route will be stretched to improve performance, and we must deliver even more in CP6 to meet the same robust standards we do today.

We are building on a solid base of improvements from CP5, with efficiencies in our operation, delivering engineering work with better access and cost planning, as well as a much safer workforce. But we know that despite many good days, train performance is not consistently good enough. We know we need to do more for our passengers and freight users, and we are determined to do better. An ageing asset base and deferral of renewals from CP5 also means an unprecedented level of renewals and refurbishments coming together in CP6. This will require us to balance the need to close the railway while we carry out these works and keeping passengers on trains.

We have joint plans in place with train and freight operating partners to enable us to build on our current day-to-day performance. We are also committed to proactively working with stakeholders in the access planning process to inform how the plans are to be delivered in 2019-2024. Anglia route will also continue to build on our success in attracting and developing third-party funding for railway upgrades. Success here relies on all stakeholders coming together and working collaboratively to deliver the transformation that the region needs.

It is an exciting time for the Anglia route. We have a clear vision for the future, and a winning team of 2,500 dedicated employees. Our CP6 plan sets out how we will deliver a safe, high-performing railway with greater capacity and efficiency to power economic growth in Anglia and the wider UK.

**Funding for projects to build a bigger and better railway and increase capacity is in addition to this figure but is secured as the business case for each project develops.*

Meliha Duymaz
Route Managing Director, Anglia

1.1 Anglia route - Purpose and vision

Our purpose:

We believe that everything we do is to
connect city, town and country to improve the lives of millions of people in Anglia.

Our vision:

Every day, we are delivering a safe, high performing railway with ***greater capacity and efficiency to power economic growth, making Anglia a place where people want to live, work and invest***.

For CP6 this means that we will:

- Provide a **safer**, more **efficient** and **sustainable railway**, that is increasingly resilient and reliable for a diverse range of passengers and freight users
- **Grow capacity in the Anglia region** to enable an uplift in passenger and freight volumes
- Be a gateway for international trade and air travel
- Be a **great employer and build winning teams,** rewarding excellence and helping our people be the best they can be
- Be **trusted by our stakeholders** to attract and realise investment in the region**:** in the franchises, concessions and in third party funded projects

To accomplish our purpose and vision we will:

- Be accountable and deliver on our commitments
- Lead with confidence and pride in everything we do
- Be easy to do business with
- Support and challenge each other to continually improve
- Invest in our people, processes and technology

1.2 Anglia at a glance

The Anglia route covers five main corridors: Greater London, Essex, Cambridgeshire, Norfolk and Suffolk.

4,230 train services per day

235 stations

1,697 miles of track

848 Level Crossings

2,568 employees

Management of Liverpool Street – the UK's third busiest station

£955m renewals and refurbishment spend in CP5

£415m of third party funding secured in CP5

Gateway for international freight and essential link for commuters and leisure travellers. Anglia route serves:

Stansted and Southend Airports

Thameshaven, Tilbury, and Felixstowe Ports

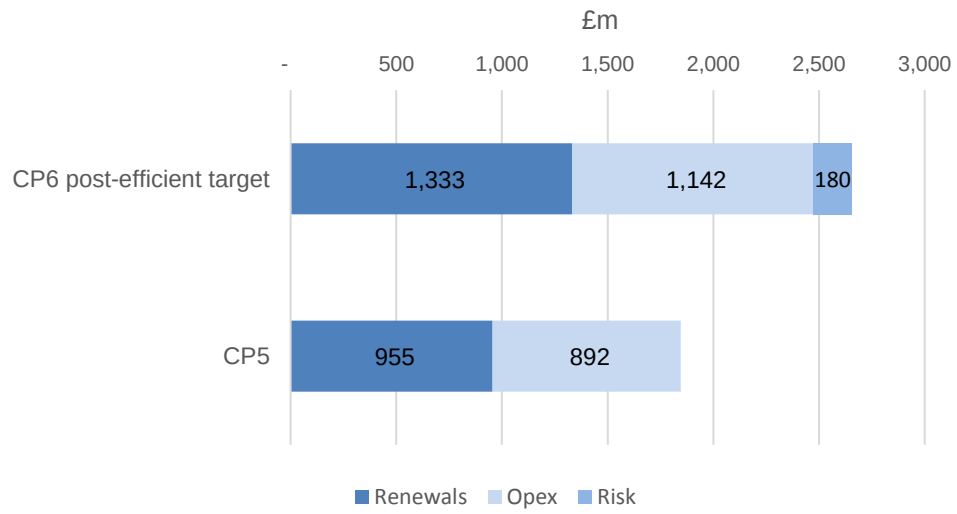
Anglia works with and engages numerous stakeholders to achieve our vision and purpose:

13 Passenger and Freight Operating Companies

Over 50 Local Authorities and Local Enterprise Partnerships

1.3 Route objectives and cost proposal

The graph below shows the total funding settlement for Anglia in CP6 (£2,655m).



Graph showing the total funding that Anglia has received in comparison to the CP5 baseline

Key objectives for Anglia route

To provide a safe, high performing, efficient and sustainable railway for Anglia.

	The renewals workbank addresses safety risks and is underpinned by a safety culture programme
	The base plan workbank and operational/maintenance activities support the substantial growth (i.e. major rolling stock replacement and new timetables)
	CAPEX workbank: • Track workbank focusses on reducing the risk of broken rails to improve the number of Track Service Affecting Failures by the end of CP6 • OLE workbank focusses on refurbishing OLE equipment, removal and targeted component replacement campaigns. • Two interlocking signalling renewals at Cambridge and Clacton, and four condition led life extension schemes to other signalling interlockings • The renewal of equipment at 23 level crossings • Replaces Liverpool Street station roof • Stabilises the embankment at Stour Wood in Wrabness • Manages the ongoing settlement on 55 miles of track on peat fens • Additional performance and resilience works for Track, Electrification & Plant, and Signalling including additional renewals and the installation of Uninterruptable Power Supplies (UPS) at key locations • Data management centre to monitor asset and train data to implement a predict and prevent approach • Additional level crossing improvements and closures to address high risk, priority sites and improve safety
	• 9% increase in efficiencies across renewals and in the day to day maintenance and operations business • Drives efficiencies in the CAPEX workbank through activities such as integrated planning • Drives efficiencies in the OPEX workbank through activities such as using technology (e.g. Plain Line Pattern Recognition) and 'Lean' continuous improvement plans

To grow capacity in the Anglia region to enable an uplift in passenger and freight volumes.

	The proposed renewal and maintenance volumes deliver interventions required to manage the ageing asset to allow increased train services on the route
	Alignment of the renewals and maintenance workbank addresses asset reliability and performance/ response challenges

To be a great employer and build winning teams, rewarding excellence and helping Anglia's people be the best they can be.

	Continually develop our approach to diversity and inclusion throughout CP6
	Develop a comprehensive training and development portfolio for all levels to build core management and leadership capability
	Implement a new recruitment and attraction strategy to attract and retain high performing talent from across recruitment pools to meet future capability requirements

To deliver for a diverse range of customers providing increased connections from East to West and through London, enabling millions to travel for work and leisure across the region, providing a gateway for international trade and air travel.

	Both the prioritised renewals plan and the access plan have been shared with our customers and stakeholders who have had the opportunity to input into them
	Operating to right-time and working closely with TOCs to manage train services will be a key focus area in CP6
	Improving management of the supply chain to ensure effective delivery of multi-asset work packages

To be trusted by stakeholders to attract and realise investment in the region, franchises, concessions and in third party funded projects.

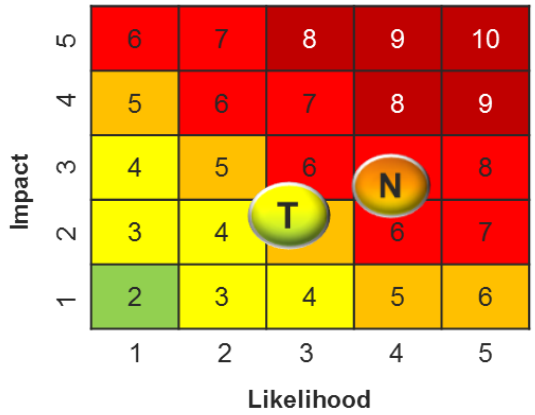
	Third party funding strategy designed to continue to attract investment to the route, building on the £450m successfully secured in CP5.
	Raise additional funding for: • Enhancement projects re-planned for CP6 (Bow Junction and Ely Area Capacity Enhancement projects) • Strategically important enhancements (including DR schemes) • Projects generating operating savings and third party benefits (i.e. Liverpool Street area regeneration) • Other third party funding which benefits the railway
	Head of Business Development appointed to lead the development and delivery of the Open for Business strategy

1.4 Output risk summary

1.4.1 Risk

The risk assessments below have been developed through aggregating risk rankings in each of the objective areas as outlined in the individual sections. In each of the risk matrices, N describes the current level of risk, and T describes the forecasted level of risk at the end of CP6 based on this plan.

Safety



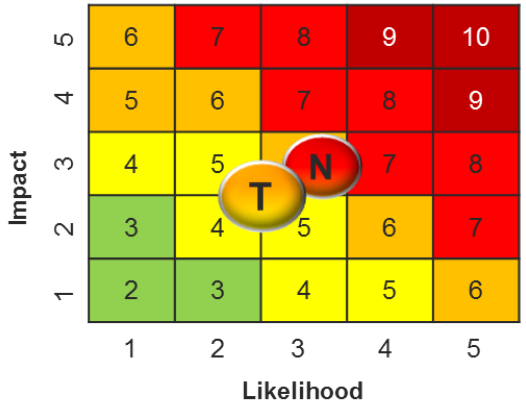
Summary of risk outcome

This delivery plan is forecasted to deliver an improvement in safety performance and therefore also safety risk. The work has been prioritised in accordance of criticality which also considers safety risk and compliance to policy will be at least maintained at current levels.

To further mitigate against safety risks, the safety culture change programme will continue to be developed and delivered for CP6 which particularly addresses workforce accidents.

Funding has been identified which would further mitigate safety risks around level crossings by providing additional mitigations and closure of further level crossings.

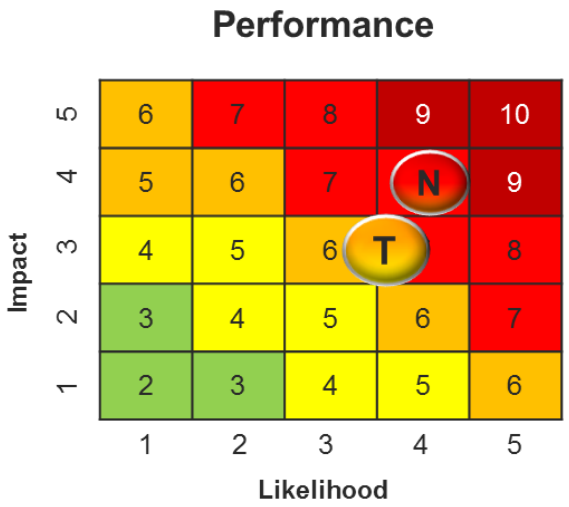
Value



Summary of risk outcome

There were a number of challenges to the delivery of the efficiencies during the first half of CP5. The packaging of renewals and the contracting strategy did not deliver the benefits expected. To address this, Anglia is implementing an enhanced focus on the rollout of continuous improvement techniques and is planning early contractor involvement with CP6.

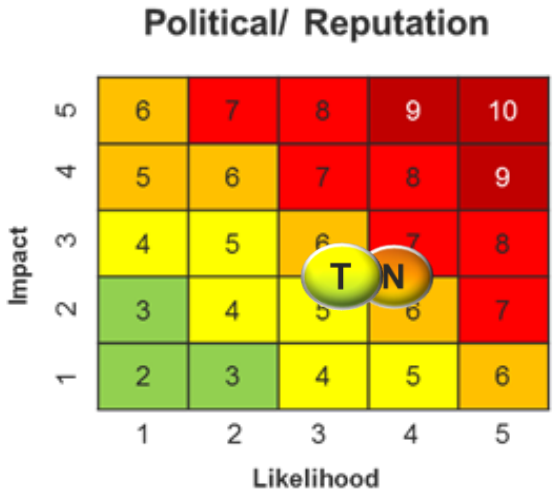
The Anglia delivery strategy for CP6 has built on the lessons learned in CP5. To improve on the rates used for renewals volumes – particularly in signalling and track – the workbank costings have been reviewed against the cost of delivering work in CP5 plus relevant efficiencies identified.



Summary of risk outcome

This delivery plan forecasts a small improvement in asset reliability despite an aging asset and an increase In usage. The work has been prioritised according to criticality, which also considers that performance risk and compliance to policy will be at least maintained at current levels.

Significant risks to performance towards the end of CP5 and into CP6 will be the large-scale introduction of new train fleet and new timetables across all operators. The impact of the introduction of new fleet on the asset infrastructure has been assumed to have minimal effect, but the introduction of new timetables will give a risk to a rise in delay per incident with recovery from disruption and undertaking necessary maintenance being more challenging. The route will therefore look to mitigate this through continuous improvement and working closely with the operators to agree contingency plans ahead of timetable or fleet changes.



Summary of risk outcome

Anglia has worked to engage stakeholders and customers during the development of this delivery plan to gain an input into the renewals access availability during CP6. However, as performance is forecast to remain challenging, and with the franchise and concession performance commitments being high, with the current funding, the route is not able to support these franchise and concession trajectories.

The delivery of renewals on time with no overruns is also critical to prevent reputational damage to Network Rail and the Anglia route. Therefore, projects will continue to be monitored closely and lessons learned tracked from previous renewals works.

The volume of work is forecast to increase, and therefore contact with the public is also expected to increase. However, the route is forecasting that railway complaints will decrease owing to an effort to undertake more pre-notification and improve the culture of staff working at the sites.

2. Route objectives

This plan is predicated on the key assumptions laid out in Appendix B and will be affected as these assumptions change. The long term scorecard in section 2.1 forecasts the regulated output for the route in 19/20 and beyond into CP6 based on the core plan within this submission.

2.1 Long term scorecard

Safety	Targets	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	Achievability
Lost Time Injury Frequency Rate (LTIFR)	Worse than Target	0.331	0.297	0.256	0.218	0.178	0.178	0.178	0.178	
	Target	0.316	0.283	0.244	0.208	0.170	0.170	0.170	0.170	
	Better than Target	0.300	0.268	0.231	0.197	0.161	0.161	0.161	0.161	
Risk Management Maturity Model (RM3)	Worse than Target	6	6	6	6	6	6	6	6	
	Target	8	8	8	8	8	8	8	8	
	Better than Target	10	10	10	10	10	10	10	10	
Train Accident Risk Reduction (TARR)	Worse than Target	60%	60%	60%	60%	60%	60%	60%	60%	
	Target	80%	80%	80%	80%	80%	80%	80%	80%	
	Better than Target	100%	100%	100%	100%	100%	100%	100%	100%	
Top 10 Milestones to Reduce Level Crossing Risk	Worse than Target	6	6	6	6	6	6	6	6	
	Target	8	8	8	8	8	8	8	8	
	Better than Target	10	10	10	10	10	10	10	10	
Financial Performance	**Targets**	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**Achievability**
Financial Performance Measure (FPM) – Gross Profit & Loss	Worse than Target	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3	
	Target	0	0	0	0	0	0	0	0	
	Better than Target	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	
Financial Performance Measure (FPM) – Gross Renewals	Worse than Target	-9.5	-9.5	-9.5	-9.5	-9.5	-9.5	-9.5	-9.5	
	Target	0	0	0	0	0	0	0	0	
	Better than Target	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	

Financial Performance Measure (FPM) – Gross Enhancements	Worse than Target	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9	
	Target	0	0	0	0	0	0	0	0	
	Better than Target	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
Cash Compliance	Worse than Target									
	Target									
	Better than Target	0	0	0	0	0	0	0	0	
Investment	**Targets**	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**Achievability**
Top Investment Milestones	Worse than Target	80%	80%	80%	80%	80%	80%	80%	80%	
	Target	90%	90%	90%	90%	90%	90%	90%	90%	
	Better than Target	100%	100%	100%	100%	100%	100%	100%	100%	
Asset Management	**Targets**	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**Achievability**
Renewals – 7 Key Volumes	Worse than Target	90%	90%	90%	90%	90%	90%	90%	90%	
	Target	95%	95%	95%	95%	95%	95%	95%	95%	
	Better than Target	100%	100%	100%	100%	100%	100%	100%	100%	
Composite Reliability Index (CRI)	Worse than Target	-2.30%	-1.50%	-0.90%	-0.40%	-0.10%	0.50%	0.90%	1.50%	
	Target	-0.30%	0.40%	1.00%	1.50%	1.80%	2.40%	2.80%	3.40%	
	Better than Target	0.70%	1.40%	2.00%	2.50%	2.80%	3.30%	3.70%	4.30%	
Composite Sustainability Index (CSI)	Worse than Target					-1.4%				
	Target					-1.8%				
	Better than Target					-2.2%				
Number of Service Affecting Failures (SAF)	Worse than Target	2,685	2,663	2,641	2,620	2,603	2,588	2,574	2,557	
	Target	2,632	2,611	2,590	2,569	2,552	2,537	2,522	2,507	
	Better than Target	2,606	2,585	2,564	2,543	2,527	2,512	2,498	2,482	
Train Performance	**Targets**	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**Achievability**
Consistent Route Measure – Performance (CRM-P) Network Rail Caused Delay Minutes	Worse than Target	1.72	1.57	1.57	1.56	1.56	1.56	1.56	1.56	
	Target	1.67	1.44	1.44	1.43	1.43	1.43	1.43	1.43	
	Better than Target	1.57	1.31	1.31	1.30	1.30	1.30	1.30	1.30	
Freight Delivery Metric (FDM-R)	Worse than Target	91.5%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	
	Target	92.4%	93.1%	93.1%	93.1%	93.1%	93.1%	93.1%	93.1%	
	Better than Target	93.6%	94.1%	94.1%	94.1%	94.1%	94.1%	94.1%	94.1%	

Freight Growth - Net Tonne Miles	Worse than Target	1.27	1.32	1.35	1.44	1.57	1.73	1.73	1.73	
	Target	1.37	1.46	1.51	1.60	1.75	1.92	1.92	1.92	
	Better than Target	1.47	1.61	1.66	1.76	1.92	2.12	2.12	2.12	
C2C PPM	Worse than Target	93.8%	94.7%	94.7%	94.7%	94.7%	94.7%	94.7%	94.7%	
	Target	94.8%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	
	Better than Target	96.2%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%	
Greater Anglia PPM	Worse than Target	85.0%	88.7%	88.6%	88.6%	88.6%	88.6%	88.6%	88.6%	
	Target	87.1%	89.2%	89.2%	89.2%	89.2%	89.2%	89.2%	89.2%	
	Better than Target	89.2%	89.5%	89.4%	89.4%	89.8%	89.8%	89.8%	89.8%	
London Overground - Time to 3	Worse than Target	89.7%	90.1%	90.2%	90.2%	90.2%	90.2%	90.2%	90.2%	
	Target	90.5%	91.0%	91.1%	91.1%	91.1%	91.1%	91.1%	91.1%	
	Better than Target	91.4%	91.8%	91.9%	91.9%	91.9%	91.9%	91.9%	91.9%	
TfL Rail Right Time	Worse than Target	78.8%	83.3%	83.3%	83.3%	83.3%	83.3%	83.3%	83.3%	
	Target	83.3%	87.6%	87.6%	87.6%	87.6%	87.6%	87.6%	87.6%	
	Better than Target	87.6%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	
Cross Country - Right Time at Peterborough coming from Cambridge	Worse than Target	43.7%	43.7%	43.7%	43.7%	43.7%	43.7%	43.7%	43.7%	
	Target	59.2%	59.2%	59.2%	59.2%	59.2%	59.2%	59.2%	59.2%	
	Better than Target	74.6%	74.6%	74.6%	74.6%	74.6%	74.6%	74.6%	74.6%	
Locally Driven Customer Measures	**Targets**	**19/20**	**20/21**	**21/22**	**22/23**	**23/24**	**24/25**	**25/26**	**26/27**	**Achievability**
All Anglia Route National Rail Passenger Survey - NRPS	Worse than Target	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	
	Target	82.0%	82.0%	82.0%	82.0%	82.0%	82.0%	82.0%	82.0%	
	Better than Target	82.5%	82.5%	82.5%	82.5%	82.5%	82.5%	82.5%	82.5%	
A great relationship with C2C Pulse Check	Worse than Target	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	Target	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
	Better than Target	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
A great relationship with Greater Anglia Pulse Check	Worse than Target	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	Target	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
	Better than Target	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
A great relationship with Arriva Rail London Pulse Check	Worse than Target	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	Target	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	

	Better than Target	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Arriva Rail London - Level 2 Scorecard	Worse than Target	0%	0%	0%	0%	0%	0%	0%	0%	
	Target	50%	50%	50%	50%	50%	50%	50%	50%	
	Better than Target	100%	100%	100%	100%	100%	100%	100%	100%	
A great relationship with MTR Crossrail Pulse Check	Worse than Target	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	Target	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
	Better than Target	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
TfL Rail Right Time	Worse than Target	78.8%	83.3%	83.3%	83.3%	83.3%	83.3%	83.3%	83.3%	
	Target	83.3%	87.6%	87.6%	87.6%	87.6%	87.6%	87.6%	87.6%	
	Better than Target	87.6%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	
Number of Railway Works Complaints	Worse than Target	312	312	312	312	312	312	312	312	
	Target	304	304	304	304	304	304	304	304	
	Better than Target	296	296	296	296	296	296	296	296	
Temporary Speed Restrictions - % closed within 28 days	Worse than Target	65%	65%	65%	65%	65%	65%	65%	65%	
	Target	70%	70%	70%	70%	70%	70%	70%	70%	
	Better than Target	75%	75%	75%	75%	75%	75%	75%	75%	
Number of Close Calls Raised (1st April 2019 - 31st March 2020)	Worse than Target	5475	5475	5475	5475	5475	5475	5475	5475	
	Target	7300	7300	7300	7300	7300	7300	7300	7300	
	Better than Target	9125	9125	9125	9125	9125	9125	9125	9125	
Close Calls Closed % within 90 days	Worse than Target	80%	80%	80%	80%	80%	80%	80%	80%	
	Target	85%	85%	85%	85%	85%	85%	85%	85%	
	Better than Target	90%	90%	90%	90%	90%	90%	90%	90%	

Achievability definitions (applies to "target" value)					
RED	Very challenging, likely to require substantial organisational and cultural change to achieve and/or highly dependent on third party involvement	AMBER	Challenging, likely to require moderate organisational and cultural change to achieve and/or dependent on third party involvement	GREEN	Achievable, builds on existing organisational and cultural capabilities and little or no dependency on third parties for delivery

3. Safety

3.1 Safety Objectives

Our goal is very simple, we believe everyone, our passengers, our workforce and members of the public, will go home safe. We will deliver this vision by working with our staff, our customers and our supply chains.

Safety	Targets	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Lost Time Injury Frequency Rate (LTIFR)	Worse than Target	0.331	0.297	0.256	0.218	0.178	0.178	0.178	0.178
	Target	0.316	0.283	0.244	0.208	0.170	0.170	0.170	0.170
	Better than Target	0.300	0.268	0.231	0.197	0.161	0.161	0.161	0.161
Risk Management Maturity Model (RM3)	Worse than Target	6	6	6	6	6	6	6	6
	Target	8	8	8	8	8	8	8	8
	Better than Target	10	10	10	10	10	10	10	10
Train Accident Risk Reduction (TARR)	Worse than Target	60%	60%	60%	60%	60%	60%	60%	60%
	Target	80%	80%	80%	80%	80%	80%	80%	80%
	Better than Target	100%	100%	100%	100%	100%	100%	100%	100%
Top 10 Milestones to Reduce Level Crossing Risk	Worse than Target	6	6	6	6	6	6	6	6
	Target	8	8	8	8	8	8	8	8
	Better than Target	10	10	10	10	10	10	10	10

3.1.1 Route Scorecard Summary - Safety

The route continues to drive safety improvements with a particular focus on safety culture and reducing the likelihood of incidents to enable improvements in passenger, workforce, and public safety. Managing safety risks in CP6 will be a challenge with an ever busier railway. The funding described within this document, alongside the improved safety culture, is forecast to deliver an improvement in safety each year which is a significant reduction to our current position and best CP5 result. The route has set a target to start CP7 with a stable foundation in safety culture and improved controls enabling a significant improvement on what is currently delivered.

Anglia Route operates within the framework of the Network Rail health and safety management system, discharging our accountabilities as detailed within the principles of the matrix framework and Devolved Businesses. We understand our risks, having developed enterprise risk records for all areas of the business including health, safety and the environment, helping us to identify and control the risks to passengers, the public and our workers. Ultimately via our periodic health and safety meeting and our periodic business review we ensure that sufficient leadership is visible across the route to manage HS&E.

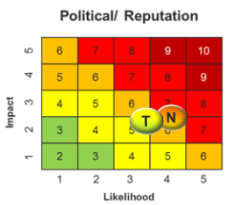
Key stakeholder priorities	Priorities to be addressed by Network Rail
Passenger safety	The safe movement of passengers is a core objective for our business. A passenger must be able to get from station A to station B safely. We will collaborate with and support our train operators to make sure we jointly deliver this objective.
Workforce safety	This is critical to making sure we have a workforce that is healthy, safe and present in our business each and every day. It is an objective we all take accountability for.
Public safety	Anglia currently has 848 level crossings resulting in the route having 25% of the national level crossing risk. Our objective is to reduce both the number of level crossings and the level of risk that they pose, to enable the wider population not to be impacted by our train operations.

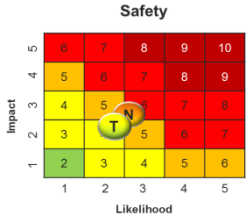
3.2 Safety activity prioritisation and risk outcome

Summary of objectives	To improve safety in all areas of the route, covering workforce, health and wellbeing, passenger and public, and our sustainability impact.

No.	Key constraints, risks and opportunities	What we plan to do	Anglia route owner*	Timescale
1	**O**: There is an opportunity to reduce near misses and therefore improve track worker safety	Workforce safety: Focus on the introduction of track circuit operating devices (TCOD) and high reliability warning systems (LEWiS), improved activity planning and task control, applying the hierarchy of control to reduce risk to staff.	Director, Route HSQE	CP6
2	**O**: There is an opportunity to reduce work accidents (LTIFR)	Workforce safety: Focus on addressing slips, trips & falls, manual handling, driving (through further deployment of awareness techniques), supervisor accountability, improved assessments, application of the hierarchy of control and further use of technology.	Director, Route HSQE	CP6
3	**O**: There is an opportunity to improve workforce wellbeing (including management) through targeted activity	Workforce safety: Reduce fatigue risk via rostering and 14hrs door to door, improve mental wellbeing via improved leadership understanding and management tools, improve HAVs and respiratory risk compliance and surveillance.	Director, Route HSQE	CP6
4	**O**: There is an opportunity to improve workforce engagement with the safety agenda	Workforce safety: Drive and deliver ‘everyone home safe every day’ vision along with contact risks, life-saving rules, PPE, Sentinel and Home Safe plan and the related ideas hopper.	Director, Route HSQE	CP6
5	**O**: There is an opportunity to reduce level crossing risk to improve public safety	Public safety: Targeted programme to upgrade level crossings based on risk supplemented with a community engagement plan targeting hotspot locations, local area issues and wider engagement.	Director, Route HSQE	CP6
6	**O**: There is an opportunity to achieve financial savings through minimising energy usage	Environment and sustainable development: Maximise environmental benefits within the budget allocation and funding arrangements within the control periods to reduce our environmental impacts.	Director, Route HSQE	CP6

* For job titles please see Appendix G - Glossary

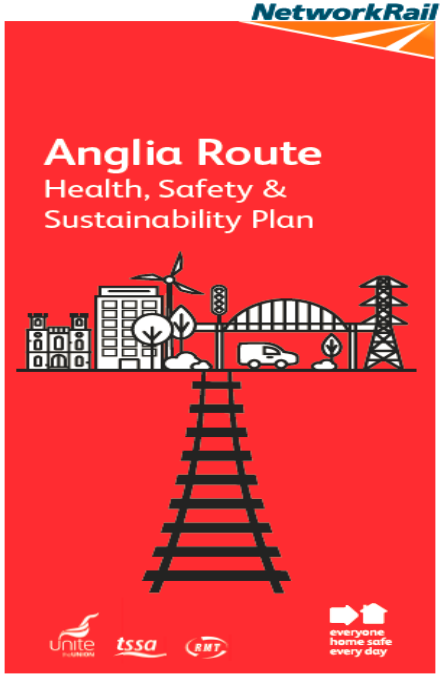


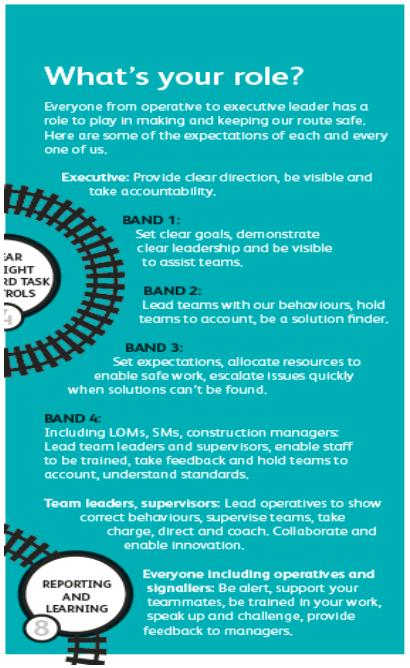


Summary of risk outcome (N=current level of risk, T=forecasted level of risk at end of CP6)

There is a large volume of initiatives making up each planned safety workstream. An increasingly diverse workforce brings different risks and opportunities. Changes in infrastructure and trends also present a risk. Emerging risks related to new ways of working will need to be properly identified and managed. Workforce engagement, training and competency development will be needed to manage these risks.

3.3 Safety Strategy





During the first nine periods of 2017/18 Anglia saw declining safety performance. Our lost time injury frequency rate increased from 0.524 (P1 2017/18) to 0.808 (P9 2017/18). Additionally, our train accident performance had seen significant events at Hockham Road, Nairns (2016/17) and Bloss level crossings (2017/18).

To address this decline in safety performance, Anglia route introduced the role of Director, Route HSQE and initiated an improvement plan for HS&E. The plan was developed through strong engagement, collaboration and delivery with our managers, supply chains, customers and Trade Unions.

Our overall strategy for HS&E is:

- To analyse our risks based on data, experience and stakeholder views.
- Collaborate with our stakeholders to get buy in and engagement
    - Our H&S plan is supported by the RMT, TSSA and Unite
    - We have an Anglia safety leadership team created from IP and route supply chain sitting alongside the Anglia route including a trade union representative.
- Build a foundation of trust and respect in our workforce.
- Tackle level crossing risk reduction via our Transport and Works Act Order and a programme of renewal and upgrade works.

We will continue to drive improvements by:

- Listening to concerns of managers, staff and customers linking them with root causes of events to develop actions that address them.
- Creating a collaborative safety leadership team with IP and route Supply Chain.
- Focussed key safety messaging to staff:
    - Period safety cascades have one safety subject from Take 5, Close Calls, accountability, health, team working & PPE. They all have a video on the topic involving front line staff from within the route alongside a route Director.
- Delivering on our commitments, for example the creation of Control Communications Review Groups to review safety critical communications to ensure that high standards are maintained along with providing operational safety training for our customers as part of our Joint Safety Improvement Plans.
- Visible safety leadership through regular H&S Weeks with our trade unions and safety tours.

Passenger Safety

Our strategy is to reduce risk in collaboration with our lead train operating companies (Greater Anglia, MTR Crossrail, ARL and c2c). We have bespoke Joint Safety Improvement Plans in place with all our lead train operators. These are monitored at our Joint Alliance Boards with the train operators.

To manage this important subject area, the route has established a new framework for collaboration; a route System Safety Review Group attended by all lead train operator safety leads. Under this group there are train operations, route crime, and safety critical communications working groups all of which are attended by our industry partners

In relation to our scorecard, the Train Accident Risk Reduction (TARR) measure is made up of a number of indicators that all enable our trains to run safely. We monitor these as proactive risk indices to make sure we prevent derailments.

Level Crossings

Level crossings are one of Anglia's key risk areas and accounts for 25% of the national risk as measured by the All Level Crossing Risk Mode (ALCRM) (2018/19 P7 Anglia 2.955 of National 11.625 FWI). The route has seen a significant risk improvement (37%) over the last 18 months including a reduction in vehicle near misses associated with level crossings.
However, we still experience significant train / car collisions. In the past 12 months, three deliberate events occurred at automatic half barriers crossings (Thorpe Lane, Waterbeach and Palgrave). Additionally, at Routs, a Power Operated Gate Opener (POGO) we saw deliberate misuse leading to a collision with a freight train. Our tactic is to seek to close crossings where we can, especially those with significant risk and misuse.

Transport and Works Act Orders (TWAO)

The route has a new approach to addressing level crossing risk. During 2016 to 2018, Anglia route has undertaken four Transport and Works Act Orders seeking to close 108 level crossings where reasonable alternatives are available. Our approach has been to close crossings that have light use or where there are logical closures as a result of alternative access means. The work has required a sustained focus with a project team consisting of members from across Network Rail. This focussed approach brings benefits to all parties involved in the work as a result of well thought through packages of activity. It allows the public to have good visibility and provides an opportunity for considered challenge. We believe that this approach is positive and of benefit to all and will seek to continue it.
Additionally, we have a programme for a steady reduction of risk at crossings across the route via a combination of improvements, with authorised users and wider community engagement via location specific, area and general community engagement.

Track Worker Warning Systems

Two systems are being considered, firstly a remote track circuit operating device (TCOD), of which the route has 25 arriving in November and the ongoing cost of these over CP6 is £325k. They will allow remote disconnection of track circuits to enable line blocks with additional protection to be taken easily and remotely, allowing for better protection arrangements. Key Junctions on West Anglia have been identified as the priority sites currently. Secondly, a warning system which we have identified 20 sites. This will enable warning of trains to be given from the signalling system. This is still in the design phase and is yet to gain product acceptance. The first live installation will be at Billericay on the Southend Branch. All the identified sites are to enable warning around point work.

Fatigue

The operations team have identified a requirement for an additional 25 posts to enable compliance with the new fatigue standard, although on-call arrangements may impact on this figure further. Major Stations have also flagged concerns during the change impact assessments, with 5 teams covering a 24/7 roster, where maintenance employ 6 teams to cover these shifts. It is expected that an entire additional station team will be required. Work with Trade Unions on the impacts of the standard will commence at the end of year. More work is also required with the ECRO team to understand any risk in that area of the business.

Transient Welfare

After being the first route in the country to achieve the 20 minute travel time to a welfare provision and establishing the Welfare App for Network Rail further success has been achieved by reducing route travel time to 10 minutes. We will establish our own Welfare Standard whilst the central standard is reviewed and updated in line with the App. These locations will all be by design completely gender neutral which will also aid in the recruitment of female track workers establishing greatly improved working

conditions with a full aim of actively supporting the 20 by 20 national target for female track workers in CP6.

As of 2019, the welfare App will hold all the details of A&E 24/7 hospital locations for almost all of the country which will be downloadable to all parts of the business inclusive of IP. We shall be adding in all automated external defibrillator (AED) units from both Network Rail locations and the NHS public network allowing all parts of the business to benefit from the information stored on it.

Safe Access to our Infrastructure

In the past three years, 205 trackside injuries have occurred. 35% of all of our lost time injuries are staff slips, trips, or stumbles. A further 30% are as a result of manual handling of tools and equipment between vehicles and our worksite. A key area to reduce these numbers is to improve our access points and cess walkways. We will undertake upgrades to our access points to enable better lighting, space for storage of materials and vehicles and arrangements to enable easy movement of tools and equipment from road vehicles to the place of work on the infrastructure.

Driver Safety

The route will be undertaking a number of improvements around creating a minimum driver standard. This is critical to reducing harm as in the past three years, fifty one staff members have been injured in road vehicle collisions. Implementing plans around fatigue and rest periods for drivers going over a set driving distance.

Young or inexperienced drivers will be given orientation into using vehicles and where appropriate sent on training courses. As a minimum they will be assessed for their skill level before being allowed to drive vehicles under set driver classification. All drivers will be asked to undertake online assessments to identify shortfalls in knowledge and understanding of road risk. When we have identified at risk groups we will offer driver assessment training to individuals to improve their ability to drive safely and understand road risk.

Our new road fleet will have puddle lighting fitted as standard to assist staff to see what ground they are stepping on to as they exit their vehicles.

IOSH Training

We will launch an IOSH accredited course entitled Working Safely. Defining hazard and risk with an aim of delivering the training during the first two years of CP6. The course contents will improve our staff knowledge and education in areas such as, improved productivity from fewer hours lost due to sickness and accidents. This will lead to improved route wide safety awareness, an appreciation for safety measures, active staff involvement to improve the workplace and enhanced reputation within our supply chain. Successful delegates are awarded an IOSH Working safely certificate.

Electrical Safety

Anglia has seen significant investment across our infrastructure renewing, upgrading and installing new overhead line equipment. These works introduce and enable our staff to take safer, faster, more reliable isolations when working. This is the standard to which we will work.

Community Safety

Community safety continues to be a challenge in CP6. There is a combination of factors to address from wilful intent, poor knowledge of risks, unsafe acts and errors. Also with a changing/ growing population in the route and new users of level crossings it is important to continue engagement with the public.

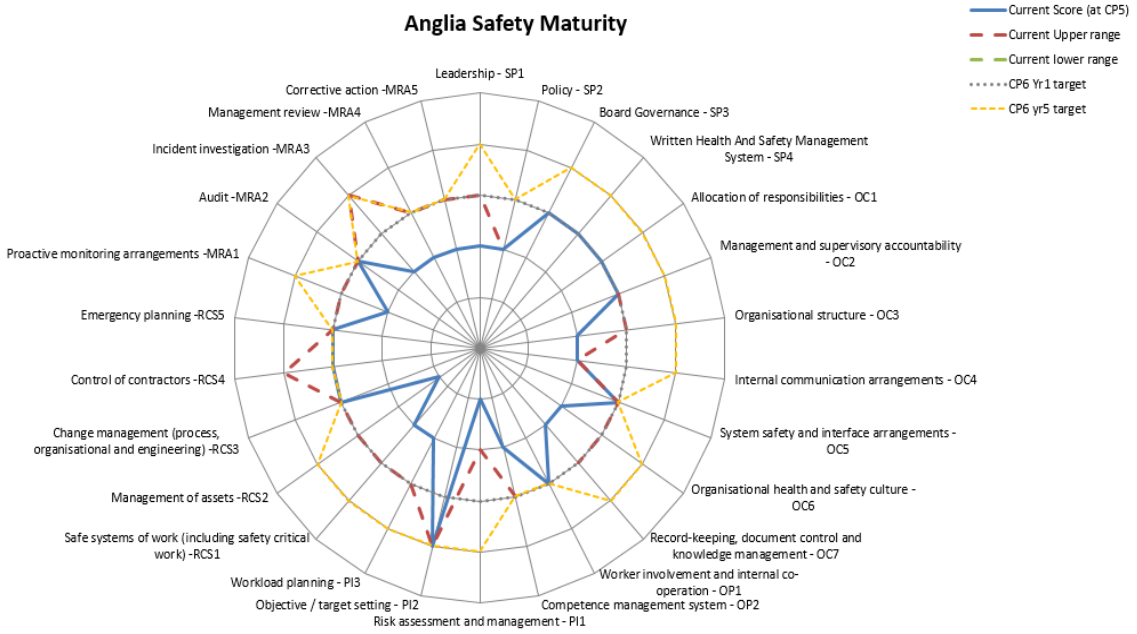
In CP6 we will be continuing our community safety plan targeting 3 areas;

location specific activity, geographical area activity and general route wide engagement. The funding will be targeted at campaign materials and events to engage the target audiences. Our initial focus will target locations at Enfield Lock, Grays and Pitsea, our geographical areas will be Broxbourne, Enfield and Havering with route engagement aimed at Level Crossings, Trespass and Crime.

Assurance

The assurance methodology proposed for CP6 is aligned to the Risk Management Maturity Model (RM3) and this commitment is written into the corporate Health and Safety Management System. RM3 allows a structured approach to enabling improved leadership across both workforce safety, operational safety, asset management and public safety at level crossings and within our managed station (Liverpool Street Station).

During the final year of CP5, we baselined our position and route understanding of RM3. This RM3 awareness maturity and understanding will continue into year 1 of CP6. From year 1, we will be targeting our assurance activity and related improvement areas on the lower maturity areas and areas which will provide our best route maturity improvement outcome. We will be creating milestone activities to monitor our progress and carrying out regular reviews to benchmark our progress and maturity. It is also proposed to expand this methodology beyond health and safety to areas such as sustainability.



3.4 Occupational Health & Wellbeing Strategy

Anglia route is committed to improving working conditions and employee health and wellbeing. Our plan drives improvements in key areas associated with occupational health including hand arm vibration, respiratory risks, fatigue and musculoskeletal related risks. We will also be improving the wellbeing of the workforce via life choices, mental wellbeing, rest and resilience and inclusivity support. We have tightened our control of vibrating tools and will continue to push vibration exposure down further.

We have initiated a programme regarding mental wellbeing. Initially, we will develop staff to be mental wellbeing champions to enable them to talk with staff who have concerns regarding anxiety or depression. Their role is solely to sign post staff to sources of expertise both inside and outside of Network Rail. We will train managers to be able to recognise and manage mental ill health within staff whilst at work. This is important to the route because in 2017/18 Anglia route saw 11,904 working days lost due to mental ill health. We can support staff and reduce this level of ill health.

Mental wellbeing is critical to staff health, and we recognise and will seek to help our staff improve their health and wellbeing. We will collaborate with our STE colleagues to bring greater focus to our occupational health services for our staff and as a result encourage and enable them to take healthy lifestyle choices.

Safety Culture

In creating a baseline for safety culture change, the starting point is risk. As Anglia people become more risk aware they become less risk tolerant. If they have a mechanism to report (through close calls) and feel able to do so.

The route understands the importance of improving safety culture. All the work detailed in this section is critical to helping change our Safety Culture and how we work in Anglia. Change comes about by leaders driving improvements that make a visible difference to our staff. Staff see the commitment and change that the business want to utilise and in turn respond to implement that change. Our work detailed above will continue to push our improvements forward to deliver that change.

4. Train Performance

4.1 Train Performance Introduction

2018/19 has been a challenging year for train performance nationally and Anglia route, like most other routes, has seen a continuation of the overall downward performance trend during the year. Most of our key lead train operators are expected to miss their 2018/19 year-end targets and, therefore, enter CP6 at a lower point than expected when our original Route Strategic Plan was submitted in February 2018. This has necessitated a review of our year 1 performance trajectories for all the operators where we are the lead route. Reluctantly, we have adjusted all our year 1 targets downwards as our analysis and plans no longer support the original forecast. However we have retained the same targets for years 2-5 as included in our original Route Strategic Plan as we believe they are attainable in the longer term.

It should also be noted that through the annual Anglia scorecard engagement process, we have changed the performance metric used for two of our train operators. For Arriva Rail London we have agreed to use the T-3 metric, which aligns with the performance regimes used in their concession agreement, and for MTR Crossrail we have agreed to use Right Time reflecting the future needs of the Elizabeth Line as a high frequency metro service. For Greater Anglia and c2c we will continue to use PPM as the performance measure. Following consultation, we have also agreed to include a measure for the Cross-Country franchise on our annual scorecard. The measure to be used is 'Right Time at Peterborough from Cambridge'.

There have been several key drivers behind the decline in performance in 2018/19. One is the impact of severe weather on the train service and the resilience of the network. It was a long harsh winter extending to the 'Beast from the East' in late February 2018. The impact included the implementation of Anglia's Key Route Strategy for several days where as many as 40% fewer trains ran than usual. Period PPM for P12 was 86.9%, our second lowest period on record. An extreme winter was followed by a long, hot and dry summer. As well as the imposition of temporary speed restrictions due to high track temperatures and OLE issues, the prolonged hot spell meant that proactive maintenance and rectification for geometry faults could not be undertaken. We also saw a high number of lineside fires. The lack of rainfall has also had a big impact on the clay and peat formations which has generated a volume of geometry faults. All these issues have resulted in a high number of speed restrictions.

Route PPM for Periods 4 and 5, were only 90% and 89% respectively. Normally during these periods, we would expect the route to deliver at least 92% PPM. In addition, most of our operators have also experienced worsening fleet performance. Greater Anglia, TfL Rail and Arriva Rail London are all in the process of introducing new fleets. The Greater Anglia and TfL fleets are ageing, and the replacement fleets being supplied by Bombardier are behind programme. Delays to new rolling stock for Arriva Rail London, also Bombardier supplied, has left the operator with reduced fleet availability. It makes managing its fleet harder and whilst the London Overground fleets are achieving reasonable miles per casualty figures, there is less flexibility in the fleet when things do go wrong.

We are therefore ever more focussed and committed to putting passengers first and making the improvements in performance that are expected from our funders and customers. We understand that it is Network Rail's role to lead performance management and Anglia route is determined to rise to this challenge in CP6.

Train Performance Objectives

Arresting the decline in performance and restoring it to the level predicted in our original Route Strategic Plan will be a key challenge for year 1 of the control period. Further details on how we plan to do this are included in section 4.4.

Train Performance	Targets	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Consistent Route Measure – Performance (CRM-P) Network Rail Caused Delay Minutes	Worse than Target	1.72	1.57	1.57	1.56	1.56	1.56	1.56	1.56
	Target	1.67	1.44	1.44	1.43	1.43	1.43	1.43	1.43
	Better than Target	1.57	1.31	1.31	1.30	1.30	1.30	1.30	1.30
Freight Delivery Metric (FDM-R)	Worse than Target	91.5%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%
	Target	92.4%	93.1%	93.1%	93.1%	93.1%	93.1%	93.1%	93.1%
	Better than Target	93.6%	94.1%	94.1%	94.1%	94.1%	94.1%	94.1%	94.1%
Freight Growth - Net Tonne Miles	Worse than Target	1.27	1.32	1.35	1.44	1.57	1.73	1.73	1.73
	Target	1.37	1.46	1.51	1.60	1.75	1.92	1.92	1.92
	Better than Target	1.47	1.61	1.66	1.76	1.92	2.12	2.12	2.12
c2c PPM	Worse than Target	93.8%	94.7%	94.7%	94.7%	94.7%	94.7%	94.7%	94.7%
	Target	94.8%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%	96.2%
	Better than Target	96.2%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%	97.7%
Greater Anglia PPM	Worse than Target	85.0%	88.7%	88.6%	88.6%	88.6%	88.6%	88.6%	88.6%
	Target	87.1%	89.2%	89.2%	89.2%	89.2%	89.2%	89.2%	89.2%
	Better than Target	89.2%	89.5%	89.4%	89.4%	89.8%	89.8%	89.8%	89.8%
London Overground - Time to 3	Worse than Target	89.7%	90.1%	90.2%	90.2%	90.2%	90.2%	90.2%	90.2%
	Target	90.5%	91.0%	91.1%	91.1%	91.1%	91.1%	91.1%	91.1%
	Better than Target	91.4%	91.8%	91.9%	91.9%	91.9%	91.9%	91.9%	91.9%
TfL Rail Right Time	Worse than Target	78.8%	83.3%	83.3%	83.3%	83.3%	83.3%	83.3%	83.3%
	Target	83.3%	87.6%	87.6%	87.6%	87.6%	87.6%	87.6%	87.6%
	Better than Target	87.6%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%
Cross Country - Right Time at Peterborough coming from Cambridge	Worse than Target	43.7%	43.7%	43.7%	43.7%	43.7%	43.7%	43.7%	43.7%
	Target	59.2%	59.2%	59.2%	59.2%	59.2%	59.2%	59.2%	59.2%
	Better than Target	74.6%	74.6%	74.6%	74.6%	74.6%	74.6%	74.6%	74.6%

4.1.1 Route Scorecard Summary – Performance

Our forecasts for 2019/20 have been modelled in their base performance currency (T-3, right time or PPM) but for years 2-5, which remain consistent with our original Route Strategic Plan, the modelling has been performed in PPM and then a conversion tool has been applied where appropriate. All model inputs include historical incident data and assumptions related to traffic and passenger growth, service affecting failures, timetable changes and new rolling stock.

Over the next few years Anglia expects to see an increase in the number of trains, and passenger volumes. The costed renewals plan outlined in this document is expected to give a minor reduction in the number of service affecting failures. However, this will not lead to significant rise in performance over CP6 from the forecast CP5 output due to the risks around new trains, timetables and passenger numbers. In some cases, this will not meet the operators' concession or franchise targets.

Anglia has defined performance as 'amber' as it relies on both Network Rail and industry engagement in order to achieve its forecast. CP6 sees a high volume of change with new train introductions and time table changes which represent risks to performance. These will require strong and robust management and delivery by the train operators and Network Rail. We will provide the leadership to ensure that the opportunities of new fleets and timetables are maximised and the risks through change are mitigated through.

Key stakeholder	Priorities to be addressed by Network Rail
Greater Anglia	Supporting the delivery of key franchise commitments. This includes the replacement of their entire train fleet by the end of 2020 and introduction of new train services including 'Norwich in 90' services. The new train services and fleet require infrastructure improvements for rolling stock compatibility, changes to safety risk profile at numerous level crossings as well as depot and stabling improvements. The new rolling stock has better performance characteristics than the trains that it is replacing and will allow for a review of sectional running times and the train timetable. Network Rail is working collaboratively with Greater Anglia to facilitate the delivery of these objectives, to mitigate performance risks and to maximise the performance benefits. Greater Anglia has a franchise commitment to deliver a PPM of 93% which our modelling does not currently support.
c2c	c2c has historically been one of the best performing UK train operators and this has been a key component of its strong customer satisfaction. Performance has suffered over the past 18 months with a decline in Network Rail infrastructure reliability. Some of this has been weather related but there have also been issues with track reliability and the robustness of signalling power supply. c2c's immediate priority is for Network Rail to restore the infrastructure performance to its historically good levels so that it can deliver a consistent PPM higher than 96%. We believe that this is achievable by year 2 of the Control Period although c2c aspires to achieve this sooner. Later in the Control Period, c2c will also see the introduction of a new fleet of trains.

ARL (London Overground)	ARL also sees an ambitious new trains programmes as it replaced the diesel C172 fleet with Bombardier electric C710 stock on the recently electrified Gospel Oak to Barking Line. More of this stock will also be used to replace the C315 and C317 used on the Liverpool Street to Enfield, Chingford and Cheshunt services. During the Control Period ARL will also be increasing the train service on the North London Line from 8 trains per hour (TPH) to 10 TPH with aspirations for more frequent trains on the East London Line as well. It aims to do this all whilst delivering a high level of performance in its busy metro services. A key component of ARL's strategy to improve performance is the introduction of a 'right time regulation policy' for its West Anglia services. We are working through this with ARL with plans for a trial in year 1 of CP6 to ensure that the wider effects of such a policy are properly understood before its introduction.
MTR Crossrail (TfL Rail / Elizabeth Line)	MTR require that trains are presented at the portals to the new Crossrail tunnels on-time to ensure excellent performance for the Elizabeth line. We are also working with MTR Crossrail and the Crossrail project to facilitate the completion of works on Network Rail infrastructure and the further introduction and testing of the C710 Bombardier fleet.
Freight	What freight particularly want from the Anglia route is a reliable asset performance whilst ensuring fair regulation whilst on the network. With Trimley Long Loop being completed during CP6 this will add much operational flexibility to better current performance for intermodal services. We need to concentrate our efforts on increasing infrastructure reliability on the Cross Country route from Haughley Jn to Ely and Peterborough which is a major artery of the UK PLC.
Cross Country	Right time presentation of trains at Peterborough coming from Cambridge is Cross Country's priority so that train services are not delayed further as they cross into other Network Rail routes. This metric has been reflected in our local scorecard.

4.2 Train performance activity prioritisation and risk outcome

No.	Key objective drivers (constraints, risks and opportunities)	What we plan to do	Owner	Timescale (start/ finish)
1	**R**: There is a risk that the major timetable changes that have been committed to as a result of increased passenger growth will have a negative impact on performance.	Engage with train operators through the timetable build process to help them build higher quality timetables, use lessons learned from recent major timetable issues that affected customers across the country.	System Operator	Throughout CP6 with May 2020 and December 2020 expected to be key timetable dates with opening of Elizabeth line and the new Greater Anglia trains
2	**O**: There is an opportunity to drive asset management and support 'predict and prevent' ways of working.	Work with operators to specify new fleet with on-board infrastructure monitoring. The CP6 core funding plan includes funding to roll out more Intelligent Infrastructure (II) capability to cover points and track circuits. Route performance plan to monitor the performance benefits of existing II, identify assets that could be more reliably managed using II, and produce business cases to justify installation.	DRAM	CP6
3	**R**: There is a risk that the volume of new rolling stock entering into service before, and at the start of CP6 across the route for all operators will impact on performance.	Engage TOCs during build and testing of units to understand and minimise performance and asset degradation impact. Ensure all risks to infrastructure are mitigated around signal sighting, level crossings and rail wear before introduction of new fleet. Include likely dip in reliability on new fleet introduction and impact of driver training on current services in the performance trajectory.	DRAM	Years 1, 2 and 3 of CP6
4	**R**: There is a risk that the uncertainties inherent in the performance forecasting process are large, and that planned performance improvement initiatives may not deliver the proposed benefits.	Ensure credible evaluation of initiatives is undertaken and apply best practice continuous improvement from other routes and industries. Develop a library of best practice in terms of forecasting models and engage with the National Performance Analysis Team (NPAT) to provide consistency of approach.	HOP	Implement by end of Year 1 and then throughout CP6

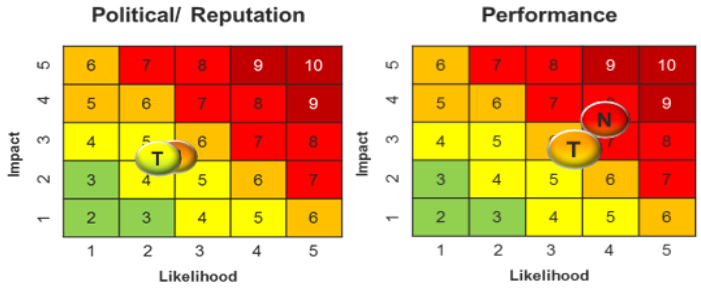
* For job titles please see Appendix G - Glossary

Summary of risk outcome

As noted earlier, performance is not on the trajectory to meet CP6 entry targets and Anglia route and our customers need to work collaboratively to return performance to the levels that our passengers rightly expect.

Our strategic performance risks include:

- Growth in passenger demand
- Ensuring that benefits from performance initiatives are realised and captured
- Seasonal challenges
- Fleet reliability uncertainties – due to large replacement programme
- Root cause analysis evermore difficult due to increasing effect of sub threshold delay.
- Large timetable changes



A joined-up approach to managing performance improvement schemes means that many improvement initiatives have been collected and identified. But these schemes add up to only a marginal improvement to overall performance.

We need to provide focus areas for the strategy and processes to really take root. For Anglia, these are:

- Management of speed restrictions and engineering works
- Track quality
- Sub threshold delay
- Smooth introduction of new rolling stock and timetables to minimise performance risks and to exploit the performance opportunity

Good train performance remains an output of the whole railway system, and Anglia overall has historically been a high-performing route. The current trend is mostly static or worsening performance, resulting in both financial and reputational challenge. Our plans for CP6 are to reverse this trend and deliver a stable and high level of performance.

4.3 Operational performance strategy

To address the performance challenge that we have seen in 2018/19 and to arrest the downward decline in operating performance we have overhauled our approach to performance management in the route.

Immediate response

We have implemented actions to address the high number of speed restrictions on the network, caused largely as a result of the long dry summer including:

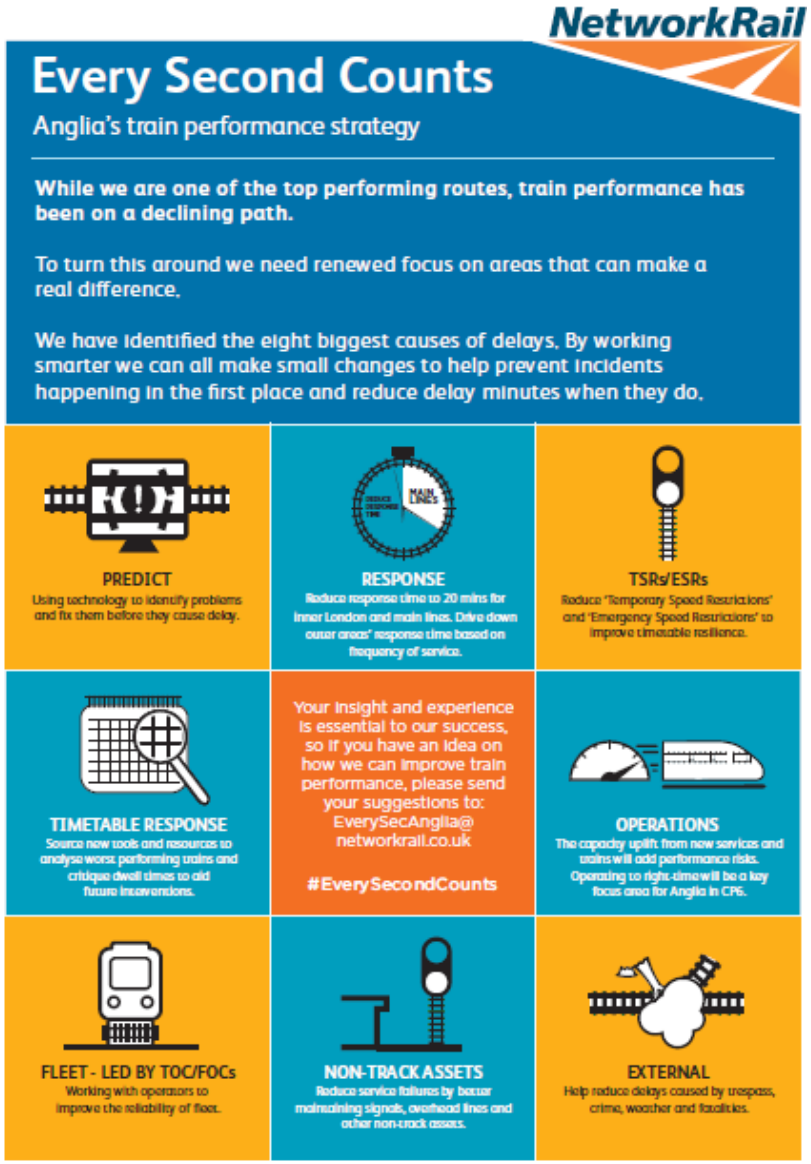
- Sourced an increase of 20% in tamping
- Undertaken an independent review of key performance-affecting speeds to ensure that they are required, plans to address are robust and that they are properly prioritised
- Made speed restrictions a key agenda item at all performance steering meetings
- Made a commitment to remove all unplanned TSRs before the end of the Control Period

Seasonal Preparedness

There has also been an increased focus on seasonal preparedness. Our autumn plan has worked well every year since 2015/16 with fewer delay minutes from autumn delay reason codes. 2018/19 autumn related delay minutes were notably lower than in 2017/18 and an improved winter plan is in place. A key component of the winter plan is a review of the Key Route Strategy whereby we have introduced greater flexibility into the plan which was previously route wide.

Security

We have embedded a small British Transport Police (BTP) team within the route organisation to focus on crime related disruption as part of operation Peel. They carry out patrols across known route crime hotspots and identify issues such as easy access points that could be used for trespass and vandalism. They will also attend fatalities to reduce the overall resolution



time and are the routes single point for contact for the BTP. This team is expected to grow and is funded throughout CP6.

The use of a specialist security contractor will also continue through CP6 focussing on reducing route crime, trespass and vandalism. This has been a successful strategy within CP5 that we intend to continue. We will also continue our work with the Samaritans and local authorities with incident and trauma support alongside providing training for our staff on the management of suicidal contacts.

Fleet Performance

Regarding the fleet performance, we are actively engaged with our train operators at many levels to ensure that we understand what plans are in place to maintain and improve the reliability of existing fleets, but also to facilitate the introduction of new trains. For example, Anglia has a joint Programme Board with Greater Anglia for the New East Anglia Trains project and is also working with ARL and MTR to facilitate testing and gauge clearing for new rolling stock.

Independent reviews

Finally, Anglia route has commissioned an independent performance review, to be undertaken by the team that carried out the Holden Review with initial reports due at the end of March 2019. The review will focus on the approach to delivering operation performance on the route and the operational deliverability of the train service.

Performance culture and governance

Notwithstanding the immediate actions that we are undertaking, we have recognised that a refreshed approach to managing performance across the route was necessary, and that we needed to both raise the profile and awareness of the performance challenge amongst all staff.

Anglia route has appointed a Performance Programme Director with the focus on driving accountability and delivery of actions whilst providing a robust governance and structure to sustain performance improvement in the long term.

The start of the “Every Second Counts” campaign has led to performance presentations and discussions with staff across the route, and the “Chats with the Chief” approach has provided opportunities for the COO to brief front line staff on the importance of performance.

We have refreshed our approach to visualisation holding fortnightly sessions (Performance Steering Group) that bring together NR, TOCs and freight stakeholders around the table. These sessions are analysis driven, combining tactical and strategic risk management. An increased emphasis on accountability means that there are clear “owners” for different types of delay, with associated performance improvement schemes.

Refreshing the approach to root-cause performance analysis

Whilst some of the bigger performance issues facing Anglia are easily identifiable, we are aware of the limitations of delay minute analysis and are currently sourcing industry expertise and resource to aid in further analysis of root cause and service recovery. We also plan to use new tools to look at, for example, worst performing trains, dwell times, and the impact of sub-threshold delay. We are sourcing the Cosmo and Quartz tools, used in South East, to help analyse the problem.

There have been a number of recent reviews of industry performance – the Gibb review of the South East, the Donovan review of Scotland, and the Holden review on Wessex. We have considered the reviews, confirming where the learning and recommendations are applicable to Anglia, and started the development of plans to address these. Anglia route is also co-funding and sponsoring a joint review with Greater Anglia by Steer which will review:

- How we are set for a proactive risk management approach to performance and the prioritised approach take to this
- How we react and amend the work bank in response to our customers views
- How we dynamically allocate resources to deliver a robust train service

We will be looking to use the Performance Innovation Fund included as part of the Final Determination for specific schemes that can demonstrate a tangible performance improvement and schemes with industry benefit will be prioritised.
Alongside that we are committed to developing and delivering a fit for purpose Intelligent Infrastructure programme for the route that improves the analytics to support a predict and prevent approach where possible. We are also increasing collaboration with our train operators to capture asset information from equipment fitted to service trains.

4.4 Capacity and Timetabling Strategy

There is significant timetable change within the first years of CP6 and Anglia has been working closely with the System Operator function to establish Event Steering Groups. These are convened to enable the smooth transition for the proposed timetable changes and include affected operators and other stakeholders. They identify and co-ordinate the challenges and potential for future timetable changes, which can be as a result of the completion of infrastructure enhancements, the introduction of new rolling stock or changes driven through franchise change. The two most significant changes on the Anglia route are:

1. The opening of the Elizabeth Line. The ‘concept Elizabeth Line train plan’ has been subject to analysis through a Crossrail Railway Systems Model. The date for full opening of the Elizabeth line is still to be confirmed.
2. Planned changes to the Greater Anglia timetable which will increase peak hour seats into Liverpool Street by 55% by 2020. The new timetable will require supporting depot and stabling works, platform lengthening works, a package of gauging works, and power and level crossing assessments. Greater Anglia timetable changes will be subject to further modelling analysis before introduction.

Nationally, the System Operator function will develop a programme plan for Event Steering Groups providing visibility of plans to lead the industry in preparing for major timetable events. These are reported through a Calendar of Events. Maintaining performance levels with this quantum of change across multiple operators is challenging and has been identified as a significant risk. As performance mitigation, new Greater Anglia trains will retain the old sectional running times on most services until December 2019.

Network Rail has a long term vision to produce a ‘zero defect timetable’. There is a clear strategy throughout CP6 to gravitate towards achieving this, which includes investment in the technology portfolio. Further details of this are included in the System Operator Strategic Business Plan. Anglia continues to work closely with System Operator to understand and input into the long term planning process, notably through study project boards, and will continue to support strategies for the delivery of a rail network to meet future passenger and freight growth and demand.

5. Locally driven measures

5.1 Locally driven measures objectives

Our locally driven measures have be developed through consultation with our stakeholders and the train operators where we are the lead route. For these train operators we want an effective and collaborative relationship that helps them to deliver their franchise and concession objectives. With this in mind we have set out the following targets.

Locally Driven Customer Measures	Targets	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
All Anglia Route National Rail Passenger Survey - NRPS	Worse than Target	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
	Target	82.0%	82.0%	82.0%	82.0%	82.0%	82.0%	82.0%	82.0%
	Better than Target	82.5%	82.5%	82.5%	82.5%	82.5%	82.5%	82.5%	82.5%
A great relationship with C2C Pulse Check	Worse than Target	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Target	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	Better than Target	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
A great relationship with Greater Anglia Pulse Check	Worse than Target	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Target	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	Better than Target	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
A great relationship with Arriva Rail London Pulse Check	Worse than Target	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Target	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	Better than Target	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Arriva Rail London - Level 2 Scorecard	Worse than Target	0%	0%	0%	0%	0%	0%	0%	0%
	Target	50%	50%	50%	50%	50%	50%	50%	50%
	Better than Target	100%	100%	100%	100%	100%	100%	100%	100%
A great relationship with MTR Crossrail Pulse Check	Worse than Target	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Target	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	Better than Target	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
TfL Rail Right Time	Worse than Target	78.8%	83.3%	83.3%	83.3%	83.3%	83.3%	83.3%	83.3%
	Target	83.3%	87.6%	87.6%	87.6%	87.6%	87.6%	87.6%	87.6%
	Better than Target	87.6%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%	90.8%
Number of Railway Works Complaints	Worse than Target	312	312	312	312	312	312	312	312
	Target	304	304	304	304	304	304	304	304

	Better than Target	296	296	296	296	296	296	296	296
Unplanned Temporary Speed Restrictions - % closed within 28 days	Worse than Target	65%	65%	65%	65%	65%	65%	65%	65%
	Target	70%	70%	70%	70%	70%	70%	70%	70%
	Better than Target	75%	75%	75%	75%	75%	75%	75%	75%
Number of Close Calls Raised (1st April 2019 - 31st March 2020)	Worse than Target	5475	5475	5475	5475	5475	5475	5475	5475
	Target	7300	7300	7300	7300	7300	7300	7300	7300
	Better than Target	9125	9125	9125	9125	9125	9125	9125	9125
Close Calls Closed % within 90 days	Worse than Target	80%	80%	80%	80%	80%	80%	80%	80%
	Target	85%	85%	85%	85%	85%	85%	85%	85%
	Better than Target	90%	90%	90%	90%	90%	90%	90%	90%

5.1.1 Route Scorecard Summary – Locally Driven Measures

NRPS

Anglia routes national rail passenger survey measures the overall Anglia national railway passenger satisfaction. As a key contributor to this measure through the performance of our infrastructure and our operation of Liverpool street station it is appropriate to include this on our scorecard. In the autumn 2018 survey Anglia was the joint best performing route achieving 82% and we intend to sustain this high level of performance throughout CP6.

Pulse Checks

We have agreed to introduce pulse checks with c2c, GA, Tfl Rail and ARL. These will measure the strength and effectiveness of our relationship and collaboration with our lead operators. Surveys are taken every period to inform the assessment of the measure. In addition to a pulse check, ARL has requested a tier 2 scorecard looking in more detail at key issues that affect them. This will include train performance by route and station lift performance. For Tfl Rail, because of the importance of performance to them, they have requested right time train performance also appears as a local measure.

Number of Railway Complaints

Anglia route has driven down railway complaints in 2018/19 and expects to sustain this through CP6 despite the greater levels of renewals activity predicted by the plan.

Unplanned Temporary Speed Restrictions

We have seen a level of unplanned temporary speed restrictions (TRSs) throughout 2018/19 which have impacted upon train performance and been flagged as an issue of concern by our customers. As part of our local measures, we will ensure that when TSRs are necessary, we will focus our efforts to remove them as soon as we can and will target to remove 70% within 28 days.

Number of Close Calls Raised and Closed

This measure has not been mandated in 2019/20. However, we believe that the focus on the much improved Anglia safety performance in 2018/19, warrants retaining this as a local measure.

Key customer priorities	Priorities to be addressed by Network Rail
Greater Anglia	Fleet Replacement: Completely replacing the current fleet with new build trains from Bombardier and Stadler. Phased into service from May 2019 to Dec 2020; new build stabling and depot facilities are ongoing to support introduction. Timetable: Operational capability and deliverability of additional off-peak services in the May 2019 (a franchise obligation). Issues being the increased risk posed to level crossings on the network and competing operator timetable aspirations regarding network capacity. Franchise Growth: Anglia route supports GA's growth plans through the introduction of new trains and services.
ARL	Performance: Tough improvements required in performance levels, punctuality targets tightened from 5 to 3 minutes, tougher penalties for all incidents to encourage greater collaboration with Network Rail and Bombardier. West Anglia has been highlighted as a particular concern and Network Rail is supporting a right time regulation trial March 2019 to identify areas to drive improvement. Customer Experience: Heavy focus upon customer experience reflected in cleanliness KPI's (stations and trains) programme to close ticket offices (due to tickets being predominantly oyster or contactless) allowing staff onto platforms.
c2c	Performance and customer satisfaction: Maintaining high levels of quality performance is crucial to delivering a wide range of successful measures, including customer satisfaction measures. Asset reliability is critical given the very limited infrastructure c2c operate over, with any failure causing very significant consequences.

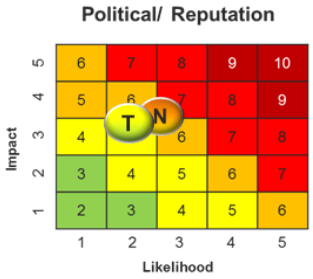
MTR	Performance Regime: The performance regimes provide strong contractual incentives for MTR to operate the railway to these high standards and Network Rail support across routes is crucial to meeting them. These include Key Performance Indicators around: • Service Performance • Delay Minutes • Passenger Performance Measure (trains within 5 minutes of scheduled time) • Headway (regular intervals between trains) • Ticketless Travel – to be maintained below 3% • Customer Satisfaction • Mystery Shopper Surveys • Ticket Queues As of January 2019 the programme for the full opening of Crossrail is yet to be released by TfL.

5.2 Locally driven measure activity prioritisation and risk outcome

No.	Key objective drivers (constraints, risks and opportunities)	What we plan to do	Owner	Timescale
1	**O:** There is an opportunity to enhance and develop the TOC relationship in a measurable way.	Enhance the new periodic customer scorecard to drive improvements to the way Network Rail and operators work with each other. A continuous improvement priority action plan will be driven from the periodic results reporting to relevant alliance boards.	HCRM	CP5 and beyond
2	**R:** There is a risk that the new Greater Anglia Franchise will bring significant change and potential impact to the route through large investments in new rolling stock, depots, stabling and radical timetable changes.	A programme board has been established and is being managed by both Greater Anglia and Network Rail. A full enterprise risk review is established to mitigate the risks of the proposed infrastructure and service changes.	DRS	CP6
3	**O:** There are ongoing opportunities to further develop our customer relationships to drive benefits to both parties managing the ongoing risk of delivering franchise/concession obligations alongside delivering to our passengers.	Collaboration events have either taken place or are being held jointly with our customers where our joint leadership teams focus on developing and forging commitments to deliver agreed objectives, all governed through alliance boards. This includes delivery of new fleet, timetable changes and innovative ways to fund and improve performance.	HCRM	CP6
4	**O:** There is an opportunity to sustain the	Support the introduction of new fleet by Greater Anglia, MTR, ARL and	HCRM	CP6

	improvement in NRPS results and for it to improve slightly in CP6.	c2c throughout CP6. The route also plans to further collaborate with TOCs to improve overall customer experience and support the new Liverpool Street Station Manager to help drive significant local NRPS improvements.		
5	**C:** There is a constraint in delivering world class service to MTR customers as a result of CRL's delayed programme.	Network Rail will continue to support MTR in delivering improved performance to our customers through improved operations, maintenance and customer service.	HCRM	CP6
6	**R:** There is a risk that as more work is conducted on the rail network, more housing developments near the railway and more passengers expected to use the railway, contact from the public and stakeholder is forecast to increase by 15% for the remainder of CP5 and for CP6.	With a renewed focus on worker behaviour Anglia route expects to see an annual decrease in railway complaints of 2.5% across CP6 but this is set against a forecasted 2% increase in non-Railway Works related complaints owing to the ever-growing ease of communicating a complaint that is available to the public.	HRC	CP6

* For job titles please see Appendix G - Glossary



Summary of risk outcome (N=current level of risk, T=forecasted level of risk at end of CP6)

We are actively engaging with our train operator colleagues in developing the plans which will support their committed obligations. All operators have an ambitious and demanding set of obligations which are still in the process of being scoped out, therefore there is some risk in respect of how all of these can be delivered.

6. Sustainability & Asset Management capability

6.1 Sustainability & Asset Management capability objectives

Our summary objective is to manage the operational assets within the route to help achieve our safety and performance targets. Our measures and targets for asset management are:

Asset Management	Targets	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Renewals – 7 Key Volumes	Worse than Target	90%	90%	90%	90%	90%	90%	90%	90%
	Target	95%	95%	95%	95%	95%	95%	95%	95%
	Better than Target	100%	100%	100%	100%	100%	100%	100%	100%
Composite Reliability Index (CRI)	Worse than Target	-2.30%	-1.50%	-0.90%	-0.40%	-0.10%	0.50%	0.90%	1.50%
	Target	-0.30%	0.40%	1.00%	1.50%	1.80%	2.40%	2.80%	3.40%
	Better than Target	0.70%	1.40%	2.00%	2.50%	2.80%	3.30%	3.70%	4.30%
Composite Sustainability Index (CSI)	Worse than Target					-1.4%			
	Target					-1.8%			
	Better than Target					-2.2%			
Number of Service Affecting Failures (SAF)	Worse than Target	2,685	2,663	2,641	2,620	2,603	2,588	2,574	2,557
	Target	2,632	2,611	2,590	2,569	2,552	2,537	2,522	2,507
	Better than Target	2,606	2,585	2,564	2,543	2,527	2,512	2,498	2,482

**The CSI forecast is in line with the Final Determination. This will be updated via change control with the ORR in May/June '19 to reflect the CP5 actuals and RF11 (Delivery Plan) submission.*

6.1.1 Route Scorecard Summary – Asset Management

The influence on asset reliability by asset is detailed in section 6.2. In summary, the proposed renewals workbank has been prioritised according to asset policy compliance, safety and performance. Due to ageing assets, asset obsolescence and deferred renewals from previous control periods, the work to be completed in CP6 is greater than in CP5 despite expected increases in traffic levels.This enables a minor improvement in infrastructure asset reliability and therefore the number of service affecting failures is forecast to reduce across CP6. Maintenance activity will remain a critical factor in sustaining the levels of asset reliability.

The CRI number changes between the last year of CP5 and the first year of CP6 as CRI is re-baselined to compare against the final year of the control period. CRI for CP7 has been baselined against the final year of CP5 but will adjust when we move to a known exit position of CP6.

Key stakeholder priorities	Priorities to be addressed by Network Rail
Sustainability	Optimising our asset to achieve asset sustainability targets, balancing renewal and maintenance interventions on a risk based approach. Critical to this is achieving our key volumes for the control period and managing track access opportunities.
Reliability	Getting passengers to their destination on time with improved track quality and the removal of Temporary Speed Restrictions (TSRs). Improved reliability by delivering both the Norwich, Yarmouth & Lowestoft and Cambridge resignalling schemes.
Performance	We will consider all ways in which we can improve performance with an increased focus on reliability, resilience and capacity to help deliver the performance targets in this plan.

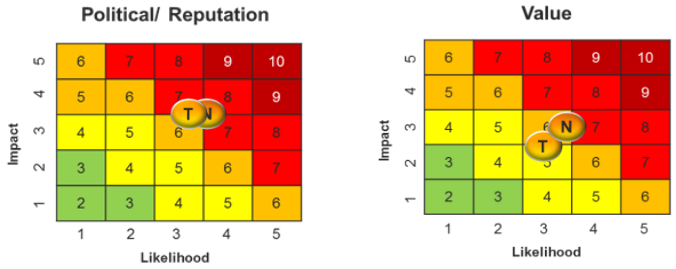
6.2 Sustainability & Asset Management capability activity prioritisation and risk outcome

Summary of objectives	To manage the operational assets within the route to meet the meet safety and performance targets.

No.	Key constraints, risks and opportunities	What we plan to do	Anglia route owner*	Timescale (start-finish)
1	**R:** There is a risk that the asset reliability CRI and SAF numbers will start CP6 worse than target, particularly for Signalling and Track failures	Recovery plans within CP5 are in place which are expected to deliver the forecasted CP5 exit level.	DRAM	CP6
2	**R:** There is a risk that renewals volumes within CP5 will be below the levels required by Asset Policy	Opportunities and actions have been identified to deliver volumes in 17/18. Further review will be required for RF11 to set a robust plan for 18/19.	DRAM	CP6
3	**R:** There is a risk that the quality of asset data is below the level required to manage assets sustainably	Develop the Anglia capability for compliance with ISO 8000 (Data Quality) which will develop the systems to better manage asset data and improve the quality of the data held within the systems	DRAM & COO	CP6
4	**R: T**here is a risk that the volume of track access is not available to deliver the volume of work required	Early engagement with TOC's and Freight operators supporting CP6 submission and development of on-going stakeholder engage process.	DRAM & COO	CP6
5	**O:** There is an opportunity to develop the Anglia Asset Management capability to align with ISO 55000	Develop the Anglia asset management capabilities for maintenance operations and renewals activities to meet requirements of ISO 55000.	DRAM & COO	CP6

6	**O:** There is an opportunity to use the maintenance Activity Based Planning tool to understand the works volumes and resources required across the route	RAM and Maintenance Engineers will use the tool to agree volumes and budgets and understand the benefits of renewals and impact of deferred renewals.	DRAM & COO	CP6

* For job titles please see Appendix G – Glossary



Summary of risk outcome (N=current level of risk, T=forecasted level of risk at end of CP6)

The key issue for the Political/ Reputation risk is the volume of access the workbank will require. Passengers have an expectation for less disruption at weekends and bank holidays whereas the current level of disruption is expected to continue. The cost associated with the delivery of work within the available access is likely to increase however opportunities are being explored to find more efficient ways of taking track access.

Asset area	Key outputs
Cross-asset prioritisation and maintenance / renewals balance	The asset intervention strategy has been developed in line with the asset management strategy and focuses on maintaining asset reliability within deliverability and funding constraints. Priority has been placed on delivery of the route's strategic objectives, specifically around supporting the additional demand on assets to enable an uplift in passenger and freight volumes. STE have provided a set of modelled renewals volumes to help set a baseline for the workbank during CP6. A bottom up (site specific) workbank was developed based on asset condition and identifies the interventions that are required to meet an acceptable level of safety and reliability based on asset policy produced by STE. Each activity within the workbank has been prioritised first based on its impact on safety, and then on performance. The value of the overall workbank was 'capped' at a value that was considered to be affordable; this level represents a small increase on the value of the CP5 workbank. The starting point for each asset workbank was one that was comparable with CP5 in volume. Then a process of cross-asset prioritisation was undertaken to achieve a balance across asset groups, ensuring that the workbank will deliver a safe and then reliable network served by realistic maintenance volumes. The volume of maintenance work required was taken into consideration when determining the final workbank. The output of this is a CP6 workbank that is considered to be sustainable – in that it is • Not creating undeliverable peaks for future renewals • Is affordable, in that the total cost will not be a significant increase on CP5 costs • Is deliverable, in that the volume of work can be delivered with the resources available
Track	The CP6 renewals workbank is expected to deliver an improvement in track CRI and an improvement in SAF at the exit of CP6. It has been assumed that the total delivered track volumes across all activities in CP5 will be 20% higher than the forecast volume for exit of CP5. Items within the track workbank are supported by individual problem statements, site specific renewal proposals, risk assessment and prioritisation sheets.
Signalling	The CP6 plan comprises of two major interlocking renewals, two signalling re-controls, four life extension schemes, a volume of level crossing refurbishment, and is independent of anything proposed as part of the Digital Railway programme. The two major renewals are Cambridge and Clacton both of which have been deferred from CP5: • Cambridge: Only Cambridge Interlocking will be re-signalled; however, life extension and re-control works will take place on the Cambridge outer interlocking's to control costs • Clacton: The mechanical systems will be replaced with equipment to match the mainline signalling system that was delivered by Colchester to Clacton in CP4

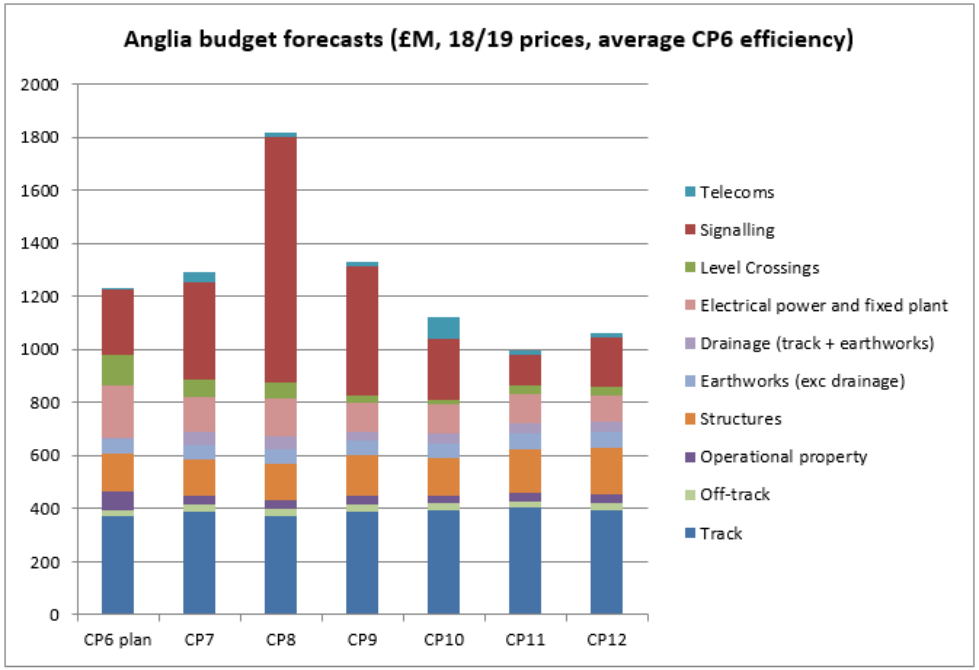
Structures	A comprehensive review of the structures portfolio was undertaken which identified all works required to the assets to achieve policy compliance and was built into a bottom up workbank. A risk score was allocated to each asset based on a matrix - the highest risk score items which would likely lead to a failure with injuries or fatalities, a failure leading to a line or road closure, or a reduction in line speed or Route Availability (RA) result were planned to be addressed during CP5. The CP6 workbank consists of structures which were deferred from CP5 and includes the highest risk score items which the route considers would likely lead to a reduction of line speed, RA rating or worse. The plan is robust, identifying assets requiring work and also considers deliverability.
Geotechnical	Funding re-prioritisations during CP5 have seen earthworks interventions from years 3 to 5 deferred into CP6. CP6 affordability and cross-asset prioritisation reviews have resulted in volumes being below STE minimum volumes. Whilst this will lead to a gradual reduction in overall asset condition and increase the risk of asset failure, the route will manage the risk. The CP6 workbank has a continued focus on earthworks embankments, earthworks crest and toe drainage and a preference for soil nails for more robust renewals interventions. Funding has also been identified to stabilise the historic embankment instability at Stour Wood in Wrabness and interventions are planned for the highest priority Weather Resilience and Climate Change Action Plan sites.
Buildings	Anglia's approach for buildings is based on a bottom-up review of its assets, used to identify those that do not meet policy targets. The workbank was built using a combination of detailed asset knowledge and includes work items previously deferred during CP5. Key assumptions in the plan are: • Stations on Arriva Rail London and GTR lines would remain under standard franchise terms during CP6 • Light Maintenance Depots will remain under standard franchise terms with the TOC's during CP6 It was assumed that Stratford High Level station would transfer to TfL under a full repairing lease in CP5 and as such no funding was allocated. It is now however, unlikely that the station will transfer and no investment has been planned.
E&P	CP6 volumes are based on a prioritised but deliverable workbank and are less than those modelled by STE. Due to under delivery of renewals volumes in the last two years of CP5, this work will need to be accommodated within the CP6 workbank. Renewal of the OLE at Stratford is required to improve reliability and remove heat-related risk in CP6. This is the final part of the GE re-wire project which targets the life expired, obsolete 1940s OLE system. It is a complex renewals work requiring significant access.

Telecoms	The themes for telecoms for CP6 will support a safe, high performing, efficient and sustainable railway for Anglia. The key themes are: • Transition to a single IP telecommunications network, this will improve availability, performance and exploit new technology and extend the use of assets for passengers • Standardisation of assets and services, this will deliver open architecture which enables secure 'plug and play' of telecoms assets to reduce cost and complexity of assets • Mitigation of the decline of asset sustainability level, this will rectify underinvestment in assets from previous control periods to improve the sustainability of the telecoms assets • Extending the use of telecoms assets and infrastructure, telecoms assets and infrastructure are required to underpin Digital Railway, mobile connectivity on trains and digital inclusion for lineside neighbours

6.3 Long run forecast

The graph below describes the long term expenditure forecast to control period 12, assuming expenditure levels for CP6 are consistent with the levels outlined in this plan. Beyond the end of CP6, the assumed level of investment is one which retains the condition and performance of the asset at CP6 levels.

The spike in CP8 is as a result of the large volume of signalling assets requiring renewal on the Great Eastern Mainline in CP8. Individual asset condition and output long term trajectories for this long term level of spend can be found in Appendix E.



This information is in 18/19 prices not cash prices, therefore the costs will not align to other numbers within the strategic plan/ databook

6.4 Strategy Alignment

6.4.1 Sustainable Development Strategy

Anglia Route understands the need to link its business strategy to the wider needs of society, in the support economic growth and in achieving social and environmental benefits. To support this the Director, Route Health, Safety, Quality and Environment will develop and implement a plan which will align with the Network Rail Responsible Railway Plan and with the Environment and Social Performance Policy. This will demonstrate the routes commitment to maintaining an environmental system that follows the principles of ISO 14001, and an energy management system which is in line with ISO 50001

Anglia route will develop actions that will focus on Environmental Management, Energy and Carbon Reduction, Weather Resilience and Climate Change, and Social Performance. These actions will be supported by focused leadership training, competence development, and awareness campaigns.

Environmental Management

As a route we are accountable for managing our impact on the environment responsibly. During CP6 Anglia Route will improve its activities to prevent pollution to air, water, and land. It will take action to improve how it can buy and use natural resources in a responsible and sustainable manner. Anglia will also focus on reducing the volumes of materials used and will minimise the amount of waste and increase the volume of materials recycled. Anglia Route will also manage its estate sustainably give due consideration of the impacts of it activities on biodiversity.

Energy and Carbon Reduction

Within the delivery of our plan we will seek to implement an Energy Management System aligned to the clauses of ISO50001. We will take positive action to support the target for a 25% reduction in carbon emissions by the end of CP6. This will be achieved through a range of targeted actions such as procurement of green energy, considering whole life costs as part of our design and procurement process. We will challenge and reduce our energy consumption across the Anglia route and we will be upgrading metering technologies to encourage and enable robust energy management.

Weather Resilience and Climate Change

Anglia route will review and update its Weather Resilience and Climate Change Adaption Plan during 2019 which will set out its plan for CP6. This will also identify the actions being undertaken to develop future strategies that will influence renewals and investment decisions in CP7 and beyond. Each renewal scheme undertaken in CP6 will be designed to current standards which will consider current weather patterns, such as specifications for drainage capacity and the position of lineside equipment, which will provide for a more resilient network. For example, the signalling base rate includes provision for flood mitigation at targeted risk sites. The base plan does not include undertaking specific interventions to address the operational risks associated with the extreme weather events, but we will explore the development of proactive measures to be included in future delivery plans for funding consideration.

Social Performance

During CP6 Anglia Route is committed to adding social value through how it manages its core business – this is a part of our vision to make ‘Anglia a place where people want to live, work, and invest.’ We will give greater consideration to the wellbeing our lineside neighbours and local communities looking to make further improvements in rail safety. We will work better with our customer stakeholders with the coordination and planning of our disruptive engineering works. We aim to work professionally at all levels within our organisation. We will seek to reducing works related nuisance. We will work collaboratively with other agencies for the preservation of our heritage, our environment and our ecology.

6.4.2 Research, Development & Technology Strategy

Anglia Route recognises that Research, Development and Technology (R,D&T) drives future efficiency. R,D&T builds new technical capability by creating the technology demonstrators, supporting first in class deployments and leading to new 'Business as Usual capability' which will drive new value from the railway to improve safety, reliability, cost efficiency and growth.

6.4.3 Asset Management Strategy

Excellence in Asset management requires that we align decision making in our planning and delivery of works to provide infrastructure that supports the delivery of our corporate objectives. Realising this goal in a whole life cycle cost efficient way will require improvement in our people, process, tools, and information capabilities to get better every day and to embrace the opportunity created by new technology. During CP6 Anglia route will be developing its people, process, and procedures, to demonstrate alignment to BS55001 in support of excellence in Asset Management.

6.4.4 Specific Sustainability Targeted Investment

Anglia route has identified areas for specific sustainability targeted investment. A key constraint has been deliverability due to the availability of track access and the items identified may not appear to provide the most obvious sustainability benefits, but a wide range of positive benefits can be demonstrated for each item.

7. Financial Performance

7.1 Financial performance objectives

Our financial performance objectives are to maintain and renew our infrastructure, within the agreed funding envelope, to deliver the train performance and service enhancements that our customers desire.

Financial Performance	Targets	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Financial Performance Measure (FPM) – Gross Profit & Loss	Worse than Target	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3	-4.3
	Target	0	0	0	0	0	0	0	0
	Better than Target	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Financial Performance Measure (FPM) – Gross Renewals	Worse than Target	-9.5	-9.5	-9.5	-9.5	-9.5	-9.5	-9.5	-9.5
	Target	0	0	0	0	0	0	0	0
	Better than Target	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Financial Performance Measure (FPM) – Gross Enhancements	Worse than Target	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9	-1.9
	Target	0	0	0	0	0	0	0	0
	Better than Target	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Cash Compliance	Worse than Target								
	Target								
	Better than Target	0	0	0	0	0	0	0	0

7.1.1 Route Scorecard Summary – Financial Performance

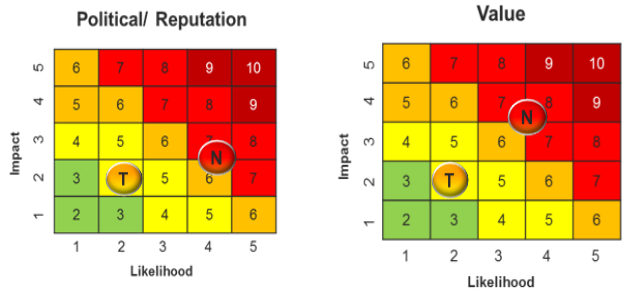
The financial performance measure is dependent on the route delivering its efficiency plans that are detailed within the Headwinds and Efficiency section. For the route to hit the Financial Performance Measure (FPM) targets we must deliver what we said we are going to deliver for the funding available. To do this, the route is engaging its key stakeholders to ensure a collaborative approach is undertaken to deliver the inherent efficiency plans. This approach is also being taken to attempt to deliver further efficiencies, which would lead to the route outperforming the targets. The tapers for FPM are auto generated by group finance and based on a percentage of the budgets set at beginning of the year. This methodology is expected to continue for the foreseeable future and this is what has been reflected in the table above. Cash compliance measure is currently being reviewed by central finance and it's expected that this measure will change to one that measures our delivery against the DEL accounting standards.

Key stakeholder priorities	Priorities to be addressed by Network Rail
Cash Forecasting	Anglia route will work closely in conjunction with Group Finance to ensure that the new financial controls introduced to the company due to moving from AME to DEL will not hinder delivery of key outputs. We will also concentrate on maximising opportunities to reprioritise activities within each year to make sure that we do not lose our set cash allocation in each year.
Efficiency Delivery	To deliver the efficiency targets that the route has agreed with the ORR, Anglia is working closely with all relevant parts of the business to create visibility and a tracking process. This will allow for greater challenge on what efficiencies can be realised in CP6.
Accurate reporting and offering insight	Reorganisation of the Finance team to create a new long term business planning function. This will be responsible for liaising with external stakeholders such as ORR and DfT on progress against Business Plan. It will also lead on establishing improved processes and procedures to make the annual business planning cycle fully integrated with the Network Rail governance and reporting standards.

7.2 Financial performance activity prioritisation and risk outcome

No.	Key objective drivers (constraints, risks and opportunities)	What we plan to do	Owner	Timescale
1	**R:** There is a risk that the route may breach its funding envelope due to track delivery unit rates being higher than those proposed at the time of the SBP	The route and IP are in the process of reviewing and adjusting the work bank to ensure we stay within our funding envelope and have limited impact on asset substantiality and performance.	DRAM/ RFD	CP6
2	**R:** There is a risk that failure to meet CP6 efficiency plans will lead to Anglia breaching the funding envelope available	Efficiency plans are being sponsored at executive level and are embedded in the business plan. The Change Team track these efficiencies on a periodic basis to ensure we are on course for delivery. CAPEX efficiencies have been shared and allocated to a specific deliverer, and efficiency working groups are in motion nationality to ensure these are being delivered.	RFD	CP6

3	**R:** There is a risk that failure to meet CP5 performance targets will lead to unbudgeted schedule 8 outflows in CP6	The route has developed the "One Plan" and launched the 'Every Second Counts' campaigns which are aimed to drive performance improvements across the 18 lines of routes. The route has also created a performance fund to encourage local initiatives which will help drive performance improvement. The route is developing a local Schedule 8 model based on the new regulatory benchmarks and delay minutes forecasting to provide robust estimation of Schedule 8 risk and opportunity in CP6.	COO / HOP	CP6
4	**R:** There is a risk that CP6 Traffic Growth may have a greater impact on asset degradation and performance than anticipated	Using risk and uncertainty analysis, we will supply high and low ranges as well as point estimates for traffic levels and OM&R across CP6. This will allow visibility of the risk in our plan and allow for effective review of contingency requirements.	DRAM	CP6
5	**R:** There is a risk that integration of enhancement works after OM&R works are already remitted could lead to access challenges and inefficiency	Anglia to work closely with all stakeholders to understand the pipeline of potential enhancements and ensure works are remitted in time scales that lead to optimal integration.	DRAM/DRS	CP6
6	**O:** There is an opportunity to integrate work and maximise access opportunities within the CP6 workbank to increase stability	Work with deliverers to develop the plan at optimum time scales, and ensure any additional work is only added to the plan if it doesn't compromise planned activities.	DRAM/DRS	CP6
7	R: The route assumed that the works delivery organisation would deliver a greater portion of the CP6 Track renewals portfolio than has been currently remitted to them. This has led to an exposure in the routes OPEX targets	Sponsor, RAMs and Maintenance organisations are currently undertaking a review to identify how the works delivery teams can help deliver the routes renewal work bank and efficiency targets. Proposals include: - Works delivery teams merging into the maintenance function to help reduce vacancy gap and use of labour only sub-contractors - Help deliver the track portfolio Using the organisation to carry out heavy maintenance activity to aid performance.	DRAM/RFD	CP6
8	R: The Schedule 4 settlement is predicated upon the ARUP model, which calculates expected schedule 4 costs for Maintenance and Renewals. There is a risk that this model lacks the necessary intelligence to accurately forecast these outflows in CP6	The route has employed a Schedule 4 specialist to calculate the expected outflows based on the different variables that impact the schedule 4 such as time of disruption, line of route, expected EBM costs etc. This has enabled to route to improve its ability to forecast Schedule 4 in the current year and will enable us to build up a robust budget for fy20.	COO	CP6



7.3 Financial Sustainability Strategy

7.3.1 The changed funding landscape

Historically, we have relied upon enhancements to provide additional capacity to meet growing demand and to contribute to safety improvements and performance resilience.

However, for CP6, Government has indicated that funding for rail enhancements will shift towards local authorities, local enterprise partnerships and regional transport groups. This reflects Government's localism agenda and the principle that beneficiaries of enhancements should pay for them rather than rely on central government. Going forward, the DfT will fund enhancements on a case by case basis (including those proposed by external investors) in accordance with the Rail Network Enhancements Programme (RNEP) process.

7.3.2 We are open for business

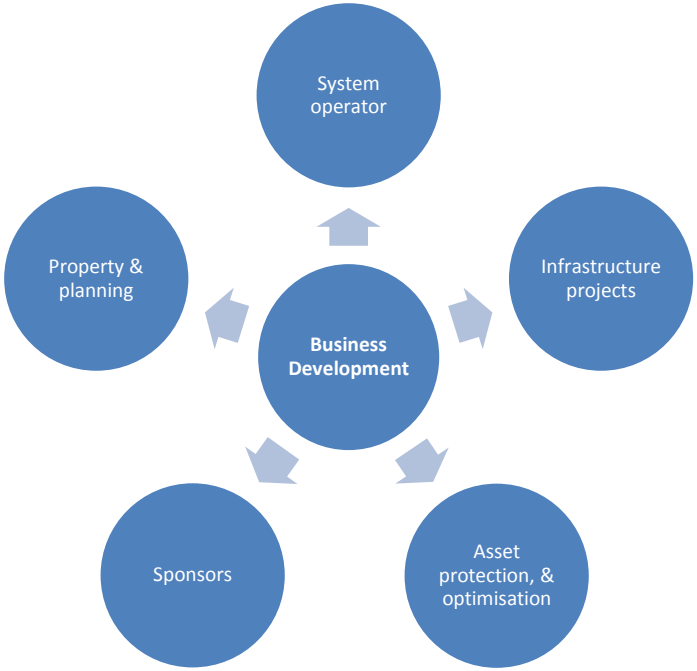
This external funding strategy for Anglia route is aligned to this changed funding landscape, and also reflects the Government's Shaw Report and Network Rail's own review by Professor Hansford. Both reports recommended that Network Rail should transform the way it works to attract investment by improving our customer focus, removing barriers to investment and opening itself up to contestable delivery of rail projects. In response, Network Rail has implemented a major change programme called "Open for Business" - pioneered in Anglia route and launched nationwide in 2017.

We want to become	We will	So we can
• Open for business • Easier to work with so that investors are motivated to invest in and build on the railway	• Improve our service culture • Transform our asset protection & optimisation • Encourage challenges to our standards • Introduce contestability • Share appropriate risks with investors	• Attract more than £450 milion in external investment in Anglia in CP6 • Drive efficiency and innovation • Improve the way we work with our stakeholders and investors • Improve our reputation with our stakeholders and investors

7.3.3 Capability

To facilitate the Open for Business programme, we have enhanced our capability in Anglia to secure funding from external investors, becoming more customer focused and proactive in attracting investment. We have built up our organisational capacity by:

- Appointing a full-time Business Development Manager as a dedicated resource to drive external investment opportunities
- Embedding business development within our organisation to benefit from efficiencies and synergies within the wider Anglia team
- Appointing a Head of Asset Protection Optimisation and reorienting our asset protection team to become more customer focused.
- Providing a single point of contact for all external investors with oversight of all external funding opportunities within Anglia to develop and implement external funding and stakeholder engagement strategies.



The Business Development Manager leads the engagement with investors and manages opportunities and is critical to the achievement of our uplifted third-party funding target for CP6. This key activity forms part of the Director, Route Business Development and Sponsorship's role, who is also accountable for the sponsorship of projects. This maximises the effectiveness and synergy between business development and other key functions.

Customer focused asset protection and optimisation
One of our key interfaces with external funders is ASPRO.
We are seeing the benefits in the positive customer feedback received with over 70% of third parties expressed satisfaction (via pulse checks) with our new arrangements for ASPRO.

7.4 Strategy

7.4.1 Our value proposition

Our value proposition to potential investors and funders rests on the Government's localism agenda – driving regional economic growth and seeking new ways of paying for the resultant investment required in the railway. The value of what we can do for investors comprises three elements.

Benefits realisation

Safety, accessibility, faster connectivity, economic regeneration, increased property value, unlocking housing, reduced congestion. We will support local authorities, local enterprise partnerships (LEPs), combined authorities and regional transport organisations to deliver rail projects included in bids for national sources of funding such as:

- Housing Infrastructure Fund (HIF); £5 billion to be disbursed to local authorities by bid competition (£900 million has been aged with mayoral areas to date);
- Transforming Cities Fund £1; billion to 2022 disbursed to local authorities; and
- Local Growth Fund; DfT contribution £1 billion per annum, managed by LEPs but often delivered by local authorities.

Value capture

Private sector developers may benefit materially and financially from Network Rail's own investment. Funding contributions will be sought where there are quantifiable windfall and capital gains from this investment – such as an uplift in the value of land and property, which in certain circumstances can improve the budget capacity of local authorities e.g. through associated developer charges or property taxation receipts. Value capture is obtained from developers via Section 106 and other agreements as planning gain contributions to the planning authority. In addition, Network Rail as a landowner itself may develop or contribute land and therefore capture value from its own landbank.

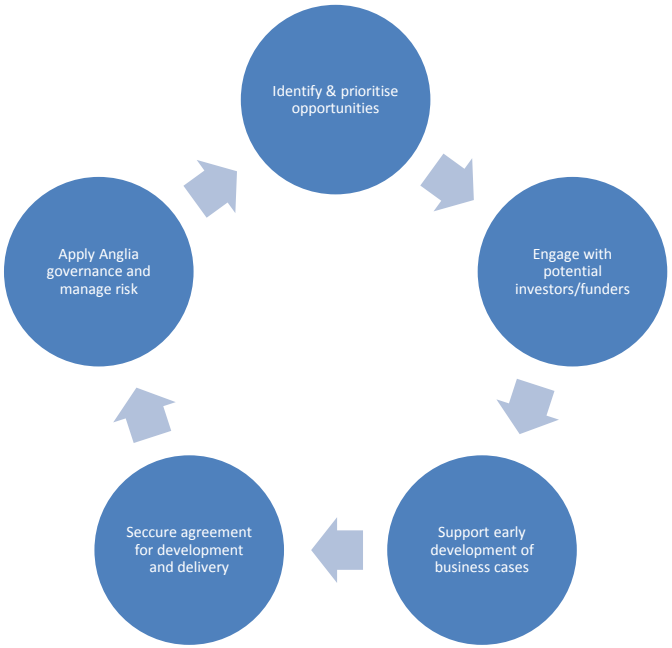
Sharing of risk

Anglia enters into a range of agreements with third parties to develop and/or deliver projects and to ensure an appropriate allocation of risks and liabilities, including:

- development services agreements
- asset protection agreements
- implementation agreements
- contribution agreements

7.4.2 Delivering the strategy

The diagram below demonstrates the process used in identifying assessing and securing third party funding.



We are researching the funding landscape in Anglia, deepening our engagement with funders and stakeholders to understand their funding profiles and aspirations. The BDM is working closely with the System Operator to establish the strategic fit of proposals and to work with funders to develop strategic outline business cases for some early stage opportunities.

Working better with our external customers

As well as growing our organisation to become more customer focused and proactive in attracting investment, we have sought to improve the way we work with investors. The Open for Business programme has published a wealth of guidance for third party investors setting out clearly how they may progress their proposals to build on and invest in the railway. Along with other routes, Anglia has published it's Open for Business Pipeline which summaries potential third party opportunities and contestable projects.
In Anglia we have pioneered the development of a robust governance and risk management processes to help us improve and simplify the way we manage externally funded projects. The aim is to make it easier for third parties to understand how their proposals and projects will progress and to facilitate better working relationships with our investors.

7.5 Opportunities

7.5.1 Trajectory

CP5 baseline

Anglia already has an excellent track record in attracting external investment: we have successfully secured a total of £415m in Control Period 5. This was by far the highest level of external funding achieved by any of the routes - a reflection not only of the large potential for economic and population growth in Anglia, but also of the strong business and customer focus culture already embedded in the route.

CP5 to CP6 trajectory

Network Rail as a whole aspires to secure £1.6 billion of external funding for enhancements for CP6: Anglia has a target of achieving £450 million, representing an 8.5% uplift over our out-turn total for CP5 and some 28% of the national third-party funding total - by far the highest of any route.

7.5.2 External investment heatmap

Building on our success in CP5, we have reviewed our portfolio and undertaken a bottom-up analysis of the projects which we believe have the potential for third party funding in CP6 and beyond. This review has focused on our portfolio of strategic enhancement projects, early stage third party

funded opportunities and long-range opportunities. In total, we have identified projects with an anticipated final cost of some £900 million which may potentially attract external investment.
We have identified a heatmap of potential external funding opportunities in Anglia. This indicates geographic clusters of projects which have the potential to attract external funding. These are listed in Appendix I.

All of these schemes are still subject to the appropriate funding approval.

8. Activities & expenditure

8.1 Cost and volume

This plan is predicated on the key assumptions laid out in Appendix B and will be impacted as these assumptions change

RENEWALS COSTS (post headwinds and efficiencies in Cash prices)

	Unit of Measure	Funded by	CP5 (£m)	CP6 (£m)						CP7 (£m)	
			18/19	19/20	20/21	21/22	22/23	23/24	CP6	24/25	25/26
Track	£m	Renewals	100	73	98	75	87	89	**423**	90	90
Conventional Signalling	£m	Renewals	61	46	84	70	103	79	**383**	71	123
Structures	£m	Renewals	20	22	27	40	42	34	**165**	35	34
Earthworks	£m	Renewals	4	7	20	16	9	4	**57**	13	11
Drainage	£m	Renewals	1	3	1	2	0	-	**6**	-	-
Buildings	£m	Renewals	8	5	12	23	28	12	**79**	13	19
Electrification & Fixed Plant	£m	Renewals	57	34	41	47	51	42	**215**	100	97
Other	£m	Renewals	1	0	2	2	2	2	**7**	-	-
Total Renewals	**£m**	**Renewals**	**251**	**191**	**285**	**274**	**323**	**261**	**1,334**	**322**	**374**
Digital Railway	£m	DR Programme	-	-	-	-	-	-	**-**	-	-
Total Renewals + Digital Railway	**£m**	**All**	**251**	**191**	**285**	**274**	**323**	**261**	**1,334**	**322**	**322**

KEY VOLUMES

	Unit of Measure	Funded by	CP5	CP6						CP7	
			18/19	19/20	20/21	21/22	22/23	23/24	CP6	24/25	25/26
Plain Line	Linear track m	Renewals	45,551	51,435	135,410	81,118	101,173	107,423	**476,559**	104,874	104,874
S&C	No. of S&C units	Renewals	44	45	131	87	101	101	**465**	102	102
Conventional Signalling	SEU	Renewals	-	97	51	-	195	19	**362**	-	-
Digital Railway	SEU	DR Programme	-	-	-	-	-	-	**-**	-	-
Embank/Soil Cut/Rock Cut	No. of	Renewals	14	78	321	190	151	41	**781**	172	172
Underbridges	Number of assets intervened on	Renewals	n/a	17	18	19	19	25	**98**	23	23
Underbridges	m2 plan deck area worked on	Renewals	1,095	876	4,263	5,853	3,950	5,525	**20,466**	4,789	4,789
Wire runs	No. of	Renewals	30	43	63	43	45	45	**239**	53	53
Conductor Rail renewal	Km	Renewals	-	-	-	-	-	-	-	-	-

OPEX COSTS (post headwinds and efficiencies in Cash prices)

	CP5 (£m)	CP6 (£m)						CP7 (£m)	
	18/19	19/20	20/21	21/22	22/23	23/24	CP6	24/25	25/26
Track	55	57	58	59	61	63	**298**	64	67
Off track	12	13	12	12	12	13	**62**	13	14
S&T	24	25	26	27	28	29	**134**	29	31
E&P	16	16	17	18	18	19	**88**	19	20
DU HQ	13	14	14	14	15	15	**72**	16	16
DU/WD Maintenance excl. B&C	119	125	127	130	134	138	**653**	142	148
Non DU Maintenance	15	15	16	16	17	16	**80**	16	16
Civils: Buildings Maintenance	4	4	4	4	4	4	**20**	4	4
Civils: Structures Maintenance	2	2	2	2	2	2	**10**	2	2
Civils: Earthw orks Maintenance	1	1	1	1	1	1	**5**	1	1
Total Maintenance Costs	**141**	**147**	**150**	**153**	**157**	**161**	**769**	**165**	**171**
Operations	58	79	67	66	70	72	**354**	73	75
Support	6	6	6	6	6	7	**32**	7	7
Operations & Support Costs	**64**	**85**	**73**	**73**	**77**	**79**	**386**	**80**	**82**
Total Controllable Costs	205	232	224	226	234	239	**1155**	244	253
Non-Controllable Costs		0	0	0	0	0	**2**		
Headcount									
Permanent	2622.5	2809	2770	2770	2770	2770	**2770**	2770	2770
Agency									

8.2 ENHANCEMENTS

In contrast to previous control periods, in CP6 Enhancements can be introduced at any time. A DfT funded Enhancement is required to go through the three key stages of the Investment Decision Framework before it can progress to the delivery phase. These stages are:

- Decision to Develop
- Decision to Design
- Final Investment Decision (FID)

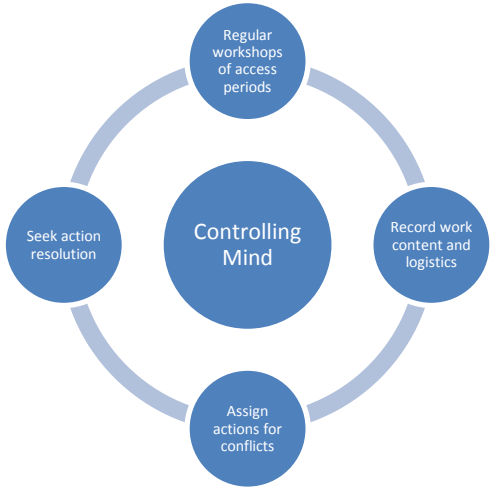
Significant Enhancements that are funded from other sources are expected to follow the same process. Only Enhancements that have passed the Final Investment Decision point, or have delivery funding confirmed if 3rd party funded, are included in the Route Strategic Plan.

Within Anglia (as of March 2019) we have 4 DfT funded enhancements that have passed FID and are therefore the only ones included in the Anglia Route Strategic Plan. Three of the four enhancement projects are solely within the Anglia route; Anglia PSU, WAML Capacity increase and Felixstowe Branch capacity only. Thameslink enhancement project crosses in to LNE and South East, South East are the lead route on this.

9. Delivery strategy

9.1 Summary route deliverability statement

Having 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 lessons on the deliverability of works within CP5 have been learned. This has resulted in the 'Controlling Mind' principle and the creation of the routes Integrated Access Planning (IAP) team. In developing the CP6 plan the route has continued with this 'Controlling Mind' principle and has used the renewals workbanks to identify access requirements early.



The IAP team has developed a set of working assumptions which identify the access required for different work types and, in conjunction with train operators, has established a set of planning rules and agreements which define what disruptive access is normally acceptable. The IAP team has been able to develop an initial CP6 possession plan that:

- Maximises the volume of work delivered within the possessions
- Ensures that different work types are compatible
- Establishes outline haulage requirements including the availability of routes to and from site
- Identifies the requirements for key resources
- Understands alignment to rules and agreements for disruptive access availability
- Minimises conflict with work on other routes based upon ongoing engagement

These plans are being developed with the support of the route Planning Team, TOCs and FOCs, and have been shared with other stakeholders as part of the early consultation process. Operators are also involved to explore options for different methods of working, including potential blockades.

From this, a detailed week by week plan across CP6 has been developed identifying suitable access periods for each piece of renewals work due to be undertaken on the route. This has enabled the route to further visualise the work and ensure that critical resource, access alignment and assumptions have been validated.

This work has been summarised into a CP6 'Strategic Engineering Access Statement' which is currently in production and will have senior level support from the TOCs and FOCs. This will provide a high level of confidence in the deliverability of the plan prior to formal engineering access negotiation taking place.

The assessment of supply chain capacity whilst balancing between renewals and enhancements, is challenging at a route level. However, completion of the majority of Crossrail works and Thameslink within CP5 should mean that capacity is available. Demand on the supply chain may be affected by any potential reduction in CP6 renewals and enhancements expenditure if these activities are not funded.

For the deliverability of maintenance, the Activity Based Planning (ABP) tool has been used to build a bottom up plan, establishing head count requirements as well as cost. There will also be an in-depth review of the

current maintenance end-to-end planning process which will look to deliver improvements in the way that maintenance work is planned and delivered going into CP6.

9.2 Planning a Better Network strategy

The Anglia Route Study published in March 2016, forecasts growth in rail demand over the next 10-30 years, and provides options to increase capacity to meet this growth. This study also provides choices for funders with a focus on the next eight years.

Table 1.0 from the March 2016 Anglia Route Study shows the increase in the morning peak passenger demand into London Termini (or at the busiest point on the route) from 2013

Corridor	2023	2043
Great Eastern Norwich and Outer suburban services	32%	75%
Great Eastern Inner suburban and Crossrail services	52%	83%
West Anglia Main Line – all services	18%	39%
North London Line / West London Line	22%	55%
Gospel Oak to Barking	20%	46%
Essex Thameside	13%	46%

Table 1.0

The graph shown in Figure 1.1 also taken from the March 2016 Anglia route study shows the forecasted growth in freight conditional outputs and freight growth per commodity

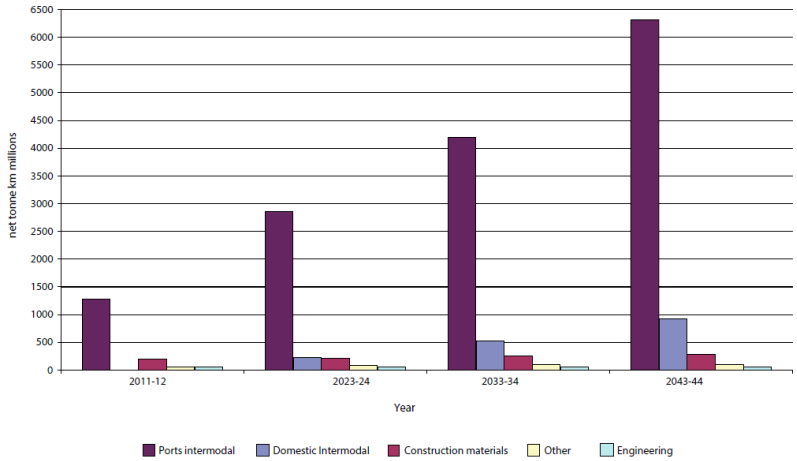


Figure 1.1

The analysis for the study analysis was undertaken before the award of the Greater Anglia franchise. The franchise change provides longer and higher density rolling stock. As part of the Digital Railway strategic outline business case (SOBC), the demand data and proposed intervention strategy was reviewed. The key impact was to reinforce the need for capacity relief works at stations and to improve the business case for performance management investment such as the introduction of Traffic Management technologies in CP6.

On the Essex Thameside corridor, forecast growth can be accommodated through the lengthening of trains to 12 cars post the infrastructure upgrades in CP4. The emerging challenge for this corridor is to provide additional capacity to current levels without a further decline in train performance. A rollout of a Traffic Management System (TMS) for the Thameside corridor is currently programmed for delivery at the end of CP5.

A key CP6 investment priority will be to obtain funding support for all of the Great Eastern Main Line (GEML) Capacity Improvement Programme. This comprises the doubling of Trowse Swing Bridge, doubling of Haughley Junction, a dynamic passing loop north of Witham, power supply requirements and level crossings, as well as additional platforms at Liverpool Street. As neither the GEML programme or Liverpool Street works are well developed or funded they are not included in the scorecard outputs within this document, although the route would request their funding in future.

The cross-country corridor, from Felixstowe to Ipswich, Ely, Peterborough and beyond, is key for both passenger and freight services, with enhancements priorities in the Ely area, Ely to Soham and at Haughley Junction. These are captured under the Felixstowe to the Midlands and North (F2N) work-stream but the route scorecard does not reflect the inclusion of this item as it is as yet unconfirmed as a project. The deferred Ely North Junction scheme will be incorporated into a more comprehensive Ely Area Capacity Enhancements scheme, for which Third party development funding has been obtained.

Further development of Crossrail 2 on the West Anglia Mainline (WAML) is key over the next eight years. This will help meet and unlock further growth in the Lea Valley area.

These significant demands on the increasing capacity required to meet forecasted growth across the Anglia route gives rise to a number of significant performance risks that the route will need to manage and mitigate against alongside the Anglia route customers.

9.3 Project Delivery

9.3.1 Infrastructure Projects (IP)

IP is the delivery route (as stated by the Network Rail “Clienting Principles”) for higher risk, significant renewals and enhancements projects.

IP will deliver a contracting strategy appropriate for the proposed workbanks to facilitate efficient delivery of these workbanks.

The proposal is to build on the IP CP5 strategy in terms of reducing the number of contractors engaged to deliver the workbank and support Network Rail’s objective to drive business improvement through collaborative engagement with the supply chain. Anglia will lead the discussion with IP to establish a contracting strategy that not only delivers the desired outputs but also builds a robust and sustainable supply base in the Anglia area. The work activity will be contracted in packages of compatible works, around a pre-agreed access strategy. It is proposed that a large percentage (at least 50%) of the workbank will be instructed prior to the start of the control period giving the contractor certainty of the core workload to enable the team resource to be built. The remainder of the workbank (the certainty of funding only comes with the final determination) will provide the incentive for efficient delivery and the desire for work continuity.

9.3.2 Works Delivery (WD)

The CP6 supply chain strategy for WD in Anglia also acknowledges the benefits of competition in driving efficiency. This particular strategy will be applicable to low-medium value jobs, low complexity and low risk.

9.3.3 Access

During CP6, there are several areas of focus for Anglia routes’ access requirements driven by a combination of renewal, enhancement and Third/Other Party works. There continues to be a focus on the Great Eastern Main Line (GEML), with significant work also planned on the West Anglia Main Line (WAML), Thameside route, and the East Suffolk Line. The route will continue to negotiate access with the various Operators affected in an open and transparent way to comply with the Network Code, supported by a combination of quarterly stakeholder meetings and ad-hoc area- or work-specific meetings. The Route Planning Team, supported by the IAP team, is key to this process to optimise access requirements between the different delivery organisations.

For CP6 the delivery plan will require a significant volume of disruptive access in locations which have already endured significant disruption during CP5. In such instances the approach will be as follows:

1. Early GRIP stage work to be commenced in CP5
2. A continuation of the 'Controlling Mind' principle
3. Obtain early agreements on access with TOCs and FOCs
4. Creating multi-disciplinary access strategies in key locations which will allow working time to be maximised while reducing the overheads associated with multiple possessions
5. Ensure that as many possessions as possible are multi-discipline

There will also be an increased use of blockades where there is stakeholder support for this approach.

There are a number of both company wide and Anglia route initiatives underway that we are bringing together to review current access planning principals, constraints and internal processes to deliver a fully integrated, efficient CP6 access plan. Some of the key objectives are as follows:

1. To continue to work in a meaningful manner with our train operators and SO, examining alternative options to move away from a weekend and midweek cyclical plan in places where they may no longer be fit for purpose
2. To resolve the problem of insufficient access at key locations in Anglia by developing a bespoke midweek and weekend cyclical plan which will be beneficial
3. Development of a fully de-conflicted CP6 plan by working with long term planning teams in Anglia and other routes
4. Delivery of a weekend cyclical access plan across each Delivery Unit to provide a more robust and flexible plan, that can be integrated with enhancement and renewals possessions

9.3.4 Supply chain capability

Anglia route has a well-established supply chain for all workbank items and understands the supply chain contractual landscape. However, it is recognised that there are further opportunities for increased efficiencies and assurances in the next control period through improvements in supply chain management. For CP6 we will continue to provide the capability and capacity to deliver a more complex workbank and to focus on key business requirements. There are a number of enabling components which are key in delivering the strategy in CP6 which include ensuring that the route:

- Secures the necessary level of skilled resources
- Aligns the supply chain to enable continuous improvement in safety culture and performance
- Integrates the supply chain for efficient delivery
- Aligns the supply chain targets with the Anglia business plan
- Manages governance, authority and risk through the Anglia route panels

Anglia has delivery partner specific supply chain strategies with Infrastructure Projects (IP), Works Delivery (WD) and Route Services (RS).

9.3.5 Route Services

Through Route Services, approximately £60m of new or replacement contracts are tendered for Anglia route each year across a wide range of works, goods and services. The key to the contracting strategy is to ensure that the principle of value for money, safety management and contract performance management are in place with our suppliers, as well as ensuring that the supply chain is embracing Network Rail's Better Every Day culture by, for example, introducing Total Productive Maintenance into their approach to reliability.

For CP6, both Route Services Contracts and Procurement and Anglia route Contracts and Procurement teams will continue the collaboration on key themes, such as engaging with the supply chain stakeholders, delivering

value for money and improving delivery performance from our suppliers. Building good business relationships with the key suppliers and embedding a sustainable approach to procure the contracts will also support Anglia route to improve the train operating performances. CP6 will see the continuing collaboration with Route Services to introduce four key strategic management themes to maximise the value from our supply chain:

- Integrated category management
- Sourcing
- Supplier management
- Processes and governance

A further example of where Route Services is working alongside the route is within Supply Chain Operations and the delivery of the Wheeled Plant Strategy, specifically:

- Facilitating peaks and troughs in the route requirements of both Plain Line and S&C Stoneblowing resulting in proven track geometry and associated durability of improvement – the result allowing life extension of the track rather than renewal and thus delivering whole life cost of the asset
- Increased grinding volumes providing economies of scale in maintenance and delivery of rectification of rail at the critical stages of RCF (Rolling Contact Fatigue) propagation
- Introduction of rail milling capability which will treat heavy and severe RCF which without treatment would require a significant programme of re-railing
- Continuing to supply quality materials and support services delivering industry best practice and economies of scale including Continuous Welded Rail and Switch & Crossings assured to Network Rail specified standards
- Tender evaluations and market testing for the new tamper & ballast regulating contracts to align fleet capability with route requirements
- Execution of best practice delivery of the High Output machinery and Track Relaying System for track renewals work throughout CP6
- Introduction of Project Atlantic – a national roll out of regional distribution centres focused on enhanced capabilities, turnaround times and delivery of industry best practice e.g PPE vending machines, improved response to short notice requests and lean inventory management
- Facilitation of best practice hardened switch rail and plain line assets allowing more trains to run with less impact to safety critical switches with reduction in maintenance which results in further whole life cost
- Continuing to provide a reliable supply of seasonal treatment programme through the specialist rail vehicles to make the Anglia infrastructure resilient to the impact of adverse weather conditions

9.3.6 Works Delivery capability

A review of the Works Delivery Anglia organisation has been conducted resulting in strengthened structures across all engineering disciplines and recruitment is currently ongoing to populate the enlarged teams to underpin CP6 volume delivery. The principles of future operation will be flexibility, responsive, efficient, productive and contributing positively to Anglia route safety, reliability and sustainability targets.

To do this Works Delivery Anglia has a multifunctional delivery capability across all engineering disciplines and holds a Principal Contractor Licence for delivery of track, signalling and electrification & plant renewal, refurbishment and maintenance works delivered through our direct labour organisation augmented by contractors as required.

Additionally, we have frameworks in place for the delivery of larger or more complex projects in these disciplines in addition to buildings, earthworks & drainage and structures disciplines via our appointed Principal Contractors and their specialist sub-contractors.

9.4 Maintenance strategy

Maintenance capability

The route maintenance strategy for CP6 and beyond takes a robust, bottom-up approach to understand core requirements in respect of meeting customers' needs and asset performance KPIs. This accounts for renewals volumes delivery during CP5 and the full renewals workbank for CP6, as well as passenger and freight service level changes and tonnage impact. The strategy incorporates a number of factors including:

- Delivery of **Plain Line Pattern Recognition** (PLPR) and the associated reduction in the requirement for manual visual track asset inspections. This will deliver some benefit in the final year of CP5 and full benefits through CP6, including Risk Based approaches to delivering routine maintenance, with resources redeployed across the route to maximise productivity
- **Eddy current technology** providing train borne Rolling Contact Fatigue detection allowing significantly improved track asset knowledge than previously available and replacing the requirements for manual visual inspection. The benefits of this project are expected in year 1 of CP6
- Once the **automated corporate rostering** tool is linked to payroll, the route anticipates delivery of efficiencies in CP6 based on maximising rosters to terms and conditions, and reduced administration in completing manual time sheets
- The **contracting mechanism** for Buildings and Civils maintenance and Civil Examination Framework Agreement (CEFA) works will be reviewed for CP6 with the aim of delivering greater productivity and efficiency. The route will also take a view as to whether efficiency can be generated by taking some of these services in house
- The use of **Intelligent Infrastructure** tools to create a 'predict and prevent' approach to maintenance is essential to delivering a high performing railway. Adoption of the range of such tools currently available is already advanced on Anglia, and this strength will continue to be built on into CP6 through the Intelligent Infrastructure programme. The existing Intelligent Infrastructure equipment will be extended to cover a higher proportion of the key assets in use enabling more real-time monitoring from the Romford Route Operating Centre (ROC) preventing failures from affecting the train service

We are undertaking a review of our maintenance strategy on the Anglia route to ensure that our resources and depots are in the optimal locations to respond to incidents and to effectively carry out maintenance. The maintenance organisation will help to reduce the volume and impact of incidents through better use of technology and tools to predict and prevent asset failure, as well as undertaking as much work as possible through fixed access windows.

The competence and capability of maintenance staff is a key driver of both quality of work and the safety and performance of the infrastructure assets. Anglia recognises this fact and will include in the CP6 plan the requirement to improve both the skill level of the staff, by training and professional development, and the capability, by cultural training to create a professional and empowered workforce.

9.5 Operations strategy

The key objective for Anglia Operations for CP6 is to improve performance whilst delivering additional capacity. CP6 brings changes in the way we will need to operate the route due to balancing the different business needs of our industry partners and the varying project delivery across the route in the coming years. Parallel to this will be workstreams that prepare the route for the full-scale migration of all signalling control to be moved from Liverpool Street IECC into the ROC during CP7. By the end of that Control Period the route will be operated from 5 key operating locations:

- Romford ROC (Liverpool Street, North London Line) – over 70% of all traffic movements
- Upminster IECC (Thameside)
- Colchester PSB (GE Outer)

- Cambridge PSB (WA Outer)
- New Cross Gate (East London Line)

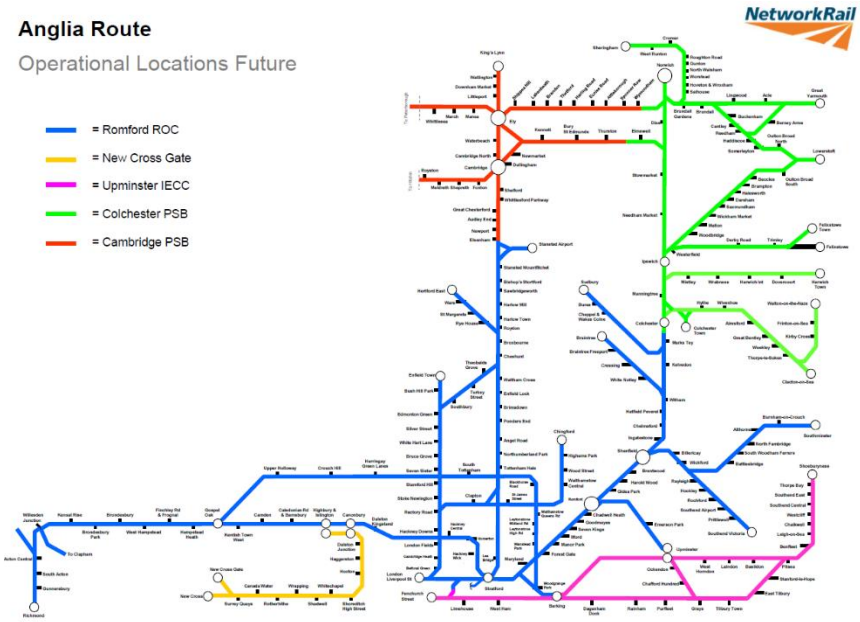


Figure 1 – Strategy for Anglia Operational Locations and Areas of Control

During CP5, the route has led the pilot implementation of digital technology for signalling, with the planned delivery of a Traffic Management (TM) system for the Essex Thameside route before the end of CP5.

The current plan is to implement Isolated Traffic Management at Upminster IECC – this change has occurred due to an alteration in the scope of the Integrated Traffic Management programme. The benefits of this are expected to be more limited than those for Integrated Traffic Management and the change to Scalable IECC at Upminster IECC with a layout change to integrate more closely with the Train Operator are expected to give more significant benefit. This integration will reduce lag in decision-making, allowing Thameside (with c2c running a geographically identical areas) to operationally function as an independent route, bringing performance benefits, efficiency and improved passenger journey experience.

In CP6, the opening of the Elizabeth Line, cascade of new traction types and significant other timetable changes, most notably across the Greater Anglia franchise area which will provide significant additional capacity.

Leading the journey towards operating the network to the principle of on-time will become a key focus area for the Anglia Operations team during CP6. As well as continuing to work closely across the industry to maximise effectiveness of the network, we will strive to continue to work as a safe and high performing team.

On Time Running

To facilitate the operation of on time running, the Anglia Route will be moving towards an On-Time Regulation focus, whilst minimising overall delay and using the network effectively, particularly during perturbation. The nature of this change will have longer lead times as it is fundamentally a cultural shift. The preparation of readiness effort is key to reducing the impact of any service affecting incidents but also enabling the technology that supports delivery. A focussed programme taking into account regulating, service and incident management will lead this change.

Work on the resilience of the timetable and improving underlying performance, particularly on the West Anglia Inner area, is vital to meeting this objective. The West Anglia Inner Regulation trials, scheduled to start in March 2019, will be a first key step to improving the journey experience for the passenger and driving down the rail industry acceptance of current delay thresholds. This is being supported by a West Anglia Performance Improvement programme looking at the root causes of the delays which lead to regulating decisions being required.

Incident Management & Response

Within CP5, the number of service-affecting incidents has reduced slowly, but their impact has also grown. To meet the increase in services during CP6 whilst also reducing the impact of future incidents, an enhancement to our present response capability is required. This will primarily focus on increasing the provision of operational response resource and increasing

the efficiency of the current response teams through reduced time to site.

The implementation of 24/7 coverage of Mobile Operations Managers based at Romford is the first step in this wider enhancement.This will also include 4G Body Cameras for all response staff and a number of response improvement initiatives including the continued increased of the use of trains to attend site wherever possible.

A review is underway to improve the resilience of coverage and eradicate uncovered turns at critical locations at key times, which could increase in route-wide Mobile Operations Manager coverage. The rise in resource combined with the continued development of a 'MOM Standard' are key to the route to improving incident response effectiveness and timing.

Fatigue Management

To comply with the planned introduction of a fatigue management standard across Network Rail and to mitigate the risks associated with fatigue, an increase in various roles that operate in 24/7 locations will be required throughout CP6. This lowers the fatigue risk, but also additionally reduces premium hour costs in many areas. This reduces the reliance on overtime to resource locations which will go some way to improving the work-life balance for all our staff.

Re-signalling Projects

During CP6, a number of key re-signalling renewal schemes are planned to take place. The Operations team have identified several key benefits within these schemes.

The Ely and Cambridge area re-signalling project will result in a number of crossing boxes and smaller locations being closed, and the authority for train movements being re-controlled into Cambridge Power Signal Box. This will come with some headcount savings, but also increase resilience of the signalling system and improve train performance. Another key benefit of these schemes is to introduce digital-ready train routing solutions that will remove some of the existing signaller workload constraints and unlock vital capacity opportunities.

The NYL (Norwich, Great Yarmouth & Lowestoft) re-signalling project was expected to be completed in early 2019, ahead of CP6. However, delays to the project have meant that implementation is likely to occur in the early part of CP6 instead. This has created some risk around staffing levels and contingent resource plans are being finalised to mitigate this.

The enabling works for the re-signalling of the North London Line into Romford ROC are planned to begin at the end of CP6 and will mark the first signalling to arrive into a Rail Operating Centre in the Anglia Route, sometime during CP7. This will allow for some changes to the methods of working between Control and Signalling, which is discussed further in 'ROC Operations'. The re-signalling will close a number of signalling locations around the North London Line, improving performance and resilience, whilst also unlocking some further capacity opportunities.

The final step of the Clacton re-signalling will be completed in the middle of CP6 with the signalling control being moved to Colchester Power Signal Box.

The West Anglia Mainline Project (WAML) will increase capacity on the West Anglia route by providing an additional single track from Coppermill Junction northwards towards Broxbourne, increasing peak capacity passenger numbers and allowing for an increase in train service per hour to four trains per hour between the Upper Lea Valley and Stratford. This also includes the building of a new station at Meridian Water, replacing Angel Road and the closure of Northumberland Park Level Crossing.

ROC Operations

The enabling workstreams to deliver North London Line signalling into Romford Railway Operating Centre will commence at the end of CP6. The changes brought about by the Electrical Control Room arriving late in CP5 will allow for a change in the methods of working for the Route Control and for Operations. The Operations Floor will then become a signalling / electrical control floor, with Network Rail, Greater Anglia, MTR CrossRail and ARL Control staff relocated up onto the 2nd Floor, adjacent to RfL Cross Rail Control.

This will require some alterations to the second floor, including the addition of a Command Room, but will allow the 1st floor operations floor to be utilised with functions working in similar environments.

With this change, there is also the opportunity to begin to consider alternative ways of working. Such options are already being considered including a roving Train Running Controller on the Operations Floor. These workstreams will be undertaken with full TOC engagement and involvement.

As a precursor to this and to trial its value, the concept of a Remote-Train Running Controller based at Liverpool Street IECC and based on the Operations Floor will be trialled in late-CP5 / early-CP6. This is an early-turn and late-turn covered role focused solely on regulation into and out of Liverpool Street Station as far as Cheshunt and Shenfield. Liverpool Street IECC controls over 70% of the traffic movements on the Anglia Route and the way that trains are routed leaving Liverpool Street Station on the Anglia Inner area sets up the rest of their journey.

An operating strategy for Thameside is also being jointly developed with the incumbent TOC, C2C. The principle is to integrate Signalling, TOC Control and Network Rail Control on a single operating floor during CP6. The objective being that a single guiding mind will lead Operations and Train Service Delivery on Thameside, with all activities in Incident, Service Management, Signalling and Response under one team. This fully-integrated approach would support the Scalable IECC upgrade in bringing streamlined decision making and improving efficiency in the running of the Thameside Route – an extremely intensive, well performing and busy part of the Anglia Route.

Digital Railway and Traffic Management

The key recommendation of the Digital Railway strategic outline business case is that further benefits could be realised from a wider implementation of an integrated TM system across selective parts of the route. These benefits would include: better conflict resolution, more efficient access for maintenance, more robust planning of possessions, increased efficiency within possession access times and faster communication – forming an integral part of improving the passenger journey experience. The Western Route at Didcot have had the Luminate Traffic Management system installed in Thames Valley Signalling Centre – as of December 2018, they are starting to see the benefits of this being realised.

An enabler for a Traffic Management solution is the installation digital ready signalling control systems into operating locations and the Anglia Route will continue to do this during CP6.

Liverpool Street IECC control 70% of the traffic on the Anglia route daily. The Great Eastern fitment of an integrated digital railway solution would bring significant performance gains to the Anglia route and its customers, as well as potentially offering more capacity that currently isn't available. This would enable other operating models to be further developed, realised and delivered.

Introduction of New Rolling Stock

Greater Anglia's introduction of new trains to completely replace the current fleet is the biggest fleet change ever attempted in the UK - £1.4 billion is being spent on 665 Bombardier carriages and 378 Stadler carriages in largest-ever single investment in trains for Greater Anglia. Some of the improvements will see 55% more seats in morning peak into London and faster journeys on many key routes including performance improvements. This also brings a risk to business as usual in that changing over current rolling stock during the transition whilst finding stabling locations can be difficult.

People

One of the key drivers for the Anglia Route Operations team, particularly heading into CP6, is its people.

As of January 2019, Network Rail Operations faces a resource challenge among some of the management roles, namely the Local Operations Managers. The turnover has been unacceptably high and a strategy is in place to attract, retain and develop staff in these roles.

This includes providing support to the Operations management team and is crucial in developing a stable, well-rounded team that attracts, retains and develops key talent. This support is broadly split into 3 areas: Administrative / Clerical, Staff ratio and Training & Competency. These three key areas are where our effort is targeted from resource provision, process change and technological enablers.

9.6 Business Change

Change is key to Anglia delivering a more efficient and safe railway. Change management will be delivered in the route by cultural change and supported by high quality, project and change management. In CP6, Anglia will be committed to ensuring that all change programmes undertaken both centrally and locally will be governed by the Network Rail Change Management methodology; Managing Successful Programmes for Network Rail (MSP4NR) and have a clear benefit to cost ratio. This will ensure that all effort is focussed in the correct place to maximise benefits for both the staff of Anglia and the customers who use the route.

The route is committed to continue to support national projects into CP6 which includes key projects such as PLPR, Eddy Current, ESD and Intelligent Infrastructure. In supporting these projects Anglia will ensure that there are the correct resources to manage the change, and more importantly to embed the change and deliver the benefits.

The Anglia route has reviewed its project governance structure in line with the vision of taking the route into CP6 and beyond. The governance framework for the route will align with the Periodic Business Review at both a national and local level. It will also enable a clear line of sight between each level within the business so management information is successfully cascaded up, and decisions and actions successfully cascaded down.

A robust governance framework is required to ensure that it enables successful delivery of projects and activities to deliver the scorecard outputs. One of the focus areas will be the review and integration of change projects across the route such that any risk or issue areas can be resolved quickly to minimise any impact they will have on delivery of project benefits.

9.7 Organisation Capability

Anglia aims to attract the best people through innovative, diverse and socially-inclusive resourcing, supported by strong people and skills requirements forecasting.

9.7.1 Recruiting the right people with the right capabilities

Having great people will be critical to delivering Anglia routes CP6 plan. Whilst it is important to think about how the route develops and engages existing employees, it is also critical to have a strategy to recruit the right people, with the right skills to the route to ensure that capability requirements can be met in future. Anglia will therefore follow a four-step process to understand current and future capability to drive the recruitment strategy:

Following this process will provide Anglia with a clear view of the capability that currently exists within the route and what will be required in future to deliver the CP6 plan. Using that knowledge the route will be able to understand the skills and capabilities which need to be targeted within the recruitment strategy. In addition to this, it will also be crucial to ensure that the organisational structure is fit for purpose and in line with the organisational design principles within the route business to meet any cost efficiency challenges that may arise.

9.7.2 The right training to meet business requirements

The key objective for CP6 is to deliver consistently to the routes business plan; to ensure all training delivered is within budget, desired timescales and is aligned to Anglia's business and people strategy. The introduction of enhanced processes and reporting will also further enable the route to make more informed decisions relative to what training and supporting resources

are needed to meet future capability/competence requirements and to address key operational challenges to deliver a competent workforce.

Throughout CP6 other key issues will continue to be addressed including reviewing existing training facilities to increase delivery capability of localised training, as well as creating bespoke training packages/solutions across all training areas.

9.8 People Strategy

9.8.1 Diversity & Inclusion (D&I)

Our vision for diversity and inclusion within Network Rail is to lead the way in making the rail industry more diverse and inclusive.

Our Anglia diversity and inclusion strategy sets out how we will deliver a safer, more accessible and improved service for our customers and passengers and how we will make Network Rail a better place to work for everyone.

Diversity and inclusion is a powerful tool to help us improve our performance. We can only continue to improve when we have new and innovative ideas, and when people feel safe to challenge the status quo. With a focus on diversity and inclusion we can create a high-performing culture, where safety, performance and D&I go hand in hand.

In CP6, we want to continue to create conditions that encourage a diverse and inclusive culture to thrive, reflecting our client base and the communities we serve.

The Anglia route operates within and across diverse geographical and social communities and, therefore, is committed to ensuring fairness and eradicating discrimination. We accept we have a duty to promote diversity throughout our business and to encourage all employees, including our stakeholders, to accept responsibility for the management of diversity and inclusion within the working environment.

We want to lead the way in creating a route whereby we embrace this, helping us to build great people and great teams.

The diversity and inclusion strategy for CP6 sets out how we'll make the Anglia route a better place to work for **everyone**, and how we will deliver a safer, more accessible, and improved service for our customers and passengers. Our strategy is underpinned by the foundations of the Network Rail diversity and inclusion strategy; Access and Inclusion, Behaviours and Benchmarks, and Collaboration.

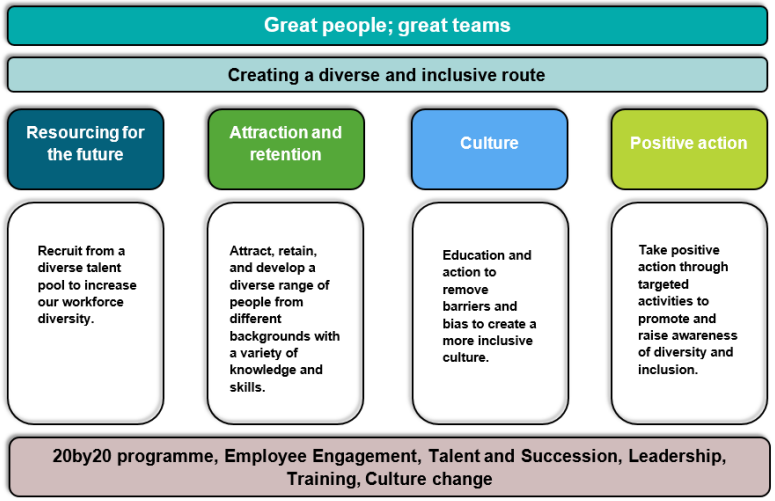
In CP5, Network Rail set a target of increasing its female workforce from the current 16% to 20% by 2020. Good progress has been made in Anglia, therefore our CP6 strategy encompasses our plans of promoting and increasing our female population within the route. Whilst there are several high-profile projects to increase the percentage of women in the workforce, there is also an opportunity to increase focus on driving greater ethnic diversity.

We need to create a working environment where employees from all levels of the organisation feel empowered to challenge inappropriate behaviours in a respectful way; an organisation where managers are trusted to swiftly investigate complaints of discrimination, bullying and harassment and take appropriate action.

We are determined to reduce the number of complaints, and reduce the length of time it takes from the allegation to be formally raised to conclusion. There are opportunities for us to make an impact, which is outlined in this document.

Our strategy for Anglia outlines 4 key areas of focus, identified as **Resourcing for the future, Attraction, Culture,** and **Positive Action**. Actions and measurements have been outlined for each, along with a timeline for delivery throughout CP6

Anglia route diversity and inclusion: one page strategy



9.8.2 Recruit from a diverse talent pool to increase our workforce diversity

To achieve this, Anglia will focus on promoting careers in rail across recruitment pool i.e. young people, under-privileged backgrounds and military personnel. It will also be important to develop long-term partnerships with industry, professional and education bodies to encourage applications from a diverse range of backgrounds.

Network Rail has also set a national target to reach 20 percent of females by 2020 which, in turn, will involve increasing the percentage of women employed by Anglia. This will require a more inclusive recruitment process with opportunities ranging from blind shortlisting to remove unconscious bias, reviewing how we attract, assess and develop our female talent; reviewing the composition of interview panels; bespoke development programmes; targeted recruitment; and enhanced retention strategies. Anglia will also develop a return to work programmes for women following maternity leave and career breaks.

9.8.3 Promote and raise awareness of D&I with all employees

With a focus on D&I within Anglia, the route can create a high-performing culture which recognises and respects the differences between people and values the contribution each person can make.

Through CP6 the route is looking to develop a mixed mentoring programme which aims to support those early on in their careers by connecting them with mentors who have a different perspective and background. This will encourage the breakdown of silos and encourage broader thinking. It will also be critical to educate line managers on the importance of D&I and how they can support a diverse and inclusive environment within Anglia and help people be the best they can be. This will be achieved through the 'Everyone Programme'.

Finally, a D&I forum will also be established with stakeholders (i.e. TOCs and FOCs) to share best practice on D&I across the rail industry.

9.8.4 Recognition

In CP6, Anglia will introduce a local recognition excellence scheme, Anglia Champion Employee Awards (ACE), which aims to recognise individuals and teams who have gone above and beyond in their role and contributed to the success of the Anglia route.

ACE
ANGLIA CHAMPION EMPLOYEE AWARDS

A key part of this is to recognise those who live by our values, behaviours and those that demonstrate our safety and performance culture.

This will be crucial in showcasing that our people are valued and that their contribution is essential in our success. We currently encourage employees to actively contribute to the business, its strategy and make a positive difference to its performance and achievement. This recognition scheme will take this to the next level by actively showing that exceptional effort is being recognised through celebrating their success led by the leadership team.

Nominations can be made for both individuals and teams for a number of categories including health and safety, diversity and inclusion, best new starter, great teams, delivering for our customer and leadership award.

This will be supported by a comprehensive communications campaign to promote the scheme. We hope the introduction of this initiative will inspire others, further embed our Network Rail values, showcase we are an organisation that appreciates those that go above and beyond and act as a vehicle to share best practice.

The key metric in evaluating the success of the scheme will be the number of nominations and award winners in each quarter to help contribute to Anglia's vision which encourages and creates a high performing and safe culture

9.8.5 Developing our future leaders in Anglia

The rail industry has long suffered from skill shortages both at operational and management levels. In economic boom, the rail industry has struggled to hold onto their best performers and failure to retain them will also certainly almost impact on both operational and business performance. The industry has an ageing workforce and a significant proportion of key role holders within Anglia will be leaving the industry in the next 10 years. The combination of all these factors means that talent management and succession planning will be a business priority in CP6.

We will do this by ensuring we focus on the following: -

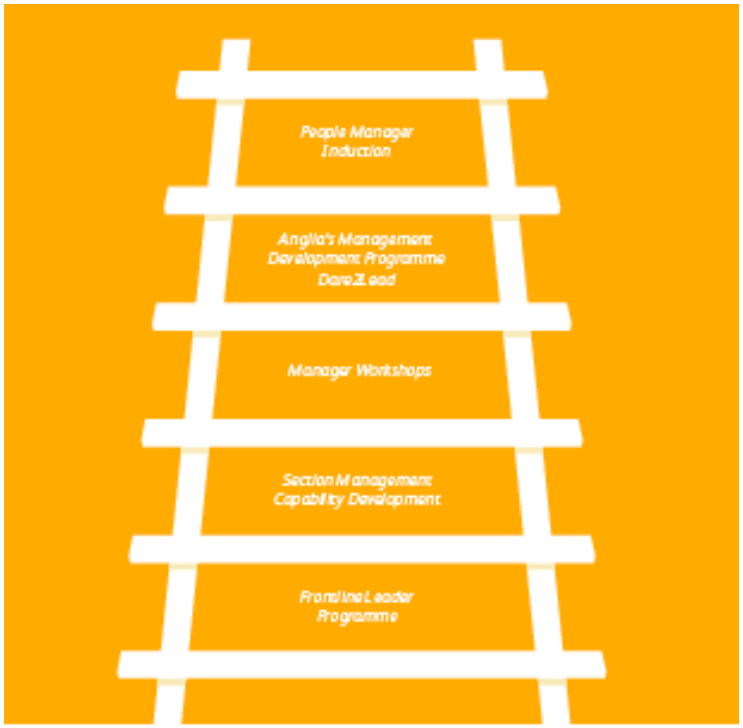
- The route will undertake quarterly talent 'deep-dive reviews at each at a local level and route executive level
- Delivery Unit (DU) succession plans will be created and collated for analysis
- Every employee within Anglia will be mapped against the 9-box model
- A talent management toolkit will be created for use across the route
- Key experts will be identified and provided with the right development opportunities
- Every 'High Potential' candidate will be validated through an in-depth career review, and provided with in-depth development plan and opportunity to fast track
- Successors to business-critical roles will be provided with the necessary leadership training
- Develop bespoke high potential development programmes

9.8.6 Upskilling our line managers

Our leadership programmes are for people at all stages of their careers. This includes those preparing to be line managers, technical experts and senior leaders overseeing strategic programmes.

Within Anglia we have produced bespoke programmes to support line managers in what it means to be a line manager and their key accountabilities.

We have developed various programmes, as illustrated in the diagram below.



9.9 Quality

The continuous improvement programme helps to support the quality programme within the route. To deliver high quality performance and meet customers' expectations in the most cost effective way, the scope of the strategy is:

- To develop, implement and maintain an integrated management system (IMS) compliant with relevant standards
- To develop and embed a revised governance structure at all levels within the route
- To drive QHSE performance and continued improvement using Lean principles

We will develop an IMS that is simple to navigate, hold content which is easy to find and facilitate enhanced compliance. This will realise the full benefits of lean principals of good risk control.

Our revised route governance structure will ensure a clear line of sight between all levels within the route, from the leadership team to front line staff. It will enable the capability to better undertake 2nd level assurance activities allowing a better understanding of the effectiveness of controls and identifying opportunities for improvement. This will help ensure consistent and high-quality business planning, delivery and reporting all supported by embedded local risk management.

We have developed our own set of metrics for CP6 utilising the benefits from RM3 to help improve our health, safety and quality leadership.

The quality strategy will be further developed by determining how to work towards achieving ISO certifications building on the single certification strategy being delivered by STE colleagues.

9.10 Information Technology (IT)

The route depends on Information Technology to underpin its processes, its data management and ever more its interface to the operational technology of the railway. Information Technology helps us collaborate as a route, with other parts of Network Rail and with our many route customers and stakeholders.

IT Provision

IT will be delivered through a number of mechanisms in CP6 each requiring us to define our requirements and fulfil our obligations as consumer, client or sponsor:

- Business Led Schemes: Specific schemes underpinning declared route benefits and national change schemes in areas such as Predictive Maintenance, Whole System Modelling, Improved Delay Attribution and Ordering & Inventory

- Business Transformation: providing the support and integration to business transformation programmes including Digital Railway, Intelligent Infrastructure, Ellipse Exploitation and more, as they become defined
- Innovation: Exploratory investment for risk/value from emerging technologies across cloud, big data, mobile, social & internet of things
- Strategic Change: IT enablers to support Network Rail strategy including application development, business intelligence, information governance, identity and access management, agile data centre, spatial data management, integration framework, operational technology bridge, cloud broker, information service management and next generation mobile
- Run, Renewals and Enhancements: Running, upgrading technology, standardising, retiring and modernising IT for CP6 and CP7

Where we decide to source IT services (strategy, architecture, planning, delivery, operations) and technology directly through trusted third party suppliers we will adopt Network Rails IT Principles and best practice to avoid common pitfalls and seek innovation and alignment opportunities.

9.11 Security

Anglia route manages assets which, when subject to security issues can have negative impacts on performance, cost and safety. Specifically, we are addressing cyber security issues through aligning our approach with the national strategic security goals.

- Establish and maintain a safe and secure culture
- Safeguard our people
- Reduce the impacts of security incidents
- Establish and develop clear roles and responsibilities for security
- Establish systems that provide clear and relevant security information to stakeholders
- Reduce the cost of security

This will also enable us to become compliant with the DfT's National Railways Security Programme (NRSP).

9.12 Communications

The Anglia route communications objectives support the route purpose and help deliver the vision. Our objectives are as follows:

- Help the route business achieve scorecard objectives through effective communications
- Improve trust and advocacy in our stakeholders

Specifically:

- Improve engagement with front line staff, encouraging safer and smarter working to help drive better business performance
- Showcase our investment and the passenger benefits as widely as possible with budget available
- Improve relationships with political and business stakeholders, making them advocates for Network Rail
- Reduce railway works complaints and keep our average age of complaints below the industry standard of 29 days.
- Support the case for future investment through effective communications and stakeholder engagement

These will be met with a communication strategy:

- Align with national communications strategy to maximise reach on common objectives
- Be the conscience for the route, advising on reputational impact of our actions
- Frontline focus - Targeted engagement activities to help improve train performance, evolve safety and people culture changes
- Work closer with our operators on joint communications both internally and externally to support, in particular, performance targets
- Move to a broader area-based approach to passenger and stakeholder comms when multiple renewals affect a location, rather than by project
- Be more visible to stakeholders across the region

- Show we care about those we impact by our work by involving them in our plans, informing them in a timely manner and listening and acting on their feedback or complaints

The communication strategy will be delivered with the following activities:

- Promote safer behaviours of our workforce, public and passengers
- Drive and sustain proactive engagement and publicity for key projects: Anglia will tell the positive story of the Railway Upgrade Plan and CP6 investment in Anglia
- Passenger communication: work in partnership with train operators at times of planned and unplanned disruption to manage demand and communicate the benefits of the Railway Upgrade Plan and show Anglia cares
- Active engagement and consultation with local communities: listen and show Anglia cares about them, and to enable work to happen without hindrance or delay
- Help create a positive climate to generate third party investment: Support the Anglia effort to become more commercial focusing on the transformation journey
- Engage Employees: Continue to evolve the internal communications programme of deep engagement with employees across the route, such as 'You said, we did' campaigns to help people reach their potential and deliver their targets and objectives
- Build reputation to become an 'employer of choice' reinforcing key initiatives including D&I, STEM, Apprenticeships and Graduate schemes
- Manage Anglia reputation: Proactively engage with media, political and public enquiries around planned and unplanned disruption

9.13 Digital Railway Strategy

Many areas on our route are at or approaching capacity and Digital Railway solutions aim to free up more capacity on busy lines and provide us and our customers with real-time planning and management tools.

Performance and capacity benefit levels have been proposed and now need to be validated. The Digital Railway programme will do this with benefit evidence from early deployment of technologies during CP5 and Anglia is one of the routes that will help with this through our Traffic Management deployment on the Thameside route with c2c.

Whilst the technology provides a lot of potential, we also need to review many of our processes to make sure we get the most out of Digital Railway solutions. Again, we are leading some of this work on Thameside in conjunction with c2c and digital railway readiness is included in the scope of the Cambridge re-signalling project to ensure future systems compatibility. Digital Railway solutions are subject to funding approval and are not part of our core plan.

CP7 will also see the deployment of ETCS and in readiness for that, it is recognised that we will need to commence development work towards the end of CP6. We envisage seeing a whole life cost benefit on the planned level of signalling renewals.

9.14 Telecoms Strategy

The reliability levels of Telecoms assets on Anglia route are at the highest they have been since CP4.
Our CP6 strategy with key stakeholder, Network Rail Telecoms, continues to focus on providing the route with telecoms capability, infrastructure and services which enable the safe, secure and efficient operation of the railway. This has an increasing focus on the growing importance to deliver better passenger connectivity. It is therefore designed to help provide more reliable and available services to our customers.

The Telecom Asset Management Policy provides guidance on the approach to asset resilience and associated criticality. This guidance has been reflected into the Telecoms Decision Support Tool (DST) and the tool has been utilised to drive the renewals work bank for the route.

Alongside that, the Telecoms Asset Management Policy provides clarity of direction on the Asset Intervention Strategy. Three key intervention types 1) monitor 2) inspect (predict) and maintain (prevent) and 3) replacement

and renewal are used by NRT to provide a service to the route which seeks to mitigate the effects of the assets degradation and failures. Maintenance assumptions are also clearly articulated in order to deliver on-going integrity of Telecom systems and assets.

We will also work with NRT in CP6 to enable route based projects which deliver operational change:

- Transmission will be provided by a single supportable network by the close of CP6
- GSM-R will continue to be the single operational radio network in England and Wales
- Driver Only Operation (DOO) despatch systems will be renewed to support our operational requirements
- Level crossing telephony forms a key part of the plan and will support the development of product/technology improvements.
- Enabling telecoms for ETCS infrastructure schemes

9.15 Property Strategy

Network Rail's Anglia route and Property teams work collaboratively to agree strategic property and town planning advice, and associated property acquisitions and transactions. This supports the delivery of operational, maintenance, renewal and enhancement activity on the route with support and emphasis currently being placed on:

- Anglia Level Crossing Closure Transport & Works Act Order
- Felixstowe Doubling
- Soham to Ely Re-Doubling
- Ely Area Capacity Enhancement
- Cambridge South
- Norwich, Yarmouth, Lowestoft re-signalling
- Beaulieu

Continued focus will be on engaging planning projects at an early stage to enable the joint planning of project delivery via Transport Work Act Orders or Development Consent Orders where appropriate. With the sale of Network Rail's Commercial Estate, Anglia route will look to develop a seamless relationship with the Condor Interface Team to deliver arch inspections efficiently and ahead of budget.

At Liverpool Street, Anglia aspires to create a world class major station that uses retail and other commercial property opportunities to enhance the customer experience.

9.15.1 Land Strategies

Anglia will also look to develop detailed land strategies to help inform the optimum use of land, realise additional benefits, such as better operational facilities where that may release development land, and leverage third party investment. Through working jointly with the System Operator and Property teams the route will continue to build on its good record to attract inward investment to the business such as through S.106 contributions at Purfleet, East Tilbury and Hawk End Lane.

9.15.2 Disposals and Income Generation

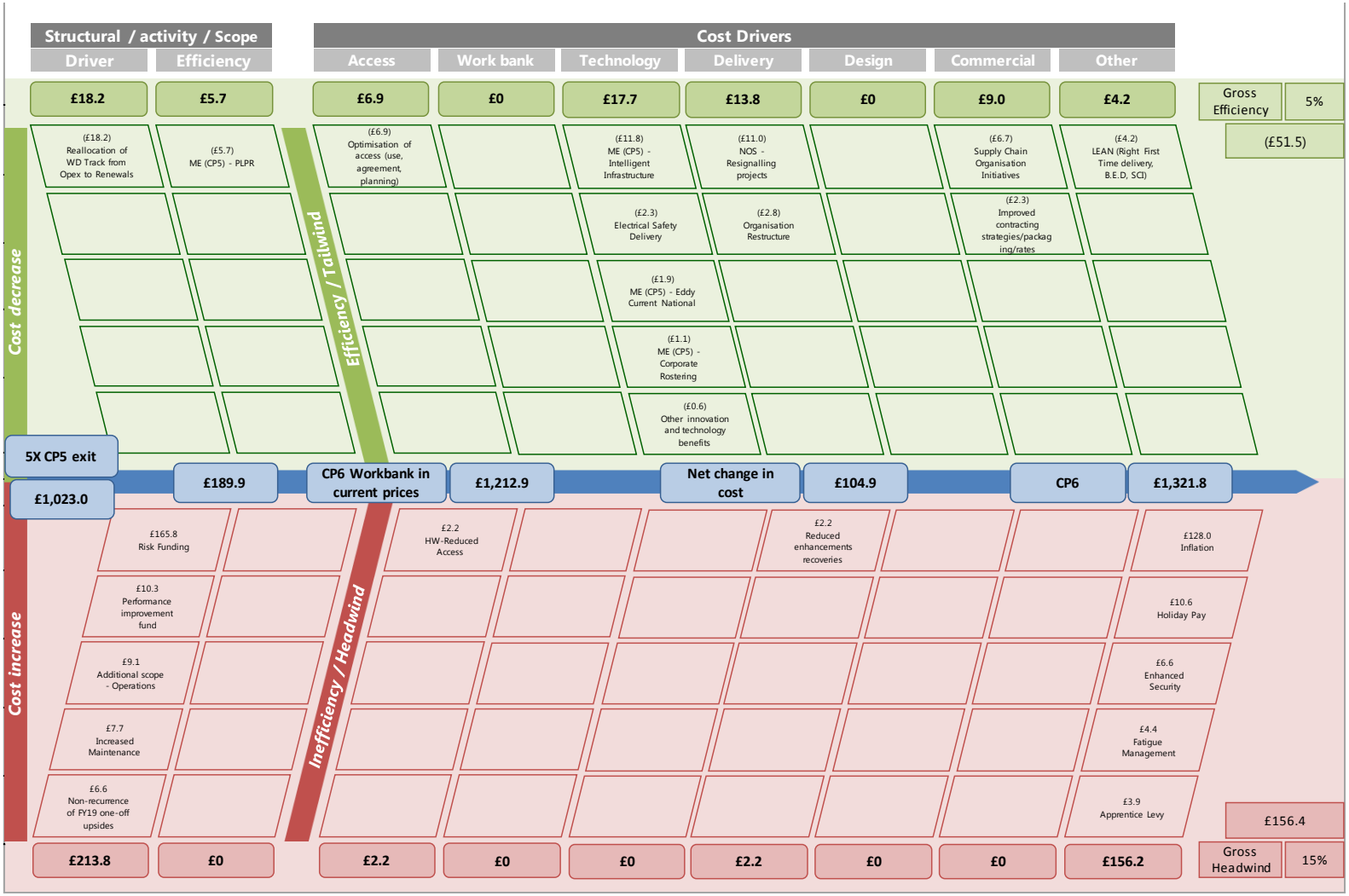
Network Rail Property will help to fund Network Rail's Railway Upgrade Plan by selling assets not core to Network Rail operations and seeking to release surplus railway land for housing to achieve government targets in CP6.

All sites that are being considered for disposal will be assessed to ensure operational uses can be protected, and where possible, enhanced. Land disposals are also underway where it presents a liability to Network Rail (for example Lowestoft station building and Wherstead Road, Ipswich).

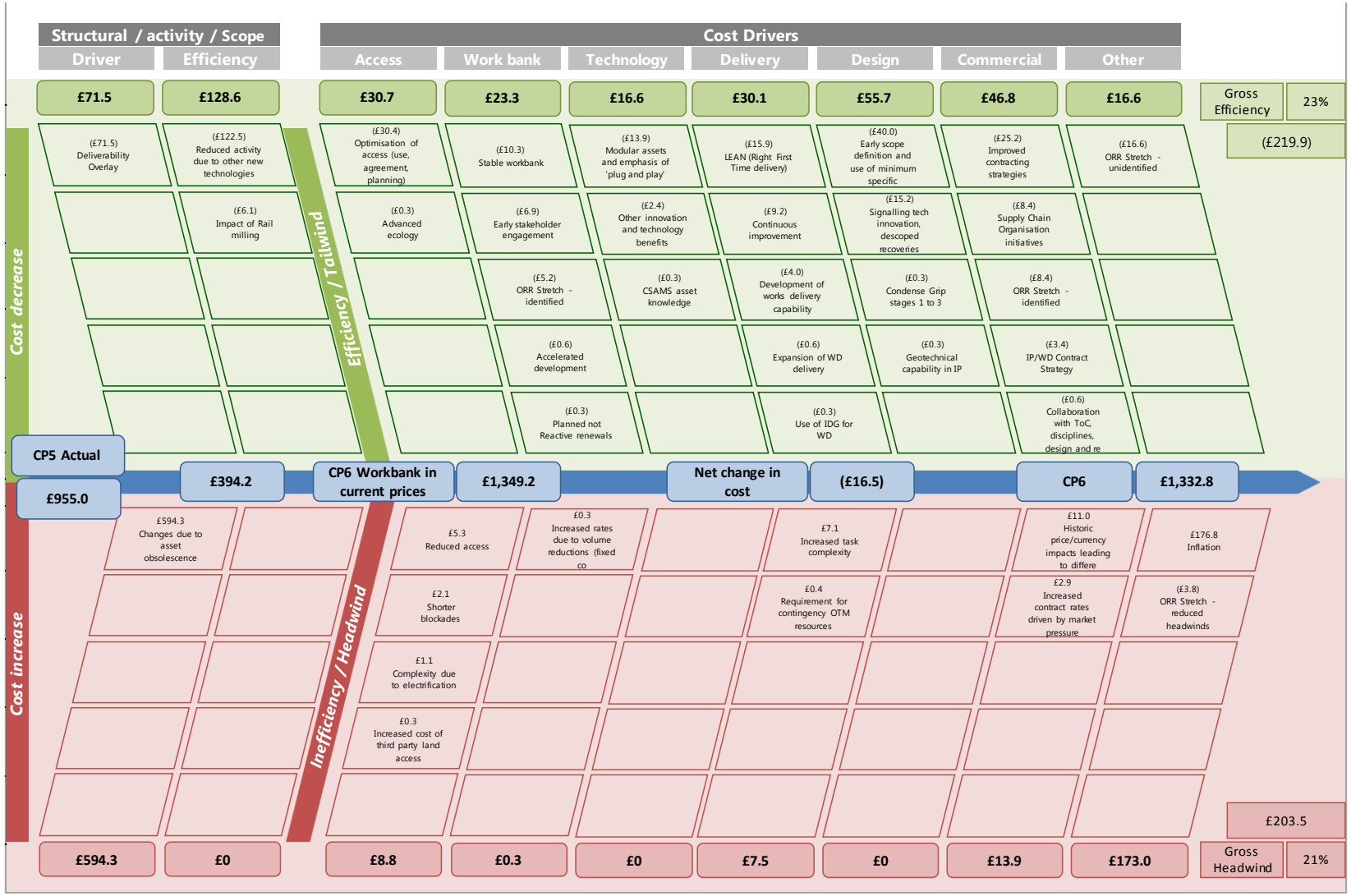
Anglia is also looking to work more collaboratively with FOCs and TOCs to identify joint development and disposals which benefit the industry through reduced costs or enhancing passengers experience. For example, a pilot project is being undertaken in collaboration with c2c to look at development above the station car parks at Upminster and Leigh-on-Sea.

10. Headwinds and efficiency

Opex Fishbone Diagram



Renewals Fishbone Diagram



11. Risk and Uncertainty in the plan

	Unit of Measure	CP5 (£m)	CP6 (£m)					CP7 (£m)	
		18/19	19/20	20/21	21/22	22/23	23/24	CP6	24/25	25/26
Risk (SBP Route held)	£m		0	13	16	21	18	**68**		
Risk (DD Route held)	£m		0	18	23	31	25	**98**		

The table above shows the size of the risk fund available to Anglia route (known as Group Portfolio Risk Fund). This risk fund relates specifically to the additional exposure of unexpected events to our financial plans to a 'P-80' confidence level. This is over and above our core plan, which is based on a 'most likely' confidence level.

This section sets out our estimate of the degree of financial uncertainty within our plan.

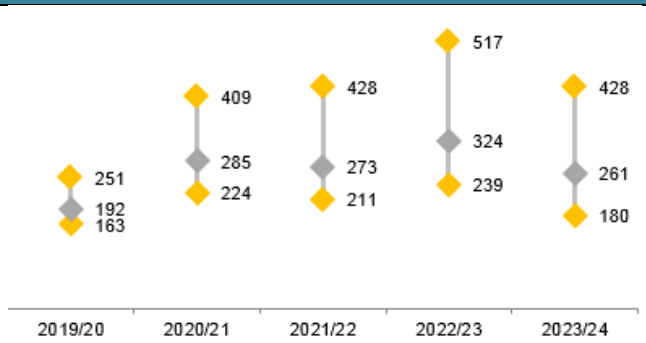
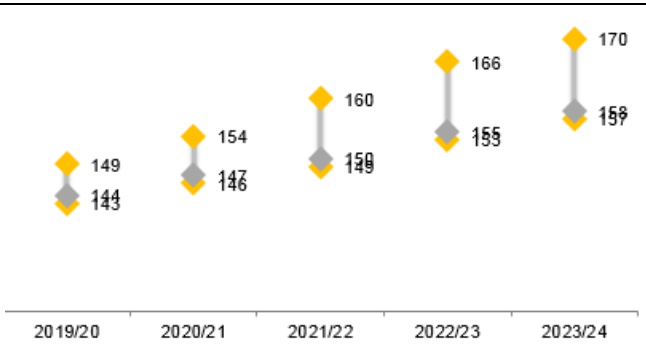
Pre-efficient costs in our plan are based on 'current rates' but include any additional scope needed to deliver the outputs in the plan. We have used 2016/17 unit rates to develop our capital expenditure forecasts and CP5 exit rates for support, operations and maintenance expenditure forecasts. Drivers of rate increases (headwinds/inefficiencies), or rate reductions (efficiencies/tailwinds), where there is a reasonable expectation they will occur, have been identified separately from the core CP6 plan.

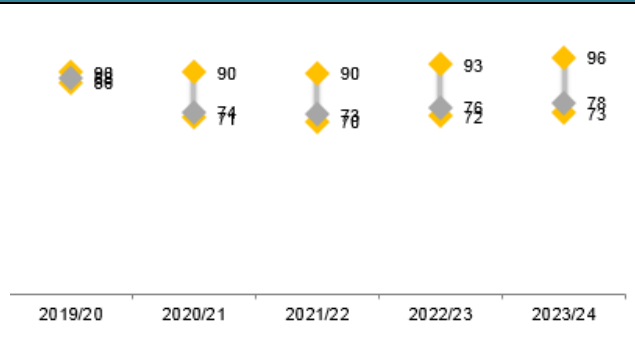
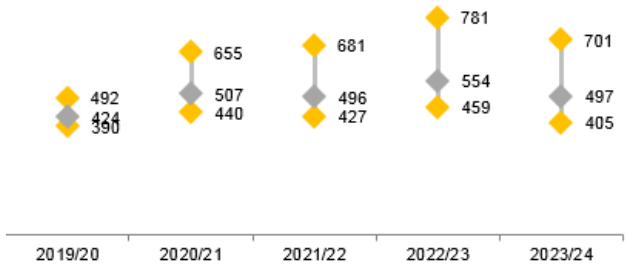
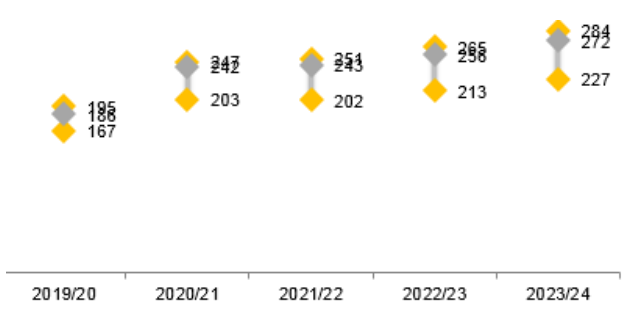
Whilst it is difficult to precisely estimate the likelihood of delivering our plan in CP6, it seems reasonable to suggest that, overall, there is a 45% to 55% likelihood of the outputs in the plan being delivered for the forecast cost in our CP6 plan (i.e. our plan is set at around P50). This means that approximately half of the time, we will be able to deliver our plan for the .

forecast cost. However, financial uncertainty varies between expenditure categories. For example, we consider that there is significantly more uncertainty in our renewals plan than in the support, operations and maintenance plans in CP6. Our analysis also shows that there is significantly more financial uncertainty in later years of the control period.

Figure 11.1, below, presents our estimate of the overall range of financial uncertainty across our income and expenditure for CP6. It also identifies the main drivers of the uncertainty ranges. The information in this table is based on route analysis of the financial uncertainty in support and operations, maintenance and renewals costs, and income. The spot values in Figure 11.1 include headwinds/tailwinds and efficiencies/inefficiencies. The financial uncertainty ranges represent our assessment of the outturn income and expenditure that could occur in 95% of scenarios in CP6.

Figure 11.1: CP6 financial uncertainty ranges

Area	Potential range (low – spot – high)	Summary of key drivers of the uncertainty range	£m		% of range	
		Driver of range	Low	High	Lower %	Upper %
Renewals		Uncertainty over deliverable unit rates – PwC analysis	-175	189	-55	27
		Deliverability of forecast efficiencies / headwinds	-27	223	-8	32
		Availability of access	-92	92	-29	13
		Additional risk on LOC 1 and 2 rated projects		145		21
		Inflation uncertainty	-24	50	-7	7
Maintenance		Deliverability of forecast efficiencies		39		61
		Non-materialisation / exacerbated headwinds	-6	6	-26	10
		Inflation uncertainty	-17	19	-74	30

Area	Potential range (low – spot – high)	Summary of key drivers of the uncertainty range	£m		% of range	
		Driver of range	Low	High	Lower %	Upper %
Support and operations		Required investment in performance improvement initiatives		40		56
		Deliverability of forecast efficiencies		14		19
		Non-materialisation / exacerbated headwinds	-7	7	44	9
		Inflation uncertainty	-8	11	56	15
Total expenditure						
Income		Access charging income – potential delay on enhancements schemes	-2	0	-1	1
		Schedule 4	-82	15	-44	34
		Schedule 8	-82	5	-44	12
		Inflation uncertainty	-20	24	-11	55

12. CP6 income and expenditure

This section sets out our latest forecast of expenditure and income for CP6, and also how our forecasts compare to the assumptions ORR made in calculating our CP6 route funding settlement. Consistent with ORR's PR18 final determination, the tables in this section include route-incurred, and allocated, expenditure and income.

CP6 expenditure forecast

In Table 12.1, below, we provide our latest CP6 forecast of expenditure. The forecast, below, will act as the baseline against which ORR measures financial performance in CP6.

Table 12.1: CP6 expenditure forecast

£m in cash prices	19/20	20/21	21/22	22/23	23/24	Total	Other	CP6
Support	6	6	6	6	7	**31.7**	235	**266**
Operations	79	67	66	70	72	**354.3**	6	**361**
Maintenance	147	150	153	157	161	**768.5**	35	**804**
Renewals	191	285	274	323	261	**1,333.8**	297	**1,631**
Schedule 4 & 8	48	26	27	25	27	**153.7**	82	**235**
EC4T, industry costs and rates	0	0	0	0	0	**1.5**	505	**507**
System Operator						**0.0**	40	**40**
GPF: route	0	13	16	21	18	**68.1**	0	**68**
GPF: contingent asset management	0	18	23	31	25	**97.7**	0	**98**
GPF: centrally-held						**0.0**	428	**428**
Total costs	**471**	**566**	**566**	**634**	**571**	**2,809.3**	**1,629**	**4,438**

In calculating the route funding settlement for CP6, ORR made assumptions about our costs. Table 12.2, below, compares our CP6 business plan expenditure forecasts with ORR's PR18 final determination assumptions.

Table 12.2: Business Plan vs. Final Determination expenditure assumptions

£m in cash prices	CP6 Business Plan			Final Determination			Variance		
	Route	Other	CP6	Route	Other	CP6	Route	Other	CP6
Support	32	235	**266**	10	227	**238**	-21	-7	**-29**
Operations	354	6	**361**	329	8	**337**	-25	1	**-24**
Maintenance	769	35	**804**	733	37	**770**	-36	2	**-34**
Renewals	1,334	297	**1,631**	1,413	403	**1,815**	79	105	**184**
Schedule 4 & 8	154	82	**235**	187	0	**187**	33	-82	**-49**
EC4T, industry costs and rates	2	505	**507**	0	532	**532**	-2	27	**26**
System Operator	0	40	**40**	0	30	**30**	0	-10	**-10**
GPF: route	68	0	68	76	0	**76**	8	0	**8**
GPF: contingent asset management	98	0	**98**	109	0	**109**	11	0	**11**
GPF: centrally-held	0	428	**428**	0	108	**108**	0	-321	**-321**
Total costs	**2,809**	**1,629**	**4,438**	**2,856**	**1,345**	**4,201**	**47**	**-284**	**-237**

***Please note**: ORR's PR18 final determination did not separately identify the costs allocated to routes from route-incurred costs. However, the table, above, identifies allocated costs based on underlying information from ORR's analysis.*

CP6 income forecast

The expenditure in Table 12.1 needs to be paid for. In Table 12.3, below, we provide our latest CP6 income forecast. Our charging income forecast reflects our latest forecast of CP6 traffic levels and is consistent with final CP6 price lists.

Table 12.3: CP6 income forecast

£m in cash prices	19/20	20/21	21/22	22/23	23/24	Route	Other	CP6
Variable charges (VUC, EAUC)	-25	-28	-30	-31	-31	**-145**	0	**-145**
Stations LTC	-8	-8	-8	-9	-9	**-42**	0	**-42**
EC4T	0	0	0	0	0	**0**	-378	**-378**
Schedule 4 ACS	-25	-28	-29	-27	-29	**-137**	-31	**-169**
FTAC	-158	-183	-182	-193	-208	**-924**	-29	**-952**
Network Grant (SOMR)	0	0	0	0	0	**0**	-2,227	**-2,227**
Income from FNPO	0	0	0	0	0	**0**	-325	**-325**
Other single till income	-20	-20	-21	-21	-22	**-103**	-174	**-277**
Income within scope of PR18	**-234**	**-268**	**-270**	**-281**	**-299**	**-1,351**	**-3,164**	**-4,515**

***Please note**: Government grants for corporation tax, financing costs, BT Police costs and enhancements were not agreed as part of ORR's final determination but we have included them in our forecast of income for completeness.*

In calculating the route funding settlement for CP6, ORR made assumptions about the amount of income we will receive from charges and other income. Table 12.4, below, compares our CP6 business plan income forecasts with ORR's PR18 final determination assumptions.

Table 12.4: Business Plan vs. Final Determination income assumptions

£m in cash prices	CP6 Business Plan			Final Determination			Variance		
	Route	Other	CP6	Route	Other	CP6	Route	Other	CP6
Variable charges (VUC, EAUC)	-145	0	**-145**	-157	0	**-157**	-12	0	**-12**
Stations LTC	-42	0	**-42**	-42	0	**-42**	-0	0	**-0**
EC4T	0	-378	**-378**	0	-397	**-397**	0	-19	**-19**
Schedule 4 ACS	-137	-31	**-169**	-187	0	**-187**	-49	31	**-18**
FTAC	-924	-29	**-952**	-604	0	**-604**	319	29	348
Network Grant (SOMR)	0	-2,227	**-2,227**	0	-2,225	**-2,225**	0	2	2
Income from FNPO	0	-325	**-325**	0	-325	**-325**	0	0	0
Other single till income	-103	-174	**-277**	-66	-198	**-264**	37	-23	13
Income within scope of PR18	**-1,351**	**-3,164**	**-4,515**	**-1,057**	**-3,145**	**-4,201**	**295**	**19**	**314**

13. Sign-off

This document and accompanying templates are owned by the Route Managing Director (RMD).
Submission of this document indicates confirmation that:

- **All appropriate level 1 assurance activities have been undertaken (see separate advice on definition of level 1 assurance);**
- **The RMD is satisfied with the quality, currency and appropriateness of the content of this document as well as the cost, volume and activity projections to which it refers;**
- **The signatories are satisfied that the plan has been assessed as deliverable, subject to the assumptions articulated in Appendix B.**

Meliha Duymaz
Route Managing Director

08 February 2019

Simon Thick
Interim Director, Route Asset Management

08 February 2019

Peter Austin
Route Finance Director

08 February 2019

Andy Duffin
IP Route Delivery Director

08 February 2019

Appendix A Stakeholder Engagement Strategy

Purpose and Vision

Stakeholder engagement is a critical part of Anglia route's business. Putting passengers, freight customers and the public at the heart of everything we do, getting the insight, input, expectations and views of our stakeholders from customers and supply chain partners, politicians, residents and businesses is extremely valuable. Stakeholder engagement enriches our decision-making, increases our accountability and improves our ability to understand and anticipate emerging trends and perspectives that might impact on our ability to run a railway that serves the public and UK Plc.

We are aware that stakeholders' needs are always changing, so our annual programme of engagement enables stakeholders to inform our plans and help us deliver for our customers.

Anglia route engages with various stakeholders in different ways. This strategy seeks not to dictate the nature of engagement, nor to constrain it in an overly prescriptive manner, but to bring together the various strands of engagement, undertaken by many people in the route, into a coherent whole so that the full extent of our engagement can be seen, allowing for improvement opportunities to be identified and implemented.

Where we are now

Stakeholder engagement has been key to the overall development of our CP6 Route Strategic Plan. Our approach has been to firstly understand our stakeholder's key priorities and then translate them into outputs for CP6. These priorities can be seen throughout our Route Strategic Plan and our Long-Term Scorecard is one of the crucial ways in which will can demonstrate delivery against them.
In developing our plans for CP6 we undertook focussed stakeholder engagement sessions with more than 30 stakeholder groups. Five consistent fundamental themes emerged from those sessions all of which see the passenger at the heart of them:

Stakeholder Priority	How We Are Addressing This
Safety - the number one priority is safety as it impacts all other success factors for the railway and this covers workforce, public and passenger safety.	Anglia route has developed a Health, Safety and Sustainability Plan which is supported by the RMT, TSSA and Unite We will analyse our risks based on data, experience and stakeholder views and build a foundation of trust and respect in our workforce. We will reduce risk in collaboration with our lead train operating companies and have bespoke Joint Safety Improvement Plans in place. Community safety is also key to our plans and we continue our location specific, geographical area and route wide engagement aimed at level crossings, trespass and crime.
Passengers - the work bank should be aligned to maximise efficient use of disruptive access and minimise overall access requirements. The impact on the passenger should always be considered and defined with benefits and changes effectively communicated.	The key to this priority is our communications strategy. Initially we need to showcase our investment and the passenger benefits as widely as possible with budget available, so that our passengers understand why we require the access requested. Our Integrated Access Planning Team integrates the work from different delivery organisations in order to maximise the access opportunities available and key lessons on the deliverability of works within CP5 have been learned.

Stakeholder Priority	How We Are Addressing This
Access Planning & Renewals Work – Early engagement and communication is key and consideration must be given to the impact on the wider network including planning diversionary routes.	Again, the Integrated Access Planning Team is key to effectively and efficiently planning work on the railway. They have several aims: 1) Maximise the volume of work delivered within the possessions 2) Ensure that different work types are compatible 3) Establish outline haulage requirements including the availability of routes to and from site 4) Identify the requirements for key resources 5) Understand alignment to rules and agreements for disruptive access availability 6) Minimise conflict with work on other routes based upon ongoing engagement.
Reliability – Performance is the most visible factor to passengers and there is a requirement for on time punctuality.	We have refreshed our approach to visualisation holding fortnightly sessions (Performance Steering Group) that bring together NR, TOCs and freight stakeholders around the table. These sessions are analysis driven, combining tactical and strategic risk management. An increased emphasis on accountability means that there are clear "owners" for different types of delay, with associated performance improvement schemes. The launch of the 'Every Second Counts' campaign which identified 8 biggest causes of delay is focussing all staff on the small improvements that they can make to impact on performance.
Investment – Ensuring that there will be enough funding for the scale of works required to meet the extra demands for the region and realise TOC and other investment.	Anglia route wants to be open for business and be easier to work with so that investors are motivated to invest in and build on the railway. We are improving our service culture, encouraging challenges to standards, transforming our Asset Protection service and introducing contestability in order to be truly open for business. In CP6 we aim to attract £450m in external investment into Anglia. Through this we will be driving innovation and efficiency. We already have a pipeline of projects which are included in Appendix G of our RSP.

Following the confirmation of the Final Determination, we wrote to all of the stakeholders that we engaged with throughout the planning process to advise them of our settlement and to communicate our commitment to ongoing engagement.

In order to improve the way that we engage with our stakeholders throughout CP6, we have undertaken a process of self-assessment to understand the current state of our stakeholder engagement. Our high-level findings are:

- We do a lot of engagement across a wide range of stakeholders but not always in a fully joined up or coordinated manner.
- We have improved our approach to lineside and community relations and as a result, significantly reduced complaints about railway work over the past two years.
- Our engagement with MPs is mostly constructive, if not always about positive issues, and we have built good relationships through our Taskforces on both East and West routes.
- We are not always consistent or coordinated in our engagement with Local Authorities and potential third-party funders, with multiple contact points and often conflicting information leading to confusing and some poor experiences.
- We have begun to build new relationships to support business development with a new Business Development Manager. System Operator also holds some of these relationships.
- Our relationship with our train operators is improving. Network Rail's 'passenger first' approach is welcomed, and we are working closer together. More is to be done in this area to demonstrate our commitment to meeting their expectations, where we can.
- Anglia Asset Protection Team has embarked on the transformation of behaviours, culture and communications. The initial feedback from our customers is that the improvements have been noted and we are seeing a significant improvement in relationships. There is more to be done, and we are forging ahead with recruitment, training, development, and attention to service level commitments and response times.

At a stakeholder group level our findings are:

Customers (Train and Freight Operators) – Anglia Route lead – Head of Customer Relations & Senior Route Freight Manager (FNPO)
Anglia's lead TOCs are Greater Anglia, c2c, Arriva Rail London and TfL Rail. Cross Country also operate on the route and we have an active relationship with them. Engagement for the communication of our CP6 plans is strong. There is also a development opportunity to ensure that communication throughout the entire engagement process is well maintained. Freight operating company engagement currently takes place in the form of stakeholder days, however coordination between routes would be beneficial to facilitate consistent and joined up communication.

Political & MPs - Anglia Route lead – Head of Communications
Engagement is strong overall, aided for example by software called 'Right Now' that logs all correspondence and interaction with MPs. There is an SLA in place for responding to any correspondence and is strictly adhered to. At the beginning of March 2019, a joint CP6 parliamentary drop in event with TOCs will take place.

Supply Chain – Anglia Route lead – Route Finance Director
Engagement is conducted well with effective processes. The 'Top 20 suppliers' are identified and have a Supplier Relationship Manager. A supplier meeting takes place twice per year with key stakeholders to discuss key issues and all the outputs that are captured. All contacts for each contract are updated twice annually and the data is stored on SharePoint. On 12th February 2019 we held a large-scale supplier day in conjunction with IP where over 100 of our suppliers were invited to hear about our plans for CP6.

Local Authorities – Anglia Route leads - Principal Route Planner (SO) & Director Route Business & Sponsorship
Engagement is positive with a transparent process is in place, allowing stakeholders to input into plans through stakeholder sessions, that have then informed the strategic business plan. The regional engagement sessions held in 2018, for example, enabled different parts of the route to gain input from varied stakeholders at different touchpoints.

Lineside Neighbours – Anglia Route lead – Head of Communications
Engagement is effective with robust processes in place to capture key engagement outcomes. For example, software is used to identify the group of people affected within a specific radius for a given project. This group then becomes the focus of the engagement. A tailored approach to engagement is undertaken depending of the duration and volume of work that is undertaken in a given location (letters, local drop in sessions, 24-hour helpline).

Asset Protection – Anglia Route lead – Head of Asset Protection Optimisation
The engagement process is currently undergoing a transformation which will further improve both its efficiency and effectiveness. This can be seen in the introduction of a 5-day SLA to respond to queries as of December 2018. Additional resources have been identified and employed to manage the volume of enquiries. A 'job database' is being developed to identify areas of proactivity, to add more value to the engagement process. A formalised process for documenting engagement and its outcomes is also currently being developed.

Train Operating Companies

Train operating companies (TOCs) are the consumer face of the rail industry and we work closely together to run the railway within Anglia. We have engaged with TOCs to ensure our strategic plan for CP6 is directly aligned to the needs of customers. Lead passenger operators are Greater Anglia, Arriva Rail London, c2c and TfL Rail.

Introductory workshops held across stakeholder groups in Ipswich, Cambridge and Stratford in March 2017. From May 2017 onwards TOC stakeholders attended tailored 'deep dive' sessions to discuss specific complexities and performance benefits of the CP6 plans and the Anglia access strategy. Going forward we will continue to hold regular face-to-face meetings.

"We like the workbank and will take the disruption but we need Anglia to be funded to help us deliver our franchise commitments"

Freight Operating Companies

Freight Operating Companies (FOCs) use the rail network to transport goods across the country as a more cost effective and environmentally friendly means of transport. Lead freight operators include Freightliner Intermodal, Freightliner HeavyHaul, DB Cargo, DRS, GBRf, and Colas Rail.

Introductory workshops held across stakeholder groups in Ipswich, Cambridge and Stratford in March 2017. From May 2017 onwards FOC stakeholders attended tailored 'deep dive' sessions to discuss specific complexities and performance benefits of the CP6 plans and the Anglia access strategy. Going forwards we will continue to work closely with our freight customers to deliver a robust, integrated plan.

"We need investment in the Anglia Route to enable us to remain competitive with road"

Local Authorities*

The railway touches almost every community in Britain. Our work not only impacts the millions who travel by rail, but also our lineside neighbours and the environment where our infrastructure is located. We work with local authorities to understand the impact of our work and better communicate with our customers and those affected by our work.

Held introductory stakeholder workshops in Ipswich, Cambridge and Stratford in March 2017. From May 2017 onwards we established four local authority stakeholder case-studies, working closely with areas particularly affected by the CP6 plans or with sensitivities due to the potential economic impact of works on them e.g. ports or airports. This activity will ensure key advocacy is given by specific stakeholders. It will also enable us to pinpoint value add opportunities and deliver third party works, such as footbridges, alongside proposed works.

"Rail is a vital part of our local economy and supports our communities and jobs"

Other Stakeholder Groups

We work with numerous other stakeholder groups from regulating bodies such as the Department for Transport (DfT), Office of Rail and Road (ORR) and Rail Delivery Group (RDG), to watchdogs such as Transport Focus and London TravelWatch, as well as other stakeholders such as Ports and Highways England.

Engaged affected stakeholder groups at introductory workshops in Ipswich, Cambridge and Stratford in March 2017. From May 2017 onwards we established 'light-touch' sessions with other relevant stakeholders who will be impacted indirectly by CP6 works. These include London Underground and other TOCs operating on Anglia such as Cross Country.

The future – where we want to be

- We want to be known as a route that has excellent stakeholder engagement. A route that shares information, asks for input, listens and responds in a timely and appropriate manner.
- We aim to have a coordinated, joined up approach to stakeholder engagement. There will always be multiple contact with some stakeholders but awareness of who is in contact, when and why will be beneficial to present a more united front to encourage trust and belief in what we are doing.
- We will have a strategy that is well-documented, regularly reviewed and measured to enable us to evolve and improve.
- We will have robust plans and strong evidence that risks are being managed appropriately.
- We will have a tailored approach to engagement that will vary based on stakeholder needs.

The future – how will we get there?

Anglia Route's Head of Communications will own the overall process for stakeholder engagement through CP6 and will be supported by the leads for each stakeholder group. Having completed our self-assessment review we understand that there are areas requiring targeted improvements and we want to agree our approach with stakeholders. We want to continue to discuss our Route Strategic Plan and the stakeholder priorities it contains alongside all other key engagement requirements. We will therefore:

- Carry out review of stakeholder engagement across the route and develop a process for mapping and capturing future contact that can be managed and be visible to all.
- We will implement a six-monthly assessment of our stakeholder engagement to understand and improve the effectiveness of our approach and produce an annual stakeholder report to document our engagement.
- We will continue to use contact management systems to manage and monitor engagement and meet across functions regularly to share our plans for engaging with shared stakeholders.
- We will have a process for capturing feedback from all external stakeholder groups and will share with them how any changes have been incorporated during the ongoing planning process.

Our Long-Term Scorecard measures also focus on our relationships with our stakeholders and how we will engage with them and we will use this methodology to further review and improve our engagement. These specific processes are owned by our Head of Customer Relations.

NRPS - Anglia routes national rail passenger survey measures the overall Anglia national railway passenger satisfaction. As a key contributor to this measure through the performance of our infrastructure and our operation of Liverpool street station it is appropriate to include this on our scorecard. In the autumn 2018 survey Anglia was the joint best performing route achieving 82% and we intend to sustain this high level of performance throughout CP6.

Pulse Checks - We have agreed to introduce pulse checks with c2c, GA, TfL Rail and ARL. These will measure the strength and effectiveness of our relationship and collaboration with our lead operators. Surveys are taken every period to inform the assessment of the measure.

Another key tool that we will use is the framework set out in the table below. It provides us with visibility of all engagement that takes place across the route and also the expected output. We will be able to hold ourselves to account on it and it provides clear evidence of the levels of ongoing, structured engagement.

Draft Version Of Stakeholder Engagement Framework Currently In Development

Method of Engagement Stakeholders	Purpose & scope of engagement	Expected Output	Frequency	Stakeholder	Key route contact
Route Supervisory Board	Cross industry working (ToR)	See ToR	Quarterly	TOCs/FOCs/Passenger group	RMD Anglia Route
Great Eastern Taskforce	Inform on delivery progress and agree on strategic focus for region's future railway.	More informed and engaged stakeholder. Funding secured for future projects.		MPs, TOCs	PRP, System Operator
BAU: Other Engagement					
Annual Report	Update stakeholders on delivery progress.	More informed and engaged stakeholder. Fewer complaints. Potential for advocacy / support for funding.	Annually	Customers, MPs, LAs, councillors, LEPs, business groups, rail interest groups, passenger organisations.	Head of Route Communications
Periodic stakeholder email update	Update stakeholders on delivery progress.	More informed and engaged stakeholder. Fewer complaints. Potential for advocacy / support for funding.	Periodically	MPs, councillors, rail user groups.	Public Relations Manager
Pre-notification of works	To advise of noisy or physical disruption to resident or business.	Reduction in complaints.	As required	Lineside neighbour	Community Relations Manager
Post- works neighbour survey	Assess engagement and learn lessons.	Better understanding of our engagement.	As required – trial	Lineside neighbour	Community Relations

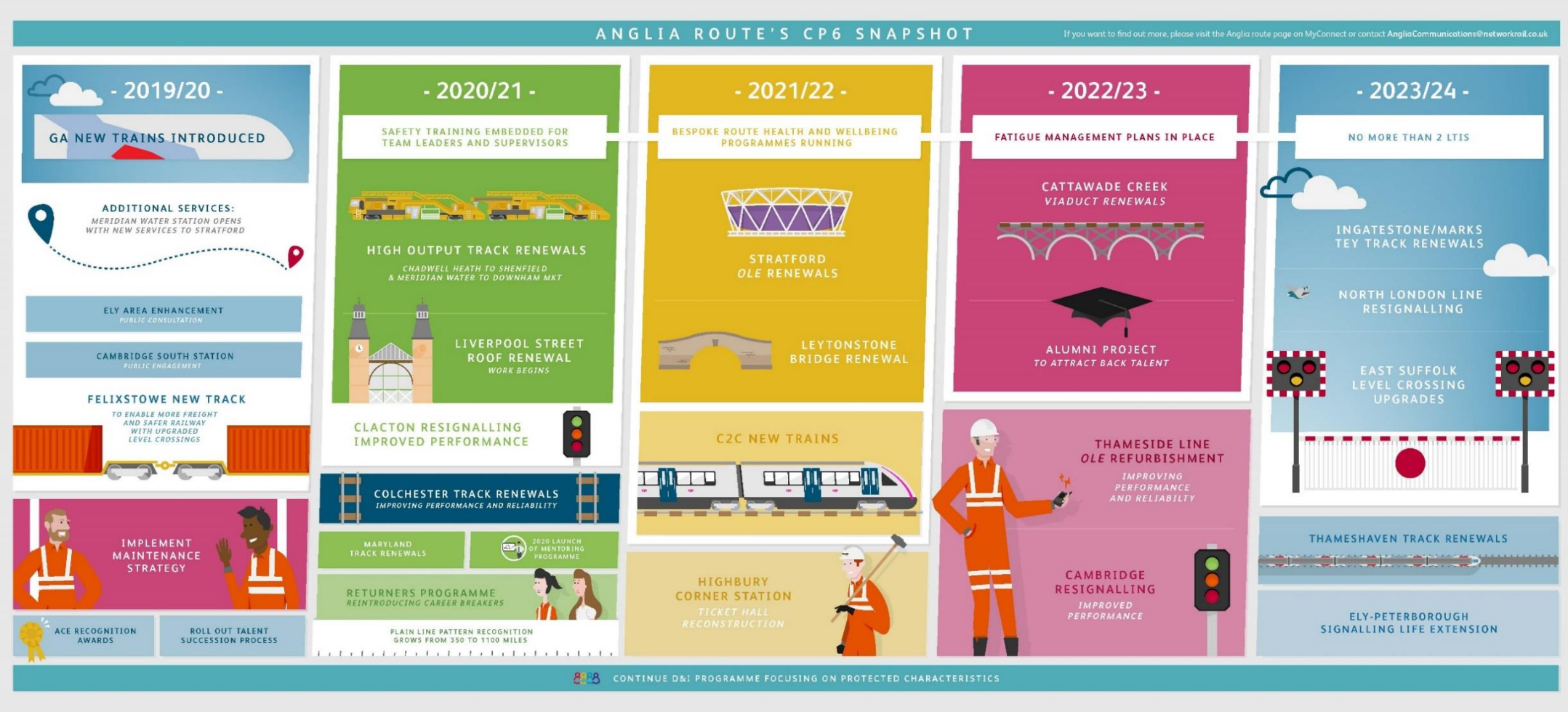
Appendix B Key assumptions

Ref no.	Topic	Assumption	Areas of spend impacted
1	Policy	Engineering Policy does not change and therefore no additional volume will be required	CAPEX and maintenance OPEX
2	Access	Operators do not deviate from agreed CP6 engineering access principles	CAPEX, maintenance OPEX, Enhancements spend
3	Safety	No new safety risk areas materialise outside those already covered in our safety strategy which need additional safety plans creating and delivering	All areas of spend affecting passenger, public and workforce
4	Level Crossings	Risk levels will not substantially change at individual crossings	CAPEX, all OPEX, Enhancements spend
5	Deliverability	Current Enhancement Delivery Plan (EDP) milestones achieved with no further deferral of significant milestones into CP6 putting pressure on availability of key resources including access	CAPEX, Maintenance OPEX, Enhancements spend
6	Sustainability	No significant drop in the renewals volumes during CP5	CAPEX, Maintenance OPEX
7	Sustainability	New rolling stock being introduced does not cause a change to forecasted asset condition	CAPEX, Maintenance OPEX
8	Deliverability	Base access plan assumes that Digital Railway rollout will not require significant access & resources that would adversely impact on the delivery of the CAPEX renewals	CAPEX, Maintenance OPEX
9	Train performance	Forecasted train performance in CP6 aligns with forecast model	OPEX
10	Train performance	CP6 train performance forecasts include Network Rail modelled risks and benefits.	OPEX
11	Locally Driven Customer Measures	Congestion improvement works required at Liverpool Street are not completed until CP7	Passenger satisfaction (Liverpool St)

Ref no.	Topic	Assumption	Areas of spend impacted
12	Enhancements	Crossrail phases are achieved to the revised plan	CAPEX and OPEX
13	Finance	Industrial Relations strategy changes to allow redundancies	CAPEX and OPEX

Appendix C Route context

The below diagram provides a view of key route events due to take place throughout CP6. Some projects still require funding confirmation.



Appendix D Scenario planning

Part 1a: Contingent renewals

Anglia route has a well developed, bottom up plan and our focus will be on the delivery of that core plan. We recognise the need for contingent renewals and have an extensive list of projects which could be quickly 'switched on' in year. However, there are a number of scenarios which would need to be fully understood before making a decision on the particular project that could be identified as a contingent renewal i.e. funding available and point at which any funding became available within the control period.

Part 1b: Investment options

This section describes the benefits of additional investment in the route which will be enabled should risks fail to materialise.

Package ID	Package title	Description	Capex (£m)	Opex (£m)	Justification for spend
ANG06	Track – Additional Rail Milling	Removal of severe & heavy RCF sites to reduce the risk of ESR imposition.	1.4	-	Improved asset sustainability
ANG07	Signalling – Mechanical Signal Structure Interventions	Renewal of 25 mechanical signal structures on the Ely – March- Peterborough (EMP) line. This is to enable safe and reliable operation of the remaining semaphore signals before full resignalling in CP7.	6.6	-	Improved asset sustainability
ANG08	Signalling – IECC Classic to Scalable Liverpool Street and Upminster	IECC classic has become obsolete in the latter part of CP5. Enhancement programmes that conclude in year 1 and 2 of CP6 upgrade Liverpool Street D and Upminster 1 and 2. This exposes the route to risk in regards to Liverpool Street A (controlling Liverpool Street East and West) and Upminster 3 (controlling the North London Line). This project aims to remove all risk of failure and significant delays to these critical areas. Furthermore, it will enable future Traffic Management opportunities.	9.0	-	Improved asset sustainability

ANG09	Signalling – Thameside Telemetry Equipment Renewal	This project aims to migrate the 10 Upminster IECC CCTV crossing controls and indications from the current obsolete transmission system to a new approved transmission system. The new system shall be compatible with Traffic Management to take into account the future migration.	5.0	-	Improved asset sustainability
ANG10	E&P – UPS Renewals	Deferred renewal from CP5 of equipment which became obsolete when supplier ceased trading just after installation. Extends life of PSP by 20 years.	1.2	-	Improved asset sustainability
ANG11	Structures – Metallic Bridge Preventative	Metallic bridges structures represent a large proportion of the structures portfolio and therefore a significant proportion of the renewal expenditure. The proposed painting package will target those where the existing protection is in poor condition to increase the asset lifespan, extending the time until renewals interventions are required and prevent significant defects forming. Whilst the CSI gain is less than structures packages ANG26 and ANG29 it is considered the overall long term benefits to the portfolio are greater due to the opportunity to mitigate a larger number of critical assets.	10.1	-	Improved asset sustainability
ANG12	E&P – Slipping Structure Renewal	Risk sites removed from the original submission.	4.8	-	Improved asset sustainability
ANG13	E&P – Along Track Conductor Renewal	Locations which are not affected by the Mk1 refurbishment.	3.8	-	Improved asset sustainability
ANG14	Signalling – COE 120 CCTV Transmission System Upgrade	The purpose of this project is to replace the analogue CCTV transmission system at 16 of our CCTV level crossings. The COE 120 analogue CCTV transmission installed at various locations on our CRI 2 and 3 routes. Anglia performance data between 2014 and 2017 shows 59 CCTV transmission faults. The system is no longer supported and using salvaged parts.	5.0	-	Improved asset sustainability

ANG15	Signalling – Lineside cable renewals	Multi-core cables on the Ely-March-Peterborough are beginning to degrade and an increase in SAF's is perceived as likely in CP6/7. This project aims to renew all the degraded signalling cables on this line of route following a deferral of resignalling in CP7 due to the cash constrained budget.	0.5	-	Improved asset sustainability
ANG16	Operational Property – Stratford	Stratford is one of the high category stations on Anglia. Without the budget, CRI and train performance will suffer as PPM (regulatory and legislative requirement), renewal and maintenance works cannot be undertaken and risk of asset failure would increase. Separate funding is being sought as the site was original proposed to be transferred to TfL.	0.8	-	Improved asset sustainability
ANG17	Geotech – Critical Earthworks (Phase 2)	This package includes EHC Grade D and Grade C sites that will show a significant sustainability EHC improvement when rescored following remediation.. The package includes emerging scour and subsidence sites on the Southminster Line and deferred CP4/CP5 embankment remediation at Harold Wood.	5.5	-	Improved asset sustainability
ANG18	Operational Property – LMDs	There is a safety risk posed by the lack of depot protection on our sites. Again in the event of a failure, train deployment would be significantly impacted and directly affect train performance. Also there is ongoing maintenance of the obsolete equipment present on depots.	1.4	-	Improved asset sustainability
ANG19	Operational Property – Liverpool Street	Station operations rely on communication equipment working well. Currently the chiller systems linked to the comms are life expired and require renewal. In addition, the station has non-compliant platforms. There is a need for tactiles to be installed. The risk to public safety will become apparent after Elizabeth Line becomes operational. Therefore additional funding is needed to address this issue.	2.3	-	Improved asset sustainability
ANG20	E&P – BARKING FS - National Grid Site 25kV Circuit Breaker Renewal	Allowance for sole user asset 25kV circuit breakers at National Grid site installed 1960s as National Grid have recently proposed they require renewal (May 2018 with a 2-5 year deadline).	1.0	-	Improved asset sustainability
ANG21	Structures – Road Vehicle Incursions	The benefits over CSI are reduced risk to public, increased resilience against bridge strikes and improved stakeholder relationships.	3.3	-	Improved asset sustainability

ANG22	Operational Property – OPSAP Remedial Works	These are substandard footbridges that require intervention. They pose a safety risk to operation of stations where the public first come in contact with the railway. Failure of the bridge would impact on CSI significantly.	1.5	-	Improved asset sustainability
ANG23	Geotech – Critical Earthworks (Phase 3)	This package includes a high proportion of EHC Grade D sites that will show a significant EHC improvement when rescored following remediation that is a clear and less subjective measure of sustainability. The package includes deferred CP5 embankment remediations at Magnolia Road and Weely.	7.9	-	Improved asset sustainability
ANG24	E&P – Bridge Bonding	Deferred from CP5 due to financial constraints. This work will correct deficient bonding arrangements at 94 bridges across Anglia.	4.8	-	Improved asset sustainability
ANG25	Signalling – Signal Head renewals to LED type	This project aims to replace all filament type signal heads with LED on our CRI 1 and 2 routes. Blown lamps are our highest contributor to service affecting failures on the route. This project reduces the amount of access required to the top of signal ladders reducing staff exposure to the risks of working at height and allows implementation of Reliability Centred Maintenance (RBM/ROSE).	3.0	-	Improved asset sustainability
ANG26	Structures – Preventative Works to Masonary	This package proposes re-pointing at 101 sites identified through detailed examinations. The submitted SBP allows for remediation of emerging high risk score works; however the additional funding would be proposed to remediate lower risk score items to improve asset reliability.	3.7	-	Improved asset sustainability
ANG27	E&P – Low wire heights and low bridge clearance	Mitigation measures of low OLE bridge clearances and low wire heights between Shenfield and Southend Victoria	1.0	-	Improved asset sustainability
ANG28	Structures – Bridge Strike Cameras	The benefits over CSI are reduced delay minutes and improved stakeholder relationships.	0.2	-	Improved asset sustainability
ANG29	Structures – Longitudinal Wheel Timber Bridges	This package proposes replacement of 4 bridge decks, currently with longitudinal wheel timbers, which are on criticality 1 or 2 routes with line speeds in excess of what is typically allowed for wheel timber structures.	6.6	-	Improved asset sustainability
ANG30	E&P – Additional Mk1 Mid-life refurbishment volume	Mitigation measures of low OLE bridge clearances and low wire heights between Shenfield and Southend Victoria	23.7	-	Improved asset sustainability

ANG31	Response (time to site) improvements	It will deliver S&T and Pway response capability at: Romford (New depot), Bury St Edmunds (New depot), Bishop Stortford (New depot), Hackney (New depot), Chelmsford, Camden, Richmond. This would to reduce time to site to under 30 minutes in the inner areas and to 30 minutes in the outer area.	-	28.4	Improved train performance
ANG32	Fleet Rescue	With continuing poor fleet reliability, and the introduction of new fleet across the route, this would provide a rescue facility for failed trains – both new, and old.	-	11.8	Improved train performance
ANG33	Security	Additional security team capability as the external impact on the network is a growing issue and this will mitigate against trespass and fatality incidents.	-	3.6	Improved train performance
ANG34	Performance Analysis	Additional support to the performance analysis team for Timetable Performance to ensure timetable changes in CP6 are robust and result in performance improvement. This includes 1 lead timetable analyst, and 2 supporting timetable performance analysts.	-	0.8	Improved train performance
ANG35	Small Plant	The provision of improved trolleys, mechanical aids and other small plant for maintenance and inspection activities.	3.0	-	Improved workforce safety
ANG36	Access to Assets	The access arrangements to a number of key assets would be upgraded. These are likely to be high use locations and would include the upgrading of access paths and steps and provision of lighting. This would complement the access point upgrade.	5.0	-	Improved workforce safety
ANG37	Cess Path	It is proposed to refurbish the entire cess path that is installed on the Great Eastern and the Essex Thameside routes. Additionally this would also add further section of new cess path where required. This item complements the 'Access to Assets' item above.	5.0	-	Improved workforce safety
ANG38	Junction Lighting	Provision of junction lighting at a number of ley locations.	2.0	-	Improved workforce safety
ANG39	Driver Training	Vehicle driver training to ensure staff are trained for the vehicles they drive	-	1.0	Improved workforce safety
ANG40	Critical Junctions	Provision to deliver the following to improve asset reliability in key locations.	-	0.8	Improved train performance

ANG41	Track Reliability	Provision to improve the removal of temporary speed restrictions and manage temporary speed restrictions through 1 Speed Restriction manager with a staff member to predict and prevent speed restrictions, and to remove them with minimal impact on the railway.	-	1.5	Improved train performance
ANG42	Environmental improvements	Safety and Sustainable Development improvements to deliver environmental improvements to the strategic plan.	10.0	-	Reduction in carbon emissions
ANG43	Weather Resilience and Earthworks	The following weather resilience and earthworks have been selected to comply with Anglia's submission to the Initial Industry Advice (IIA) need to further safeguard the ongoing operational availability of the network against current and future environmental threats. A total of 18 earthworks projects and 5 weather resilience projects have been selected.	44.6	-	Improved train performance, Improved asset sustainability, Improved passenger safety
ANG44	Community Safety initiatives	Provision of materials and events to promote railway safety to the public	-	0.5	Improved train performance

Part 2: decrease in total remaining expenditure for CP6

This section describes the impact of a 10% decrease in expenditure across CP6 based on all risk funding has been exhausted.

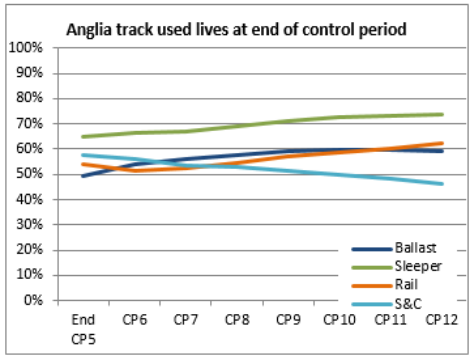
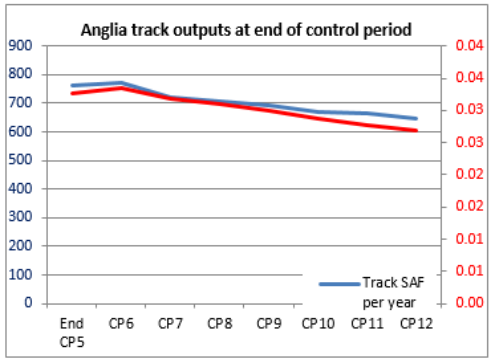
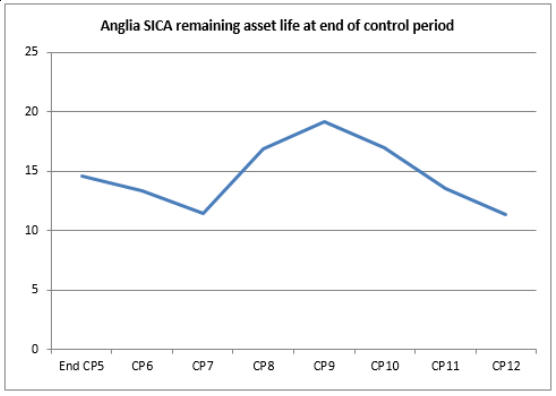
Asset	Outstanding CP6 expenditure	Maximum potential saving	Risk of curtailing expenditure			
			Safety	Performance	Sustainability	Reputation
Track	444.3	29.8	A	R	R	A
Earthworks	58.2	5.0	A	A	R	A
Structures	151.1	2.5	A	A	R	A
Signalling	403.3	148.7	R	R	A	R
Electrification and Fixed Plant	228.0	2.0	A	A	R	A
Buildings	81.4	20.0	A	A	R	A
Workplace Management	6.7	-				
Total	1,373.0	208.0	A	A	R	A

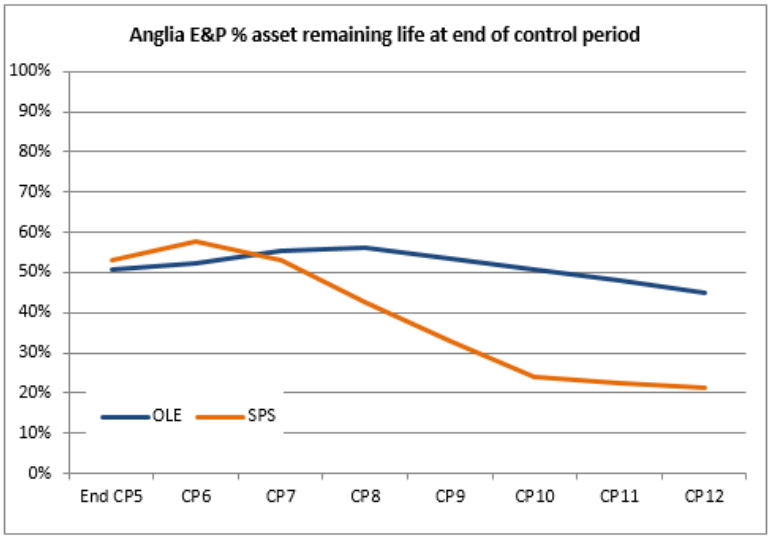
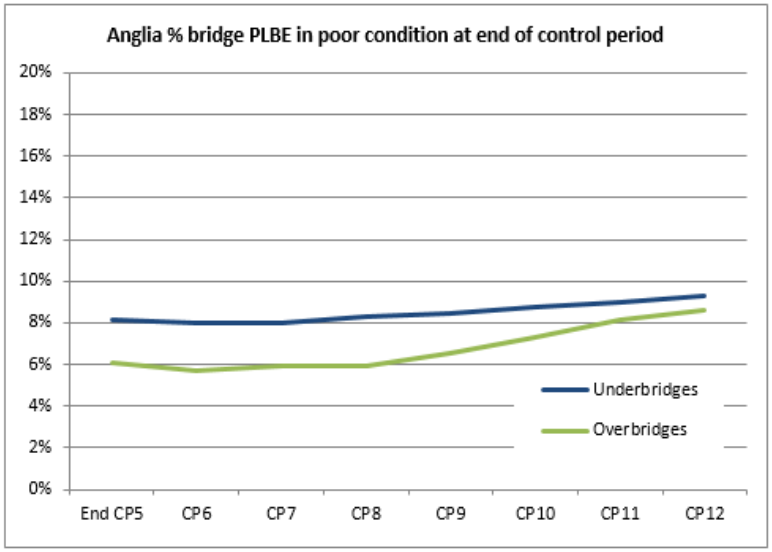
Impact of curtailing expenditure

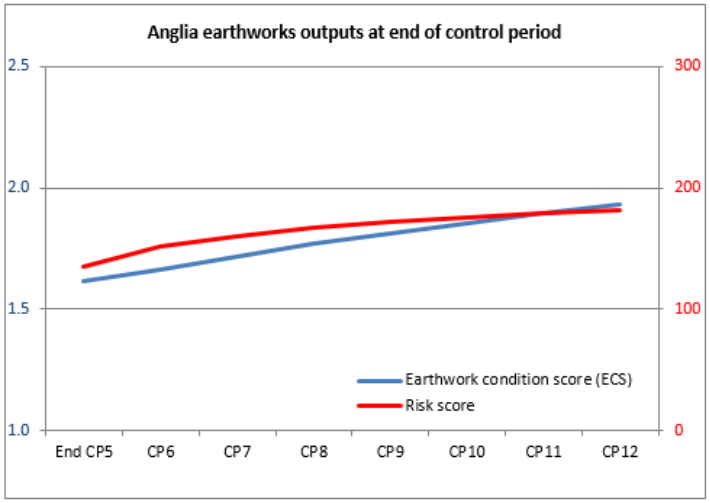
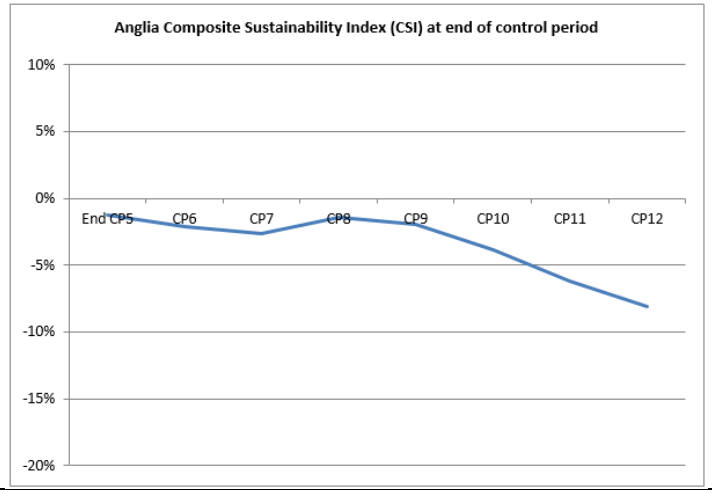
Pre-RSP investment options (predicated on performance and safety improvement) and sustainability driven schemes progressed as part of ORR FD. Signalling includes a considerable volume of level crossing risk reduction, represented in the signalling safety impact. Signalling performance would reduce and given this, it would remove the intelligent infrastructure installation plan. There would be additional OPEX costs associated with the removal of signalling funding, as the removal of intelligent infrastructure on assets would reduce the planned scope of Reliability Centred Maintenance. Works Delivery have amended their organisational capability to deliver the signalling Appendix D workstream, therefore it is expected that this will create overall workbank inefficiencies following the removal of this funding. Buildings funding to improve staff accommodation and facilities would have an indirect impact on safety and performance due to staff morale potentially worsening if this work isn't carried out. Following the catastrophic incident at Thorrington in CP5, additional structures funding was sought to reline existing culverts, to predict and prevent future failures. Geotech funding was sought to manage the risk of a cash constrained CP6 workbank. Performance and safety risk would remain with a reduced sustainable infrastructure.

Appendix E Asset by asset long term forecast

The long-term expenditure on renewals, for each control period out to CP12, has been calculated using NR's strategic asset models. The main objective is to maintain the overall asset performance over the whole network from the end of CP6 to CP12, consistent with the asset policies and at the lowest whole life cost. The route plans form the basis for the CP6 renewals and costs. The renewal activity unit costs are based on the average efficient costs in the route plans. Although the network performance is maintained over the long-term for each asset group, its performance in an individual route may vary, for example where that asset group is much older than average in the route, it might be allocated more funding in the medium term to improve its overall condition relative to the rest of the network. Finally, post-CP6, enhancements are not explicitly included, so asset groups that might benefit from enhancement projects (such as signalling, though programmes such as the digital railway roll-out) might be expected to have a higher long-term renewal budget than experienced previously.

Asset	Condition trajectory	Comment
Track	 	From CP7 – CP12 the percentage of used life for all categories of track assets will increase. This is due in part to the volume of refurbishments proposed rather than a full renewal. However, this volume of renewal and refurbishment is expected to result in an improvement in both service affecting failures and FWI. The reason for this is due to newer rail systems that have been installed over recent control periods which are providing a higher level of asset reliability when compared with the assets that are being replaced
Signalling		The volume of activity required for the re-signalling schemes on the GE Main Line and on the North London Lines during CP7, CP8 and CP9 will result in an improvement in the remaining asset life. The condition then falls through to CP12. The impact on the constrained plan will have less of a positive impact to remaining asset life due to the scope of the works and the volume of life extension work that would be subtitled for some of the full renewals. Both scenarios have the same impact on remaining asset life by the end of CP12.

Asset	Condition trajectory	Comment
E&P		The reduction of the percentage of asset life remaining for E&P assets is due to the low level of expenditure in overhead line renewals after CP8. The current programme for mid-life refurbishment of Mk1 OLE equipment is due to be completed in CP8 and the next phase of mid-life refurbishment work is not due until after CP12.
Structures		The proposed levels of expenditure for both the baseline and constrained scenarios are the same. As a result, there is no difference in the output for these scenarios. Both asset types will see an increase in the volume of asset that are categorised in poor condition through to CP12.

Asset	Condition trajectory	Comment
Earthworks		Both expenditure scenarios will result in an increase in asset score and an increase in the risk scores. However, both of these are better than the national average.
Composite Sustainability Index		Under both scenarios there will be a reduction in the CSI from the end of CP5 through to the end of CP12. The baseline plan does give a small positive affect from the end of CP6 through to CP8 but then the rate of decline is similar to the baseline option.

Appendix F Freight and National Passenger Operators Route Plan

This summary sets out how the Anglia and FNPO routes will work together to deliver the route Strategic Plan for Anglia. It outlines existing FNPO activity, and then describes the impact of the plans and aspirations of FNPO customers to grow and develop their businesses. It summarises what Network Rail needs to do to deliver these strategies and how, in doing so, efficiencies can be identified and realised.

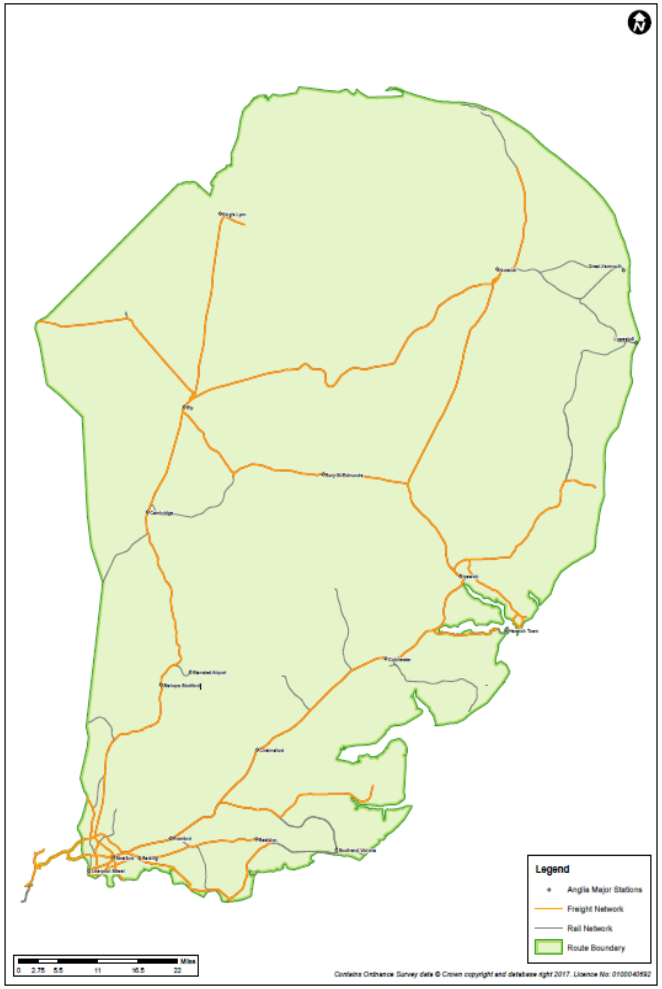
National Passenger Operators:

CrossCountry is a regular user of Anglia route, with services to and from Stansted Airport. In addition to the Ely area scheme in CP6, there are two important signalling schemes that could improve Cross Country services in CP6. These are the Cambridge area signalling renewal and Ely to Peterborough.

The interdependencies that these schemes have are important and need monitoring at programme level to ensure maximum benefits are obtained.

Other key issues include right time arrivals from to and from Peterborough, TSR management and timely removal and incident reduction in Cambridge area.

Charter trains also operate across Anglia route, especially at weekends, to a variety of leisure destinations being hauled by both standard and heritage steam and diesel locomotives. This leisure market is expected to grow during CP6.



Challenges and Opportunities

No	Key Challenges, Risks and Opportunities	What we plan to do
1	Aggregate Growth O: Volume growth from sea-dredged sand facilities to concrete batching plants across Anglia – Ipswich Griffin Wharf, Marks Tey, Norwich Riverside, Trowse, Brandon, Kennett, Harlow, Chelmsford, Purfleet, Bow East and West. R: Capacity and capability. Infrastructure not able to cope with traffic demand.	• Explore opportunities for longer and heavier trains maximising loco capability • Support introduction of new wagons that maximise payload/length ratio • Support Terminal and Yard developments – e.g. complete redevelopment of Bow Yard on the Anglia route for rail freight to be a part of the future Olympic Legacy development in Stratford. • Support introduction of 'pop-up' terminals, bringing out of use infrastructure back into use and increased use of lineside loading • Explore opportunities for new capacity – enhanced use of HS1 and the Channel Tunnel for rail freight to either free-up paths on the classic network or stimulate entirely new traffic
2	**Domestic & Deep Sea Intermodal Growth** O: Volume growth from Ports / Terminals (Felixstowe, London Gateway, Tilbury 2) R: Train paths and SRT discrepancies with longer, heavier trains R: Capacity and capability, including gauge clearance and diversionary capability	• Work with customers to maximise opportunities to increase length of trains • Increase Average Journey Speed origin to destination • Explore provision of recognised diversionary routes with adequate capability • Facilitate new terminal developments – future expansion of London Gateway with additional rail terminals similar to the Port of Felixstowe. Demand dependent, but rail needs to be fostered as the best solution for end users. • Explore opportunities for new capacity – Strategic Freight Corridor improvements on the cross country route from Felixstowe to the Midlands and the North including promoting the business cases for Haughley Junction Doubling, Ely-Soham Doubling, Ely area improvements, as well as off route enhancements at Leicester to facilitate the future growth in traffic from Felixstowe
3	**Gauge establishment** C: Establishment of recognised diversionary routes for gauge critical traffic	• Explore gauge clearance on key corridors, e.g. (GE Mainline, Thameside, North London Line, Gospel Oak-Barking, West Anglia Main Line), and provision of diversionary capability • Explore funding opportunities, including Third Party • Documented diversionary routes for core intermodal flows • Review of RT3973 provision to more closely align with traffic flows – reduced duplication
4	**Other Commodity Traffic Growth** O: Steel & other scrap metals O: Automotive O: Forest Products O: Bulk O: Aviation Fuel & other Petro-chemicals	• Work with customers to maximise opportunities for longer and heavier trains maximising loco capability • Support Terminal / Yard developments to facilitate growth • Support introduction of 'pop-up' terminals, bringing out of use infrastructure back into use and increased use of lineside loading. Promotion of and assisting customers to set up new automotive flows and growing traffic from Dagenham and Purfleet Deep Wharf. • Work with FOCs and Freight End Users to deliver new network connections and necessary capacity and capability, or bring out of use infrastructure back into use including the Parkeston Tip Sidings
5	**Franchise changes / Crossrail** R: Refranchising of Greater Anglia Franchise on Anglia seeks greater capacity on shared lines	• Retain adequate capacity, capability and flexibility for existing and forecast freight • Review Impact on possession strategy from new flows • Review stabling plans for new rolling stock / change of maintenance locations for Greater Anglia, an enhanced Ilford Depot for Crossrail and Greater Anglia

6	**Infrastructure enhancements / electrification** O: Greater capacity/opportunity following enhancement (Thameside/Great Eastern OLE Enhancements). O: Electrification of the Gospel Oak – Barking Line - opportunity for through electric rail freight to Ripple Lane & Barking. R: Loss of Capacity following timetable change. Crossrail and Greater Anglia on Anglia route	• OLE upgrades could potentially present greater opportunities for electric rail freight on the GE and Thameside routes. • Support route forums (RSPG etc.) to influence scope and secure freight benefit following scheme delivery • FNPO, FOCs and Freight End Users to provide appropriate input into the decision making process • Work with Route Business development team to identify potential Third Party funding sources
7	**Construction projects / HS2** O: Opportunity for spoil and waste out and aggregate and other commodities in to support construction R: Capacity for new aggregate and spoil flows from HS2 project	• Work with DfT, HS2 Ltd, FOCs and End User -customers to offer solutions to demands of major projects • Work with customers to manage the impact of major projects on their business (HS2) • Terminal / Yard developments ('pop-up' terminals / lineside loading potential) • Work with FOCs and Freight End Users to deliver new network connections and necessary capacity, or bring out of use infrastructure back into use
8	**SRFI Terminal Development** O: SRFI terminal development supports intermodal growth especially addressing demand for inland terminals C: Securing of sufficient capacity to support SRFI developments through planning and into use	• Work with Developers to understand SRFI proposals progression through planning • Offer Network Rail support to proposals when adequate strategic fit and capacity Work with System Operator to support funded early stage timetable work for SRFI developers. Intermodal developments for Anglia will be the additional paths from Felixstowe and the expected expansion of London Gateway Intermodal Operation
9	**End User-customer service** O: Closer working with FEU's enables greater understanding of customer priorities for future (e.g. Tarmac, Aggregate Industries)	• Work with end user -customers to develop business growth and support modal shift to rail • Work with end user -customers to strengthen service delivery and support
10	**Review of redundant and unused assets** O: Following traffic changes in CP5 and structural change in energy market, opportunity exists to review size and organisation of non-passenger network R: FOC objection to supporting Network Changes	• Identify opportunities to reduce maintenance costs and remove unneeded infrastructure • Regularise the status of freight assets and other assets including gauge, S&C (actual v published capability) • Explore potential to transfer ownership of redundant lines / assets to secure better opportunities for redevelopment
11	**Yards and sidings infrastructure** R: Yard and Siding Infrastructure asset condition is critical to avoid derailment events and customer LTI's	• Working with routes and customers to review asset condition on regular basis. Keeping up emphasis on maintaining and enhancing major terminal infrastructure, including Bow. • Working with routes and customers to establish and benchmark walking route use and condition. For instance, establishing a walking route to the headshunt for the Carless Operation at Parkeston •
12	<u>Timetable Review</u> O/R: Timetable Improvements to closely reflect capability of trains and capacity of network required on busier network	• Continuation of CP5 work to review path usage and remove unused paths and agree strategic capacity • Work with FOC's to more closely align Train Slots in the Timetable with Access Rights in the TAC, and remove unused rights where there is no corresponding Train Slot • Work with the route, System Operator and FOC's/TOCs where in upcoming major timetable re-casts the available capacity may be less than contracted rights, the new Greater Anglia and Crossrail Timetables for Anglia Work with System Operator and customers to review opportunities to improve average speed origin-destination • Review with System Operator and customers suitability of current systems to capture network constraints and traction capability (Loads Book, Timing Loads, Lengths)

13	Digital Railway O: Successful introduction of Digital Railway offers potential for growth on busiest corridors	Act as internal client on behalf of Freight to build sympathetic capability for freight traffic needs. The first major challenge will be the implementation of Traffic Management on the Thameside route and ensuring that Freight is fully represented, and interests protected as we move towards this new way of operating
14	Upgrades and Disruptive Possessions R: Major upgrade programmes including Crossrail, Thameslink and Great Eastern Track and S&C renewals including High Output will require significant disruptive access	• Champion requirements of FOCs and Freight End Users so that services can operate as required during disruptive possessions including availability of diversionary routes and timely provision of capacity studies to identify train service capability

Appendix G Third Party Funding Pipeline Projects

Essex Thameside

Project	Description	Indicative Cost	Status/expected	Key funding stakeholders
Beam Park New Station	New station proposed to accommodate new development at Beam Park	£36m	GRIP 3/2022	TfL
Barking Riverside Extension	1.5km Extension of new railway with new stations proposed at Castle Green and Barking Riverside	£10m	GRIP 5/2021	DfT, London Riverside HIF Bid, South East LEP
Redevelopment of Purfleet Station	Re-development of station to accommodate major new mixed development	£30m	GRIP 2/2022	Purfleet Centre Regeneration Ltd
Essex Thameside Corridor Study	How to accommodate growth in corridor	N/a	Commenced 2018	

Great Eastern Mainline (GEML)

Project	Description	Indicative Cost	Status/expected	Key funding stakeholders
Beaulieu Park	New station	£138m	GRIP 3/2025	Essex County Council, HIF Bid, Developer, GEML Task Force
Trowse Swing Bridge	Doubling of Trowse Swing Bridge to support additional capacity on the Great Eastern Main Line	£100m	Pre GRIP	GEML Task Force

Project	Description	Indicative Cost	Status/expected	Key funding stakeholders
Loops North of Witham	Loop north of Witham and associated works to create overtaking capability on the Great Eastern Main Line	£100m	Pre GRIP	GEML Task Force
Liverpool Street Station Integrated Improvement Scheme	Short, medium and long term improvements to access/egress, pedestrian flow and retail. Master-planning and redevelopment of adjacent sites	N/a	Pre-GRIP	DfT, British Land
Stratford Station Improvements	Short, medium and long term improvements to access/egress, pedestrian flow and retail. Master-planning and redevelopment of adjacent sites	N/a	Pre-GRIP	TfL, Westfield Shopping Centre, LLDC, LB Newham
Bishopsgate Good Yard redevelopment	Redevelopment of goods yard for retail and business use	N/a	Pre GRIP	Developer
Great Eastern Mainline capacity study	How to accommodate growth in corridor	N/a	Commenced/2019	Internal
North Essex Green Communities	Marks Tey station redevelopment to accommodate major residential and new community development.	£40m	Pre GRIP	North Essex Green Communities, HIF Bid, Essex County Council

Cambridge/Ely corridor

Project	Description	Indicative Cost	Status/expected	Key funding stakeholders
Cambridge South New Station	New station to serve bioscience cluster in South Cambridge	£160m	GRIP 1-3	DfT, Cambridgeshire and Peterborough Mayoral Combined Authority, Greater Cambridge Greater Peterborough LEP
Kings Lynn Service Enhancement	Platform extensions and a new siding to enable train lengthening/congestion relief.	£27.5m	GRIP 5/2020	DfT
Ely Area Capacity Enhancement	Track Doubling, capacity improvement Ely to Soham Improved track layout and capacity at Ely North junction	£140m	GRIP 2/CP6	Cambridgeshire and Peterborough Mayoral Combined Authority, New Anglia LEP
Waterbeach Station Relocation	Replacement of existing station with new station to serve major residential development.	£8m	GRIP 3/2021	DfT, Developer
Soham New Station	Construction of new station to serve large residential development	£10m	GRIP 3/2022	Cambridgeshire County Council, Developer
Re-opening of March-Wisbech line	Aspiration to re-open line to passenger traffic	£110m	Pre GRIP	Cambridgeshire County Council
Redevelopment of Whittlesford Station	Redevelopment of existing station to accommodate new residential development and additional parking	N/a	Pre GRIP	Cambridgeshire County Council
Cambridge South Corridor Study	How to accommodate growth in and around Cambridge and accommodate EW Rail	N/a	Long range planning	DfT, Cambridgeshire and Peterborough Mayoral Combined Authority, Greater Cambridge Greater Peterborough LEP

Appendix H List of supporting annexes

Annex 1: Change log

http://oc.hiav.networkrail.co.uk/sites/cp5bp/bps/Documents/Forms/AllItems.aspx?RootFolder=%2fsites%2fcp5bp%2fbps%2fDocuments%2fFY19%20RF11%20Submissions%2fAnglia&FolderCTID=&View=%7b31EAA4D8%2d0E16%2d4B5E%2dB6C4%2dFA90897B2567%7d

Annex 2: Long term Scorecard

http://oc.hiav.networkrail.co.uk/sites/cp5bp/bps/Documents/Forms/AllItems.aspx?RootFolder=%2fsites%2fcp5bp%2fbps%2fDocuments%2fFY19%20RF11%20Submissions%2fAnglia&FolderCTID=&View=%7b31EAA4D8%2d0E16%2d4B5E%2dB6C4%2dFA90897B2567%7d

Annex 3: Efficiency Plan

http://oc.hiav.networkrail.co.uk/sites/cp5bp/bps/Documents/Forms/AllItems.aspx?RootFolder=%2fsites%2fcp5bp%2fbps%2fDocuments%2fFY19%20RF11%20Submissions%2fAnglia&FolderCTID=&View=%7b31EAA4D8%2d0E16%2d4B5E%2dB6C4%2dFA90897B2567%7d

Annex 4: ABP models

http://oc.hiav.networkrail.co.uk/sites/cp5bp/bps/Documents/Forms/AllItems.aspx?RootFolder=%2fsites%2fcp5bp%2fbps%2fDocuments%2fFY19%20RF11%20Submissions%2fAnglia&FolderCTID=&View=%7b31EAA4D8%2d0E16%2d4B5E%2dB6C4%2dFA90897B2567%7d

Appendix I Glossary of terms

Abbreviation	Expanded
ABP	Activity Based Planning
ARP	Assurance Review Panel
BCR	Benefit Cost Ratio
CAPEX	Capital expenditure
CaSL	Cancelled and Significantly Late
CEFA	Civil Examination Framework Agreement
C-DAS	Connected Driver Advisory System
CRI	Composite Reliability Index
CSI	Composite Sustainability Index
DPI	Delay Per Incident
DU	Delivery Unit
E&P	Electrification and Power
ELR	Engineering Line Reference
ETCS	European Train Control System
F2N	Felixstowe to North Programme
FDM	Freight Delivery Metric
FEU	Freight End Users
FMS	Fault Management System
FNPO	Freight and National Passenger Operator
FOC	Freight Operating Company
FPM	Financial Performance Measurement
FWI	Fatality Weighted Index
GEML	Great Eastern Main Line
HAVS	Hand Arm Vibration Syndrome
HAW	Heavy Axle Weights
IECC	Integrated Electrical Control Centre

Abbreviation	Expanded
IOSH	Institution of occupational safety and health
IP	Infrastructure Projects
ISO	International standards on quality management
LEP	Local Enterprise Partnership
LTI	Lost Time Incidents
LTIFR	Lost Time Injury Frequency Rate
MSP4NR	Managing Successful Programmes for Network Rail – Project Management methodology
NRPS	National Rail Passenger Survey
OLE	Overhead Line Equipment
OM&R	Operations, Maintenance and Renewals
OPEX	Operating expenditure
ORBIS	Offering Rail Better Information Services
ORR	Office of Rail and Road
PSR	Permanent Speed Restriction
PIM	Precursor Indicator Model
PDSW	Planning and Delivering Safe Work
PLPR	Plain Line Pattern Recognition
PPM	Public Performance Measures
QHSE	Quality, health, safety, environment
RAMP	Route Asset Management Plan
RDG	Rail Delivery Group
RA	Route Availability
RS	Route Services
RSP	Route Strategic Plan
RSPG	Route Strategy Planning Group
RTD	Right Time Departures

Abbreviation	Expanded
S&C	Switches and Crossings
S&T	Signalling and Telecoms
SAF	Service Affecting Failures
SFN	Strategic Freight Network
SOBC	Strategic Outline Business Case
SPADs	Signals Passed at Danger
STE	Safety, Technical and Engineering
TM	Traffic Management System
TOC	Train Operating Company
TPH	Trains Per Hour
TSR	Temporary Speed Restriction
UTC	University Technical College
WAML	West Anglia Main Line
WD	Works Delivery
Operating Companies	
ARL	Arriva Rail London (London Overground)
c2c	c2c Train Operating Company
GA	Greater Anglia
GTR	Govia Thameslink Railway
TfL Rail	Transport for London - Crossrail Train Operator

Abbreviation	Expanded
Network Rail Role Titles	
ASPRO	Asset Protection Team
COO	Chief Operating Officer
DRAM	Director, Route Asset Management
DRHSQE	Director, Route Health, Safety, Quality and Environment
DRS	Director, Route Business Development and Sponsorship
ECRO	Electrical Control Room Operator
FNPO CPM	Freight and National Passenger Operators Capability and Planning Manager
FNPO HSC	Freight and National Passenger Operators Head of Strategic Capability
FNPO HNM	Freight and National Passenger Operators Head of Network Management
FNPO OSM	Freight and National Passenger Operators Operations and Safety Manager
FNPO PM	Freight and National Passenger Operators Performance Manager
FSDM	Freight Service Delivery Manager
HASPRO	Head of Asset Protection Optimisation
HCRM	Head of Customer Relationship Management
HOP	Head of Performance
HRC	Head of Route Communications
IAP	Integrated Planning Team
RAM	Route Asset Manager
RFD	Route Finance Director
SIO	Senior Incident Officer
SRFM	Senior Route Freight Manager
TME	Track Maintenance Engineer