

System Operator



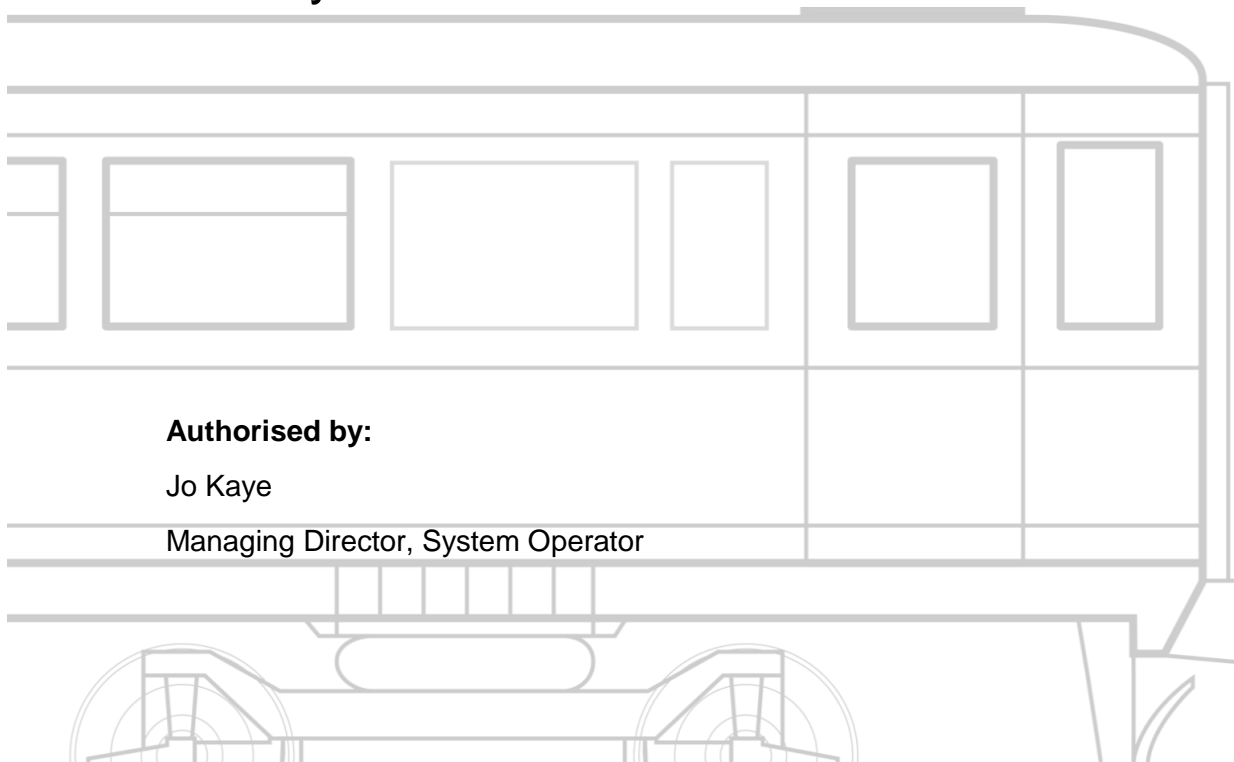
2018/19 Annual Narrative Report

26 July 2019

Authorised by:

Jo Kaye

Managing Director, System Operator



Preface

Introduction from Jo Kaye, Managing Director, System Operator

I am pleased to introduce the first System Operator Annual Narrative report. This report provides our customers and stakeholders with a balanced view of our activities, as we believe that the quality of what we do is as important as our numeric achievements. It supplements our scorecard in providing transparency of our activities. As the System Operator, planning the use of capacity for passengers and freight users is at the heart of everything we do. Our activities span the whole breadth of railway planning - from what the railway could look like in 30 plus years' time through to tomorrow's timetable.

This year we have focussed on accelerating the plans we set out in our Strategic Business Plan for Control Period 6. This has included strengthening the capability of our teams and implementing improvements to how we work in response to industry feedback and learning arising from the operational implementation of the May 2018 timetable.

As we continue to develop our role as System Operator, we will work with others to address issues highlighted by the ORR's independent inquiry into the implementation of the May 2018 timetable. We will provide the greater industry leadership and co-ordination role that has been identified as having been lacking, and ensure that passengers and freight end users are at the centre of our thinking in everything we do.

Introduction from Nick Brown, System Operator Advisory Board Chair

Welcome to the System Operator's first Annual Narrative Report. This report provides System Operator's reflection on the organisation's performance in 2018/19, including information on their preparation for the start of the next financial 5-year control period (2019-2024), and provides further information to the wider rail industry about the role of System Operator.

The System Operator provides independent, trusted expertise in future strategy and capacity allocation for train services, both passenger and freight, on a network-wide level across Great Britain. In this it seeks to balance the needs of the industry, the requirements of the Office of Road and Rail and, above all, the needs of customers and stakeholders.

As the System Operator Advisory Board (comprising Board members from across the rail industry including passengers, freight, funders and internationally comparable organisations), we have scrutinised the plans for CP6 and challenged the System Operator's senior leadership team to make improvements to their scorecard, customer engagement, resourcing and the criticality of a single whole-system model for timetable production and development. They have responded positively to our challenges - recognising the benefits of having in place an external and independent governance framework based on the tenets of whole-industry accountability and scrutiny; the need for system-wide thinking independent of current

stakeholder or commercial demands; and delivering for passengers and freight end users.

As the railway industry continues to grow and become more complex, there remains the need for coordinated long term focussed planning across the rail network . Good collaboration with key stakeholders including operators, customers, devolved governments, local authorities and devolved transport administrations, will only become more important in the years ahead. The System Operator role, as a network-wide function operating within a devolved Network Rail structure , leads the coordinated central planning and capacity planning for future generations and tomorrow's timetable for the rail industry. The System Operator continues to learn from the challenges of the implementation of the May 2018 timetable, working closely with the Industry Readiness PMO, to make improvements for the passengers, freight and rail users of today and future generations.

General Notes

Throughout this report, references are made to the System Operator webpage, and our 2019/20 Strategic Plan.

Both can be found through the following links:

- System Operator webpage

<https://www.networkrail.co.uk/who-we-are/about-us/system-operator/>

- System Operator 2019/20 Strategic Plan

<https://cdn.networkrail.co.uk/wp-content/uploads/2019/03/System-Operator-CP6-Delivery-Plan.pdf>

Abbreviations & Glossary

CMSP	Continuous Modular Strategy Planning	SBP	Strategic Business Plan
CP6	Control Period 6	SOBC	Strategic Outline Business Case
DfT	Department for Transport	SO	System Operator
ESPD	Early Stage Project Development	TOC	Train Operating Company
E2E	End to End	TPR	Train Planning Rules
ESG	Event Steering Group(s)	TPS	Train Planning System
FOC	Freight Operating Company	TPE	TransPennine express
FNPO	Freight & National Passenger Operators	TfL	Transport for London
GRIP	Governance for Railway Investment Projects	TfN	Transport for the North
GTR	Govia Thameslink Railway	WSM	Whole System Modelling
HLOS	High Level Output Specification	TRT	Technical Running Time
HS1	High Speed 1		
HS2	High Speed 2		
Industry	Industry timetable assurance Project		
PMO	Management Office		
TPS	Train Planning System		
LNW	London North Western		
NR	Network Rail		
ORR	Office of Rail and Road		
OPSG	Operational Planning Strategy Group		
PMO	Project Management Office		
RDG	Rail Delivery Group		
SOAR	Sale of Access Rights		
SRO	Senior Responsible Owner		
SAG	Standing Advisory Group(s)		

Contents

Part A: Who we are and what we do	6
A.01 Role of the System Operator	6
A.02 Purpose of the annual narrative report	9
Part B: Delivery throughout our Operating Model	10
B.01 System Operator 2018/19 scorecard	10
B.02 Strategic Planning activity	11
B.03 Managing output change	14
B.04 Contribution to franchising process.....	16
B.05 Management of the access rights framework	16
B.06 Management of Event Steering Groups.....	18
B.07 Timetable development	19
B.08 Informed Traveller recovery plan	21
B.09 Timetable performance.....	22
Part C: Performance beyond the Scorecard	24
C.01 System Operator contribution to system safety	24
C.02 ORR's Final Order and independent inquiry	25
C.03 Scottish Minister's High Level Output Specification	29
C.04 Processes and controls for CP6 capital expenditure....	29
C.05 HS2 Integration	33
C.06 Economic and station capacity analysis	33
C.07 Management of the enhancements portfolio.....	35
C.08 Customer advocacy	36
Part D: People and culture within the System Operator	41
D.01 System Operator team profile	41
D.02 Representative groups.....	41
D.03 Capacity Planning capability & retention	43
Part E: Improvement initiatives	45
E.01 End to End Planning Process	45
E.02 Whole System Modelling Programme	45
E.03 Integrated Train Planning System Programme.....	46
E.04 Developing CP6 programmes	46
Part F: System Operation dashboard.....	47
F.01 System Operation Dashboard.....	47
Part G: Governance.....	50
G.01 System Operator Advisory Board.....	50
G.02 Standing Advisory Groups	52
Part H: Appendices	53
H.01 Annual Narrative Report Feedback	53

Part A: Who we are and what we do

A.01 Role of the System Operator

The System Operator is a part of Network Rail that takes a network-wide view, making Great Britain's railway greater than the sum of its parts. We provide a whole-system, long term view, with every train operating customer, route and infrastructure manager, enabling the industry to deliver for passengers and freight users at a network level.

Capacity is at the heart of everything we do. Our activities span the breadth of railway planning in terms of time horizons - what the railway could look like in 30 years to tomorrow's timetable - and the full spectrum of system opportunities to deliver more capacity, including better timetables, longer and more trains, new technology, improved performance and, where necessary, new infrastructure.

We are a distinct but connected part of Network Rail. The separation of our role in managing capacity allocation from the routes allows Route Businesses to work locally in collaborative models, such as Alliances, avoiding conflicts of interest in the provision of network access.

Our services also extend beyond Network Rail. Trains already run between Network Rail routes and infrastructure owned by other infrastructure managers, such as High Speed 1 (HS1), Transport for London (TfL), Nexus and Heathrow Airport.

Network Rail is changing how we engage with each other and our stakeholders so that we are more focused on passengers and freight users. These changes will be implemented throughout 2019 as part of our Putting Passengers First change programme.

This Annual Narrative Report reflects on the System Operator's activities throughout 2018/19, before implementation of changes to Network Rail's structure.

Why we exist (our role)

We plan changes to the GB railway system so that the needs of passengers and freight customers are balanced to support economic growth.

What we want to be (our vision)

Our vision is to become the recognised expert trusted by decision makers to plan the GB railway.

How we will do this (our strategic intent)

We will support each other to realise our full potential, building confidence and being a better System Operator. We will be transparent about how we optimise the use of the existing network and identify opportunities to create new system capability.

What we do

We recognise that many decisions that affect the outputs of the railway are made by others, especially funders and franchising authorities. The System Operator must understand the choices and trade-offs of different solutions and retain a line of sight to the intended benefits from long term planning through to the operational timetable.

The System Operator must provide high quality advice to these decision-makers and be clear on the relative merits and consequences of different choices that could be made.

Our key products and services reflect the breadth of our activities:

Inform

We look to the future, providing insight to funders and stakeholders on where capacity constraints may emerge. We can identify a range of possible solutions, potential improvements for users and options for economic growth & other societal outcomes.

Analyse

We can undertake quality analysis of: long term prospects of the markets that rail serves; long term strategies and plans; and the development of business cases to assess potential costs & benefits in support of potential project funding.

Advise

We advise on new outputs from the railway system through planning of new services, in franchising advice, reviewing access bids ahead of ORR's directions, and specifying requirements of any infrastructure or system changes to support output changes.

Decide

We are responsible for allocating capacity in timetables including customers' train paths. To make best use of the network and deliver plans we identify where timetables may be failing (risking poor performance) and build timetables that balance everyone's needs.

How we're organised

Throughout the 2018/19 year covered by this report, the System Operator function was organised as follows:

- Strategy and Planning teams (Scotland, North, South and Wales and Western);
- Capacity Planning;
- Policy and Programmes; and
- High Speed 2 Integration



Strategy and Planning teams

Led by Directors of Strategy and Planning, the role of the strategy and planning teams was developed to respond to changes in the funding landscape and so better align with a greater number of governments, devolved funders and other customers.

In a number of areas throughout this report, we have separated our commentary to reflect the four teams. The geographical focuses of these teams is outlined on the map overleaf.

Capacity Planning

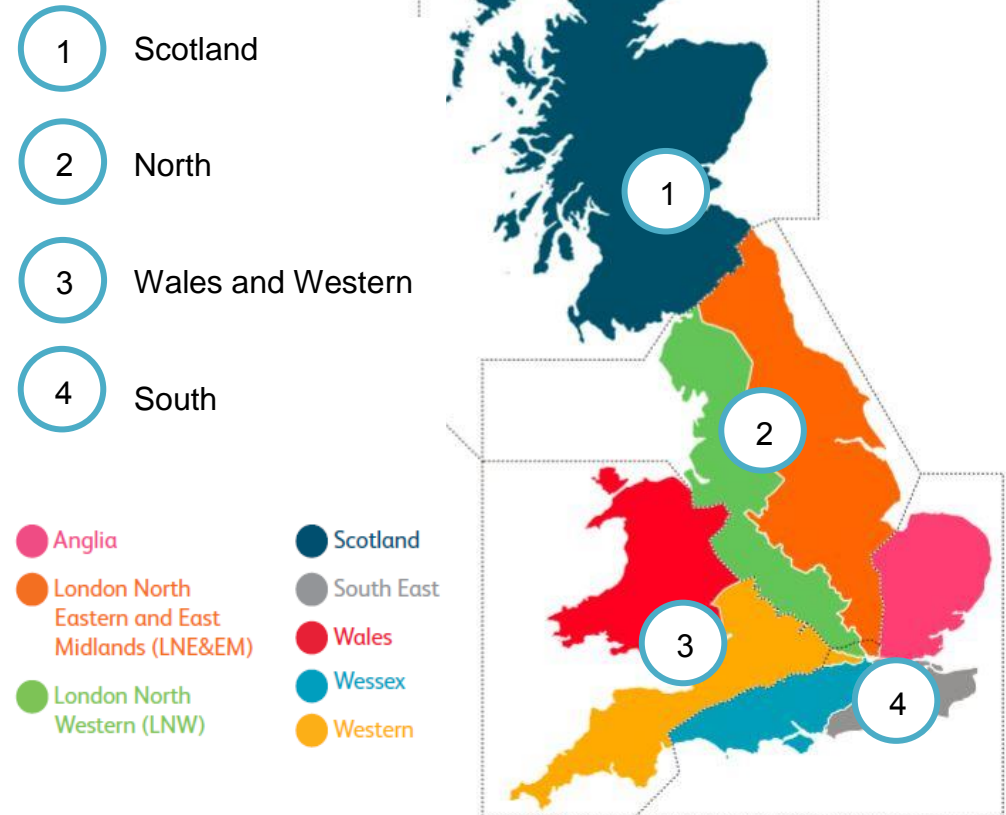
The capacity planning team lead the development and delivery of timetabling processes, including leadership of industry steering groups to support timetable change, management of the timetable planning rules and delivery of the network-wide timetable.

Policy and Programmes

The policy and programmes team provides a range of central (non-geographic) cross-functional activities and supports the geographically based teams in specific disciplines, such as the provision of economic analysis, station capacity analysis, policy development and the overall client oversight of the investment portfolio.

High Speed 2 Integration

Accountable for the for the integration of HS2 with the wider network, the HS2 integration team support funders and decision-makers to take evidence-based and timely decisions with the aim of delivering an optimal, system-level output, and that capacity use is planned most effectively at a network level.



System Operator Planning a better network for you

A.02 Purpose of the annual narrative report

This annual narrative report supplements the annual return and System Operator scorecard, providing a more in depth narrative to lend context to our business performance, as well as providing information on the System Operator's progress in areas such as the management of the access rights framework, for which no industry recognised measure exists. We recognise that there is information that is of interest to our customers and to the regulator that does not lend itself to expression as a metric on a scorecard.

The annual narrative report is a feature of ORR's Control Period 6 (CP6) settlement for the System Operator, and we have decided to implement the reporting approach in advance of CP6 in line with the implementation of our governance framework in 2018/19. The report provides a focus on the 2018/19 financial year, and sets out our progress in delivering and implementing our plans and commitments in readiness for CP6.

As representatives of the key customers of the report, we have engaged with our Standing Advisory Groups to develop the structure and content of the report, as well as with our Advisory Board. The focuses of the report have been established through this engagement, in addition to the engagement we have undertaken with our customers and stakeholders to inform our CP6 plans. We undertake this engagement annually to enable the report to be published following conclusion of the financial year, and to ensure that it remains topical in the context of our customers' priorities.

When read alongside System Operator Strategic Plans, our customers and stakeholders will have visibility of our plans and commitments, and of our progress and performance in delivering them.

The report is structured as follows;

- Part A – introduction and context
- Part B – an in depth discussion of our scorecard and examples of delivery in the year
- Part C – further focus areas identified with our customers and stakeholders
- Part D – a discussion on the System Operator people strategy
- Part E – a review of the improvement initiatives being undertaken within the System Operator
- Part F – the System Operation dashboard
- Part G – an overview of the proceedings of our governance meetings throughout the year

Throughout this report we have included verbatim feedback from our customers and stakeholders in relation to the System Operator's outputs, improvement plans and performance derived from our customer advocacy survey. As always, we welcome your feedback on this report and would be pleased to hear from you. A web link is included at the end of this report to provide a mechanism to contact us.

Part B: Delivery throughout our Operating Model

B.01 System Operator 2018/19 scorecard

The 2018/19 scorecard was designed to enable the Managing Director and leadership team of the System Operator to manage the function to deliver the required outputs, through the provision of balanced indicators. This scorecard was the main regulatory reporting mechanism for the System Operator, supported by this Annual Narrative Report and going forward into CP6, the suite of scorecards described within our Strategic Plans¹.

We have published progress against our scorecard throughout the year, including a short narrative summary of the key information supporting each metric². The following scorecard represents the 2018/19 year end position for the function.

We have engaged with our customers and stakeholders throughout the year to simplify the scorecard, and to provide greater focus on the priorities of our customers and stakeholders. These changes have informed the 2019/20 System Operator scorecard which is set out in detail in our Strategic Plan.

¹ This can be found by expanding the 'CP6 Functional Strategic Plans' section of the following link www.networkrail.co.uk/who-we-are/publications-resources/cp6deliveryplans

² This can be found by expanding the 'How we are performing' section of the following link www.networkrail.co.uk/who-we-are/about-us/system-operator

System Operator		MD: Jo Kaye		FY Period: 18/19 P 13					
Safety & Sustainability	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
Everyone home safe every day (work related absence incidents - total)		40	35	30	2/3	43	↑	43	
Workforce safety (% close calls closed within 90 days)	10.0%	80%	85%	90%	99%/85%	99%	↑	99%	100%
Health and wellbeing (improvement plan - milestone delivery)	20%	10.0%	60%	80%	100%	3/2	↑	100%	100%
Sustainability - supporting our communities (0.5 volunteer days per employee per		303	319	335	10.5/24.5	405	↓	405	
Finance	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
Financial performance measure – opex (£m)	20%	20.0%	32,034	30,509	28,984	3,664/2,850	30,343	↓	30,343
53%									
People	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
Your Voice action planning (roll up of all functional plans - milestone delivery)	2.5%	60%	80%	100%	19/20	94%	↑	94%	85%
Operational planner vacancy gap (against Capacity Planning recruitment plan)	10%	2.5%	12%	10%	8%	4%/10%	↓	3%	100%
Continuous improvement training	2.5%	277	312	347	378/312 (Rolling total)	378	↑	378	100%
Diversity & Inclusion - 20by20 (improvement plan - milestone delivery)	2.5%	60%	80%	100%	2/2	100%	↔	100%	100%
Train Performance	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
Impact on train performance (delay minutes)	20%	388,472	369,973	351,474	21,781/28,506	351,010	↑	351,010	
Impact on train performance (incidents)	20.0%	27,006	25,720	24,434	1,608/2,390	22,457	↑	22,457	100%
Planning a better network	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
Strategic planning milestones (annual plan - milestone delivery)	5%	5.0%	60%	80%	100%	4/4	↑	84%	59%
Managing output changes to the network	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
Department for Transport (funded project development milestones)	0.83%	60%	80%	100%	3/3	70%	↑	70%	25%
Transport Scotland (funded project development milestones)	0.83%	60%	80%	100%	0/0	67%	↓	67%	17%
Welsh Government/Transport for Wales (funded project development milestones)	5%	0.83%	60%	80%	100%	0/0	↔	100%	100%
Subnational transport bodies (TfL; TfN; MC) (funded project development milestar	0.83%	60%	80%	100%	4/4	100%	↑	100%	100%
Franchising milestones (by competition)	0.83%	60%	80%	100%	0/0	100%	↔	100%	100%
HS2 programme milestones	0.83%	60%	80%	100%	3/3	97%	↑	97%	91%
Managing the access rights framework	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
Sale of access rights review (key milestones)	2.5%	2.5%	60%	80%	100%	0/0	↔	100%	100%
Planning the timetable	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
WTT production milestones	5%	5.0%	4		1/1	2	↑	2	0%
TW-12 compliance		85%	90%	95%	0%/90%	0%	↔	0%	
Cross-functional improvement programmes	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
CP6 delivery plan/PR18 (key milestones)	1.0%	60%	80%	100%	1/1	100%	↑	100%	100%
End to end planning (key milestones)	1.0%	60%	80%	100%	0/0	100%	↔	100%	100%
Capacity planning improvement portfolio (key milestones)	5%	1.0%	60%	80%	100%	2/2	↑	100%	100%
Role of the client & early stage project development (key milestones)	1.0%	60%	80%	100%	0/0	100%	↔	100%	100%
Analytical Capability (key milestones)	1.0%	60%	80%	100%	1/1	100%	↑	100%	100%
Customer advocacy	PRP %	WORSE	TARGET	BETTER	PERIOD Actual vs. Planned	YTD		FYF	ACHIEVEMENT
Routes	1.88%	3.32	3.66	3.94	3.54/3.66	3.54	↓	3.54	32%
Operators	7.5%	1.88%	2.41	2.69	3.01	2.87/2.69	↑	2.87	78%
Funders and Franchising Authorities	1.88%	2.95	3.24	3.52	4.0/3.24	4.00	↑	4.00	100%
Other infrastructure managers	1.88%	3.21	3.54	3.86	3.37/3.54	3.37	↓	3.37	24%

The following sections set out a more detailed narrative of our delivery throughout the year in relation to the core delivery sections of our scorecard.

The scorecard features metrics that relate to the direct management of the function:

- financial performance, with spend in 2018/19 maintained in line with forecasts following acceleration of a number of our plans from CP6 into the year.
- workforce safety measures relating to the investigation, closure of close calls and the number of work related absences in the function.
- workforce engagement measures, including delivery of local engagement plans and improvement plans delivered by representative teams focussed on diversity & inclusion, and health & wellbeing.

B.02 Strategic Planning activity

Throughout 2018/2019, Long Term Strategic Planning activity was carried out through a rolling programme of route-focussed initiatives. This constitutes the implementation of our Continuous Modular Strategic Planning approach, described in the System Operator CP6 plans. This iterative and consultative way of working brings the needs of passengers and freight users to the heart of our strategic planning process.

This more collaborative approach has been undertaking using existing whole industry forums (attended by TOCs/FOCs, Subnational Transport Bodies, RDG, and DfT) such as the route investment review groups. Through it we can demonstrate not only progress on strategic questions focused on local needs, but in addition we have been able to explore opportunities for enhanced renewals that local stakeholders are best placed to exploit for passenger and freight user benefits. The approach has been welcomed by our stakeholders.

“We are all here to run trains for customers. We need to put customers first [in all our processes].”

“TfSE has found the System Operator very helpful to date, particularly in terms of sharing data with us as we develop our strategy. Regular meetings are also planned to assist us in the development of our strategy.”

The System Operator has worked closely with DfT and Network Rail business development colleagues on initiatives seeking to

bring more third-party funding on to the railway. Last summer we supported the launch of the DfT's Market Led Proposals programme, which was initiated to seek organisations with ideas for enhancing the railway, or reducing the cost of the railway, with third party financial investment.

The programme was launched through two Rail Industry Opportunity Days at which we spoke, and the first category of proposals (those which require no government funding or commitments) is currently being considered by DfT. One of the challenges associated with this first category is the difficulty in finding schemes which do not require any government commitment (e.g. even for a usage guarantee) at all.

The DfT and several scheme proposers provided positive feedback about our involvement in these initiatives and our approach, welcoming third party investment (including delivery on the railway).

In an effort to deepen our expertise to deal with the ever more complex strategic planning challenges, we have been progressing GB-wide workstreams to improve the way strategic planning is carried out as a profession within the System Operator. This work is developing a suite of options to improve the practice, competencies and professional development of our Strategic Planning teams.

North

Initiatives delivered included the North of England Freight Study and consultation on the East Coast Main Line Route study. We have also undertaken studies required for growth at major centres such as Sheffield, which has required consideration of the future of the network as High Speed 2 services operate. Broader studies looking at station needs across the north have also been undertaken, as well as a study considering the rail demand across the Cumbrian coast.

The latter part of the year included a focus on the Cheshire lines, identified with our stakeholders as a high priority in our CMSP plan. The study considers the output required for capacity to meet future demand, and how these outputs can inform HS2 and Northern Powerhouse Rail conditional outputs.

Scotland

The team has provided evidenced based strategic advice to not only funders, but also Regional Transport Partnerships, Local Authorities, City Deal teams and communities with aspirations to enhance the rail network. This has involved engaging with groups who have secured funding from Transport Scotland's Local Rail Development Fund to progress proposals through the Rail Enhancement and Capital Investment Process, and working closely with Transport Scotland, and their consultants, on the development of Scottish Ministers' Strategic Transport Projects Review 2.

Other focus areas have included the development of a masterplan for Edinburgh Waverley, collaborating with Transport Scotland, City of Edinburgh Council, undertaking a public consultation on the proposals.

Wales & Western

The Wales & Western team has provided strategic advice to funders throughout the year, including a depot and stabling strategy for West Drayton, options to improve journey times on long distance services to Cornwall via Newbury and station developments at Shotton and Deeside.

The team have also been undertaking their first CMSP question: the Oxfordshire Rail Corridor Study is a long-term study to 2050 and will answer the overall strategic question of *"how can the rail system in Oxfordshire best support economic growth?"*. The team continue to develop the study in partnership with DfT, Oxfordshire County Council, Oxford City Council and train operator.

South

The 'Cambridge corridor' study was the first CMSP question focussed on by the team, undertaken in a jointly funded manner by DfT, Cambridgeshire County Council, Cambridgeshire and Peterborough combined authority and Greater Cambridge Partnership. It considers the impact of longer-term growth in demand for rail travel along the 'Cambridge corridor' to 2043 and the consequential need for more passenger capacity.

The study of opportunities on Great Eastern mainline has been particularly well received by stakeholders, with a draft published at the end of the year. Further CMSP studies are currently under way, planned for completion during next financial year, including the exciting Railway for Everyone strategy which is identifying prioritised opportunities to remove impediments and offer rail travel as a more attractive option for more people.

B.03 Managing output change

The System Operator continues to work closely with our funders, sub-national transport bodies and other partners to develop upgrades to the rail network that drive the economic benefits that stakeholders want to realise. This is a broad portfolio of activity, and one that has presented some challenges in the consistent achievement of our scorecard commitments. These commitments have broadly related to the key business case requirements of the Investment Decision Framework in place with the DfT, and an equivalent mechanism in Scotland with Transport Scotland.

Throughout the year we have focussed on the design of a consistent approach to the early lifecycle, whole system development activities associated with strategic planning and the early stage development of enhancements. The resulting framework offers a robust and efficient approach to the creation of strategic advice to funders and the core inputs to a Strategic Outline Business Case. Clear accountabilities are an inherent part of each step in the framework.

As such it can be used as the basis of work with any funder, and we are now focussed on incorporating the framework into the System Operator Operating Model and the Putting the Passenger First Programme.

Network Rail has worked collaboratively to develop a “Team Scotland Execution Plan” which describes the governance of the Scottish enhancement pipeline and the supporting processes, procedures and accountabilities. This has been developed jointly between Transport Scotland, Network Rail, the Office of Rail and Road and ScotRail through a series of workshops and reviews.

Scotland

Network Rail has continued to develop Strategic Business Cases for five priority programmes and two further programmes, providing evidence at a GRIP 2 level, in accordance with the Rail Enhancement and Capital Investment Process.

Engagement has been undertaken with all member of Team Scotland throughout this process, with updates to cross-border operators at Route Investment Review Group, Freight Working Group and separate bespoke workshops.

The seven programmes have been developed with a “whole system” philosophy, setting requirements that benefit passengers and freight shippers and investigating how these outputs can be efficiently delivered through timetable changes, rolling stock changes, infrastructure enhancements, or in some cases a combination of these.

North

We are a partner of Transport for the North and have worked closely with TfN to develop and deliver the Northern Powerhouse Rail Strategic Outline Business Case, and to integrate rail improvement aspirations across the Midlands, North and East Coast geographies.

In addition, we successfully worked alongside Midlands Connect to deliver the SOBC for the Midlands Rail hub in March 2019.

Wales & Western

The Wales & Western team has been developing a number of Strategic Outline Business Cases, including consideration of options to improve operational flexibility and capacity approaching Paddington.

Development activity for Wales has included consideration of options to improve journey times and capacity in a number of key locations, including the South Wales Main line, the North Wales coast, and from West Wales to Cardiff.

South

Successes delivered this year include Cambridge South station, the development work for which is with DfT for consideration (we are delighted that this work was half-funded by 3rd parties).

The public consultation for the Croydon Area Redevelopment (including East Croydon station) was successfully held and informed the outline business case, which is due for submission in July 2019.

We completed the pre-GRIP feasibility work for the much-needed short term interventions at Clapham Junction station, aiming to address the most immediate overcrowding issues.

Our Crossrail 2 team (co-located with Transport for London) has developed the Independent Affordability Review response papers for the South West branches and West Anglia main line for Crossrail 2, to enable continued consideration of the project.

B.04 Contribution to franchising process

The System Operator provides expert advice to franchise specifiers to inform the strategy for forthcoming franchises. This enables track and train to work more closely together and to bring benefits to passengers. We provided comprehensive advice and support to DfT to enable more deliverable franchise specifications throughout the competition procurement process that should result in a more reliable service to passengers.

“The System Operator must have a clear plan for ensuring that the network does not become oversold [in franchise specifications].”

As part of accelerating our plans into 2018/19, we have appointed three Franchise Specialists to support franchise specifiers and our Route Businesses with planning and delivering the end to end competition lifecycle. This support has been welcomed by our customers, who have commented on the need to support greater alignment in franchising specifications,

Throughout the year this has meant the following full competitions: South Eastern, East Midlands, and West Coast Partnership. The team is also working with the DfT supporting the development of the East Coast Partnership and providing strategic advice on the next iteration of the Thameslink, Southern & Great Northern franchise.

In terms of Direct Awards, support has been provided to DfT through the provision of strategic advice for Great Western and Cross Country, in both instances bringing more focus to the needs of the passenger.

We have also supported Transport for Wales through provision of strategic advice on the planning and mobilisation of the new Wales & Borders franchise which commenced in Autumn 2018.

B.05 Management of the access rights framework

Network Rail's Sale of Access Rights (SOAR) panel, established during early stages of devolution, acts as a review and approval body for proposed changes or consultation responses, provides challenge and governance, provides for network and system considerations, and promotes consistency in our treatment of customers and our decision making.

The SOAR panel received 88 proposals in the 2018/19 year, of which 41 were authorised. A further 37 proposals were authorised on condition of changes being made either to the application (for example, the level of rights or the duration for which rights were proposed) or to the mechanisms used within Network Rail for approvals to be concluded. In some instances, this position has been taken where an application can only be authorised in part, resulting in an operator experiencing what will be considered a part rejection and part approval of the proposal.

On 8 occasions the panel deferred its decision, particularly where further information was felt to be necessary, for example where further analysis was felt to be required. 1 proposal was rejected, owing to a conflict between the proposed rights and the existing rights in place for another operator.

System Operator initiated a review of the SOAR process to identify areas of potential opportunity to enhance it, strengthen the tiers of governance and improve customer / business collaboration. Improvement to the process is important to our customers, who feel the process is difficult to navigate and not customer focussed.

A package of reforms to the SOAR process were developed following engagement internally (with Route Customer Teams, SOAR panel, System Operator) and externally (including RDG workshop with ORR participation). The end-state of these reforms is intended to be a stronger route-based ownership of the process,

“SOAR is too late, we need a much better structure for perhaps granting 'provisional rights'.”

“Network Rail needs a measured and properly pragmatic approach to the consideration of rights applications via SOAR.”

an improved customer experience, reliable assurance and governance, and improved System Operator involvement to provide routes with early advice and support network-level decisions.

Throughout 2018/19 we focussed on the implementation of the first phase of these reforms to deliver improvements to the governance, internal engagement and training of the SOAR process including;

- earlier engagement of key SOAR Panel members within Route Businesses to build a more effective process;
- training material for Network Rail customer teams supporting the process on behalf of our train and freight operators; and
- clearer communications framework within the submission process between routes and SOAR Panel to support transparency.

The next phase of the improvements seek to reform the more externally focussed elements of the process, including:

- service level agreements for the completion of the SoAR process, providing clearer accountability at route level;

- regional submissions panels to bring decision making closer to our customers;
- escalation processes to enable operators an avenue to seek support for proposals when unsupported by a regional submissions panel.

“[A] key area for development is to improve customer focus (put passengers first) when considering access rights decision making.”

The review’s reforms have been phased and align with the Putting Passengers First review and improvements into the timetable development process.

B.06 Management of Event Steering Groups

Event Steering Groups (ESGs) are convened to enable delivery of major timetable change and include affected operators and stakeholders. These groups identify and co-ordinate the challenges and potential opportunities associated with future timetable changes, including the completion of infrastructure enhancements, the introduction of new vehicles or changes driven through franchise change. Industry feedback, as well as the findings of the ORR’s independent inquiry into May 2018, has identified a need to focus on improving the role of ESGs.

In 2018/19 Capacity Planning teams worked in collaboration with members of the Operational Planning Steering Group to develop a draft Code of Practice for more structured management of future timetable change.

The finalisation of this code of practice is linked to the Putting Passengers First outcomes where the new Regions assume accountability for ESGs within their routes.

This code of practice informed the approach taken by the Western, Midland Mainline, Anglia and the closed out West Coast Mainline ESGs to enable System Operator to start integrating risks arising from each event.

Activity continues for ESGs including:

- Midland Main Line
- East Coast Main Line 2020
- Wales refranchise
- Western and Anglia: Crossrail full timetable implementation

“ESGs were noted by NR at the Timetable Conference in Autumn 2018 as an area for review - progress needs to be made on this.”

“System Operator has engaged very well on the subject of the Midland Main Line event steering group, which we have worked very closely on to make an effective group that has whole industry engagement.”

B.07 Timetable development

Developing and publishing the Working Timetable (WTT) is measured through completion of the twice-yearly production milestones, D-40 Bid and D-26 Offer, as outlined in the Network Code. The 2018/19 activity has therefore focussed on the development of the December 2018 and May 2019 timetables.

December 2018

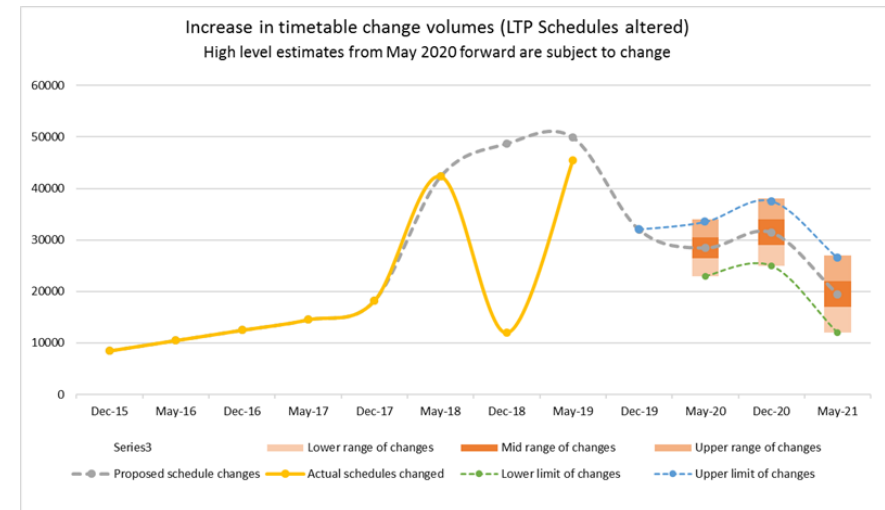
Following Andrew Haines' review of the December 2018 timetable specification triggered by the challenges in implementing the May 2018 timetable, we have worked with operator colleagues and the industry timetable assurance Project Management Office (industry PMO) to deliver a de-risked hybrid timetable for December 2018. The industry PMO exists to clearly and consistently assess the status of and risks associated with infrastructure enhancement and capability programmes, rolling stock changes, timetable planning capability and Route/Operator readiness required for the implementation of each timetable change

The de-risked timetable consisted of around 18,000 schedule changes in 63 work packages, and was delivered to revised dates agreed with industry, which were later than those described in the Network Code. Circa. 4,500 changes were received in response to the December 2018 hybrid offer, which were processed in line with industry PMO agreed timescales.

One timetabling dispute was raised by GB Railfreight around the content of the December 2018 de-risked hybrid timetable, which is still under consideration by the ORR.

On implementation, the timetable has resulted in significant performance improvements being realised, especially for Northern, Trans Pennine Express (TPE) and Govia Thameslink Railway (GTR). The control brought about by the assurance reviews undertaken by the industry PMO had a material impact on the volume of schedule changes that took place in December 2018, as shown in the following chart.

"To GB Railfreight, [the timetable] took no notice of what we had requested or what was best for our customers."



May 2019

Development of the May 2019 timetable was similarly undertaken with an industry agreed revision to bidding timescales. The May 2019 timetable was provided to most operators on time at D-26, representing an industry recovery to Network Code timescales, which was welcomed across the industry. The single exception to this was the delayed offer of GTR weekend services which was made because the GTR bid was submitted late to enable further focus on the midweek timetable.

“Whole scale delays to timetable re-writes is not in the best overall interest of the passenger.”

The May 2019 timetable changes have also been developed with independent assurance provided by the industry PMO, with a material increase in the overall number of schedule changes made totalling circa 45,500 schedule changes in 64 work packages. This constituted a significant number of schedule changes.

Around 5,100 changes were received in response to the offer, which were processed by D-22, in line with Network Code timescales. Since the publication of the May 2019 timetable at D-22, a further circa. 21,000 schedule changes have been made to

account for rolling stock and crew diagramming amendments from operators.

It has been necessary to ensure continued focus with local operations teams to support operational readiness for the timetable change given the scale of alteration. This has been particularly evident in the north, with alterations required to platforming arrangements at Leeds owing to a misalignment in specifications.

“[There was a] swift response to Leeds station workings problems.”

The implementation of the May 2019 timetable, introducing 1,000 new services each day, has so far represented a success for the industry. System Operator capacity planning teams were in place in signal boxes and Route Operating Centres for the initial days of operation at locations where difficulties may have occurred, however there was minimal requirement for timetable interventions.

September 2019

Around 2,500 schedule changes were also processed for a September 2019 seasonal timetable change. The purpose of this change is to take account of seasonal amendments that were not processed as part of the May 2019 development period and incorporate a small number of operator aspirations for changes to services that would be ready to start from September 2019. These

changes include the introduction of Greater Anglia Meridian Water to Stratford services, morning peak Stansted Express services, and TPE service extensions to Edinburgh.

B.08 Informed Traveller recovery plan

The original Informed Traveller recovery plan established in February 2018 was consistently achieved throughout the early stages of the 2018/19 year and included a stretch target to recover to TW-12 in time for the publication of the timetable operating over the Christmas period.

The decision by the industry PMO to move to the hybrid timetable option for December 2018 was driven by a series of risk assessments of industry infrastructure and operational readiness. The adoption the hybrid option led to a requirement for a revised Informed Traveller recovery plan owing to the finalised December 2018 timetable becoming available at D-12.

A revised Informed Traveller (TW-12) recovery plan was created with train planning representatives from across the industry and published on Network Rail's website in August 2018. This plan enabled recovery to TW-12 by April 2019, subject to a set of guiding principles that were agreed with the Operational Planning Strategy Group, including;

- the recovery by one week every four weeks;
- adjustments to accommodate greater timetable change over bank holidays; and

- prioritisation of offers to operators bidding in line with the recovery plan.

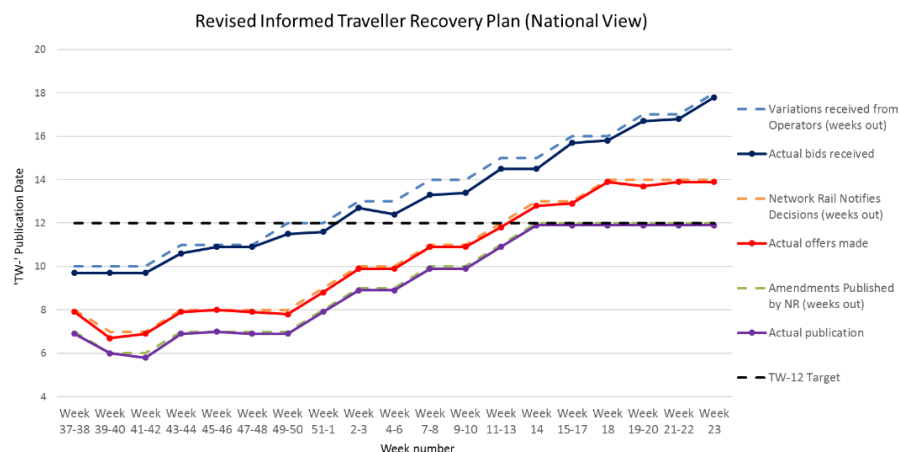
Generally, adherence to the bidding requirements set out in the recovery plan has been maintained. There have been occasions where a small number of operators have missed the bidding deadlines for various reasons, which were usually recovered in a short timeframe. It has been necessary to establish a separate recovery plan to support TW-12 delivery for GTR.

The changing of the base timetable to the May 2019 timetable presented a challenge for a number of operators in achieving the requirements of the recovery plan, but in the majority of instances we were able to absorb the later bids into workload plans to mitigate the impact on offer or publication dates.

"This year has been challenging with the breakdown of the Informed Traveller timescales that has put put pressure on the teams working in this area."

Following the revised TW-12 recovery plan, no significant changes were made that impacted the April 2019 date for recovery. A minor

amendment was made in early December 2018 to accommodate operator requests around reduced bidding capability in early January 2019 due to the festive period and high levels of annual leave. This change was for a double bid week to be delayed by one week and did not have any impact on the final recovery date.



The network-wide TW-12 recovery plan concluded in line with the planned end date of late April 2019, seeing recovery to offering the weekly amended timetable at TW-14, having operator responses by TW-13, and uploading and publishing the timetable at TW-12. The separate recovery plan established with GTR remains with an expected recovery back to consistent achievement of TW-12 in September 2019.

B.09 Timetable performance

Timetable performance, measured by the numbers of incidents and minutes associated with errors in the timetable, has remained largely favourable to target across the year.

An element of risk was incorporated in the target for this year owing to the significant level of recovery from the May 2018 timetable implementation issue, which resulted in a 16-month recovery plan for Informed Traveller delivery.

Despite this recovery plan the team managed to introduce effective validation processes such that this was the second-best performance year (measured in attributed incidents) since 2008/09. Underlying timetable planning performance has improved by almost 20% comparing between the end of the 2017/18 year and the end of 2018/19, with improvements of more than 25% visible in the timetable on Anglia, LNW, Wessex and Western Routes.

This suggests overall timetable performance has overcome the challenges of the May 2018 and “hybrid” December 2018 timetables and the Informed Traveller Recovery Plan. The stability afforded to the planning process through the revised planning deadlines helped maintain a consistent focus on the quality of output, with clear priorities being established on both safety and performance.

Further notable challenges included the fact that there were regular strike plans having to be developed in support of Operators including Northern Rail and GTR.

The impact of a continuing demand for more train services makes the development of conflict free timetables increasingly challenging, so the delivery of full year results below target represent a very positive outcome given the levels of challenge that the industry planning teams faced.

Part C: Performance beyond the Scorecard

C.01 System Operator contribution to system safety

The System Operator makes a meaningful contribution to whole railway system safety by embedding safety considerations at the very beginning of the strategic planning process and throughout our project development activity. We focussed on strengthening this capability throughout 2018/19, both improving the guidance and processes used by our teams to enable strengthened safety considerations throughout strategic planning activity, and in the establishment of competencies to support the professional development of our planning teams.

The concept of safety baselines that inform the development of network enhancements has also been pioneered, with the development of a standard process for their creation and use underway.

We have also focussed on creating a baseline position for stations across the network according to their capacity, safety, accessibility and other factors. From here, long-term forecasts will be applied to see which stations will struggle with congestion or safety in the future, informing the strategic advice we provide and in establishing the impact of network changes and new schemes.

In 2018/19 it has been initially used on rail development programmes such as Midland Rail Hub, East West Rail and West Midlands Train Lengthening.

System Operator station capacity analysis capability can also be used to identify opportunities to improve system safety. We have actively engaged with GTR and the DfT to build a strong case for a scheme that would improve passenger safety at St. Albans, where our analysis has highlighted the risks passengers face on the central island platform where high speed trains pass crowded platforms in the peaks.



This has given rise to a project to explore a range of options including; timetable changes; a new station footbridge; and platform decluttering. System Operator analysis teams are in the process of assessing the effectiveness of these options in alleviating the serious passenger safety risks. The project is an excellent example where the industry has come together to expedite improvements to system safety.

System Operator also directly influences system safety through the development of a safe and robust network-wide timetable. This includes controlling the number of conflicts in the timetable, such as conflicts between timetable plans and the infrastructure, including consideration of gauging, axle weight restrictions and possessions.

Such incidents require intervention by our operational teams to amend plans at short notice, and our teams raise 'close call' incidents when they occur. We investigate these close calls, and seek to apply learning in an effort to prevent recurrence. Our CP6 Strategic Plan commits to a continued improvement in System Operator performance in this area.

In 2018/19 we have;

- measured the number of conflicts between train paths and possessions (achieving 21% better than target) and developed a trajectory for improvement throughout CP6;
- investigated 304 close calls, closing 99% within 90 days; and
- delivered improvements to nearly 3,000 timetable planning rules for timetabling activity delivered within the year (1,008

³ This is published on ORR's website, and may be referred to as the 'Glaister Review'

https://orr.gov.uk/data/assets/pdf_file/0010/39916/inquiry-into-may-2018-timetable-disruption-december-2018-report.pdf

in May 2019 and 1,939 in December 2019) with a view to supporting a safe and robust network-wide timetable.

C.02 **ORR's Final Order and independent inquiry**

The introduction of the new timetable in May 2018 caused significant and deeply unfortunate disruption to the lives of many passengers over a period of several weeks. This led to an inquiry by the ORR into the causes of the timetable disruption.

The ORR's independent inquiry³ identified a series of recommendations for the System Operator, wider Network Rail, the DfT, and wider industry parties. At the same time, ORR published its decisions in respect of its investigations into the contravention of Network Rail's network licence in relation to the provision of information to passengers and the operation of an effective timetable process. The actions required by the ORR in the final order aligned with a number of the recommendations identified in the inquiry.

Network Rail responded to these actions on the 1st April 2019, setting out;

- our plans to run an efficient, effective, fair and transparent process for future timetables with a focus on transparency, and the role of the industry PMO; and
- a plan to lead the industry review of the Network Code Part D

We also set out;

- the progress of the TW-12 recovery plan, discussed earlier in this report; and
- our plans to implement improvements to System Operator reporting as set out in our CP6 plans, of which the introduction of this Annual Narrative Report is a feature

A number of recommendations made by ORR are aimed at DfT and other funders, such as improving how the impact on passengers is taken account of in decision-making on projects at investment decision points and during the delivery phase. There are also recommendations that focus on the role of Programme Boards in managing systemic risks and dependencies and the establishing of Industry Readiness Boards as programmes mature towards delivery.

These recommendations seek to build on existing arrangements, and we continue to discuss these with DfT, the industry timetable assurance PMO and with other funders and the industry more generally.

Industry PMO

Following the formation of the industry PMO, the December 2018 timetable was implemented successfully, without any significant issues or impacts on the majority of passengers and freight users. There were some short-term cancellations in Scotland due to traincrew availability following the introduction of ScotRail's new enhanced timetable. This demonstrated the benefits of the close collaboration by the industry to de-risk the timetable and undertake assurance activity in the period between May 2018 and December 2018.

Feedback from Network Rail and train operators on the benefits of the industry PMO activity and collaboration has been positive and the continued joint effort on assurance and planning for the May 2019, December 2019 and May 2020 timetable changes reflects this.

"The [industry] PMO type governance has been welcomed. Good solid structure that has been used to positive effect."

We have therefore created funding provision to sustain and embed the current approach to operating the industry PMO in CP6, and have engaged with both the PMO Steering Group and relevant stakeholders to identify opportunities to improve its effectiveness and alignment with other industry processes.

The December 2019 timetable saw the reinstatement of industry planning timescales (publication at D-26), and we will continue to utilise the established approach for the timetabling process as described in the Network Code, noting that this will be discussed further with industry as part of the industry review of Network Code Part D.

Timetabling pilots

The industry PMO, working with Operational Planning Strategy Group (OPSG) has developed a programme of work to improve the efficiency and effectiveness of rail industry timetable development and to identify opportunities for different ways of working.

Two pilot schemes have been developed to trial different working methods and closer working relationships between capacity Planning and the timetabling teams in ScotRail and Great Western Railway, respectively. The trial with ScotRail seeks to improve the work ahead of and during the development of the New Working Timetable by:

- developing a joint project plan, communications approach and progress tracking for the delivery of the New Working Timetable

- creating a virtual team for pre-D-40 timetable development and timetable planning rules
- streamlining activities by working in collaboration and giving ScotRail access to the Train Planning System to remove manual data transfer between ScotRail and Network Rail
- agreeing common data inputs and toolkit for the creation of Timetable Planning Rules

“The [industry] PMO adds value but needs to avoid duplicating other workstreams in the industry.”

The trial has been live since November 2018 and is continually being reviewed by the ScotRail and Network Rail timetabling teams with oversight from the industry PMO and the Alliance Board. It will be reviewed by the ScotRail Alliance Executive in August 2019.

The GWR trial is focussed on improving collaborative working to improve the short-term timetable plan by:

- introducing collaborative working, better communication and earlier information sharing between GWR and Network Rail planning teams
- measuring the number and nature of planning interventions in the short term planning processes and developing options for the reduction in industry workload
- reviewing the responsibilities for station workings

- investigating TPR compliance assurance opportunities by better exploiting existing technology

The trial has been in active development since late 2018 and is being managed by the industry PMO and the Western Alliance team.

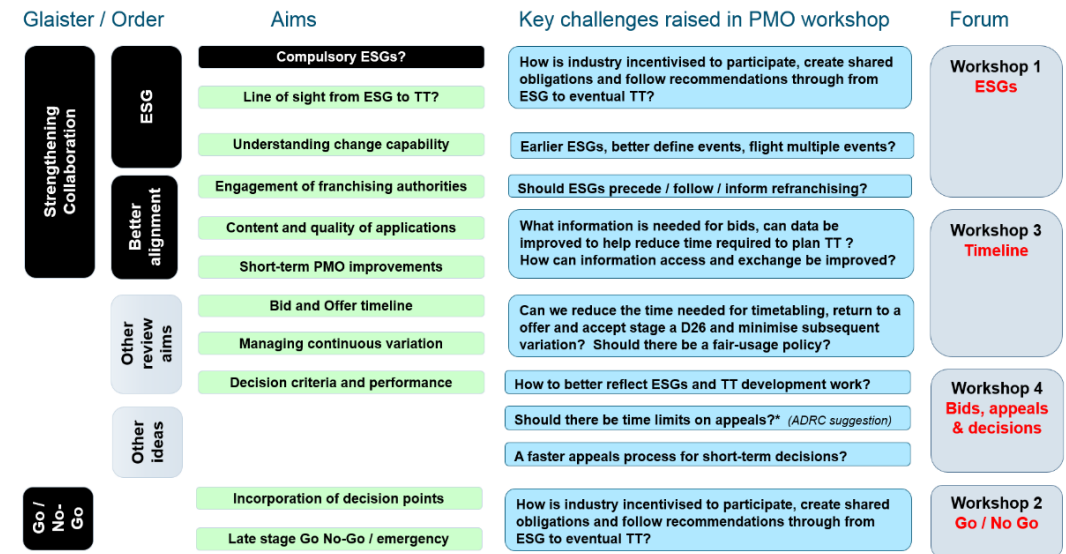
Industry review of Network Code Part D

The ORR's final order required us to develop a plan to lead an industry review of Part D of the Network Code. This was supplemented by a number of observations set out in the independent inquiry as to what such a review should include.

Industry members hold a range of views; some feel Part-D is fit for purpose, others believe greater change is needed. However, it is recognised that it has been some time since it has been significantly reviewed and an exercise to review the current arrangements would be sensible.

Throughout the early stages of 2019 we have been working with our customers to develop the remit, approach and engagement for the industry review of the Network Code Part D. This has included establishing industry governance arrangements for the review. Our plan has been published and is available on the System Operator webpage.

To date there have been four workshops with industry, aligning to the aims and key challenges identified by the ORR's independent inquiry and industry engagement. The outputs of these workshops will be used to inform further industry consultation throughout June and July 2019.



C.03 **Scottish Minister's High Level Output Specification**

Network Rail has led the industry in developing a plan to deliver Scottish Ministers' high level output specification (HLOS) requirements relating to improving journey times for ScotRail and increasing the average speed of freight services. Network Rail organised and chaired a series of Industry Working Groups including Transport Scotland, ORR, Freight Operator Representative, FNPO, Scotland Route and ScotRail. The industry plan was submitted by Network Rail to the ORR, in accordance with the ORR's Final Determination in advance of 31st March 2019.

Network Rail is also leading the industry to develop a Depots and Stabling Strategy working with similar working groups and stakeholders, as well as collaborating with the Rail Delivery Group's Depot Servicing and Stabling Group. We are due to submit a draft industry strategy to the ORR by July 2019.

C.04 **Processes and controls for CP6 capital expenditure**

As part of the ORR review of our CP6 plans, an Independent Reporter (Nichols) was commissioned to assess the

appropriateness of our processes and controls for managing the portfolio of capex expenditure we proposed to invest in improvements to the System Operator's timetabling and analysis technology.

The resulting report outlined the review findings, with broadly positive assessment of our processes and capabilities, and identified twelve recommendations relating to three general themes of opportunity;

- industry wide engagement
- internal processes and controls
- programme and portfolio management capability

We welcomed this review and its findings, and have developed an action plan (shown below), which outlined a structured list of interventions to realise the improvement opportunities, and further enhance our tools and capabilities relating to capex expenditure, in readiness for CP6.

System Operator Response to Nichols Recommendations

Source: Review of the Network Rail System Operator CP6 Processes and controls for investment decisions relating to capex spend



Objective	Themes	Recommendations	NR Response	Where this will be captured	Timescale
To ensure that the SO is well equipped to deliver its capital expenditure programme in CP6	Industry wide engagement	R6: Define the roles of industry representatives through relevant engagement with the industry and ensure appropriate representation at the various governance levels within the CP6 SO capex programmes.	A6a: We will define and agree with OPSG the role of the industry representatives on the Programme Boards and their relationship with OPSG.	Paper submission and minutes of approval at OPSG	30/09/2018
			A6b: Industry representatives on the Programme Boards will approve and sign off acceptance of their role.	Commitment letters issued and accepted by individual members	28/08/2018 WSM (*)
		R7: Have a clear process for gaining buy-in from the industry representatives to the aims and objectives of the programmes.	A7: We will ensure that each CAPEX Programme will have aims and objectives endorsed at OPSG in the form of programme brief / vision statement or blueprint.	OPSG minutes confirming approval of documented aims and objectives	30/09/2018 WSM (*)
		R8: Continue to ensure that single source data is used for consistency of reporting to all meetings that have industry wide representation, including information supplied to the planned SO Advisory Board.	A8: We will maintain a consistent source of reporting to external bodies, including SO Advisory Board. A note of the proceedings at the SO Advisory Board will be published for transparency.	Examples of programme reports to external bodies	31/03/2019
	Internal Network Rail Processes and Controls	R9: Clarify the appropriate route for escalation of issues for the agreed industry representatives.	A9: We will produce an escalation process map demonstrating the relationship between existing industry fora, and the SO governance framework and include this within the role brief of the industry representative.	Approved escalation process map incorporated into role brief of the industry representative	31/03/2019
		R1: Define the critical success factors and metrics that will help demonstrate the effectiveness of the processes and controls and review regularly throughout CP6	A1: We will define and report on critical factors and metrics which measure success of our key processes and controls, such as the attendance of industry representatives at CAPEX Programme Boards. The report will be collated and analysed by the SO PMO.	Controls Success Metrics reporting	31/03/2019
		R3: Ensure stage gate reviews are supported by appropriate Network Rail assurance by those outside the SO direct management team.	A3: We will agree the principles of robust stage gate reviews at the Delivery Board. These will be implemented across the SO and will include an appropriate level of NR assurance.	Paper to Delivery Board and evidenced in programme stage gate minutes	31/03/2019
		R4: Consider whether and how the SO's investment authority would benefit from relevant expertise and capability to consider whole industry benefits, in order to provide more effective challenge. Options could include the creation of a new SO investment panel.	A4: We will develop an options paper for the SO Managing Director, working with NR Group Investment and subject matter experts, to support selection and implementation of the investment authority solution.	Options paper & meetings scheduled	31/03/2019
	Internal Network Rail Processes and Controls	R5: Ensure the roles of those attending the programme board are clearly defined and documented.	A5a: We will ensure all industry representatives who attend CAPEX Programme Boards will approve and sign off the remit of their role as a board member.	Signed commitment letters	28/08/2018 WSM (*)
			A5b: We will include within the Terms of Reference for each programme board clarity of the roles of programme board members	Terms of Reference for Programme Boards	24/10/2018 WSM (*)
		R10: Provide greater definition of the roles of key personnel associated with the delivery of the programmes, including the sponsor, client, business change manager and end user practitioner representative.	A10: We will ensure that each programme brief will be approved at Programme Boards and will include identification and accountabilities of key roles through the use of a Responsible, Accountable, Consulted and Informed (RACI) Matrix.	Programme briefs as approved at MSP4NR Stage 1	31/03/2019 WSM (*)
		R2: Investigate the practicality of developing a strategy that gives consideration to allocating some contingency at overall portfolio level as well as at an individual programme level.	A2: We will ensure that our reporting to the Delivery Board will include allocation and spend at a programme and project level so the Delivery Board can manage contingency across the portfolio.	Example reporting to Delivery Board	31/12/2018
		R11: Assess how programme resource and training needs change throughout the various lifecycles of the programme during CP6.	A11: We will refresh all resource plans to forecast the programme and business resource requirements at each stage gate and ensure this is reflected in the CP6 Delivery Plan.	Example portfolio resource reports and aligned to the Delivery Plan	31/03/2019
		R12: The two PMO's should ensure that resources are managed at an overall portfolio level to ensure their most efficient utilisation across the individual capex programmes.	A12: We will ensure that that our reporting to the Delivery Board will include programme resource information to enable Delivery Board to review and manage portfolio resources on a periodic basis.	Example reporting to Delivery Board	31/12/2018

System Operator Planning a better network for you

A number of opportunities for further improvement were identified by the review. The majority of these opportunities are incorporated within the outcomes of the SO's proposed response. We will further assess the remaining opportunities as we progress in the delivery of the response and at appropriate points in the development of our CP6 Delivery Plan

Note: (*) as programmes come online

System Operator Planning a better network for you

Industry-wide engagement

Nichols suggested System Operator should seek to clarify and strengthen the level of relevant industry representation in the development and delivery of the CP6 System Operator capex portfolio, as per recommendations 6, 7, 8 and 9 below.

- R6: Define the roles of industry representatives through relevant engagement with the industry and ensure appropriate representation at the various governance levels within the CP6 SO capex programmes.
- R7: Have a clear process for gaining buy-in from the industry representatives to the aims and objectives of the programmes.
- R8: Continue to ensure that single source data is used for consistency of reporting to all meetings that have industry wide representation, including information supplied to the planned SO Advisory Board.
- R9: Clarify the appropriate route for escalation of issues for the agreed industry representatives.

As a result, System Operator focused its efforts on engaging with the wider industry, with a clear aim of jointly shaping and managing its capex portfolio, as outlined below.

Actions and outcomes achieved;

- Operational Planning Steering Group (OPSG) as the key industry forum was utilised to validate and endorse the System Operator portfolio and its objectives, with a written confirmation of endorsement;
- OPSG members were appointed to the existing programme boards for Whole System Modelling (WSM) and Integrated Train Planning System (iTPS) programmes;
- commitment letters were issued to all programme board members outlining their roles and responsibilities to drive shared accountability for successful delivery;

- wider industry engagement was undertaken through surveys to understand the industry view, which is being incorporated into the development and delivery of the portfolio initiatives; and
- our programme governance framework was revised to ensure internal (NR) as well as external (industry) escalation channels exist, enabling effective industry oversight and challenge where necessary.

Internal processes and controls

Recognising good foundations already in place, Nichols suggested further clarification and strengthening of System Operator processes and controls for capex expenditure, as per recommendations 1, 3, 4, 5 and 10 below.

- R10: Provide greater definition of the roles of key personnel associated with the delivery of the programmes, including the sponsor, client, business change manager and end user practitioner representatives.
- R5: Ensure the roles of those attending the programme boards are clearly defined and documented.
- R1: Define the critical success factors and metrics that will help to demonstrate the effectiveness of the processes and controls and regularly review throughout CP6.
- R3: Ensure stage gate reviews are supported by appropriate Network Rail assurance by those outside the SO direct management team.
- R4: Consider whether and how the SO's investment authority would benefit from relevant expertise and capability to consider whole industry benefits, in order to provide more effective challenge. Options could include the creation of a new SO investment panel.

System Operator focused on robust execution of and compliance with the existing governance processes and investment regulations,

ensuring rigour and clarity to drive effective management of capex expenditure.

Actions and outcomes achieved;

- Senior Responsible Owner (SRO) and programme board appointments confirmed in writing, setting out clear expectations of roles, their specific input and how to discharge their responsibilities;
- a new organisational structure was put in place and supported with clarity of accountabilities, with particular focus on clienting, sponsorship, enterprise architecture, programme delivery and business change relationships and dependencies; and
- consideration of the most effective investment authority resulted in the establishment of an independent System Operator investment panel to provide more appropriate and effective scrutiny of investment decisions.

Programme and portfolio management capability

Nichols suggested System Operator should improve its resource management across the capex portfolio, including in relation to relevant financial contingency, as per recommendations 2, 11 and 12 below.

R11: Assess how programme resource and training needs change throughout the various lifecycles of the programmes during CP6.

R12: The two PMOs should ensure that resources are managed at an overall portfolio level to ensure their most efficient utilisation across the individual capex programmes.

R2: Investigate the practicality of developing a strategy that gives consideration to allocating some financial contingency at overall portfolio level as well as at individual programme level.

System Operator focused on further developing plans for programmes, and establishing clearer links between the ongoing management of programmes and the efforts on engaging with the wider industry, with a clear aim of jointly shaping and managing its capex portfolio.

Actions and outcomes achieved;

- review of our capital expenditure plans, resources and arrangements for contingency throughout the development and update of our Strategic Plan, published in March 2019
- strengthening of portfolio level oversight and reporting to the System Operator leadership team

C.05 HS2 Integration

Network Rail continues to work collaboratively with HS2 Ltd, DfT and other partners to make the best of the new line that HS2 Ltd will build. This will better develop how HS2 services can be integrated with the future demands of the conventional network to bring the maximum benefit to passengers and freight users. The work is a mixture of strategic planning through the lens of how the service choices will meet the demands over the whole region, asset protection and longer-term operations strategic development.

“The System Operator shows a good understanding of the HS2 project and the steps to integrate with the conventional rail network.”

Following a year of extensive work by the System Operator HS2 Integration team in close collaboration with London North Western (LNW) route, DfT, HS2 Ltd, the Euston Master Development Partner and other stakeholders, we have developed and selected the strategic concept for the enhancement of our station at Euston, supported by a compelling Strategic Outline Business Case demonstrating substantial benefits to passengers and a positive economic case. The concept and case have been endorsed by the Network Rail executive and Board as well as DfT Board Investment and Commercial Committee, with funding for the next stage of development now secured.

Managed through the High Speed Integration Steering Group, and in collaboration with key industry parties, System Operator has led the collaborative development of a comprehensive framework, scope and set of agreed accountabilities for the whole-system integration of the HS2 network. Throughout the year System Operator has also continued to work with HS2 and DfT to support and feed in to the design development for HS2 Phases 2A and 2B, including support for the relevant legislative processes.

C.06 Economic and station capacity analysis

The System Operator economic analysis teams undertake analysis activity in line with specific Rail Appraisal guidance, where appropriate trade-offs are made between services and between service changes and infrastructure changes.

Economic analysis supports strategic planning activity within the System Operator, such as informing the Cambridge Corridor Study, where analysis articulated a strategy for improving inter-regional rail connectivity and unlocking land for much needed housing, and increasing passenger carrying capacity in the peak. This was published in February 2019. Further analysis was undertaken throughout the year to inform wider industry strategy, such as the development of influential analysis to articulate the nature and extent of the decarbonisation challenge, and to guide the deployment of potential traction solutions.

In support of rail development programmes, the socio-economic appraisal of options and recommendations is formalised into business cases. Examples of activity undertaken in 2018/19 include the Redevelopment of Euston Conventional Station programme where economists informed option development culminating in the submission of an economic case which was used to determine the joint decision to proceed.

“The team has worked tirelessly with both the project team, our business case consultants and our designers to ensure we can capture as much economic information as possible. The team has supported in defining the Outline Business Case phase of the project and posed a number of challenges to the project in order to ensure we continue to optimise the value of the scheme’.”

The System Operator provides independent expert analysis and therefore our success is not measured by the number of positive investment decisions are made, but instead by the provision of information to support good evidence-based decision making.

At times our work informs a decision not to proceed. In 2018/19 an example of this was the Moorgate Capacity Programme where the

decision was taken not to progress owing to higher costs and reduced benefits being identified in comparison to earlier business cases.

The System Operator station capacity analysis teams have been strengthened in 2018/19 to respond to additional demand for station capacity activity. This included supporting professional development to enable progression towards team members becoming chartered transport planners.

Throughout the year we provided station capacity input into business cases for congestion relief schemes at Denmark Hill, Peckham Rye, Lewisham, St Albans, London Victoria, London Liverpool Street and Clapham Junction. At St Pancras low level station the team provided analysis to make the case for expanding the gateline to relieve congestion which has already been implemented and improves passenger experience every day.

We also contributed to large masterplans at Leeds, Sheffield and Euston. For example, at Euston we are leading the concept development stages from a passenger flow point of view to support the case for change, and have supported the Euston enabling works by informing plans to manage crowds during the closures. This includes the suggestion of clearing the concourse and adjustments to internal retail units to create more space for passengers to move to improve passenger experience during the construction works for HS2 and to increase the resilience of the station to cope with perturbation.

At Leeds Station, we've worked closely with a wide range of stakeholders in providing short-term solutions to current overcrowding issues, especially around the gateline, and developing a world-class station masterplan for an HS2-enabled future that enables the station to work for all passengers. Stakeholders have particularly appreciated the pragmatic approach and knowledge from involvement across many workstreams, which would not have been achievable or affordable from outside of Network Rail.

C.07 Management of the enhancements portfolio

DfT are the primary funder of enhancements in England and Wales and we work closely with them to ensure that the available funding is used to maximise benefits across the network in England and Wales.

This includes advising DfT on how best to balance investment between short-term and long-term needs of the network. Our role is to advise, facilitate and inform decision-making in the context of the network. We work closely with our colleagues in the Routes to ensure that new capabilities can be delivered onto the network whilst maintaining line-of sight back to the strategic objectives DfT are seeking.

Management of the CP5 portfolio was not without challenge particularly in the early years of the control period. Throughout CP5 we undertook activity to improve the way we manage the enhancements portfolio and new governance arrangements were established through the Memorandum of Understanding agreed

between NR and DfT in 2016. These have continued to evolve and mature during the second half of CP5 and will continue to do so in CP6.

Underpinning these arrangements is the requirement for projects to demonstrate a robust business case as they progress through development to delivery; value for money, affordability and deliverability will always be key considerations in deciding which enhancements to progress.

The new Portfolio Definition Board will oversee the 'Decision to Proceed' (shown below), ensuring that projects only enter the portfolio if they are likely to meet the needs of passengers and freight users whilst delivering value for money for our funders and taxpayers.



At any of the Joint Decision points, the decision may be taken to cancel a project if it no longer going to achieve these outcomes. Following a Joint Decision to Deliver, details of the project will be

published in the Enhancements Delivery Plan ⁴ and DfT have undertaken to publish the remaining projects which have not yet reached a Decision to Deliver.

The final year of CP5 allowed us to see the benefits of these process and governance changes as the enhancements portfolio was delivered to the Hendy baseline of £14.7bn. The individual projects delivered by the routes have meant that taxpayers, passengers and freight users will be able to benefit from a wide range of service improvements across the network. There remain projects within the Hendy review which are yet to be delivered, and these will be completed in CP6 subject to ongoing review of their business case.

C.08 Customer advocacy

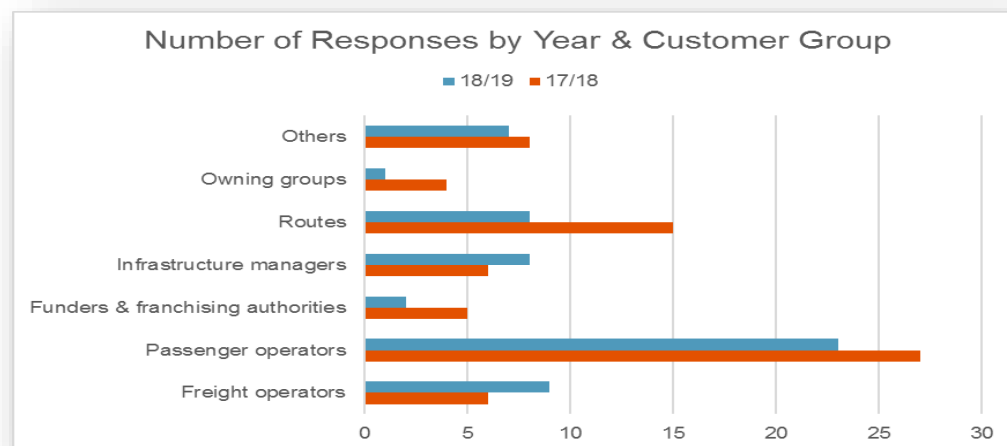
The 2018/19 System Operator customer advocacy survey operated at the end of February and throughout March 2019. This was the second survey of its kind following implementation at the beginning of 2018. The survey provides us a valuable insight into our customers' perceptions of the importance of, and satisfaction with, the outputs of the System Operator.

The survey saw a reduction in the overall response rate from 71 responses in 2017/18 to 58 responses in 2018/19, which we

⁴ This can be found under the 'Enhancements Delivery Plan' section of the following link <https://www.networkrail.co.uk/who-we-are/publications-resources/our-plans-for-the-future/>

consider was due largely to the challenging and busy period during which the survey was undertaken.

We will consider this further as we develop our plans for next year's survey.



For the purposes of reporting the survey results on our scorecard our customers are grouped into four categories; funders and franchising authorities, operators, routes, and other infrastructure managers, although responses from all customers surveyed including sub-national transport bodies and local authorities. Responses from these customer groups inform our on-going and future activity.

our work that customers rate as important, and to equalise the value each organisation's responses provide.



The four measures demonstrate the overall level of satisfaction our customers report across our core areas of business with responses weighted to attribute greater weight to the rating given to areas of



Our ambition for 18/19 was to maintain the satisfaction levels achieved during the 17/18 survey, recognising the challenging period for the industry between the former and the latter. This was achieved for our funders and operators but fell short with regards to Routes and other Infrastructure managers. Responses indicated broad support for a well-functioning System Operator and the benefits that positive working arrangements can bring.

Of note is the improvement in the number of 'favourable' responses (good or very good responses in the survey) to the development of both the working and short-term planning timetables which may reflect the efforts made during the year to recruit, train and retain colleagues in Capacity Planning - improving our service offer to our customer. Narrative comments illustrated positive examples and also highlight that the continued focus on Capacity Planning capability set out within our Strategic Plan is important to our customers.

"Whilst there is a good relationship with Capacity Planning, their product needs to improve through better training and retention of staff".

The change in satisfaction chart above shows a move to a more neutral (satisfactory) response to Managing the Access Rights Framework. This may reflect the emphasis given to reviewing the Sale of Access Rights (SoAR) process last year and the time between the development work and the planned implementation of the recommendations coupled with some dissatisfaction with the process in general.

Customers welcomed the opportunity to provide feedback affording us the value of their insights into where improvements have been made and where future emphasis should be placed to improve. With regards to the function of the System Operator several respondents pointed to a confusing structure, having a good

understanding of the Capacity Planning function and being less clear on the wider strategic planning role. Limited clarity of accountabilities between the System Operator and the Network Rail Routes was also noted.

"I would say I have some understanding of the role of the System Operator. It would be helpful to see an organisational structure to understand more about who is who within the System Operator, what the specific remit of each area is, and how this fits within the different organisational elements of Network Rail".

Improved visibility of the organisational structure and remits of each area was highlighted as being beneficial with improved communication and awareness of the strategic overview of the role of the function, its interaction with Routes and its place in the overall structure of Network Rail.

This will be a focus for us as we implement changes to the organisation alongside Network Rail's broader structural changes and use our ongoing customer engagement to provide greater clarity of our role.

Some of the responses articulated where System Operator input has been helpful and positive, with examples of excellent working relationships and stakeholder engagement. This demonstrates where a strong and collaborative relationship can add value and support the development of both local and national transport strategies.

“The level of engagement has been outstanding; Network Rail staff have attended master planning events held by the council. Network Rail have helped to shape the masterplan for a new town and continue to influence our regeneration agenda”.

However, examples were also provided where the level of engagement and our ability to meet the needs of our customers appears to be lacking both in terms of style, timing and capability. This feedback indicates a level of inconsistency in our engagement, and in we are perceived.

Freight businesses commented that the System Operator does not understand the commercial world or the freight business sufficiently to meet their needs, compounded by the view that there is prioritisation of passenger operator needs over freight needs. Their customers also reflected the strength of the relationship with the

System Operator teams that focus on freight and national passenger operators.

“We do not feel that we are a customer (or that there is a focus on delivering for our business customers). We feel that we are of secondary importance to passenger operations. This does not mean that we have a bad relationship - but it does feel like one of supplier-customer”.

The overall view provided is that engagement continues to improve, with room for further improvement. This includes; more continuous engagement, and development of a stronger awareness of our customers’ business needs. This will enable us to be responsive to those needs, providing high quality and efficient services, and to be relied upon as a trusted partner.

A few comments reflect the view that Network Rail does not consistently adhere to the Network Code with the expectation that operators, conversely, are required to do so. This appears to feed into some frustrations concerning Network Rail’s ‘rigid adherence to process’ where a flexible, pragmatic and decisive approach, coupled with more intelligent tools and strong leadership could enable more innovative and efficient outcomes that better meet industry needs. This may have fed into the responses by some

operators who felt punished by the May 2018 response with a 'one size fits all approach'.

In response to feedback provided by our Advisory Board, System Operator's approach for the 19/20 survey is to commit to an independently delivered face-to-face survey. This will maintain the ability to compare between years, supplemented by additional questions, but will evolve to capture as broad a range of views as possible from a balanced and representative customer sample, enabling both quantitative and qualitative feedback.

This will be a two-stage process looking firstly at the reasons why some customers have to date elected not to provide feedback and to explore the preferred method and timing of the surveys to inform 2019/20 and future surveys.

We will then to deliver the face-to-face survey with the option for telephone interviews where the offer of a face-to-face interview is declined. Feedback will be used to inform our future business activity, outputs and engagement strategies, which will be reflected in our Strategic Plan. We will also share the results with our customers and discuss them in our annual narrative report.

Part D: People and culture within the System Operator

D.01 System Operator team profile

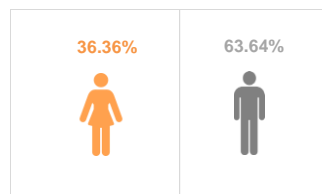
Our focus is in making the System Operator a great place to work, and in being an organisation which reflects the society that we serve. Our people strategy, set out within our Strategic Plan places focus on developing our leadership, encouraging and celebrating diversity, and in developing our capabilities.

At the end of the 2018/19 year, headcount within the System Operator totalled 792 employees.

- a total of 162 new starters joined the organisation;
- a total of 116 individuals moved roles within the System Operator; and
- 50 individuals left the System Operator organisation.

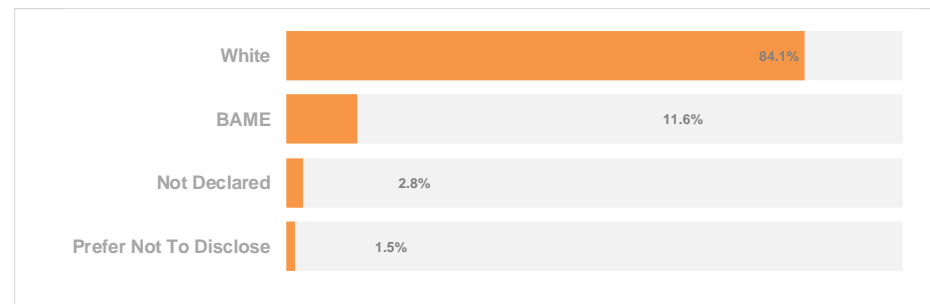
We recognise that movement within the System Operator itself, whilst supporting development and retention within the function, can change the working relationships with our customers in the short term.

The gender balance within the System Operator moved within the year by just over 1%, representing an improvement in the representation of females within the organisation. However, there is



clearly more to do to encourage a continued improvement of the gender balance within the function.

This is also true of the ethnic diversity within the function.



By the end of the 2018/19 year, more than 90% of colleagues within the System Operator had completed an e-learning module to encourage and develop diversity and inclusion.

D.02 Representative groups

The culture System Operator encourages is an open and approachable one. Our leaders aim to inspire and support people, empowering individuals and their teams to be successful.

In 2018/19 empowering our people to define and embed the culture they want was a key focus. This led to the development of representative groups, drawing volunteers from across the System Operator to lead improvements in the areas of;

- health and wellbeing;

- diversity and inclusion; and
- employee engagement.

The groups developed action plans drawing on feedback from System Operator focused surveys, as well as the wider Network Rail engagement survey to clearly set out the periodic themes, activities and owners. This helped to create visibility for colleagues across the System Operator on how their responses and thoughts were being turned into actions.

Health and well-being

The representative group delivered a programme of activities across System Operator to raise awareness and understanding of health & wellbeing issues, opportunities and resources, and demonstrate leadership and management support for, and focus on wellbeing matters.

This covered themes relevant and important to System Operator colleagues including mental health awareness, men's health, caring for others, and work-life balance. This encompassed the delivery of regular communications, 'drop-in' events and talks, line manager briefing material and team discussion packs. We also piloted training for Mental Health Champions and established training packages for Mental Health First Aiders and Line Managers that are being rolled out more widely in 2019/20.

Diversity and Inclusion

Our aim is to become an open, diverse and inclusive organisation which will enable us to become safer and more customer driven,

where our workforce reflects the diversity of the populations we serve.

In 2018/19, the group delivered a number of different activities that align with this aim, including:

- workshops encouraging colleagues to reflect and develop personal development plans that meet their personal and professional needs as part of International Women's Day;
- encouraging the international campaign leading the rail industry in celebrating the positive contributions of disabled persons by participating in **#PurpleLightUp**; and
- lunch and learn sessions on men's health, reasonable adjustments and flexible working.

Employee Engagement

The System Operator engagement working group delivered a pulse survey in March 2019 to offer colleagues an opportunity to provide valuable feedback in the period between the bi-annual companywide engagement survey. A total of 494 colleagues responded, giving an overall response rate of 62% of the organisation.

The survey will be used to inform local action plans in teams across the System Operator, as well as functional communications and actions led by the working group to support improvements to employee engagement and utilisation of the strengths outlined.

77% felt they had a good understanding of the role of the SO

69% receive regular and constructive feedback on their performance.

62% felt that communications within SO are open and honest

78% stated the function supports their health and well-being.

91% felt that 'one of my responsibilities is to continually look for new ways to improve the way we work'.

78% felt they had knowledge, skills and training to do their job.

80% enjoy working in the SO.

Opportunities to improve engagement rest in;

- improving the provision of constructive feedback on personal performance;
- improving recognition within our teams, and celebrating success; and
- greater visibility and awareness of the actions we are taking to improve engagement

D.03 Capacity Planning capability & retention

We have continued to implement the people plan set out in our CP6 Strategic Plans, which we accelerated as part of implementing our learning from the operational implementation of the May 2018 timetable. The plans were informed by feedback from our customers relating to resource volumes, issues with retention and the need to deepen our expertise. The acceleration of our plans into 2018/19 has led to;

- over 100 additional Operational Planners in role since 1st April 2018
- uplift of basic rates of pay for all planners achieving Level 1 and 2 competencies
- creation of promotional opportunities for technical planning experts within capacity planning to support retention of skill, knowledge and experience within the team and Network Rail
- promotion of first level of line management to better reflect the importance of their roles in leading, directing and developing the Operational Planners

"System Operator is very good at having process and people to manage the process, but they require subject matter experts at granular detailed planner level."

- embedding an onboarding approach that includes an eighteen week 'learning journal'. This has proven effective in supporting how new recruits take on the required levels of learning and achieves it in a way that has reduced the learning time from 26 to 18 weeks, without a loss in effectiveness of learning.
- creating a training programme for management level new entrants, dealing with technical basics of train planning to foster better understanding between line manager, team and customer and increasing understanding of leadership fundamentals.

Since the start of 2018/19 capacity planning have better than halved the turnover of Operational Planners.

We recognise that the challenges of improving the timetable output and service provided to our customers cannot solely be improved by investing in the resources within the System Operator. There is a need to build rail industry capability to increase the speed and efficacy of timetable production without compromising the robustness of the end product. This industry capability extends across the range of people, systems, processes data and contractual frameworks, and ultimately crosses all rail communities including stakeholders, train operators and Network Rail.

We worked closely with the Operational Planning Strategy Group to identify representatives across the industry to support the development of an industry timetabling technology strategy (the

development of which was recommended by ORR's independent inquiry). This representative group was formed towards the end of 2018/19, and will consider how to identify the outcomes the industry wants to change, and the scale of opportunity with an aim of achieving a strategy that the industry can agree to implement by the end of the 2019 calendar year.

"With [current technology] it is very difficult to improve the output as the railway gets busier. Better, more intelligent tools and a more rational, systematic approach to optimise capacity utilisation is needed."

Part E: Improvement initiatives

A number of improvement initiatives have been progressed throughout the year, both in taking forward a number of identified opportunities as part of continuously improving our services, and in preparing for the commitments set out in our CP6 plans. The following section sets out a narrative summary of progress in key initiatives throughout the year.

E.01 End to End Planning Process

The End to End Planning Programme was remitted to consider how the line of sight between strategy and timetable production could be improved so that the benefits intended at the strategy stage can be tracked through to delivery via timetable change. It will also give an auditable trail to identify the basis for decisions where this is not the case. Several work streams were setup to deliver benefits that addressed the gaps identified in a gap analysis exercise

Two of these work streams have focussed on improving alignment in our strategic planning activity, and in the provision of wider guidance materials to develop system level considerations. These guidance materials will progress into delivery in the early stages of 2019/20.

Significant progress has also been made in developing a continuously updated 'forward view' of train service changes (committed or potential) any associated linkages to infrastructure changes. A prototype database and interrogation tool has now

been developed, and at the end of 2018/19 network-level coverage of the required data has been achieved in readiness for further development and staged rollout from the first year of CP6.

E.02 Whole System Modelling Programme

The Whole System Modelling (WSM) Programme aims to improve the decisions the industry makes in the areas of performance, capacity, journey time and cost. The programme will allow an increase in the amount of analysis that takes place to support critical decision by speeding up modelling processes. It will also improve the accuracy of modelling outputs allowing the industry to make better informed decisions.

The programme has tested the current and future end-to-end timetable planning processes, to identify good practice and target the introduction of modelling and simulation. This has involved engagement with over 140 industry stakeholders and subject matter experts to document the current processes and to elicit recommendations for the future state, and we now have a set of recommendations on the best use of analytics, modelling and simulation.

WSM has focussed on benchmarking to help identify best practice in the use of modelling and simulation from recognised leading organisations in relevant industry sectors. This has enabled the programme to draw insight and inform the strategy for the better use of modelling and simulation tools within Network Rail and to produce a set of recommendations to be taken forward in CP6.

A further focus of the programme is the development of the capability to read scheme and signalling diagrams automatically, so they can directly imported into modelling and simulation tools. This has cut the amount of time taken to prepare and validate the data during validation. A prototype has been developed this year, with full rollout of the tool planned for the first year of CP6.

The next year sees WSM build on the feasibility phase and the opportunity to implement the identified tools, solutions and business change so that analytics, modelling and simulation better informs the decisions we make in response to timetable, infrastructure or rolling stock change.

E.03 Integrated Train Planning System Programme

The integrated Train Planning System (TPS) programme is a group of projects designed to enable additional capabilities within the System Operator's train planning software. An initial scoping and analysis of latent TPS features and changes to the planning process that would be most helpful to meet the needs of the TPS user community has been undertaken this year.

System Operator has also investigated the feasibility of sending higher-precision timetable information to downstream systems, specifically the impact to operational and customer information systems of increasing the precision of train planning from 30 seconds to 1 second intervals. After consultation with system owners across the industry, we found that while the change to systems to accommodate this is technically feasible, it also carries a significant cost and the industry is not yet able to articulate a

consistent business case. Engagement continues with industry to explore these findings.

A further focus for the programme has been how our TPS infrastructure model might be brought up to the suppliers recommended data standard in order to reduce the maintenance TPS data, and to enable the potential adoption of Technical Running Times (TRTs) and automated conflict detection. We are now focussed on the investigation of a single, common capability model to feed all of the System Operator's planning and simulation systems.

Over the next year, as well as implementing renewals and upgrades to TPS, the programme will lead engagement across the UK rail industry to understand the impact of a change to the use of TRTs on industry timetabling and capacity allocation processes.

E.04 Developing CP6 programmes

The System Operator 2019/20 Strategic Plan sets out our plans to lead an industry Data Improvement Programme as well as an Access and Planning Programme in CP6. These programmes are in early stages of development, and we have made some initial progress to establish clear feasibility remits, alongside the industry timetabling technology strategy development referenced earlier.

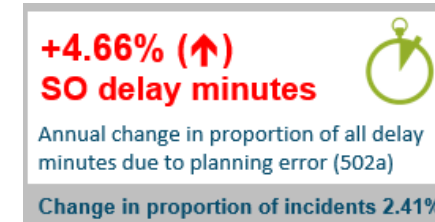
We have undertaken an initial industry survey to identify the key data problems across the industry, and we will further develop this activity throughout the next year with a view to progressing towards delivery in mid CP6.

Part F: System Operation dashboard

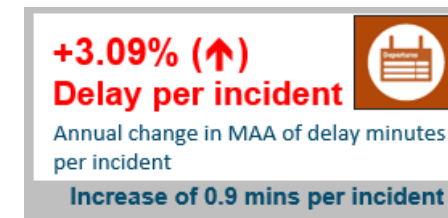
F.01 System Operation Dashboard

Over the last three years Network Rail has published a Network System Operation Dashboard on the Network Rail website. Use of the dashboard has generally been low, however in discussing the intended focus areas of this Annual Narrative Report with our customers, we have prepared an updated view of the indicators within it. We welcome views on the continuation of the dashboard, and a mechanism to provide your views is included in the feedback link appended to this report.

The dashboard includes indicators that bring together a wealth of related industry data, and demonstrates movement over time. It therefore does not represent a suite of measures which can be individually controlled by the System Operator, but instead blends both the operation of the network and the planning of the network to articulate the balance of performance and capacity. It also seeks to give a view of the service being provided to passengers and freight end-users, and the way in which train services are being used by our customers.



This indicator demonstrates the proportion of delay minutes associated with timetable planning as part of overall delay minutes. This percentage grew from 1.64% in 2017/18 to 1.72% in 2018/19. This growth was predominantly seen in short term planning, where contingency plans for industrial action and responding to operational incidents resulted in growth in planning delays.

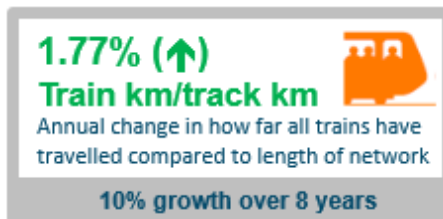


The average delay per incident on the network grew by 0.9 minutes per incident between 2017/18 and 2018/19. Delay per incident associated with timetable planning grew by 5.35%, though the average DPI for such incidents was 50% less than the overall DPI.



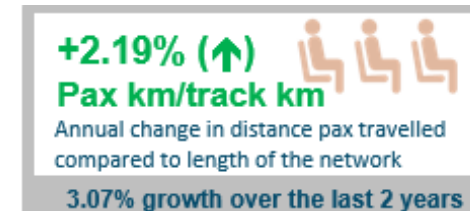
Network Rail declared the Castlefield corridor, between Castlefield Jn and Manchester Piccadilly East Jn via Deansgate Station, Manchester Oxford Road Station and Manchester Piccadilly Station platforms 13 & 14, to be congested infrastructure in line with the Congested Infrastructure Code of Practice published on our website. An analysis of the causes of congestion is under way.

There are existing declarations for the Midland Main Line between Cricklewood and Leicester, and for the route between Reading and Gatwick. It is anticipated that the latter will be rescinded next year, as infrastructure works to increase platform capacity conclude.

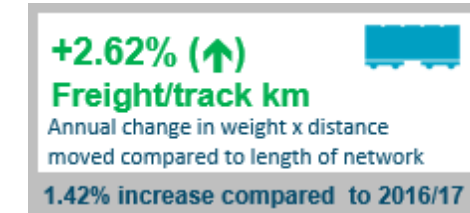


The total number of train kilometres operated relative to track kilometres (length of the network) has increased in the year, following a slight downturn in 2017/18. This represents a growth in

train services operating on the network, including the consideration of the infrastructure available to operate trains on.



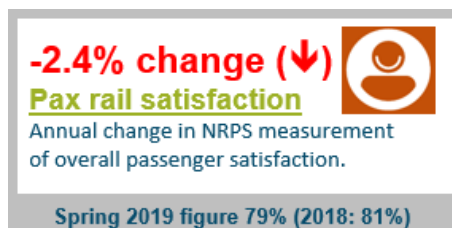
The number of passenger train services operating on the network relative to the infrastructure available increased, and has increased by over 3% over the last 2 years. This indicates more passenger services operating in addition to investment in train lengths to accommodate passenger demand.



The volume of freight moved, calculated by weight and distance moved (again relative to the infrastructure available) continues a steady recovery following a significant reduction arising from changes in coal demand.



Following a reduction in passenger train risk in 2017/18 (due to a reduction in objects on the line, level crossing, wrong side signalling, earthworks and track failures over the year) there was a further reduction in 2018/19 by 1.7%. This was despite unfavourable weather increasing failures, as track, wrong side signalling failures and level crossing incidents reduced in the year.



Passenger rail satisfaction demonstrated a decline in 2018/19, having been broadly static for two years previously. This constitutes the lowest level of passenger satisfaction for a decade and demonstrates the case for change and modernisation within the industry. The unfortunate events arising during the operational implementation of the May 2018 timetable change clearly contribute to this position, alongside other key triggers such as punctuality, cost, train seating capacity, and station facilities.

Part G: Governance

G.01 System Operator Advisory Board

In October 2017 a governance framework for the System Operator was established to support devolution and ensure that the network is planned and managed fairly and optimised for the benefit of all. The framework included design principles, architecture, processes, and reporting arrangements.

The framework is intended to; be clear and comprehensive, support an independent mind-set and behaviours for the System Operator, provide a whole-industry accountability and be able to advance network policies and decisions in the overall best interest of the railway system. At the time of adoption, it was intended to report back a year after the governance framework was put in place to review arrangements and suggest any further changes. At this stage, while impressions can be drawn on the operation of the framework it is still too early for views to be fully formed. During the past year there has been significant participation in the governance arrangements by industry which is indication of the industry's expectations for the System Operator's areas of activity.

The System Operator's Advisory Board and its standing stakeholder advisory groups began meeting in Spring 2018; A public note of each System Operator Advisory Board meeting is published on Network Rail's website⁵ to support transparency and accountability

⁵ This can be found by expanding the 'Independent Advisory Board reports' section of the following link www.networkrail.co.uk/who-we-are/about-us/system-operator

to our stakeholders. The appointment of the independent chair was concluded in 2018 and we were very pleased to welcome Nick Brown to this critical role.



The System Operator Advisory Board has now met four times, on a quarterly basis. Particular focus has been given to: our preparation and readiness for CP6 including reflecting on the periodic review process; the implications of the various investigations as a result of the May 2018 timetable change (including ORR's independent

inquiry, Transport Select Committee and ORR's Final Order); the use of scorecards and customer advocacy in our business management; and educating our Advisory Board members on the breadth of System Operator activities and stakeholder engagements.

At the same time, and in parallel with arrangements for Route Business, the System Operator now has its own CP6 settlement and license requirements for regulatory purposes.

We intend to conduct the review of the System Operator Governance Framework in Autumn of 2019, having allowed for a full year of activity by the complete Board and the development of its relationships with stakeholders.

The Advisory Board's remit includes:

- ongoing consideration of the System Operator's overall performance, priorities, risks, opportunities, plans and funding, capabilities and incentives;
- monitoring delivery through scorecards, customer surveys, etc.;
- promoting openness, transparency and scrutiny of the System Operator's work; and
- providing challenge to the System Operator's leadership team, encouraging innovation and system-wide thinking.

The Board membership is made up as follows:

- Nick Brown – Independent Chair
- Bridget Rosewell – Network Rail Non-Executive Director
- Conrad Bailey – Department for Transport (Funder England & Wales)
- Bill Reeve – Transport Scotland (Funder Scotland)
- Catherine Mason (representing the interests of passengers)
- Russell Mears (representing the interests of the freight sector)
- Russell Evans (elected representative of the Class Representatives Committee)
- Pier Eringa (External System Operator expert – Managing Director, ProRail – Netherlands)

G.02 Standing Advisory Groups

Following implementation of our governance framework in 2018, we continue to utilise two Standing Advisory Group (SAG) meetings; one for operators and applicants; and one for infrastructure managers. These SAGs, chaired by a director within the System Operator leadership team, support independent governance activity for the System Operator with dedicated channels for network-wide industry engagement.

The groups provide a forum to discuss business plans and policies, their execution, effectiveness, and ongoing engagement. We will consult the groups in a structured and regular way – meetings being held three to four times per year.

Operators & Applicants

The operators & applicants standing advisory group met four times since introduction in 2018. Focus areas have included;

- implementation of Continuous Modular Strategic Planning
- System Operator customer advocacy measurement mechanisms and results
- System Operator scorecard and business plan development
- development of the industry Network Code Part D review plan
- Capacity Planning development plans
- review of Network Rail's sale of access rights process, and implementation of changes
- development of the System Operator Annual Narrative Report

Routes & Infrastructure Managers

This standing advisory group also met four times since introduction. Focus areas have included;

- development of a protocol on co-operation between UK rail infrastructure managers and the System Operator
- System Operator customer advocacy measurement mechanisms and results
- development of the industry Network Code Part D review plan
- Capacity Planning development plans
- review of Network Rail's sale of access rights process, and implementation of changes
- Network Rail's role in integrating HS2
- System Operator scorecard and business plan development
- development of the System Operator Annual Narrative Report

The development of the protocol on co-operation has been an important focus, bringing together infrastructure managers across Great Britain to develop and make best use of Great Britain's railway network.

The latest draft sets out at a high level, the principles and provisions for coordination and cooperation that parties to it, in good faith, seek to follow and make reasonable endeavours to implement, including co-operation in key processes such as timetabling and long-term planning.

Part H: Appendices

H.01 Annual Narrative Report Feedback

We want our Annual Narrative Report to be valuable to our customers and stakeholders. We welcome your views and feedback on this report, which will be used to help shape future System Operator reporting.

The following link provides a short survey, which also offers opportunity for written feedback should you have any.

<https://www.demographix.com/surveys/3G4N-QFBR/SZW8NS8Z/index.html>