

Network Rail

CP4 Delivery Plan 2009

Performance Delivery Plan

March 2009



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Introduction

This document sets out our plans to deliver the top level regulatory outputs and associated customer reasonable requirements for train service performance in control period 4.

The plan is split into three sections:

- Part A detailing the top-level regulated outputs for punctuality and reliability and our overall planning methodology;
- Part B detailing our plan to deliver those outputs on an operator by operator basis, and an overview of the methodology we will use to deliver the plan; and
- Part C detailing the functional and geographic responsibility for delivery of the plan within Network Rail and the wider industry.

This performance delivery plan supplements Network Rail's CP4 delivery plan.

Our strategies for managing and improving train service performance were described in the Strategic Business Plan (SBP), published in October 2007 and updated in April 2008.

Since our update to the Strategic Business Plan (SBPu) we have continued our work to build plans for CP4 based upon developing Long Term Performance Plans (LTTPs) with customers. We have also refined our view of the expected outturn reliability and punctuality performance at the end of Control Period 3 (CP3) and amended our plans to take account of these outputs.

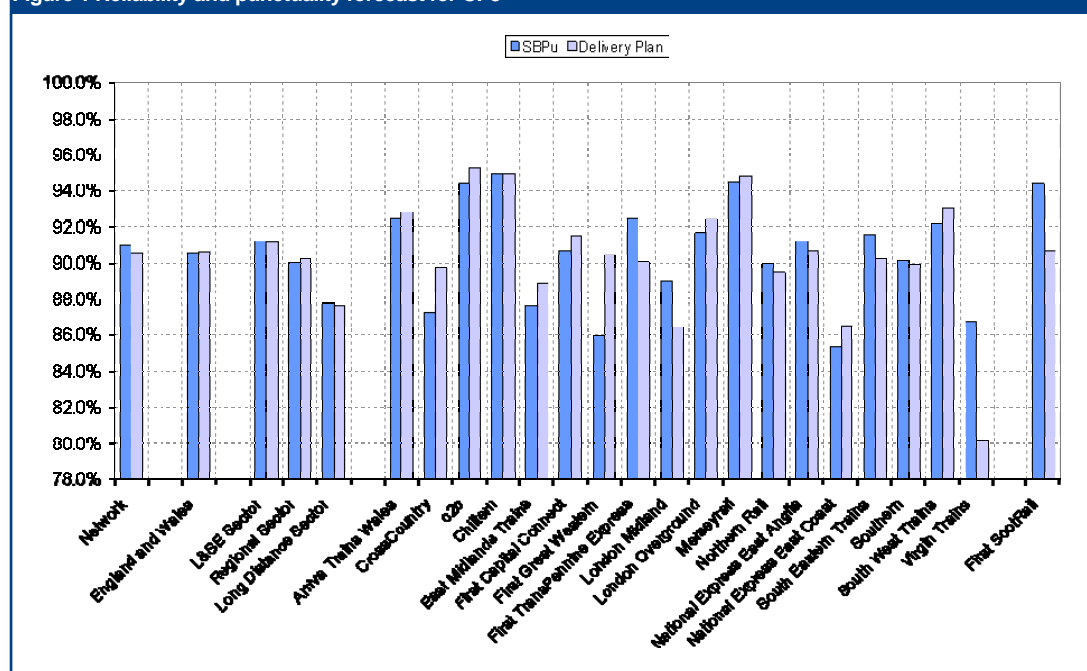
The SBPu used forecast levels of performance resulting from the 2008/9 Joint Performance Improvement Plan (JPIP) process as the starting point for CP4. It is now possible to predict with a greater degree of confidence the level of performance at the end of 2008/2009 based on the year to date reliability and punctuality up to the end of period 11 with a trajectory based on the existing JPIPs for the remainder of the year.

Figure 1 shows a comparison between our latest estimate for the CP4 starting point and that assumed in the SBP and SBPu. It can be seen that overall the level of performance in England and Wales at sector level has remained more or less constant since the SBPu was issued, however there have been some significant differences within individual operators. In Scotland the level of performance is now expected to be lower than forecast in the SBPu.

We have developed LTTPs with each of the franchised train operating companies (TOCs). These identify the level of performance to be delivered, together with detailed plans for delivery. The LTTPs also form the basis of the 2009/10 JPIPs.

It is also our intention to agree simplified LTTPs with open access operators (OAO), who in total account for one per cent of the passenger services in England and Wales, during the early part of 2009. We will also agree LTTPs with freight operators (FOCs) within the same time period.

Figure 1 Reliability and punctuality forecast for CP3



Part A: Outputs

Regulatory outputs for reliability and punctuality

The ORR has set the following top-level regulated outputs for reliability and punctuality:

- Public Performance Measure (PPM) for passenger services by funder, and by sector in England and Wales, by year;
- Cancellations and Significant Lateness (CaSL) for passenger services in England and Wales only, by sector, by year; and
- Network Rail delay minutes for passenger and freight services by year by funder.

The top-level regulated outputs for CP4 are detailed below. Definitions of these outputs are shown in Appendix 1. The output forecast at the end of 2008/09 is also shown in order to demonstrate the improvement required over the current level of performance.

Within England and Wales, all passenger services are allocated to one of three sectors; long distance, London and south east or regional, dependent upon the operational, geographical and market characteristics of that service. Most operators' services fall into a single sector. Some fall into two sectors (National Express East Anglia, London Midlands and East Midlands Trains). First Great Western services fall into all three. Appendix

2 shows the allocation of TOCs to sector in England and Wales.

Passenger services in Scotland comprise solely of First ScotRail services, irrespective of whether or not the service starts or completes its journey in Scotland.

Network Rail and TOCs have developed a series of long LTPPs that set out the level of reliability and punctuality that we plan to deliver during CP4 for each TOC, and the initiatives that will enable this performance to be delivered.

For FOCs and open access operators (OAOs), we have planned performance trajectories based on the improvements to reliability and punctuality that can be achieved through our own action plans. These are consistent with the local output commitments (LOCs) agreed with each operator for the first three years of CP4. As LTPPs are developed with these operators our plans for each FOC and OAO will be refined to reflect a greater proportion of operator-driven improvements.

Figure 2 Public Performance Measure (per cent annual average)

Sector	2008/9 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
Long Distance	87.5	88.6	89.8	90.9	91.5	92.0
London & South East	91.2	91.5	92.0	92.4	92.7	93.0
Regional	90.2	90.5	91.0	91.5	91.9	92.0
Total England & Wales	90.6	91.0	91.5	92.0	92.3	92.6
Scotland	90.7	90.9	91.3	91.7	91.9	92.0

Figure 3 Cancellations and significant lateness – England & Wales per cent of services affected

Sector	2008/9 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
Long Distance	5.2	4.9	4.5	4.2	4.0	3.9
London & South East	2.1	2.3	2.2	2.1	2.0	2.0
Regional	2.7	2.6	2.5	2.4	2.3	2.3

Figure 4 Network Rail total delay minutes – passenger services (000s)

Sector	2008/9 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
England and Wales	6,565	6,270	5,790	5,430	5,190	4,980
Scotland	497	436	410	391	386	382
Total	7,063	6,706	6,200	5,821	5,576	5,362

Figure 5 Freight delay minutes per 100 train km

	2008/9 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
Total	3.96	3.68	3.41	3.18	3.05	2.94

Part B: The Delivery Plan

This section describes the results of our work with customers to determine the most efficient way of delivering the top-level regulated outputs, together with an overview of the strategy behind delivering the plan.

Our performance plan consists of three key elements:

- a series of plans to deliver the required outputs;
- a robust process to monitor those plans and the resultant outputs; and
- a risk mitigation process that manages the introduction of new or revised plans in order to meet the specified outputs.

Reliability and punctuality outputs are subject to an underlying level of variance or risk, some of which is under the direct influence of the rail industry whilst some to varying degrees is externally driven.

Our approach to performance management is to develop plans to manage the risks associated with poor reliability and punctuality whilst monitoring the effectiveness of those actions and identifying any new risks that emerge.

Delivering improved reliability and punctuality

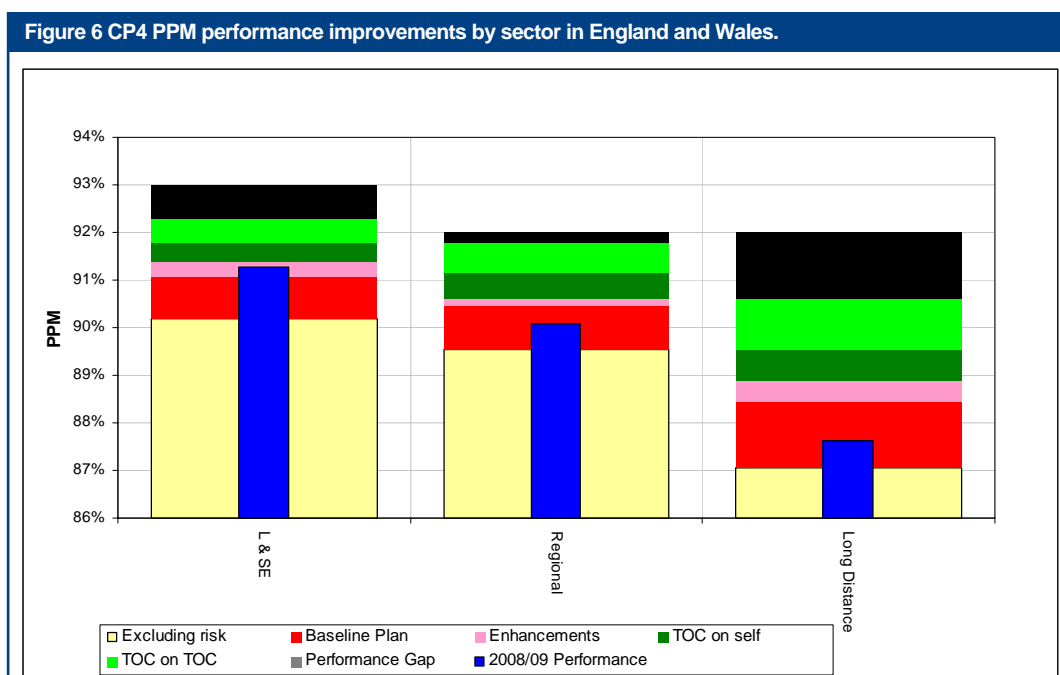
Our strategy is to deliver the outputs by combining punctuality and reliability benefits achieved through three categories of initiative:

1. Network Rail CP4 baseline plan including
 - a) asset renewals
 - b) enhancements schemes
 - c) more robust timetables
 - d) incident prevention
 - e) management and process improvements
 - f) improved control
2. Train operator improvements; and
3. Improvements delivered using the CP4 Performance Fund for England and Wales

Figure 6 shows how we expect these activities to combine and deliver the outputs within England and Wales. Starting from current performance levels the graphs show the reduction in PPM due to the impact of specific risks (passenger growth, additional engineering work and implementation of the Thameslink programme), then adds on the benefits we plan to gain from each of the categories detailed above. Part C of this document provides further details of the improvements that we plan to deliver through these activities.

Within Scotland, we believe that our baseline plan together with the improvements we expect the train operators to deliver will meet the regulatory outputs.

Within England and Wales our plan indicates a performance gap between the regulatory outputs and those delivered by our baseline plan and train operator improvement. This gap is most significant in the long-distance sector. The performance fund has been provided to fund targeted performance improvement schemes to close this gap.



Industry performance management

The delivery of train service performance outputs requires cross-industry cooperation. Within the industry framework, Network Rail has two key roles:

- to lead overall industry performance delivery; and
- to contribute to the achievement of performance outputs from its assets / resources and through effective management of interfaces with industry partners and external bodies.

Figure 7 summarises the framework of the industry and Network Rail's role in performance delivery.

The Joint Performance Process (JPP) is a key part of industry performance management. JPIPs between Network Rail and train operators are the primary means by which performance outputs are planned and monitored on a year by year basis.

JPIPs will affirm the performance outputs contained in this delivery plan and the LTTPs, and provide the basis for agreement of any changes proposed during the course of the control period. Activities and outputs within JPIPs will be targeted to meet the top-level regulated outputs detailed in this delivery plan.

The National Task Force (NTF) will continue to endorse national performance outputs on a year by year basis. Industry reporting will continue to be based upon the outputs detailed within each JPIP.

Network Rail's performance management processes

We have developed a performance manual which details the processes and tools which are used to manage the delivery of reliability and punctuality outputs during CP4.

The performance manual is split into two sections:

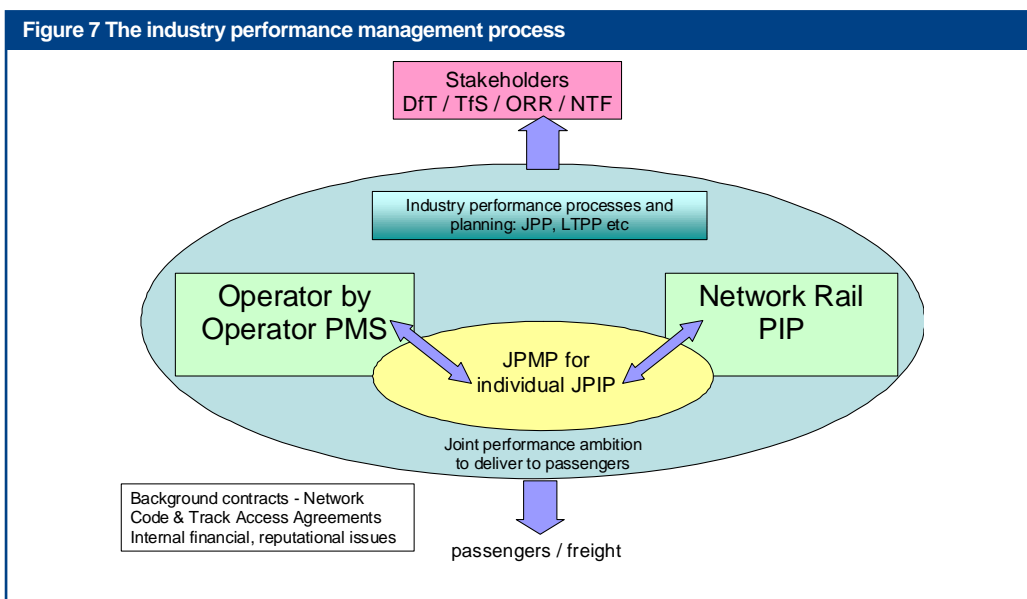
- Part A, the performance improvement process;
- Part B, the performance measurement process.

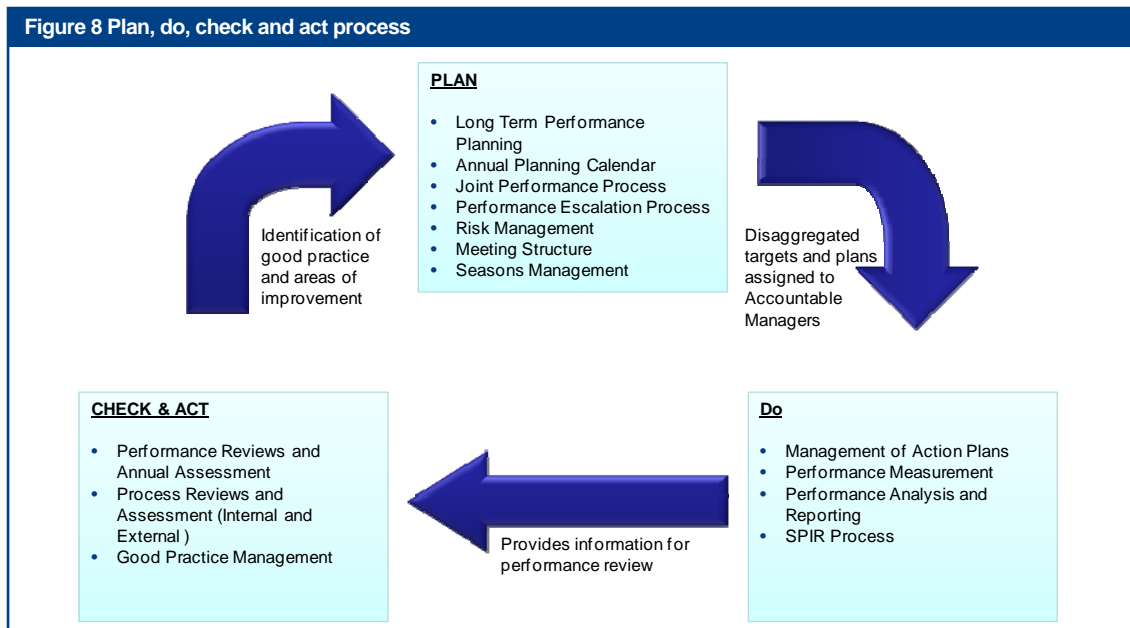
The purpose of the performance improvement process (PIP) is to ensure that Network Rail and the rail industry:

- develop good practice into best practice;
- deliver excellent standards of performance; and
- drive continuous improvement in all areas.

The PIP is structured using the headings of plan, do, check and act. It is focused on the processes for improving performance of the passenger railway and comprehensively describes the planning process. Similar processes are applied to freight and open access operators. Figure 8 illustrates the plan, do, check and act process included within the PIP.

The performance measurement process (PMP) defines the process that is followed by Network Rail to ensure that we are able to meet our regulatory and contractual requirements to collect and manage train performance data.





During the course of CP4, our performance improvement processes will become more closely aligned with those used by operators, the expectation being that a single railway industry performance improvement process can be established to enable synergies and release potential efficiencies.

Underlying metrics and diagnostics

This performance delivery plan takes the top-level regulated outputs and identifies how these outputs will be delivered through a series of TOC specific outputs, and a series of plans for Network Rail routes and functions.

A primary aim of the plan is to provide confidence that industry plans for CP4 will deliver the outputs specified by the ORR and to assist delivery of those outputs by forming the basis of geographical and functional targets throughout Network Rail. Targets for performance outputs will be cascaded down to individual responsible managers and form part of our management incentive plan.

The models developed by Network Rail predominantly rely on predicting the effect that actions have on the number of delay minutes and then converting this into PPM and CaSL changes. Relationships between delay minutes and PPM and CaSL are established using historical data on a TOC and sector basis.

During the development of this delivery plan we have assumed that the current relationship between delay minutes and PPM and CaSL remains constant, except where there are specific schemes focused on PPM or CaSL improvement.

Analysis will continue throughout CP4 to better define and predict how these relationships change with varying levels of industry performance.

During the course of CP4 we expect to move away from our reliance on planning and measuring performance improvements in terms of delay minutes, and encourage a mindset where PPM and CaSL become the key measures. We expect that this change of thinking will happen most quickly with PPM, as it is the more established and understood measure.

Our plan includes assumptions as to the level of growth in the number of train services operated and distance travelled, both of which are factors which influence performance. Details of the expected growth are contained within our route plans. Appendix 3 contains a summary of how this is reflected in our performance delivery plan.

Risks

The identification and management of risk is integral to delivery of performance outputs. The PIP supports the JPPs by defining the process for risk management across the industry.

Each of our nine operating routes is tasked to identify and manage all risks to performance in conjunction with operators, and to implement plans which mitigate the effects of new and emerging risks.

Within this delivery plan it has been assumed that all but three new and emerging risks can be managed without any specific adjustments to our models and plans, these risks being;

- passenger and traffic growth;
- engineering work; and
- Thameslink implementation.

Our plans make provision for the impact on delay minutes, PPM and CaSL associated with these risks, which are shown in Figure 9.

Except where we have shown specific improvement initiatives, the assumption within this performance delivery plan is that externally-caused and weather-related incidents will be managed by Network Rail and the industry within the totality of existing performance risks. This means that the risk to performance remains the same during CP4, except for the above risks. This will be done by either managing the frequency or impact of such events.

Our actions to manage the risk of cable theft represent a good example of how risk has been managed in CP3, and will continue to be managed in CP4. When we developed our CP3 plans, cable theft was not a significant performance issue. During the course of CP3 it has developed as a problem. Network Rail and the industry has had to develop plans to minimise the risk of it happening and to mitigate the impact when it does occur, whilst improving performance in others areas to offset this impact. This has all been managed within the existing agreed outputs.

The combination of performance risks can lead to significant variations in output against our plans. Various performance events may combine to provide a TOC with performance higher or lower than plan, whilst the underlying level of performance, or performance trend, remains unchanged.

During CP4 we will work with the industry to understand the impact of climate change on reliability and punctuality and to develop plans to mitigate these risks during CP5 and beyond. We believe the incidence of severe weather will increase but that we will become better at managing these types of incident and external factors. We have therefore assumed no net change in delay minutes attributable to the weather and external delay categories.

Train operator outputs for reliability and punctuality

We have worked with train operators to determine the most efficient and effective ways to achieve the top-level regulated outputs. For franchised passenger operators we have developed a series of LTPPs that detail the strategic plan for each operator during CP4. Delivery of each operator plan will enable the achievement of the outputs.

Each LTPP provides a bottom-up check of our strategic performance improvement models. We are confident that there is convergence between the two approaches, and we can test the impacts of changing the mix and timing of initiatives.

For open access and freight operators our plan is based on the LOCs, which take into account the impact of our plans on operations together with any agreed level of TOC on self or FOC on self improvements.

Due to the variable nature of reliability and punctuality outputs, we expect there to be significant differences between our planned and achieved outputs for each operator during CP4. The overall spread of this variance, together with the application of our PIP, will mean that the top-level regulated outputs can be achieved.

Figure 9 Risks provision within the CP4 Performance Delivery Plan

Risk	Reduction in PPM (per cent)	Reduction in CaSL (per cent)	Increase in Network Rail delay minutes
Passenger and traffic growth	0.38	0.05	158,000
Engineering work	0.23	0.03	100,000
Thameslink implementation	0.26	0.03	93,000

The outputs planned for individual operators represent the industry's current view as to the most effective way to deliver the top-level outputs. We may flex these planned outputs during the course of CP4 in order to establish a more effective way of delivering the outputs. Details of the process that Network Rail will use to initiate and control such changes are detailed in this performance delivery plan.

Within this performance delivery plan multi-sectored TOCs are only shown as a single figure for each output. Appendix 4 shows the relevant sector level trajectories for those TOCs that operate in more than one sector.

Even though some TOC franchises end during CP4, forecasts for individual TOCs are indicated for all years of the control period, irrespective of the length of franchise remaining. This

performance delivery plan assumes that any new franchise aligns with the outputs detailed herein.

Public Performance Measure

Our plan is to achieve the top-level regulated outputs specified in Part A by planning to achieve the PPM output detailed in Figure 10.

For freight services Network Rail will continue to work with FOCs and other industry bodies to develop the Freight Performance Measure (FPM) that will provide a more effective measure of industry performance. It is planned that the new FPM will commence at the start of CP4.

We will work with the major freight operators to develop FPM trajectories and include those trajectories in updates of this performance delivery plan.

Figure 10 PPM – TOC share of sector-level targets (per cent annual average)						
TOC	2008/9 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
England and Wales						
First TransPennine Express	90.2	91.7	92.2	93.2	93.8	94.0
National Express East Anglia	90.7	90.8	91.8	92.1	92.3	92.8
Northern Rail	89.4	90.1	90.7	91.2	91.7	91.8
First Great Western	90.2	90.7	91.3	92.2	92.7	93.0
First Capital Connect	92.1	91.7	92.1	92.4	92.7	92.9
Cross Country	89.8	90.0	90.2	90.6	90.9	91.3
London Midland	86.5	87.8	89.1	89.9	90.5	90.6
London Overground	92.7	92.5	93.1	94.0	94.4	94.6
East Midlands Trains	88.6	88.1	88.7	89.4	89.9	90.2
National Express East Coast	86.5	86.6	88.2	89.5	90.5	91.1
Merseyrail	94.8	94.8	94.9	95.1	95.2	95.2
Virgin Trains	81.3	85.0	87.8	90.3	90.6	90.9
Arriva Trains Wales	92.7	92.7	92.9	93.2	93.4	93.5
Chiltern	95.1	95.1	95.3	95.6	95.8	95.9
c2c	95.4	94.8	95.1	95.2	95.3	95.3
Southeastern	90.9	91.4	91.9	92.2	92.5	92.8
Southern	90.0	90.7	90.9	91.1	91.6	91.9
South West Trains	93.0	92.3	92.5	92.8	93.1	93.3
Scotland						
First ScotRail	90.7	90.9	91.3	91.7	91.9	92.0

Cancellations and significant lateness

Our plan is to achieve the top-level regulated outputs specified in Part A by planning to achieve the CaSL output detailed in Figure 11.

Industry delay minutes

Whilst total industry delay minutes is not one of the top-level regulated outputs; total industry delay minutes and the change in delay minutes is a key

factor in determining the performance delivery plan. Figure 12 provides details of delay minutes by responsibility.

Passenger operator delay minutes

Figures 13 and 14 show the assumptions we have used for operator delay minutes, both TOC on TOC and TOC on self.

Figure 11 PPM – Forecast CaSL by passenger operator (per cent annual average)

TOC	2008/9 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
England and Wales						
First TransPennine Express	4.0	3.9	3.7	3.5	3.4	3.3
National Express East Anglia	2.1	2.3	2.2	2.2	2.2	2.2
Northern Rail	2.5	2.4	2.3	2.2	2.1	2.1
First Great Western	2.3	2.5	2.4	2.2	2.1	2.0
First Capital Connect	2.6	2.5	2.6	2.5	2.5	2.4
Cross Country	5.0	4.6	4.4	4.2	4.1	3.9
London Midland	3.8	3.8	3.7	3.7	3.6	3.5
London Overground	2.2	2.1	2.1	2.0	2.0	2.0
East Midlands Trains	3.4	4.5	4.4	4.2	4.2	4.1
National Express East Coast	7.2	6.7	6.2	5.8	5.5	5.4
Merseyrail	2.4	2.4	2.3	2.2	2.1	2.1
Virgin Trains	7.8	5.7	5.2	4.9	4.8	4.6
Arriva Trains Wales	2.8	2.7	2.6	2.4	2.4	2.3
Chiltern	1.4	1.4	1.3	1.3	1.2	1.2
c2c	1.9	2.1	2.0	1.9	1.8	1.8
Southeastern	2.2	2.2	2.1	2.1	2.0	1.9
Southern	2.3	2.4	2.4	2.3	2.2	2.1
South West Trains	1.8	2.0	1.9	1.9	1.8	1.7
Scotland						
First ScotRail	2.0	2.0	1.9	1.8	1.8	1.7

Figure 12 Forecast industry delay minutes for passenger operators (000s)

	Forecast 2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
England and Wales						
TOC on Self	3,360	3,225	3,025	3,015	2,905	2,807
TOC/FOC on TOC	1,347	1,379	1,338	1,280	2,321	1,164
Network Rail	6,484	6,270	5,790	5,430	5,190	4,980
England and Wales Total	11,192	10,873	10,153	9,725	10,415	8,952
Scotland						
TOC on Self	272	290	279	268	264	261
TOC/FOC on TOC	68	77	73	70	67	63
Network Rail	510	436	410	391	386	382
Scotland Total	850	803	762	729	716	706
Network Total	12,041	11,676	10,916	10,454	11,131	9,658

Figure 13 Forecast TOC on TOC delay minutes (000s)

TOC	Forecast 2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
England and Wales						
First TransPennine Express	91	88	83	79	75	71
National Express East Anglia	72	67	65	64	63	61
Northern Rail	165	159	152	145	137	129
First Great Western	153	151	145	130	124	118
First Capital Connect	57	65	63	61	57	54
Cross Country	193	188	182	175	169	162
London Midland	118	135	131	126	121	117
London Overground	21	23	32	31	30	29
East Midlands Trains	59	65	61	58	55	51
National Express East Coast	45	43	40	38	34	30
Merseyrail	1	1	1	1	1	1
Virgin Trains	104	95	92	88	85	82
Arriva Trains Wales	67	60	58	56	54	51
Chiltern	22	20	19	18	17	16
c2c	3	2	2	2	1	1
South Eastern	62	63	61	62	60	58
Southern	62	96	94	92	86	83
South West Trains	53	60	59	56	52	50
Scotland						
First ScotRail	68	77	73	70	67	63

Figure 14 Forecast TOC on self delay minutes (000s)

TOC	Forecast 2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
England and Wales						
First TransPennine Express	56	54	51	49	47	46
National Express East Anglia	265	248	241	234	233	223
Northern Rail	594	530	507	490	475	460
First Great Western	379	360	351	340	331	321
First Capital Connect	91	94	90	86	80	75
Cross Country	132	133	132	131	130	129
London Midland	184	202	199	187	176	167
London Overground	52	46	56	49	44	43
East Midlands Trains	127	123	118	114	110	107
National Express East Coast	63	58	52	47	44	42
Merseyrail	35	37	35	34	34	34
Virgin Trains	100	110	106	102	98	95
Arriva Trains Wales	273	283	273	265	264	262
Chiltern	47	50	48	45	43	41
c2c	26	27	25	24	24	24
South Eastern	309	302	287	285	269	257
Southern	380	326	214	299	279	266
South West Trains	248	244	242	234	224	217
Scotland						
First ScotRail	272	290	279	268	264	261

Network Rail delay minutes

Our plan is to achieve the top-level regulated outputs specified in part A by planning to achieve the delay minute outputs detailed in Figures 15 and 16.

Figure 15 Network Rail delay minutes TOC share of network total (000s)

TOC	2008/9 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
England and Wales						
First TransPennine Express	292	238	221	206	198	191
National Express East Anglia	566	526	511	497	493	473
Northern Rail	943	852	805	763	739	718
First Great Western	581	575	534	463	431	410
First Capital Connect	219	199	186	177	166	156
Cross Country	460	454	437	418	405	392
London Midland	482	417	379	358	344	329
London Overground	70	65	68	92	90	88
East Midlands Trains	299	300	278	256	242	229
National Express East Coast	208	180	161	142	125	116
Merseyrail	54	55	54	52	51	49
Virgin Trains	573	526	484	459	436	415
Arriva Trains Wales	306	285	276	258	249	238
Chiltern	87	83	78	74	71	68
c2c	41	40	37	35	34	33
South Eastern	407	394	374	359	320	300
Southern	501	477	445	420	391	369
South West Trains	397	468	440	407	374	355
Scotland						
First ScotRail	510	436	410	391	386	382
Open Operators						
Grand Central	17	17	16	15	14	13
Heathrow Express	22	23	21	19	18	17
First Hull Trains	20	19	17	15	15	14
Wrexham and Shropshire	20	19	18	17	16	15

Figure 16 Network Rail delay minutes FOC share of network total (per 100 train kms)

FOC	2008/9 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
DB Schenker	3.84	3.49	3.24	3.04	2.92	2.82
Freightliner	4.69	4.34	4.00	3.73	3.56	3.42
First GBRf	4.31	3.50	3.19	2.92	2.77	2.64
Direct Rail Services	2.38	2.13	1.97	1.84	1.77	1.70
Other	4.62	3.17	2.94	2.74	2.63	2.53

Variation in outputs

Our plan assumes that risks may combine to deliver significant variation in outputs to plan at an individual operator level. This variation is predominantly driven by the occurrence of low frequency - high impact incidents, such as overhead line equipment failures, fatalities or extreme weather. The occurrence and frequency of such events are extremely difficult to predict; in a good year a TOC may experience few of these incidents. In a bad year they may experience many, whilst the underlying performance in the two years would be the same.

Key factors when determining this variation potential are the number of services operated and the diversity of routes over which a TOC operates. A TOC which operates fewer services over a single route will generally have a higher level of variation than operators that operate more services over many different routes.

Within England and Wales our plan assumes that this variation in performance for an individual will balance out at a sector level. Within Scotland we will manage our plan to take account of low probability – high impact incidents in order to ensure that the top-level regulated outputs are achieved.

The CaSL outputs are the most sensitive outputs to low frequency - high impact incidents, for example two to three days of severe weather in the south east of England can account for up to ten per cent of the annual plan for CaSL services.

Customer reasonable requirements

We have agreed with the franchised operators, through NTF, that customer reasonable requirements will have the following components:

The planned outputs for PPM and Network Rail delay minutes as described above (included in Figures 10 and 15) and a process for monitoring and review with specific thresholds of underperformance for each measure which trigger reviews as follows:

- a) internal review between Network Rail and the TOC concerned; or
- b) formal review, with the option of regulatory intervention.

A review will take place if the PPM or Network Rail delay minutes were to under-perform the published trajectory on a moving annual average

basis for three consecutive periods, in common with other industry reporting. A review will consist of an investigation with the relevant TOC to understand the causes of underperformance, and the development of appropriate remedial actions.

The threshold levels for formal review have been agreed as one per cent below planned output for PPM and 10 per cent above planned output for Network Rail delay minutes. The threshold levels for internal review will be agreed on a TOC by TOC basis. We have similarly agreed review thresholds for TOC on self delay minutes, this threshold level is also 10 per cent more than the planned output for any given operator.

These thresholds are based on a statistically based assessment of the practical need for the process to bring formal review to appropriate issues whilst avoiding excessive formal focus where performance is within normal variation. It is intended that the threshold levels will be reviewed by NTF after the first year of CP4.

For freight operators, we have published planned trajectories for Network Rail delay minutes per 100 train kilometres which are consistent with each operator's LOC.

Change control

During CP4, Network Rail or a franchised TOC may wish to change the TOC's PPM or Network Rail delay minutes output trajectory. Provided that the top-level regulatory outputs are still achieved, then Network Rail, following consultation with the TOC(s) concerned and endorsement by NTF, will advise the ORR and update this plan accordingly.

Network Rail may amend any of the outputs contained in this performance delivery plan, which are not regulatory outputs or franchised TOC specific PPM outputs, following consultation with customers and taking account of any contractual implications.

Part C: Management of the Delivery Plan

Part B of this delivery plan provided details of plans to disaggregate the top-level regulated outputs to specific operator outputs together with an overview of how Network Rail and the industry will deliver the plan. Within Part C we provide further detail as to how Network Rail will deliver the plan and allocate responsibility for delivery of the plan on a geographical and functional basis to align with Network Rail's delivery organisation.

Delivery of funder and sector level outputs

Figure 17 shows how our plans combine to deliver the top-level regulatory outputs for PPM. Starting

from a baseline of the 2008/9 year end forecast, we then introduce the punctuality and reliability benefits achieved through three sets of activities:

1. Network Rail CP4 baseline plan initiatives including:
 - a) Improved asset reliability
 - b) enhancements schemes
 - c) more robust timetables
 - d) incident prevention
 - e) management and process improvements
 - f) improved control
2. train operator improvements; and
3. improvements delivered using the CP4 Performance Fund for England and Wales.

Figure 17 Performance delivery plan contributions to PPM outputs (per cent)

Plan Component	Network	England and Wales				Scotland
		Total	Long Distance	London and SE	Regional	
2008/09 year end forecast	90.6	90.6	87.6	91.3	90.1	90.7
Baseline CP4 plan	1.9	1.8	2.9	1.7	1.6	2.6
TOC/FOC improvements	0.5	0.5	0.6	0.4	0.6	0.8
CP4 performance fund	0.5	0.6	1.4	0.7	0.2	0.0
Risk	(1.0)	(0.9)	(0.6)	(1.1)	(0.5)	(2.1)
CP4 output (2013/14)	92.5	92.6	92.0	93.0	92.0	92.0

Performance improvement delivered within the baseline plan

This section provides an overview of the activities included within the baseline plan that will deliver punctuality and reliability benefits. Our baseline plan will deliver a reduction of 1.1 million Network Rail delay minutes per annum, by the end of CP4, compared to 2008/09.

Figures 18 and 19 provide a summary of change within the three sectors in England and Wales, and in Scotland that we plan to achieve through our baseline activities during CP4. When combined with the improvements that we

anticipate train operators to deliver, this equates to 92.0 per cent PPM in England and Wales by the end of the control period. This leaves a 0.6 per cent PPM to be delivered by the performance fund. The long term performance plans detail how we expect these improvements to be distributed between the operators and by sectors.

Our plan for Scotland assumes that PPM at the end of 2008/09 is 90.7 per cent. We believe that a more realistic outturn will be 90.5 per cent, so we have allowed additional risk in our plan to cater for this lower start point, and resultant increased challenge during CP4.

Figure 18 England and Wales CP4 baseline performance

Baseline initiative	Activities	PPM improvement (per cent)		
		Long Distance	London and SE	Regional
Management and process improvements	<ul style="list-style-type: none"> Maintenance benchmarking to encourage best practice Seven day railway initiatives Right time railway initiatives 	0.5	0.3	0.4
More robust timetables	<ul style="list-style-type: none"> Introduction of new integrated train planning system and continued use of Railsys 	1.1	0.5	0.6
Asset renewals	<ul style="list-style-type: none"> Key improvement areas are: Track renewals on primary network Points renewals on primary network Signal renewals based on asset age Track circuit based on asset age OLE component renewal and GE main line rewiring 	0.4	0.1	0.1
Enhancements	<ul style="list-style-type: none"> Enhancements in the baseline plan including those specified in the HLOS and those necessary to deliver HLOS capacity metric 	0.1	0.1	0.2
Incident prevention ("stop it")	<ul style="list-style-type: none"> Remote condition monitoring and intelligent infrastructure Additional drainage in high risk locations Fixed telecoms Network Improved patrolling and New Measurement Train 	0.3	0.2	0.1
Improved control	<ul style="list-style-type: none"> Faster isolations process More access points GSM-R Improved signaller aids Train management systems Improved fatality incident management Improved contingency and scenario planning 	0.5	0.3	0.3
Total baseline improvement		2.9	1.7	1.6

Figure 19 Scotland CP4 baseline performance

Baseline initiative	Activities	PPM improvement (per cent)
Management and process improvements	Maintenance benchmarking to encourage best practice and use of masterclasses Seven day railway initiatives Right time railway initiatives Removal of restrictions Improved reliability of components replaced as part of renewal Reliability centred maintenance of signalling equipment (ROSE)	1.5
More robust timetables		0.2
Asset renewals	Improved track geometry after renewal Small minor renewals Structures and drainage improvements Improved reliability of components replaced as part of renewal	0.4
Enhancements		0.0
Incident prevention ("stop it")	Remote condition monitoring and intelligent infrastructure Bridge strike mitigation plan and works Improved maintenance through junction lighting	0.2
Improved control	Improved access to spares and key equipment Improved signaller guides, briefing and aides GSM-R Improvement initiatives to mitigate against weather	0.2
Total baseline improvement		2.6

Overview of key activities within the baseline plan

A brief overview of the activities delivered within the baseline plan that deliver the most significant reliability and punctuality improvement is detailed below.

Asset renewals

Plain line and switches and crossings (S&C) track renewals are the asset renewals that provide the most significant performance benefit.

Our track renewals plan will deliver benefits to the primary and secondary routes on the network. All but one of the track asset condition measures for primary, London and SE, and secondary routes will improve over the duration of CP4 (good track geometry on secondary routes remains constant).

Performance benefits from track renewals are derived from Network Rail's track asset maintenance and renewal policy. Key items in that policy are;

- replacement of pre-1975 rail with CEN 60 and CEN56;
- replacement of pre-1979 concrete sleepers;
- replacement of timber bearers with concrete bearers;
- replacement of jointed S&C with fully welded designs; and

- installation or renewal of track drainage systems.

These actions will result in a significant reduction in track and points failures.

Remote condition monitoring

The remote condition monitoring programme will install monitoring to around 9,000 sets of points, 9,000 track circuits, 1,000 power supplies, 500 level crossings and 20 flood telemetry systems across the network during CP4.

The outputs will provide the following benefits to performance:

- reduced incident count through effective prediction and prevention of failure;
- rapid response to failure and impending failure;
- improved long-term planning through greater understanding of the modes and rate of wear, failure and intermittent operation; and
- better information about faults should they still occur.

Performance benefits will arise through predicting and preventing failures therefore saving delays caused due to failure, reduced maintenance costs & improved long-term works planning.

Maintenance benchmarking

The delivery unit benchmarking project forms part of the asset management project and is summarised as follows:

- The quality league table compares the performance of delivery unit's ability to maintain the infrastructure (it does this by comparing normalised failures of track, signals, points, track circuits and repeat failures).
- Local managers will identify and implement a series of small projects and initiatives aimed to close the differential in productivity and reliability performance of delivery units.

Initiatives that may be used to drive this improvement in performance include:

- providing additional / enhanced training;
- more managers working nights;
- introduction of point care teams;
- introduce dedicated heavy maintenance / renewals team; and
- improve relationship between planners and section managers

Fifty actions, similar to those above, have been identified as means of improvement quality. Each delivery unit will select those actions most able to deliver improvements locally, or develop other initiatives if required.

Enhancements

Network Rail will deliver a number of specified enhancements, primarily aimed at providing additional network capacity or improved journey times, but also producing some performance benefit. Our plan assumes that most of the increased flexibility is used to run more, longer or faster services.

There are however two enhancement schemes specifically aligned to reliability and punctuality improvements; East Coast Main Line (ECML) overhead line improvement works; and the Cotswold line redoubling. Both of these projects deliver improvements to the Long Distance sector.

Timetable developments

Accurate timetables are critical to performance. They are particularly important in making incremental improvements in PPM when it is above 90 per cent as they can significantly reduce sub threshold delays. Major timetable changes are proposed over the next few years for several routes, including Great Western, Trans Pennine,

East Coast, Brighton Mainline, North London Line, West Coast, Cross Country and North Kent. We will work with the operators on these routes to use this opportunity to carry out a fundamental timetable review with the aim of improving overall route performance.

Our analysis has also identified 900 individual train paths with a PPM less than 70 per cent. We have carried out similar analysis for each TOC to assess where the timetabled paths do not appear to be robust. As a result we are proposing to work with operators to understand the underlying causes so that we can resolve these within the overall timetable planning cycle. Where the cause is controlled by Network Rail, we would initially seek to resolve the issue (for example, through rebalancing the timetable) rather than amend journey times: as higher quality timetable planning software becomes available, we believe that most of these issues can be resolved without extending journey times. However, there will probably be some instances where the industry will need to decide between improving performance and retaining the current journey times.

We believe that timetable changes will result in an improvement of 0.6 percentage points in overall PPM in England & Wales. This is supported by improvements achieved by Arriva Trains Wales, First ScotRail and Central Trains following recent timetable restructuring projects.

In Scotland, the impact of the major infrastructure enhancement schemes will require a further recast of the timetable around Glasgow and Edinburgh to achieve greater timetable resilience.

Train operator improvements

This is an industry plan and therefore includes assumptions about the level of performance improvements that train operators will deliver by the end of CP4. We have made an assumption in the plan that where TOCs are currently exceeding their franchise commitments that they will continue to do so by two per cent TOC on self delay minutes per annum. This is based on continued good performance management by the TOCs.

We have also assumed that closer working with the freight operators will enable FOCs to make a 12.5 per cent improvement in FOC-on-self delay creating benefits to FOC on TOC delay during CP4.

Performance improvement delivered via performance projects

In England and Wales the performance benefits from baseline and train operator schemes do not deliver the whole of the improvement required during CP4. In order to achieve the additional 0.6 per cent PPM to meet the sector outputs in England and Wales £160 million has been allocated during CP4 for specific performance-focused actions. These funds will be initially allocated to routes in proportion to the size of the performance challenge within each route.

The fund will be used to deliver PPM and CaSL benefits in the most cost effective way to the industry, irrespective of asset ownership or delivery mechanism. Industry engagement in agreeing which schemes to deliver will be managed through the JPP.

The use of the performance fund will be governed by Network Rail's Investment Regulations. Business cases will be required to demonstrate the improvement to PPM and CaSL that any scheme will deliver.

In order to ensure that the performance fund delivers sufficient benefits, at the right cost, we will establish threshold values for PPM and CaSL benefits for each sector. During 2009/10 the threshold cost per train (either PPM achieved or CaSL avoided) will be:

- Long distance £410
- London and south east £180
- Regional £80

The cost of proposed schemes will be compared against the delivered PPM or CaSL benefits. Schemes will be acceptable if the delivery cost is less than the sum of benefits delivered. The threshold values will be reviewed from time to time, and at least annually to ensure that schemes are delivering the required benefits to the right sectors.

In order to reduce the risks on delivering the benefits we will plan the delivery of the fund up to two years in advance, although some flexibility will be required to mitigate issues that may arise during the course of CP4. Appendix 5 provides an overview of the current plan.

Network Rail delays minutes by category

Our performance delivery plan has modelled the change in delay minutes expected to be delivered and how this will affect the delay minutes by category.

Figure 20 details our plan for delay minutes by delay category. These figures will form the basis for establishing internal delivery targets for the main delivery functions within Network Rail.

These delay minutes include all freight and passenger operators, together with an allowance for other operators taking account of the level of traffic anticipated in this plan.

Delay minutes by category will form the basis for Network Rail's internal management of performance, as each category is easily identifiable with one of our delivery functions.

On a year by year basis these numbers will be validated, taking in to account the latest details on the level of traffic, together with any changes resulting from JPIP and the resulting agreed industry plan, before they are used for establishing internal targets.

Network Rail delay minutes by route

Based upon our performance delivery plan we have modelled the geographical split of train delays for which Network Rail is responsible by our operating routes. This split of delay minutes is based upon the historic allocation of delay minutes modified by the impact of our plans during CP4. Figure 21 shows the planned split of Network Rail delay minutes by route.

These outputs will be further divided to provide delay minute trajectories by area and delivery units. Where appropriate these geographically aligned numbers will be combined with the delay category split to enable allocation of responsibility for achieving the outputs to be cascaded throughout the organisation.

A proportion of the total minutes delay has not been allocated within Figure 21, this allows for some of the risk of associated with low probability – high impact incidents, such as extreme weather, to be managed centrally and allocated to routes, if and when such incidents occur.

These delay minutes include all freight and passenger operators, together with an allowance for other operators taking account of the level of traffic anticipated in this plan. Once validated for

traffic volume and any changes to our delivery plan resulting from JPIPs this plan will form the basis for annual performance targets within our routes.

Figure 20 Planned Network Rail delay minutes by category (000s)

Category Group	2008/09 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
TSRs COT/GCC	339	296	273	252	238	229
Track defects	712	666	620	579	539	514
Track asset group total	1,051	961	894	831	777	743
Points	742	615	498	419	399	366
Track circuits	697	639	553	509	494	485
Signal, signalling systems and power supply failures	740	639	609	550	527	500
Other non-track	705	640	612	566	540	518
Non track assets group total	2,885	2,532	2,271	2,045	1,960	1,869
Other infrastructure/possessions	731	661	622	582	559	543
Operations	953	888	815	770	743	724
Takeback / unexplained	685	670	654	635	622	614
Management control group total	2,370	2,220	2,091	1,986	1,924	1,880
Weather / structures group	498	533	517	511	504	502
External factors (excl weather) group	1,714	1,669	1,597	1,534	1,487	1,452
Autumn group	241	210	206	203	198	194
Total	8,759	8,125	7,575	7,110	6,850	6,640

Figure 21 Network Rail delay minutes by route (000s)

Route	2008/09 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
Anglia	907	826	802	788	783	762
Kent	533	503	463	441	401	379
London North Eastern	1,680	1,473	1,375	1,272	1,222	1,194
London North Western	2,593	2,285	2,083	1,939	1,875	1,818
Midland and Continental	361	360	351	337	331	319
Scotland	601	547	504	476	472	470
Sussex	501	472	435	412	384	364
Wessex	501	520	513	491	460	442
Western	1,081	1,015	949	854	821	793
Total	8,759	8,125	7,575	7,110	6,850	6,640

Appendix 1 - Output Definition

Public Performance Measure (PPM)

PPM combines figures for punctuality and reliability into a single performance measure. It measures the performance of individual trains advertised as passenger services against their planned timetable as agreed at 2200hrs the night before. PPM is therefore the percentage of trains 'on time' compared to the total number of trains planned.

A train is defined as 'on time' if it arrives within five minutes (i.e. 4 minutes 59 seconds or less) of the planned destination arrival time for London and south east or regional services, or 10 minutes (i.e. 9 minutes 59 seconds or less) for long distance services. Where a train fails to run its entire planned route calling at all timetables stations it will count as a PPM failure.

Cancellation and Significant Lateness (CaSL)

CaSL combines figures for punctuality and reliability of the train service to measure significant disruption to the train service. It measures the performance of individual trains advertised as passenger service against their planned timetable as agreed with the operator at 2200hrs the night before. CaSL is therefore the percentage of trains which arrive significantly late compared to the total number of trains planned. A train is defined as significantly late if it arrives 30 or more minutes late at its planned destination, or fails to complete its entire planned route, including calling at all timetabled stations. Unlike PPM the threshold defining significant lateness is the same for all trains.

Delay Minutes

A delay is a loss of time against the schedule between two consecutive locations on the train's journey. Delays of three minutes or more, or delays smaller than three minutes where the cause can be determined are attributed to an incident and a responsible manager – this allows them to be split between those caused by the TOC and those caused by Network Rail (which also takes responsibility of incidents due to external events). Delays are recorded against the working timetable but do not include any loss of earliness. All delays to scheduled passenger and freight trains are included within the measure – delays to empty coaching stock (ECS) and light locomotive moves (class 0 trains) are excluded. Only delays on Network Rail owned network are included. Delays per mile figures are normalised against the actual mileage the train service ran.

Funder

Passenger outputs for Scotland relate solely to First ScotRail services, wherever that service starts or terminates. First ScotRail's sleeper services fall totally within the outputs for Scotland. Similarly, outputs for England and Wales include those services operated by TOCs other than First Scotrail which operate to and from Scotland

Appendix 2 - Sector definition (England and Wales funded services)

Listed below is the allocation of train services, for both franchised and open operators, to England and Wales sectors, used in determining this delivery plan.

London and south east

- c2c
- Chiltern
- First Capital Connect
- First Great Western (London & Thames Valley services)
- Heathrow Express
- London Midland (London Euston services and St Albans and Bedford branches only)
- London Overground
- National Express East Anglia (excl former Inter City services)
- South Eastern
- Southern
- South West Trains

Long distance

- Cross Country
- East Midlands (former Midland Mainline and Liverpool – Norwich services)
- First Great Western (High Speed services)
- First Hull Trains
- First TransPennine Express
- Grand Central
- National Express East Anglia (former Inter City services)
- National Express East Coast
- Virgin Trains
- Wrexham and Shropshire

Regional

- Arriva Trains Wales
- East Midlands (local/regional services)
- First Great Western (West services)
- London Midland (West Midlands local and regional services)
- Merseyrail
- Northern

Appendix 3 - Traffic growth assumptions

Traffic growth assumptions are based on forecasts produced for the strategic business plan. In particular, we expect that the following franchised operators will see a significant growth in train mileage due to known franchise commitments during the course of CP4 from their 2008/09 mileage.

- Transpennine Express: ten per cent;
- Cross Country: 17 per cent;
- London Overground: 56 per cent;
- First ScotRail: seven per cent;
- National Express East Coast: ten per cent; and
- Virgin Trains: 15 per cent.

Growth in train miles on other passenger franchised operators is assumed to be between zero and five per cent. We have assumed a 13 per cent increase in freight train mileage. We have assumed no growth in open access operators.

Appendix 4 - Sector outputs for multi-sectored passenger operators

Figures 22 and 23 show the split by sector for PPM and CaSL for those passenger operators that provide services within more than one sector.

Figure 22 Planned PPM split by sector by operator (per cent annual average)

TOC	2008/09 Forecast	2009/10	2010/11	2011/12	2012/13	2013/14
National Express East Anglia						
Long distance	86.1	86.7	87.4	88.7	89.0	90.6
London and south east	90.9	91.0	92.0	92.3	92.4	93.0
First Great Western						
Long distance	85.4	86.7	88.1	89.3	90.2	90.9
London and south east	92.3	92.4	92.9	93.6	93.9	94.3
Regional	88.8	89.5	90.1	91.1	91.7	91.9
London Midland						
London and south east	83.4	87.0	90.0	91.0	91.5	92.0
Regional	87.4	88.0	88.8	89.6	90.1	90.2
East Midlands Trains						
Long distance	90.4	90.8	91.6	92.7	93.3	93.8
Regional	87.1	86.0	86.4	86.8	87.2	87.3

Figure 23 Planned CaSL split by sector by operator (per cent annual average)

TOC	Forecast 2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
National Express East Anglia						
Long distance	3.9	4.3	4.0	3.9	3.8	3.7
London and south east	2.0	2.2	2.1	2.1	2.1	2.1
First Great Western						
Long distance	4.4	5.7	5.4	4.9	4.7	4.5
London and south east	1.3	1.6	1.6	1.5	1.4	1.4
Regional	2.9	2.7	2.5	2.3	2.1	1.9
London Midland						
London and south east	6.0	5.6	5.4	5.2	5.1	5.0
Regional	3.9	3.4	3.4	3.3	3.3	3.2
East Midlands Trains						
Long distance	4.0	4.4	4.3	4.1	4.0	3.9
Regional	2.9	4.5	4.4	4.4	4.3	4.3

Appendix 5 - Potential projects to be delivered using the performance fund

A mix of initiatives is expected with a range of ease of application and benefits. Specific opportunity is expected to be taken to consider larger schemes or progress some analytical / data improvement work which may take longer to implement but will yield higher eventual benefits. Both opex and capex based schemes are applicable. The following list highlights potential initiatives (not prioritised) planned for delivery in 2009/10:

Short term focus:

- localised cable theft and fatality reduction work
- automatic route setting (ARS) improvements
- autumn and weather mitigation
- uninterrupted power supplies (UPS) and alert monitoring equipment
- better equipment for response teams; strategic spares
- staff training and competence
- service management tools
- focussed component replacement
- cable replacement before life expiry to reduce performance risk
- line speed improvements in depots

Longer term focus:

- focused capital investment – e.g. fleet maintenance improvements, better placed accommodation
- analysis and development of longer term solutions such as improved data (for example by linking on train monitoring systems with TRUST and other data sources), autumn effects, climate change and incident reduction where sociological factors may be key (for example longer term fatality reduction).