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09 May 2014

Dear

A handwritten signature in blue ink, appearing to read 'Alan', is written over the word 'Dear'.

**RE: CP4 Performance Assessment**

Further to recent discussions please find attached the final version of Network Rail's assessment of operational performance in CP4.

As discussed the performance assessment seeks to summarise the key trends in operational performance and highlight the key causes of under-delivery.

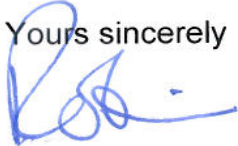
As stated within the attached assessment, and as we have previously discussed, we accept our responsibility for the missed CP4 train performance targets and we recognise that this has not been satisfactory. We accept our part in the performance shortfall. Significant improvement is needed to make sure that our end of CP5 targets (which we are committed to achieving) are delivered.

We have previously shared and discussed with ORR our progress in delivering our CP4 performance improvement plans. As such the assessment does not seek to cover, in detail, the measures that we have taken in CP4 to mitigate the shortfall in performance. As ORR is aware, a substantial programme of response has been undertaken mostly initiated by Network Rail and implemented in consultation with the industry. Both locally focussed and national actions have been undertaken. Towards the end of CP4 this response included steps to stabilise and improve resilience for CP5.

We are absolutely committed to addressing this shortfall both by driving further improvements in our own business and by working collaboratively with train operators, governments and ORR to address broader cross-industry issues over CP5 and beyond. We now have a greater understanding of the linkages between inputs and outputs which has informed our CP5 plans.

I am copying this letter to Nigel Fisher at ORR and to Paul Plummer at Network Rail.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Robin Gisby". The signature is fluid and cursive, with a prominent initial "R" and "G".

**Robin Gisby**  
Managing Director, Network Operations

# Network Rail

# Control Period 4 Performance Assessment

April 2014

# Contents

– Foreword	3
– Introduction	5
– Executive summary	6
– Outputs	8
– Causation	12
– Mitigation and response	27
– Appendices	33

## Foreword

This is Network Rail's summary of train performance delivery in Control Period 4 (CP4).

During this time the railway has seen significant growth beyond forecasts with levels of operation and passenger use not seen since the 1920s, and the rail network of Great Britain has been seen to be the best in many ways compared to networks across Europe. Customer and passenger satisfaction has mostly been positive, even during periods of poor performance.

Notwithstanding this, operational performance in CP4 has not been at the levels we would expect and the regulatory targets set for CP4 have not been achieved. We recognise that this has not been satisfactory and accept our part in the performance shortfall. Significant improvement is needed to make sure that our end of CP5 targets (which we are committed to achieving) are delivered.

Although some of the reasons for our targets being missed are outside Network Rail's control, we are also clear that Network Rail must accept responsibility and seek to remedy the situation both by driving further improvements in our own business and by working collaboratively with train operators, governments and ORR to address broader cross-industry issues. For example:

- the number of asset failures has fallen significantly over the control period, but in some areas this has not fallen by as much as we assumed at the start of the control period and it is now clear that even the improvement which we targeted would have been insufficient
- although we have experienced a series of extreme weather situations in the last few years, we accept that it is our responsibility to manage our assets sustainably and to work with operators to mitigate the impact of such external events on rail users
- although traffic growth has been greater than assumed at the last review and supporting this growth is the right thing to do, it is our responsibility to find solutions which enable us collectively to respond to this opportunity in a way which does not unduly compromise performance
- under-delivery of benefits assumed in the improvement plans

We are committed to addressing this shortfall both by driving further improvements in our own business and by working collaboratively with train operators, governments and ORR to address broader cross-industry issues over CP5 and beyond. We now have a greater understanding of the linkages between inputs and outputs which has informed our CP5 plans.

## Introduction

This document summarises performance in CP4 with particular focus on delivery in 2013/14.

This report follows the Enforcement Order issued by the ORR in respect of Long Distance (LD) PPM on 23 July 2012, the letter relating to Breach of Licence in respect of LD and London & South East (LSE) performance issued by ORR on 31 July 2013 and related correspondence since that time. As agreed in correspondence and discussed by our respective Boards, Network Rail's ambition is to provide a clear narrative of performance in CP4, with the specific focus on performance in 2013/14, such that we can conclude CP4 performance matters efficiently and effectively.

We have used our previous discussions and work with the National Task Force, our customers and stakeholders to understand both delivery and the causes of under-delivery against regulatory targets. The main focus of this document is PPM as the prime output for customers and presented in the HLOS. We have collated data at Route and local operator level in order to present a whole network story. This has enabled us to set out the common themes that have been critical to the impact of key programmes and recovery plans. An overall chronology is included in the appendix.

Delivery in Scotland and for freight operators is treated separately, with causation and customer interest being different from the story for England & Wales (E&W) passenger delivery. This document sits alongside the wider narrative of performance against all our planned outcomes in CP4.

## Executive Summary

Nearly all the regulatory targets for CP4 were missed with many of the underlying Joint Performance Improvement Plan (JPIP) targets and delay targets also missed. In many cases performance was also worse than at the end of CP3. Only the Regional regulatory CaSL target was achieved, and in 2013/14 the only JPIP PPM target to be achieved was for Chiltern.

Network Rail accepts our responsibility for the missed CP4 train performance targets, and we recognise that this has not been satisfactory. We accept our part in the performance shortfall and recognise that significant improvement is needed to make sure that our end of CP5 targets are delivered.

Analysis of causation is complex and individual factors interlink with both direct (delay, reduced PPM) and indirect impacts (e.g. delay in other categories, increased delay per incident, diverted resource) on performance. A number of factors have been transient in nature, but an underlying challenge has been longer term trends such as growth that will remain unless specific, often radical actions are taken. Many of the factors are not within Network Rail's direct control.

The key causes of under-delivery against the E&W PPM targets are:

- extreme weather beyond the assumptions made in the original delivery plan
- growth in train mileage and passenger volumes greater than forecast and the impact of each unit of growth being greater than expected
- the effects of efficiency and drive for increased revenue
- under-delivery of benefits assumed in the improvement plans
- the number of asset failures has (in some areas) has not fallen by as much as we assumed at the start of the control period.

A substantial programme of response has been undertaken mostly initiated by Network Rail and implemented in consultation with the industry. Both locally focussed and national actions have been undertaken. Towards the end of CP4, this response included steps to stabilise and improve resilience for CP5.

Key actions have been:

- recovery plans for each of the sectors



- national programmes tackling new or strategic issues
- funding for improvement schemes to twice the value of the original the CP4 performance fund
- process improvements leading to the launch of a new over-arching performance management process – the Performance Planning Reform Programme (PPRP).

In general, Network Rail has supported customers delivering industry benefits, sometimes in the knowledge that the delivery of operational performance was likely to be affected (and sometimes made worse) by the actions taken, for example by keeping trains moving during the most severe weather incidents.

## Outputs

### Overall CP4 performance

Nearly all of Network Rail's regulatory targets were missed at the end of 2013/14

CP4 closed with nine of the ten CP4 regulatory targets missed. Only the Regional CaSL target was achieved:

		Plan	Actual	Difference
PPM	Long Distance	92%	86.9%	-5.1%
	London and South East	93%	89.6%	-3.4%
	Regional	92%	91.0%	-1.0%
	Scotland (FSR)	92%	91.4%	-0.6%
CaSL	Long Distance	3.9%	4.9%	1.0%
	London and South East	2.0%	3.1%	1.1%
	Regional	2.3%	2.3%	0.0%
Network Rail delay (k DM)	England & Wales	4980	7544	51%
	Scotland	382	447	17%
NR delay / 100 train km	Freight	2.94	3.68	25%

Table 1: comparison of plan against actual for regulatory targets at the end of CP4

Performance is also worse than at the start of CP4 and delay in nearly all routes and delay groups worse than target.

The recent trend for outturn was downwards: the forecasted year end outturn for E&W PPM was 91.2 per cent at period 7, but ended the year at 90.0 per cent. Much of the downturn was weather related: the product of a difficult end of autumn and extensive storms and flooding during the winter, but underlying delivery also worsened. Delay in all major groups, including operator caused delays, was worse than expected in the original plan.

Many of the year by year regulatory targets were missed and in 2013/14 the JPIP PPM target was achieved for only 1 of 19 Franchised TOCs.

The overall trend in CP4 was:

- Initial good performance better than target
- Transition to and then continued worsening trend in the last two years
- Material extreme weather events

The following chart plots E&W PPM MAA actual vs plan for CP4 showing these trends:

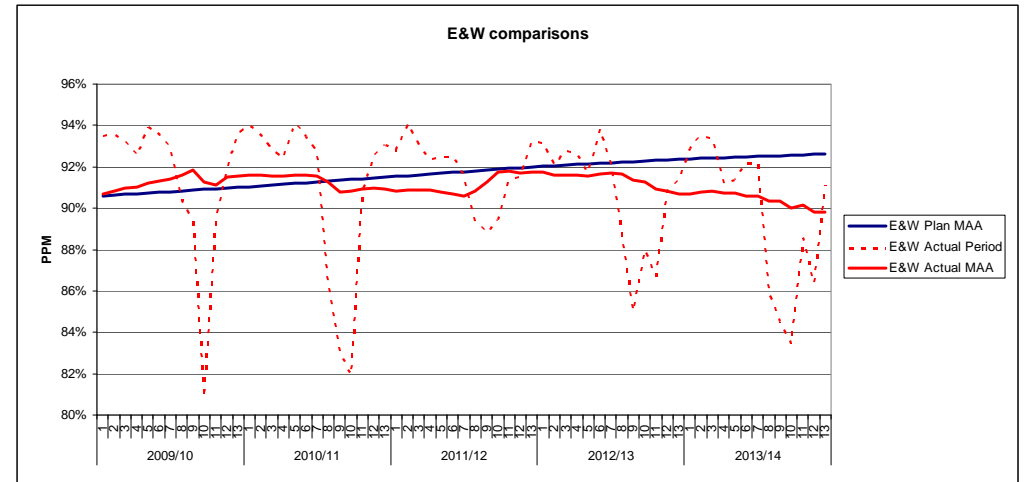


Chart 1: trend of plan against actual for E&W PPM through CP4

Sector by sector delivery compared to plan has varied in quantum but there has been a strong consistency of trends and impact of key events across all the sectors. In comparison, delivery in Scotland has seen more variation from the trend in E&W in the latter part of CP4. The following chart plots variation between actual and plan by sector and for Scotland through CP4:

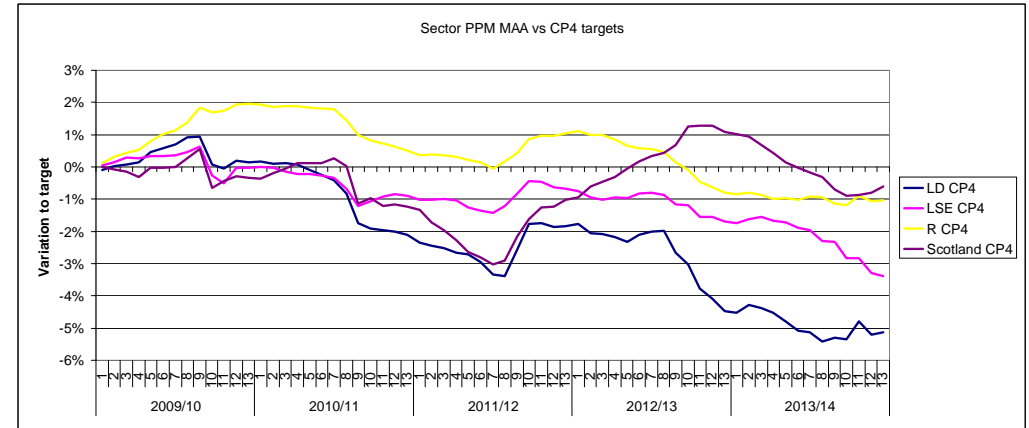


Chart 2: trend of variation between plan and actual PPM MAA by Sector through CP4

In addition to presenting performance below target in CP4, the current worsenment needs to be reversed before further improvement to achieve CP5 targets.

The trend in CaSL differs from PPM in being more affected by extreme conditions but more resilient to other trends that cause change in PPM outputs. CaSL also tended to show more improvement compared to target in the early and middle part of CP4 although this trend was lost in 2013/14. There is more variation across sectors for CaSL than for PPM most obviously caused by variation in impact of extreme weather conditions, although especially in the latter part of CP4, there have been specific CaSL problems such as cancellations due to traincrew resourcing problems which have affected sector CaSL outputs. The following charts mirror Charts 1 and 2 for CaSL outputs (there was no CaSL target for Scotland):

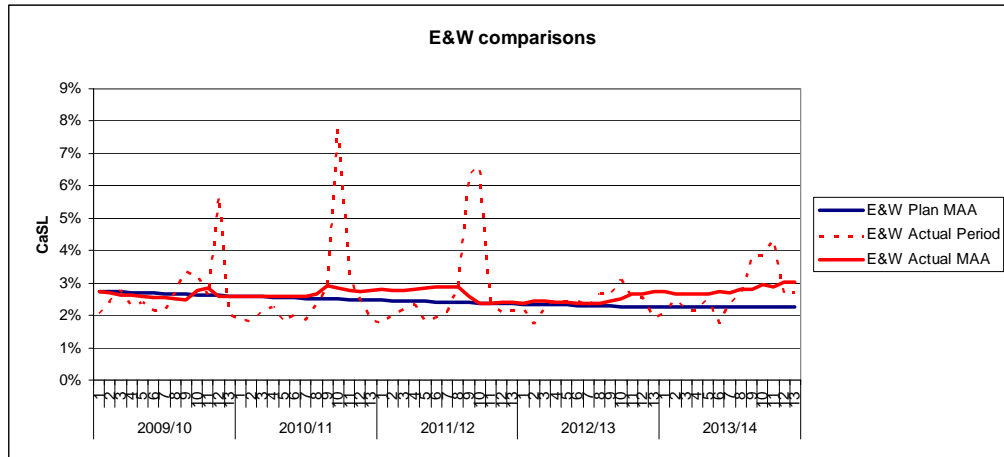


Chart 3: trend of plan against actual for E&W CaSL through CP4

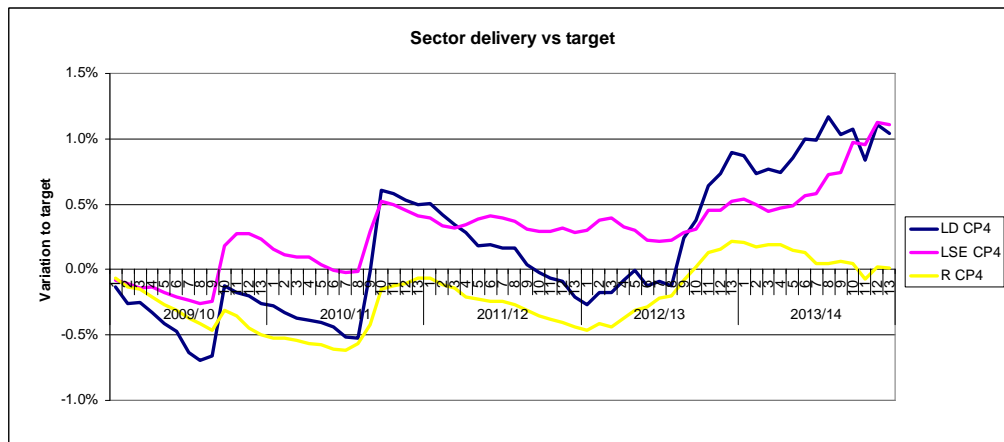


Chart 4: trend of variation between plan and actual CaSL MAA by Sector through CP4

The following charts plot the year by year trend of actual vs plan for each of the nine passenger regulatory targets

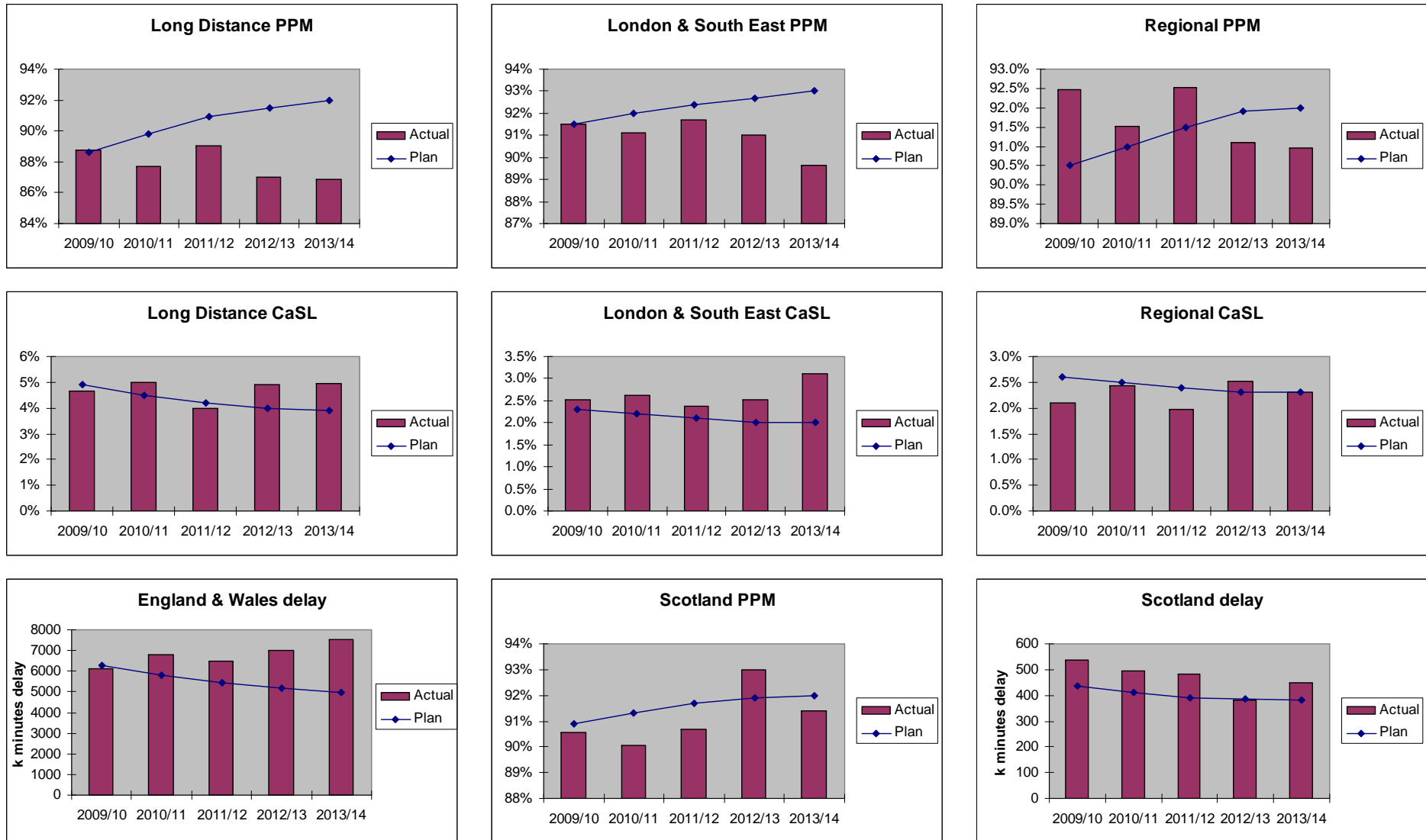


Chart 5: trend of plan against actual for all passenger operations regulatory targets during CP4

None of the delay targets by JPIP group in the original plan were achieved, the largest variation being in Network Rail caused delay. The following chart breaks down actual delay compared to plan by JPIP group for franchised train operators (i.e. as presented in standard industry reports)

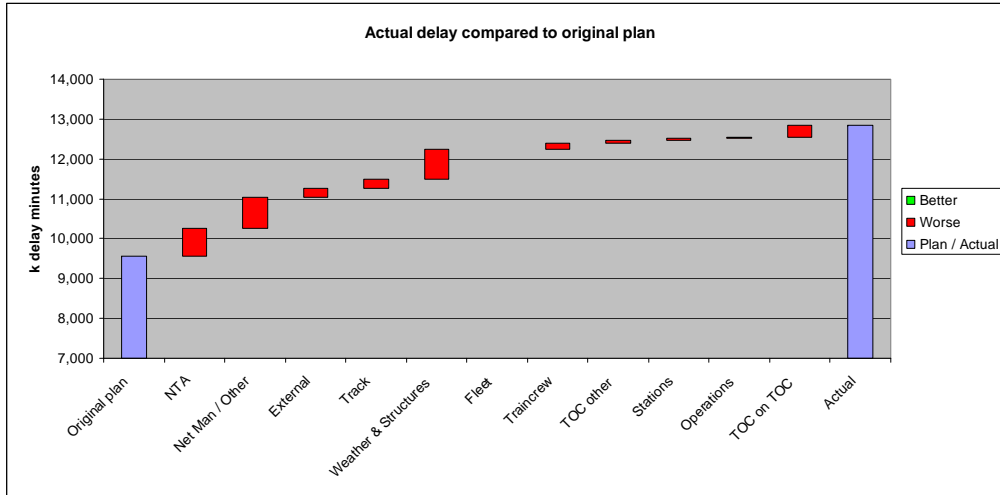


Chart 6: waterfall of actual delay compared to plan by JPIP delay groups for E&W franchised operators through CP4

## Delivery in 2013/14

Delivery in 2013/14 has varied from delivery in 2012/13. Detailed tables by sector – as presented in quarterly reports and a table showing change in delay, significant lateness, cancellations, CaSL and PPM between 2012/13 and 2013/14 are provided in the appendix.

Specific problems in 2013/14 included:

- Prolonged winter sequence of storms, flooding (both from rivers and groundwater), wind related disruption, tidal surges. Initial major impact on LSE services, increasing impact on LD services later in the winter.
- Prolonged autumn with performance not to the level expected
- Worsening reactionary delay and delay per incident
- Specific (transient) problems:
  - Possession overruns (related to increased enhancements and renewals workload)

- Traincrew problems for some operators driving material impact on cancellations and CaSL at LD and Regional Sector level
- Increasing operator on operator delays, partly disproportionate to the rise in operator on self delays
- Slowing in reduction in infrastructure failures, with particular spike in telecoms incidents due to teething problems introducing GSM-R
- Major programme to reduce TSRs interrupted by worsenment caused by waterlogged formation

Material impact (in comparison to other factors) is included in the Causation section below.

## Causation

### Causation is complex with a range of factors including both long term trends and transient issues

Analysis of causation of under-delivery is complex with several factors interlinked and overall outcomes influenced by the focus of improvement and recovery work. The analysis uses a range of techniques to isolate individual factors and produce evidence of both the factor and quantum of impact on performance.

In simple terms, performance delivery is a series of local problems, reflecting variation in asset age and condition, weather conditions, traffic etc, with direct (delay, PPM) and indirect (effects of deferred work etc) impact on performance. For the most part, sector performance interacts: the effects of individual incidents are seen across all sectors. This document aggregates the analysis of these factors and demonstrates the material sector level impact.

There is a range of causes:

- Extreme weather (beyond asset capability and planned levels) causing delay beyond assumed levels
- Long term trends such as growth which are unlikely to be reversed except through implementation of major enhancement work
- Transient effects for which specific action plans are implemented to mitigate or remove

The effects of extreme weather beyond assumed levels (in the plan) are in principle transient effects, but also drive requirements for specific action and improvement plans whereas other transient effects are tackled as part of the overall performance plan.

This document focusses on major causation:

- Extreme weather
- Growth
- Efficiency and revenue improvements
- Failure rates and response times
- Subthreshold delay
- Attrition (corroborative analysis)
- 2013/14 factors

## Extreme Weather

### Extreme weather causing impact beyond levels assumed in the plan has had a material effect on delivery in four of the five years of CP4

Although we have experienced a series of extreme weather situations in the last few years, we accept that it is our responsibility to manage our assets sustainably and to work with operators to mitigate the impact of such external events on rail users.

The CP4 performance delivery plan included a simple, practical assumption that delay due to extreme weather conditions (and consequent impact on PPM and CaSL) would be at the CP3 average level with expectation that an effective response to actual weather conditions was the prime focus for CP4. Improvements included in the base programme (mitigating a potential slight worsenment in weather conditions) have been delivered, but their effect has been overwhelmed by the impact of real weather conditions. Significant levels of resource have been invested in real time reaction, response, repair, recovery and implementing longer term improvements. Many of the weather events were “record” events, with return periods of more than 1 in 100 years seen in recent flooding problems. On many occasions the core output for the affected parts of the network was the provision of capacity, often to the recognised detriment of performance. Four out of five years of CP4 (including four of the five Christmas periods) were materially affected by extreme weather conditions. The industry has been recognised by passengers, customers, stakeholders and government for improving the quality of response on many occasions; many of the longer term improvements initiated by major weather events have been recognised as providing effective mitigation. We recognise there is more to do to mitigate the impact of weather on rail users.

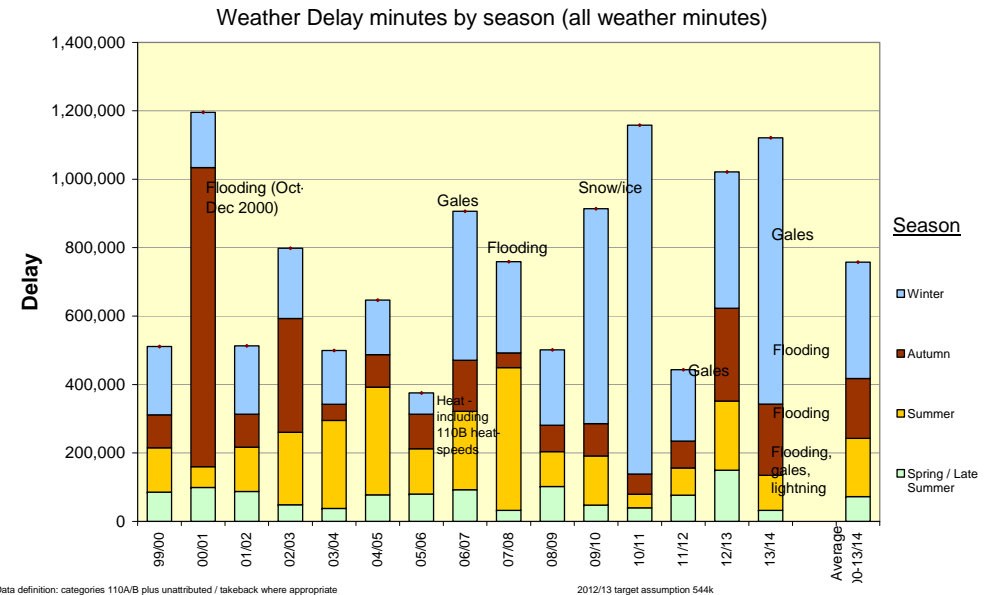
In summary, our view is that actual weather conditions in CP4 have presented:

- More extreme weather conditions than expected
- A larger range of extreme conditions driving increased response and recovery work
- Circumstances where the core railway product had to be capacity, to the recognised detriment of performance
- Delay, reduced PPM, increased CaSL more than expected
- Significant investment in response, repair and enhancements targetting reduced impact during equivalent weather conditions, sometimes effectively diverting resource and funding from other, potentially more efficient performance improvement opportunities
- Prolonged recovery because of waterlogged assets and other repair work, and the need to reprioritise maintenance and renewal activities not undertaken during the weather events.

Whereas the position on the effects of climate change in CP4 is not clear, the programme of mitigation of weather effects has become a major climate change programme for CP5.

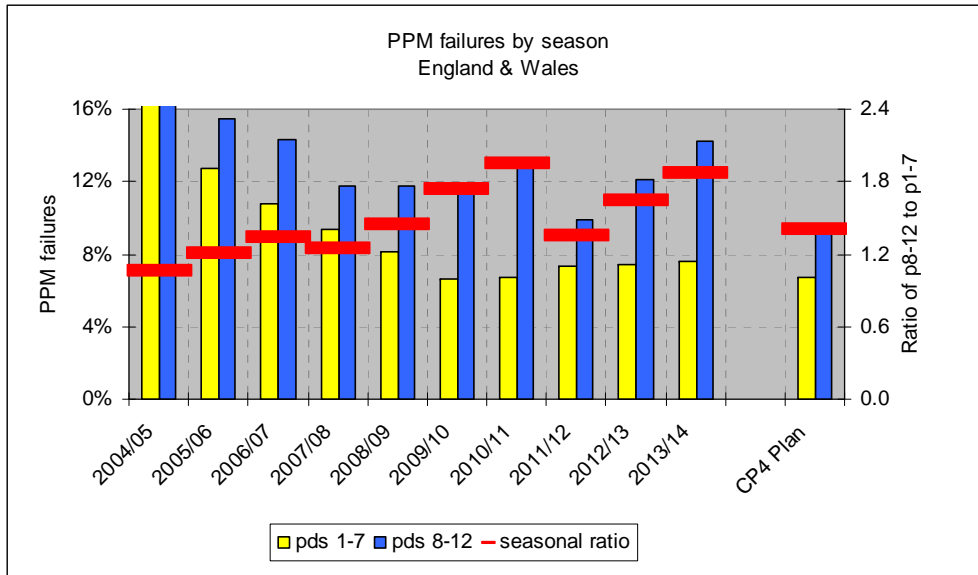
In principle, the effects of weather are transient effects. With the exception of potential climate change effects, there is no statistical reason to expect bad weather conditions year on year as has been seen in CP4. The same approach (of allowing for average weather) has been used in planning for CP5. The response to the range of extreme weather in years 1 to 4 has indirectly affected overall performance in year 5 (2013/14).

The following chart shows the delay attributed to Network Rail due to the effects of severe weather and shows the increased impact of weather in CP4 compared to CP3 and CP2:



**Chart 7: trends of delay attributed to the Network Rail severe weather delay category**

The impact of extreme weather has been focussed on the latter part of the year with this seasonality much more acute in CP4 than seen in CP3 as shown in the following chart:



**Chart 8: variation in PPM between early and late year across CP3 and CP4**

In 2013/14 the key extreme weather event was the prolonged storms including winds, rainfall, flooding (from both rivers and groundwater), and tidal surges through the winter season. Initial problems centred on LSE sector services with later flooding also affecting LD services. Regional services were comparatively less affected.

A Strategic Crisis Management Team was introduced in early 2013/14 to lead the closure of response to the recent weather problems and generate acceleration of the wider weather resilience programme.

In many of the extreme weather events, further impact has been caused by:

- Amended timetables: reducing planned services in response to conditions and some network closures
- Indirect delay through increased infrastructure failure (not attributed to weather)
- Decisions to operate the railway for capacity to the recognised detriment of performance resulting in more PPM and CaSL loss compared to delay conditions.

Statistical analysis shows that in certain weather conditions, indirect delay/PPM effects can be as much as, or exceed the direct effects. In 2013/14, amended timetables have reduced net train mileage by 0.5 per cent compared to the core plan.

In recognition of the wide-scale extreme weather conditions in 2013/14 and the analytically complex requirement for amended timetables and other network output decisions, a replacement approach has been taken to assessing the effects on performance.

The assessed impact is:

- LD services 1.1%
- LSE services 1.5%
- Regional services 0.2%

Other effects have included:

- Additional network investment in response and mitigation £95m
- Lost network access in 2013/14 due to weather conditions (Schedule 4) £30m
- Lost train mileage in 2013/14 0.5%

The wider cost of network repairs arising from extreme weather in 2013/14 is close to £200 million.



## Growth

### Growth of nearly all forms has exceeded forecasts and caused material difficulties to delivering required performance outputs

Although traffic growth has been greater than assumed at the last review and supporting this growth is the right thing to do, it is our responsibility to find solutions which enable us collectively to respond to this opportunity in a way which does not unduly compromise performance.

A key CP4 success has been the sustained increase in traffic despite the wider economic downturn. For the most part, Network Rail has encouraged growth even where there has been expectation of performance worsenment (without mitigation) and has not sought to stop requests or bids for extra traffic as a performance management tool nor influence drivers of passenger growth (e.g. through lobbying for fare change).

The variation in growth between plan and actual, and the effect on performance has been multiple and is complex to assess. Actual growth is arguably at the upper bound of forecasts made during preparation for CP4.

Key factors are:

- Traffic growth (train mileage) in excess of planned levels. Mostly on already very heavily utilised routes (see appendix)
- Passenger growth beyond expected levels, especially on LSE routes which were already close to saturation.

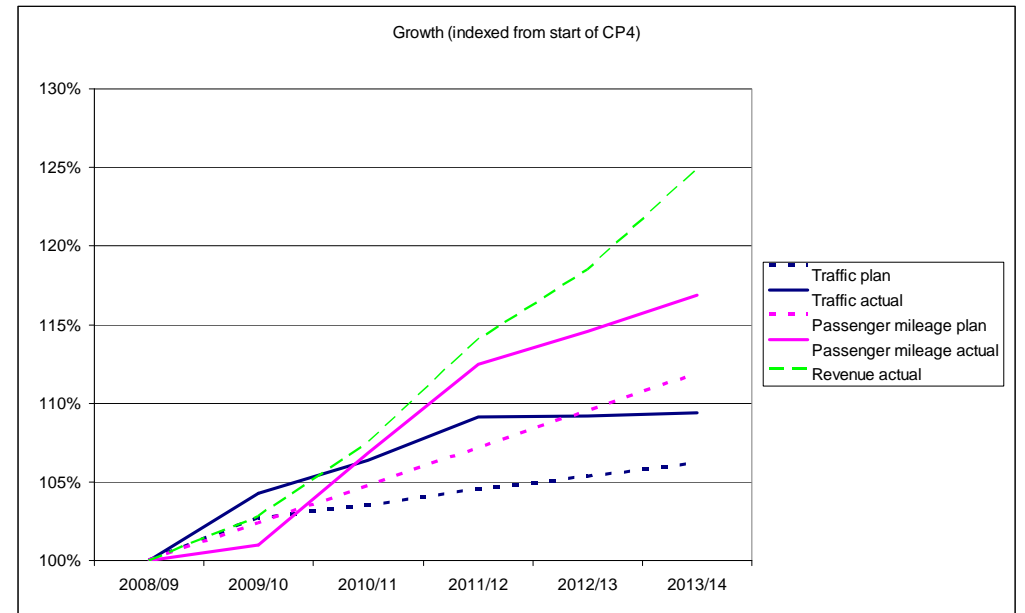
Some routes in the LSE area are effectively saturated.

Key effects on performance are:

- Increased congestion driving increased reactionary delay and delay per incident, with major incidents causing delay in locations increasingly distant from the incident site.
- Longer dwell times
- Prolonged junction transit times through using longer trains without change to timetable running times and junction margins
- Likely increased need for capacity during service recovery (from incidents) to provide for increased ridership, to the detriment of efficient service recovery for performance
- Some increase in passenger caused delays.

The CP4 plan included a specific risk for growth and impact of 0.38 per cent PPM was included in performance trajectories.

The following chart shows the planned and actual traffic and passenger growth:



**Chart 9: planned and actual growth (network)**

There is variation in growth across the sectors (see appendix), but with most growth being on routes or at locations with traffic across the sectors. The driver for performance impact is overall growth, with some local variation where sector specific routes have seen the growth.

Whereas the increase in traffic has flattened in the last two years, reactionary delay and other effects of growth have continued to increase, probably due to the continued increase in passengers and the effects of enhancement projects being delivered without material service reductions (e.g. Birmingham Gateway, Reading).

The measurement of the effects of growth is complex, potentially seeking to aggregate the effects of individual trains on each other. Prior analysis presents:

- 1 per cent of growth broadly presents 1.5 per cent increased delay (detailed industry analysis in the early 2000s)
- Demonstration of the broad effect of variation in passenger loading (by analysis of delay between peak and off peak services etc)
- The original CP4 plan provided for 0.38 per cent delay risk from 6.2 per cent growth.

In addition, recent analysis provides both local measurement of the key links between growth and performance and evidence that the effects of growth are materially of the same order or beyond these levels, including:

- General trend of increasing reactionary delay
- Reactionary delay is particularly high at known traffic pinch points; positive effects becoming visible as major enhancement programmes are completed
- Analysis of inner-London routes shows:
  - Increased dwell times and causal links to worsened PPM
  - Increased net lateness of trains later in the peak
  - Increased transit time across junctions with longer trains being introduced
- Detailed modelling shows an increase in the impact of TSRs due to “blocking back” of impact onto following trains on Routes operated at capacity
- Increased volatility in the primary: reactionary ratio of daily delay indicating reduced controllability.

## Efficiency and revenue improvements

There is natural focus on using resources efficiently and the drive for growth has not been matched by increased resourcing. There is also a natural drive for revenue growth by operators, part of which has been through timetable adjustments. Both of these have had a negative effect on performance.

Although traffic growth has been greater than assumed at the last review and supporting this growth is the right thing to do, it is our responsibility to find solutions which enable us collectively to respond to this opportunity in a way which does not unduly compromise performance.

Resource availability has not kept up with actual growth and revenue growth has exceeded passenger growth. This is a further success for the industry in CP4, but has, on balance, made performance delivery worse than planned.

Key factors for performance have been:

- Resource provision has not aligned with the drive for growth:
  - A requirement for increased availability of rolling stock (which has also indirectly reduced scope for performance improvement in this area)
  - Likely increased complexity in diagramming making service management harder to direct and control: PPM recovery between the morning and evening peaks has reduced in CP4 and anecdotally, service recovery in general has become more difficult
- Tightened timetable differentials to drive journey time reductions
- Local timetable adjustments in response to operator competition on individual routes.

The 1300 extra vehicles planned through the HLOS for introduction during CP4 have not all entered into service. The fleet “mix” for some routes is arguably more complex in addition to increased pressure on simple resource provision.

The complexity of the industry structure reduces visibility of causal links between efficiency and revenue improvements and their impact on performance, but there is clear evidence of the increased challenge of service recovery and commercially driven timetables.

The following chart shows the increase in vehicle use in CP4:

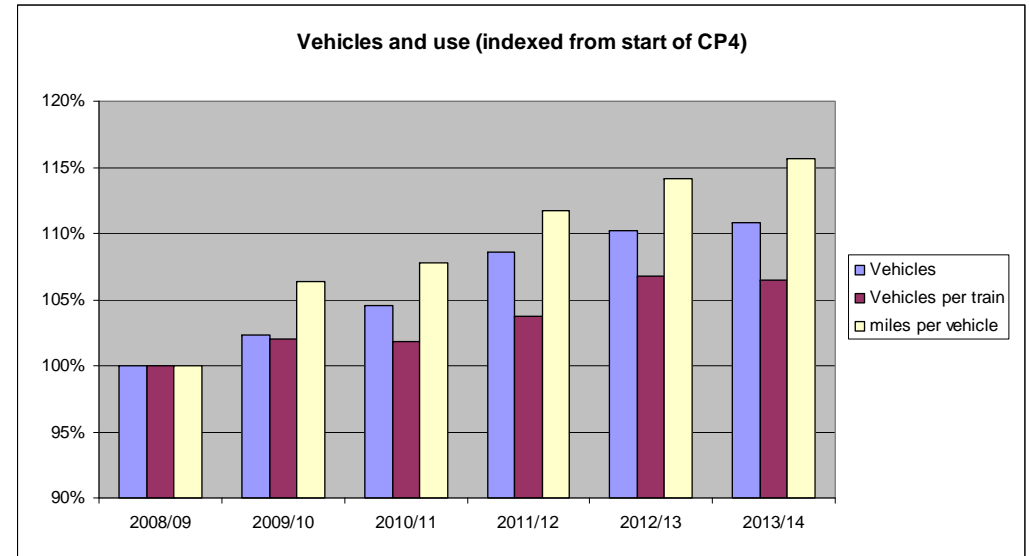


Chart 10: trend in vehicles and mileage over CP4 (E&W)

Planned adjusted timetable differentials have materially affected LD delivery, The impact on PPM has been assessed by comparing change in PPM against the working timetable and the public timetable. The measured effect is a 0.4% loss on LD PPM.

In 2013/14, a number of operators decided not to implement autumn timetables (which include journey time extensions to provide for more cautionary driving), effectively increasing the challenge of delivery in the 2013 season.

## Failure rates and response times

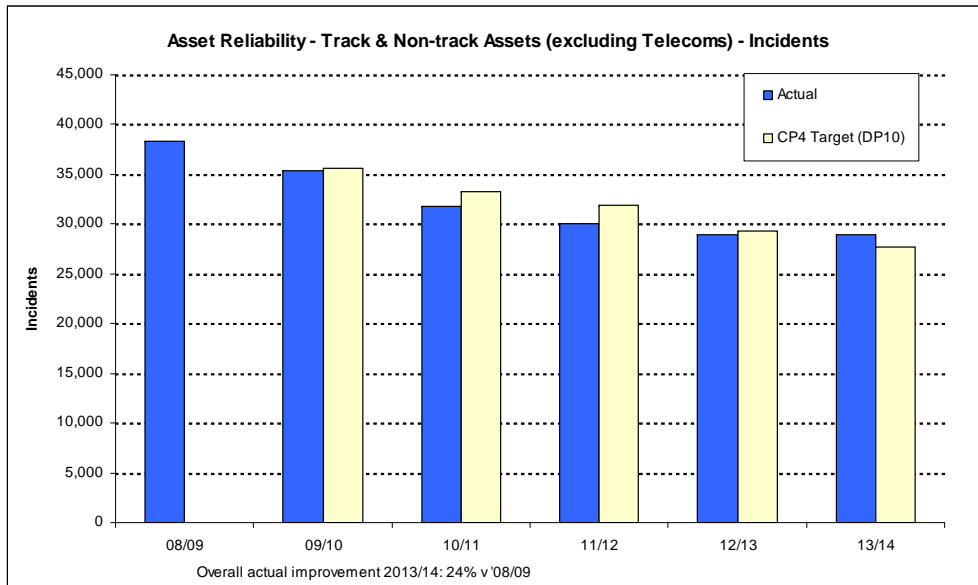
**Delay is worse than planned in all delay groups and worse than actual levels at the start of CP4 in many delay groups. Much of this is increased delay per incident, but some incident rates have also not kept up with planned reductions.**

The number of asset failures has fallen significantly over the control period, but in some areas this has not fallen by as much as we assumed at the start of the control period and it is now clear that even the improvement which we targeted would have been insufficient.

Much of the impact of growth and efficiency has driven increased delay per incident, but for some delay groups incident count has also not kept up with expected reduction in failure rates. For the most part, reductions in incident rates were not defined as part of the CP4 plan, but the broad plan was that improvement would be driven through a balanced programme of “stop it” initiatives (reducing incident rates) and “control it” initiatives (reducing delay per incident). Incident rates were defined for Network Rail asset management (included in the asset stewardship measures) albeit through a separate part of the overall CP4 plan.

### Infrastructure failure rates reductions have not kept up with targetted trends

The following chart shows the trend in Network Rail infrastructure asset failures over CP4:



**Chart 11: Comparison of actual and plan for Network Rail infrastructure asset failures\* (E&W)**

\* excludes telecoms faults (which have low delay per incident)

Many of the core delay groups have been subject to both continuous improvement and specific, more strategically based improvement programmes. The cable theft programme is a clear, successful version of the latter with delay now reduced compared to the lead indicator of the value of scrap copper. In addition the fatality programme is currently holding railway suicide rates broadly static against a worsening overall UK trend. Asset maintenance focus continues to strengthen.

### Other material trends are visible in other categories of delay

The assessed impact of this problem takes a simple test against an assumed original plan:

- Asset stewardship targets for Network Rail infrastructure faults
- Assumed incident rate reductions of half the overall planned delay reduction for other Network Rail delay types

### Delay per incident has materially increased in CP4

In simple terms, delay per incident has been a key problem during CP4. The main driver of this has been growth (see above), with some contribution from incident response changes. Fix time has increased in some locations, this likely to be a mix of changes to response resourcing (reflecting reduced incidents), change in the mix of incidents to more difficult faults to fix, and reduced access time driven by objectives for safer access clear of traffic and / or increased traffic. There is a wider, weak relationship between delay per incident and change therein in CP4.

A 2012 NTF study into DPI highlighted two themes: saturation of key points on the network and the gradual removal of contingency, whether within the resource base or the timetable. As underlying asset performance improved from CP3 onwards the contingency was needed less often and therefore much of it has been traded off for other benefits such as efficiency and journey time.

The overall effect has been to overwhelm the reduction in incidents: incident count (on non-track assets) is down by 21 per cent but attributed PPM failures have increased by 6 per cent. The following chart highlights the range of impact:

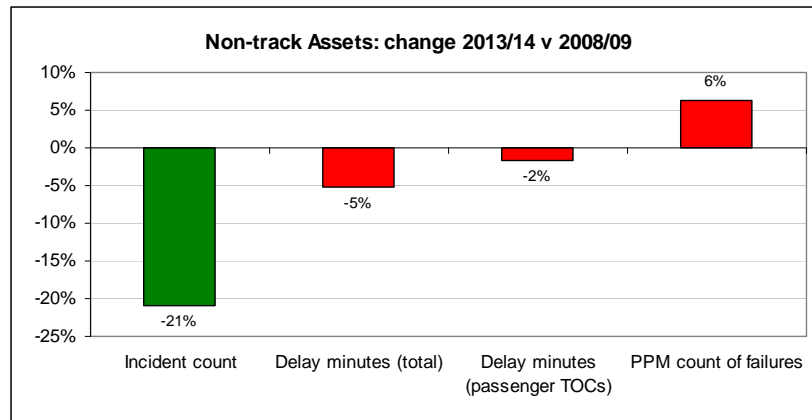


Chart 12: Effect of delay per incident on Network Rail non-track asset failures in CP4

#### Timetable errors have continued to be a problem

A lesser trend has been timetable quality and the planned reduction in errors. The original plan was to deliver broadly 0.6% improvement through timetable based actions:

- Reduce process errors
- Improvements to individual trains and problems
- Major timetable changes driven towards performance

In overall terms most of this planned programme was overwhelmed by other factors including:

- Process errors: office relocation, implementation of the new planning system – ITPS, increased timetable complexity and short term change to accommodate enhancement programmes etc driving an increased opportunity for problems
- Improvements to individual trains and major change: focus moved to timetable change for other purposes and a large increase in short term change within constrained resource

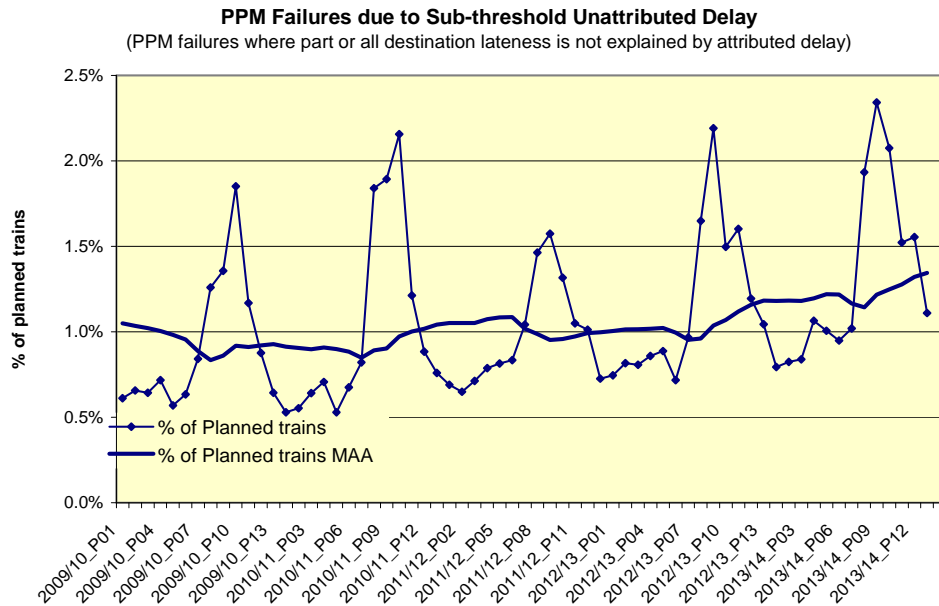
Delays due to process errors caused a worsenment in PPM of about 0.05% in CP4.

A major programme is planned in this area in CP5.

## Subthreshold delay

There has been an underlying upwards trend in subthreshold delay

Underlying – and to an extent underpinning – the performance challenges of growth, weather and asset performance has been an increase in subthreshold delay. Whereas there are clear links into direct causation – most obviously increased passengers, autumn and other effects where common cause problems present below threshold delay, the causes of this increase are probably also representative of the wider saturation of the network and drive for efficiency and marginal improvements. The following chart provides the national trend:



Method: if lateness > delay by 25%, then 0.25 of PPM failure is identified to sub-threshold

Chart 13: Trend in effect of subthreshold delays on PPM failures during CP4

The increase during CP4 varies across sectors:

- LD services 0.3%
- LSE services 0.5%
- Regional services 0.3%

In simple terms the effect is equivalent to adding a material delay group to the main series:

National PPM failures - latest MAA v 08/09 & 09/10  
% of planned trains failing PPM (ie 100% - PPM MAA)

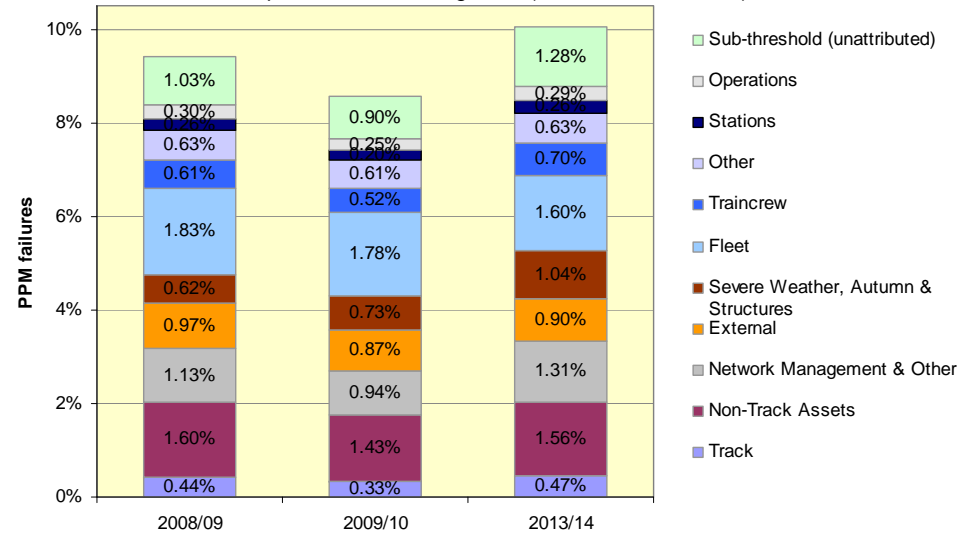


Chart 14: Comparison of effect on PPM attribution of subthreshold delay to other delay groups

Management of subthreshold delay has started, but a key challenge is precise measurement and accurate causation data: a major programme is planned for CP5 to address this.

## Attrition - trends in primary and reactionary delay

PPRP has introduced a new suite of tools to analyse performance trends, which corroborates the analysis presented above

The attrition analysis provides an alternative approach to analysing the direction of travel of performance and defining new improvement opportunities. Use of the new toolkit is developing but in respect of CP4 assessment, the analysis corroborates the analysis presented earlier.

The following chart presents attrition of E&W PPM:

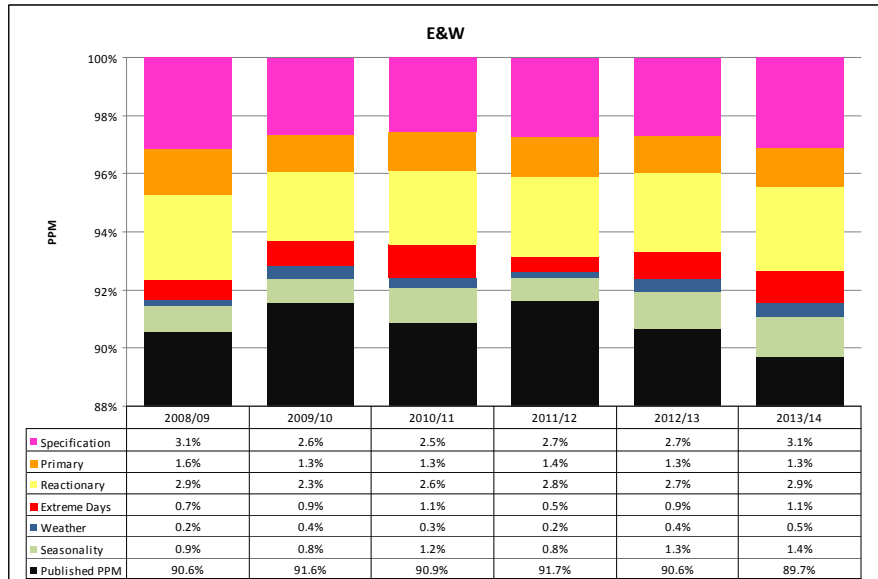


Chart 15: E&W PPM attrition over the course of CP4

The following key trends show through:

- Timetable (specification) related delay has increased (as measured by PPM on the best 5 per cent of days reflecting timetable quality and common cause incidents)
- Primary delay (and incidents) has generally reduced during CP4
- Reactionary delay (and delay per incident) has significantly increased
- Extreme days have increased and are volatile, especially due to weather effects
- Seasonality has varied, but with particular problems in Autumn 2010 and 2013

The following chart presents a waterfall of the change in attrition for E&W through CP4:

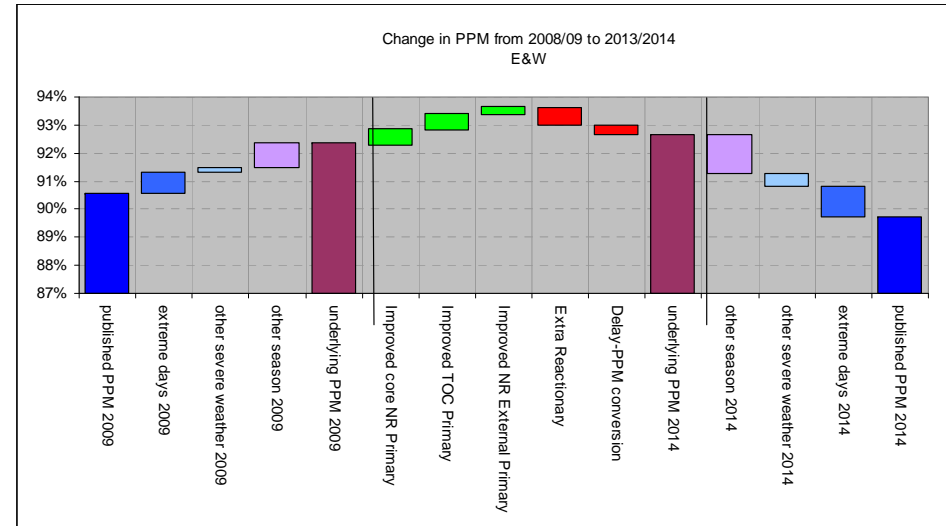


Chart 16: E&W PPM attrition over the course of CP4

Linking across between attrition and causation presents the following coordination

	Growth	Efficiency	Weather	Incidents
Specification	H	H		
Primary	L	L	Indirect	H
Reactionary	H	M	Indirect	M
Extreme	L		M	L
Severe Weather			H	
Seasonality			H	

Table 2: Coordination of attrition losses with causation

Linking across to the causation analysis provided above presents the following conclusions:

- Confirms the improvement in incident reduction
- A key challenge is improving the timetable
- The challenge of growth has been seen in the material rise in reactionary delay
- Major weather events have had a material – volatile – impact

The following charts plot attrition factors at sector level:

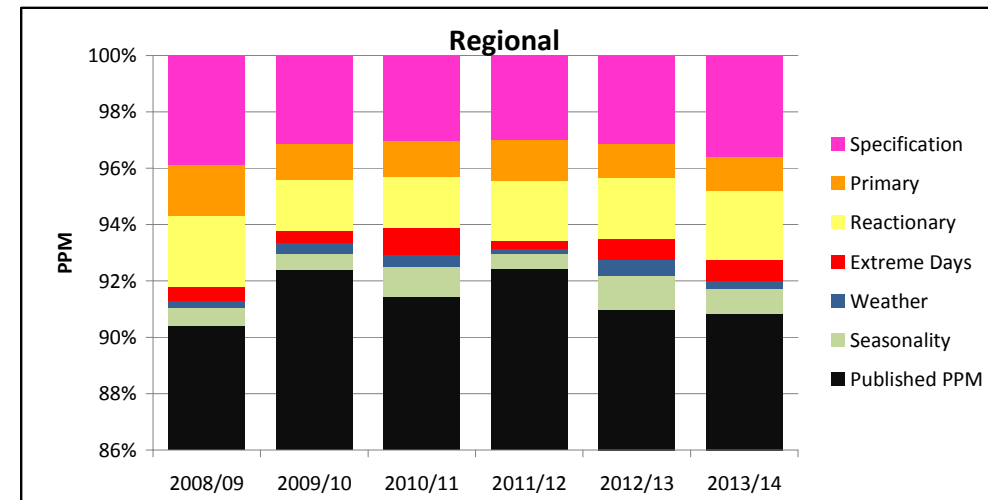
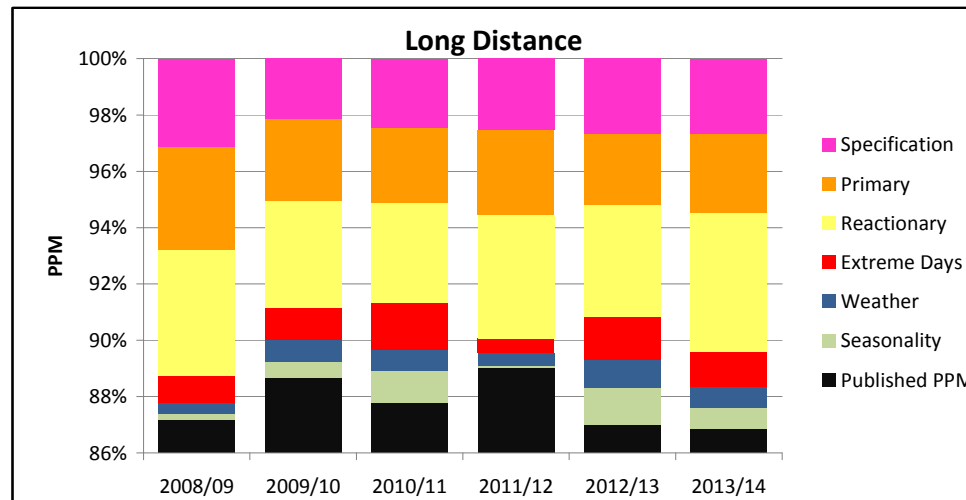
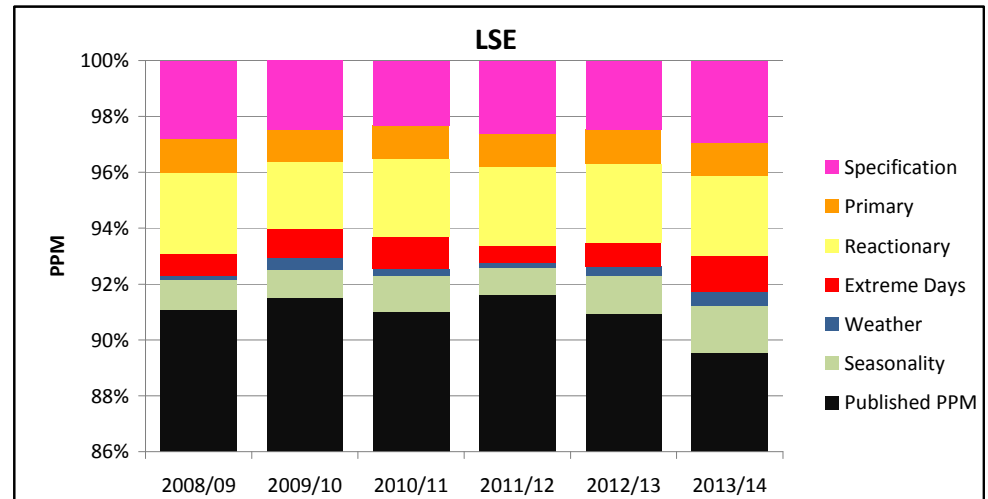
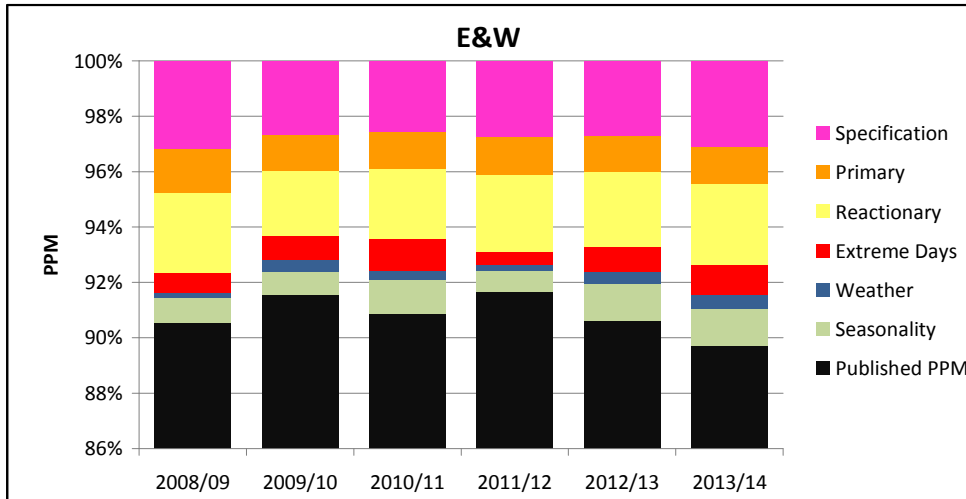


Chart 17: PPM attrition by sector over the cause of CP4



## 2013/14 factors

A range of factors has affected performance in 2013/14 beyond both expectations and the effects of the longer term trends in growth, weather and efficiency

Delivery in 2013/14 has been additionally affected by other factors. These have effectively worsened delivery against the CP4 performance targets for nearly all sectors and operators. Many of them are local problems and in principle transient effects: problems with specific causation for which action plans can be devised and implemented.

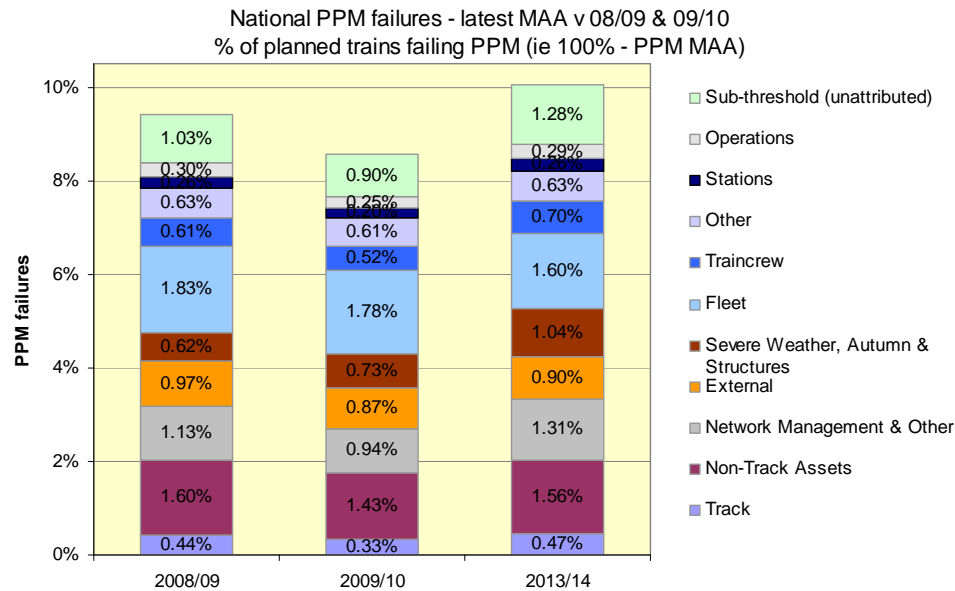


Chart 18: Change by delay group through CP4

Autumn performance was worse than targetted and expected given weather conditions and significant recent investment in mitigation work

Autumn performance was worse than planned. Key impacts were:

- A prolonged season requiring extension of rail treatment and other mitigation
- Some teething problems in delivering new treatment train operation contracts
- Some worsened autumn conditions resulting from the storm events

- PPM worse than in previous years in similar conditions, as measured by autumn indicators

The poor performance is repeated in safety indicators and more difficult to explain given normal seasonal focus has been extended by material investment in mitigation treatment since the hard autumn in 2010. A strategic review is ongoing.

Temporary speed restrictions were planned to reduce to historically best levels but this trend was reversed due to problems from waterlogged formation

Following an increase in TSRs in 2011/12 and 2012/13 a programme was created to drive TSRs down to historically low levels (200 by the end of CP4). At the same time, further detailed modelling of the impact of TSRs showed that the likely impact of TSRs was, in certain circumstances (e.g. more congested routes), higher than previously thought and generating interest in further reductions. This programme was overwhelmed by the rainfall and flooding through the winter of 2013/14 and resultant waterlogged formation.

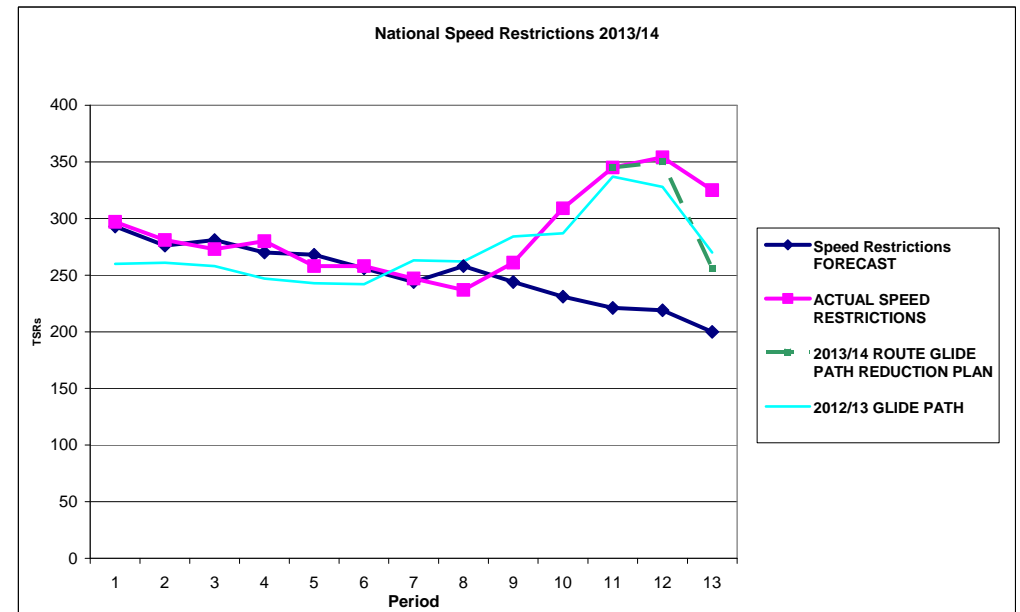


Chart 19: TSR reduction programme for 2013/14 and impact of reversal due to waterlogged formation

**Possession overruns have increased**

Overruns increased in 2013/14 coincident with increased possessions and engineering work and symptomatic of both the challenge of accommodating the increased portfolio within the network availability targets set for CP4 and likely widened complexity of possession based activity. The increase in incidents is less than the increase in project investment as shown on the chart below and the major problems at Christmas 2012 were not repeated. More than 96.5 per cent of possessions are handed back on time. A programme to reduce the risk of overruns is being implemented, including part of a wider programme to improve the efficiency of renewals work.

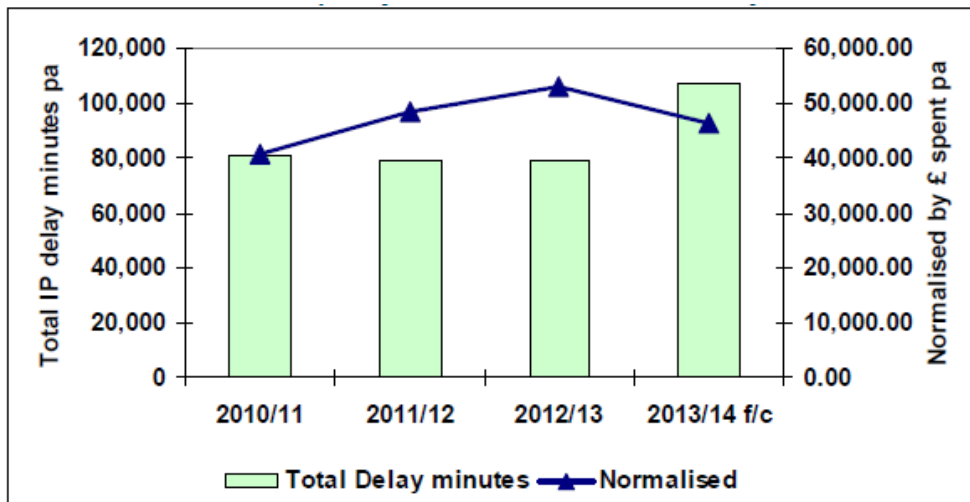


Chart 20: Comparison of project related delay with spend rates

**Traincrew problems have caused some local performance problems sometimes material to sector outputs**

A volatile part of performance is the scope for industrial relations issues with traincrew. The key problem is cancellations driving CaSL failures, with less effect on PPM. The major problem in 2012/13 was in London Midland services around Birmingham. This reduced in 2013/14, replaced by material problems affected FTPE and to a lesser extent East Midlands trains services with a 0.4 per cent impact on LD PPM.

**Operator on operator delays have increased**

Operator on operator delays increased markedly in 2013/14. Delays caused by other passenger operators increased despite TOC on self delays being stable. Delays caused by freight operators increased due to increased freight on self delays and an increased on self: on others ratio. In principle these reflect congestion problems as they are reactionary delays and there were specific spikes in individual operator on operator impacts beyond the national trend. NTF initiated an improvement programme in 2013/14 although outputs from this work are expected to be more visible early in CP5. The following charts present the trend in freight on TOC and TOC on TOC delays:

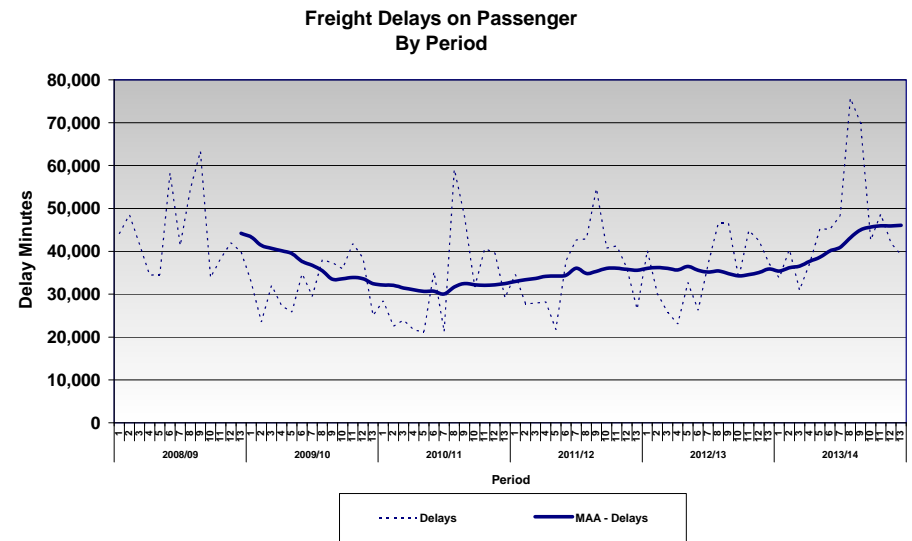


Chart 21: Trend in freight on TOC delays

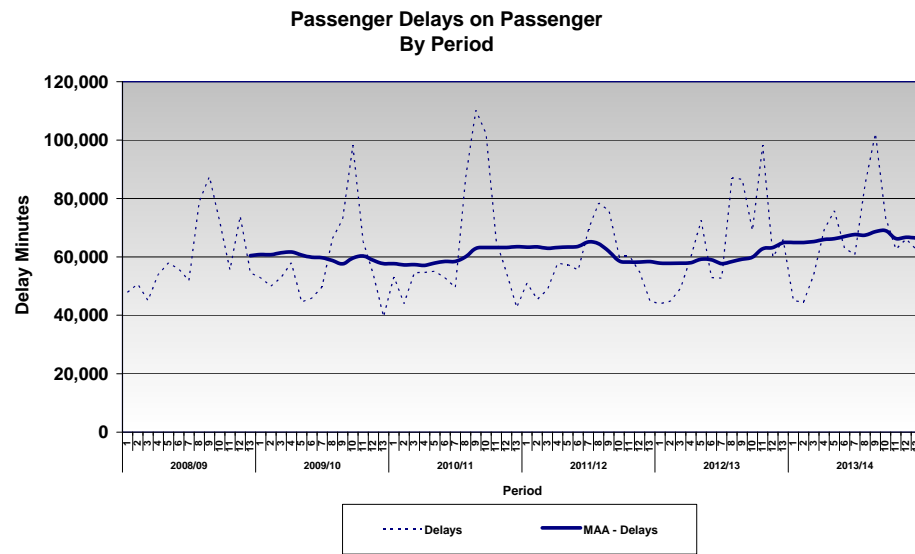


Chart 22: Trend in TOC on TOC delays

## Causation summary

A range of factors has affected performance. The following table provides a summary of assessed impact by cause on delivery in 2013/14

Group	Cause	Comment	Performance impact	E&W	Sector split		
				LD	LSE	R	
Weather	Extreme weather	More extreme weather events than forecast across most of CP4	More direct weather delay More indirect delay in other categories Reduced PPM due to need for capacity in extreme conditions Diverted resources	1.1%	1.1%	1.5%	0.2%
Traffic change	Traffic Growth	10.2% train km growth compared to 6.2% planned growth (biggest variance is LSE - 5.8%)	Congestion and reactionary delay higher than forecast	0.8%	0.4%	0.9%	0.6%
Traffic change	Passenger growth	17.7% passenger growth compared to 13.1% planned growth	Increased station dwell and junction clearance times Increased reactionary delay due to slower service recovery due to passenger volumes Increased passenger action delays - ill passengers on trains etc	0.1%	0.0%	0.2%	0.0%
Efficiency	Timetable differentials	Reduced public timetable differentials to reduce journey time for improved revenue Reduced provision for extended journey times on defined routes in autumn	Reduced journey time causes direct lateness and worse PPM	0.0%	0.4%	0.0%	0.0%
Efficiency	Timetable	Increased reactionary delay beyond core growth, including the impact of freight growth, complexity of the operational plan, industrial action (reducing flexibility within operations) and impact of reduced network availability/flexibility at key hotspots (London Bridge, Reading, Birmingham) during enhancement work without reduction in service levels.	Increased reactionary delay and DPI Increased incidents managing more complex timetable and resourcing Reactionary delay going up in 2013/14 despite stable traffic	0.5%	0.5%	0.5%	0.5%
Targets missed	Infrastructure faults	Infrastructure asset failures forecast to be 4% higher than target at end of CP4	More incidents than planned	0.1%	0.0%	0.1%	0.0%
Targets missed	Infrastructure DPI	Rise in infrastructure delay per incident due to combination of factors inc growth, removal of contingency and resourcing, and a small increase in fault fix times	Increased delay per incident	0.2%	0.2%	0.2%	0.2%
Targets missed	Timetable faults	Increased faults during timetable development due to increased complexity and late completion of ITPS / move of team to Milton Keynes	Increased incidents	0.2%	0.2%	0.1%	0.2%
General	Subthreshold delays	Increased small delays due to network saturation	Increased subthreshold delay	0.4%	0.3%	0.5%	0.3%
Targets missed	TSRs	Worsenment of TSRs since 2011/12 and increased measured effect per TSR part related to network saturation, reduction programme in 2013/14	More incidents than planned More delay per TSR	0.1%	0.1%	0.1%	0.1%
Targets missed	TOC on Self / TOC on TOC	TOC on Self and TOC on TOC is worse than targets set at the start of CP4	More delay than planned	0.2%	0.0%	0.3%	0.0%
This year	Recent delivery problems	Recent general worsenment across range of underlying causes, not mitigated	Increased incidents	0.5%	0.3%	0.6%	0.3%
Autumn	Autumn losses 2013	Autumn 2013 had worse performance than expected given prior investment, industry preparation and awareness	General worse than expected PPM	0.3%	0.2%	0.3%	0.3%

Table 3: Causation summary

## Mitigation and response

**A significant programme of improvement and recovery has been implemented, although the net effect has been to mitigate under-delivery against targets**

A major programme of recovery has been implemented including:

- Sector recovery plans
- Strategically positioned programmes integrating local programmes with nationally focussed actions for more significant effect
- Major timetable changes
- Widened investment and funding
- Performance planning process enhancements leading to development of the PPRP

A key action was to create a mix of response proportionate to problems and responsive to the changing operational environment, and recognising that for some factors, scope to remove the effect (e.g. by removing growth) was not possible. The strategic structure included:

- Enable local response to local problems
- Integrate route focus and drive national change on key issues
- Drive process change for longer term delivery
- Fluidity of focus as problems – and opportunities - changed

An underlying infrastructure of analysis, funding, process management, governance and customer engagement was set up to underpin delivery of mitigation and further improvements.

JPIPs remained the base focus for individual operator: Network Rail plans, with increased mitigation and response actions. A refreshed approach to collaborative planning between operators and Network Rail – PPRP – was introduced for the 2014/15 planning round.

In general, Network Rail implemented improvement actions rather than challenging positive plans for growth. Recent improvements have focussed on schemes likely to produce lasting benefits into CP5 rather than seeking more tactical, but less efficient plans to produce as much improvement as possible before the end of CP4. Improvement activity has been affected by the need to resource other activity both planned (e.g. the enhancements and renewals plan) and unplanned (e.g. weather response).

Material benefits are visible from individual schemes, and it should be noted that despite forecast major growth impact on LSE services, the expected rise in reactionary delay has not happened. A small comparative study with Transilien (the Paris network operator) indicates that Network Rail's response to growth has been more effective in maintaining high levels of punctuality.

## JPIPs – Base delivery

**JPIPs remained the prime focus for plans for individual operators as customers.**

JPIPs continued to be the main plan for individual operators. The majority of improvement plans continued to be designed and implemented as JPIP actions with each sector plan including cross reference to base delivery through JPIPs. The original CP4 performance fund was used in the first instance to fund further improvement activity as the challenge of delivery changed. Further improvement plans were created in mid 2011 including the “Eight Point Plan”.

## Sector recovery plans

**Sector recovery plans were created in 2012 (LD, LSE) and 2013 (Regional), setting the blueprint for driving mitigation and response**

Recovery plans were created for all sectors. The approach to each was to carry out deeper analysis of key problems for performance in each sector, guiding operator focussed workshops to design recovery plan actions. Each was accepted by customers and NTF before issue.

Quarterly reviews of sector plan performance presents:

- An increasing portfolio of improvement actions both planned and delivered: for the most part, delivery of improvement plans exceeded planned levels of activity
- A range of impacts outwith initial plans and risk analysis affecting performance
- Increasing challenge from longer term trends such as growth.

The recovery plans identified sector based programmes (“Base+” and “Base++” programmes, effectively extending the Eight Point Plan), additional to plans in JPIPs designed to drive an accelerated, more strategic approach to key problems and opportunities. The following table shows programmes included in each plan:

Focus	LD	LSE	R
Freight	Y	Y	Y
Timetables	Y	Y	Y
Control	Y	Y	Y
Rules	Y	Y	Y
Response	Y	Y	Y
Campaigns		Y	
Passenger interface at stations		Y	Y

Vegetation		Y	
Regulation trials	Y		
Red Route	Y	Y	
Subthreshold delay			Y
Weather			Y

**Table 4: Base+ and Base++ programmes included in the sector recovery plans**

Primary outputs from the programmes were:

Focus	Outputs
Freight	Freight reform programme: £10m investment in freight focussed improvements and integration of performance within the overall freight supply chain
Timetables	Initial programme of timetable adjustments, leading into PPRP
Control	Sector specific controllers and service management process improvements
Rules	Remote bridge strike monitoring and reclassification, dynamic risk assessment, headcodes, GSM-R cautioning, ESR cautioning
Response	Assessment of scope to optimise response teams
Campaigns	Integrated into the wider programme of focus and PPRP
Passenger interface at stations	Pilot schemes to improve passenger management at stations on radial routes from London
Vegetation	Additional investment in vegetation management beyond core maintenance budgets
Regulation trials	Successful pilot on LNE route then transferred to EM and LNW routes
Red Route	Integrated into the wider programme of focus and PPRP; some direct additional investment arising from increased understanding of criticality
Subthreshold delay	Integrated into the wider industry programme
Weather	Integrated into the wider industry programme

**Table 5: Outputs from recovery plan (Base+ and Base++) programmes**

The summary of benefits from the programmes is:

Delay Minutes Benefit	ORR (Upon Publication Promise)	CP4 Delivered & To Be Delivered
Rules	11,000	42,056
Control Centre Actions	0	10,081
Performance Campaign Services	0	1,620
Passenger Information At Stations	0	272
Incident Response Times	0	6,984
Timetable for Performance	53,000	19,436
	<b>64,000</b>	<b>80,449</b>

**Table 6: (Base+ and Base++) programme benefits**

In summary the programmes included in the sector plans provided a range of accelerated benefits within the overall balance of the recovery programme. They included some key success in previously difficult areas (especially in respect of rules), but with some of the programmes being refocused and integrated into wider programmes to enable continuation of benefits into CP5.

## Strategic programmes

**Strategically positioned programmes were created to integrate local actions, draw out good practice and drive nationally focussed actions to reduce the effects of cross-network problems**

Strategically positioned programmes were created to enhance focus on major problems. At a lesser level, many of these were practical responses to transient problems identified above, for example recent focus on reducing possession overruns and vegetation management.

Specific performance related programmes focussed on cable theft and fatalities with focus on remote condition monitoring being a core part of improvement throughout CP4.

### The cable theft programme was very successful and sets a base for CP5

The cable theft programme was launched in 2011 which focussed on the life cycle of cable theft and adopted the “5Es” approach: engineering, enforcement, education, enablement, evaluation. Working in partnership with the British Transport Police the programme introduced a range of measures across the spectrum of actions to deter, prevent and, if necessary enforce penalties for theft. It also included legislation change to require scrap metal dealer to assure provenance of metal received. It has been very successful in bringing down both incidents and delay compared to the lead indicator of the value of scrap copper as shown on the following chart:

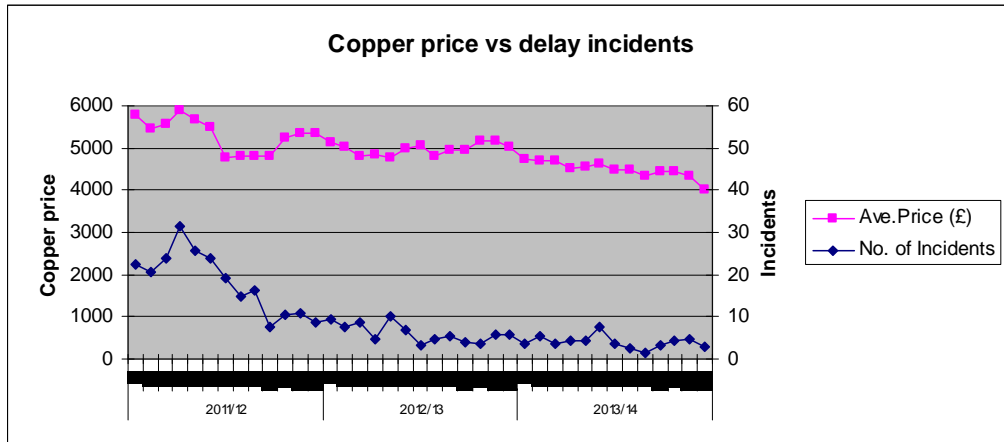


Chart 23: Comparison of scrap copper price and national cable theft incidents

**The fatality reduction programme was successful but requires continuation into CP5 to build further value**

The fatality reduction programme has also been successful, but less obviously so than the cable theft programme. Network Rail has been working in a long term partnership with the Samaritans on the programme and the approach was refreshed and enhanced in 2013.

Key successes from integrating the route programmes have been hard responses such as the systemic application of island platform fencing (segregating the slow and fast line platforms), and provision of patrol personnel to both deter would be suicidal people and approach them compassionately if they are in a position of potential danger. Training programmes have been delivered for both handling suicidal people situations and likely related trauma (in train crew etc) with significantly more interventions by trained staff in 2013 than previous years, and remote monitoring equipment is now being trialled. Some of the work has been linked to the Red Route programmes in the sector plans. A further key driver for this programme is the softer focus to better understand the mindset of people likely to commit suicide and provide help and deterrence to match: recent investment has been made into underlying research. The programmes have been designed to be continued in CP5 to both reduce the risk of problems returning and drive further improvement.

**The remote condition monitoring programme has become successful following a slower than expected start up and is now developing further installation of equipment and enhancement of response processes**

Remote condition monitoring (RCM) was a key programme in the original CP4 plan. Project initiation was delayed to improve programme efficiency, but the installation programme accelerated through CP4 and was extended in part funded through the CP4 Performance Fund. Infrastructure fitted with RCM is failing less frequently than unfitted infrastructure and data from RCM is helping fault finding. Further work is needed to bring best value in using the data produced and further developing a “predict and prevent” approach, but the position of the programme is already recognised positively by other network operators and industry.

**Major timetable changes**

**There has been mixed benefits from the major timetable changes implemented in CP4.**

A number of significant timetable changes have been implemented in CP4. The original plan was that these would drive real performance improvement, but the focus for these has been mostly on traffic growth, adjustments to enable enhancement programmes and wider service improvements. Real impact on performance has been mixed:

Description	Effect
LOROL – May 2011 (part of package of service improvements)	Positive
ECML recast – May 2011 (the “Eureka” programme)	Positive
Birmingham Gateway project: frequent change required to the timetable, often small and at short notice.	Negative - Proven to be a high amplifier of delay
Reading project: smaller than Gateway. Large changes December 2012 and Easter 2013	Negative through construction, positive longer term
Brighton Main Line 4th path (Southern franchise requirement)	Negative
Chiltern September 12 change (responding to problems in earlier new timetables)	Positive
London Midland 110 mph timetable change (December 12)	Positive initial integration, but may have driven some underlying increase in reactionary delay
West Anglia December 11	Positive
Southeastern December 08/09, benefit in CP4	Positive, but with teething challenges related to train crew diagramming

Table 7: Assessed performance impact of major timetable changes (also see appendix)

## Widened investment and funding

### Substantial additional funding was made available as part of the recovery programme, used to implement a range of programmes across the breadth of performance planning environment

The original CP4 performance fund targetted efficient improvement in performance to bridge the gap between planned outputs from core operation and the CP4 performance targets. It was also used to fund key wider improvements including winter and autumn resilience enhancements following difficult seasons early in CP4.

Additional funding was made available from mid 2012. This comprised extensions to the original national CP4 performance fund and more local funding from Routes targetting specific problems and opportunities, sometimes on a matched funding type arrangement.

Work was organised into effective programmes including specific funding for LSE based schemes delivered as an overall programme (eventually funded to £75 million spend), focus on the West Coast Main Line (WCML - £10 million) and the freight reform programme (£10 million).

Key focus areas were:

- LSE programme: asset resilience, seasonal and weather resilience
- WCML: enhancements to performance at the South end of the line including the “Gibb programme”: overhead line and other asset improvements, suicide management work, rescue locomotives and operator focussed schemes, access and vegetation
- Freight reform programme: track improvements on core routes and around terminals, train planning, integration of performance within the wider freight supply chain, some fleet focussed improvements
- Funding for Base+ and Base++ schemes in the recovery plans, further weather resilience improvements and the strategic cable theft and fatality programmes
- Further JPIP actions tackling local problems
- Piloting and innovation funding for new schemes and approaches including use of remote monitoring and positioning technology

With the increasing renewals and enhancements programme and prolonged diversion of resources to weather management activity scope for delivery was reduced in 2013/14 due to reduced availability of critical resources. Latterly, focus also changed to forming a good base for CP5.

Opportunity for significant performance improvement through schemes focussed on fleet (the “Fleet Challenge” programme) did not eventually deliver to its full planned extent due to problems getting projects delivered in parallel with increasing availability requirements etc. the original objective of the programme was to deliver a 1 per cent improvement in PPM, the eventual output was a 0.32 per cent improvement.

New route funding (beyond the national fund) included:

- £30 million for resilience improvement on the LNE route
- £28 million for WCML improvements (coupled with £10m from the national fund)
- £24 million for performance improvements on routes (the Outperformance fund)
- £15 million for asset resilience at the South end of the East Coast Main Line

About £10 million was spent in local reliability enhancements as part of Olympics preparation.

In overall terms, investment beyond the value of the original CP4 performance fund includes:

- Extended national performance funding £162 million
- Route investment programmes £97 million

DfT provided funding of £12 million in relation to winter resilience enhancements.

The following chart provides cost of work done data for the national performance funding:

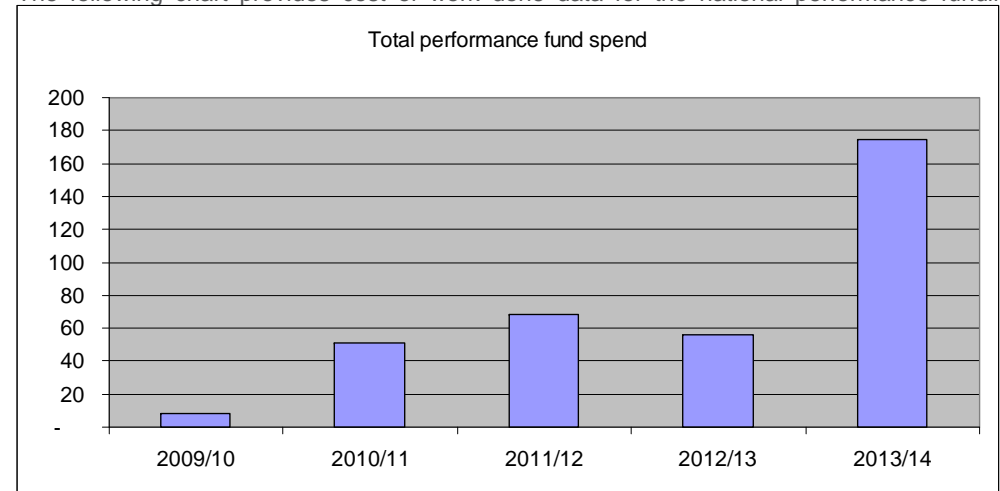


Chart 24: Spend of national performance funding through CP4

Over 600 individual schemes have been delivered in total. Benefit realisation is visible across the wide spectrum of schemes and will continue into CP5.



## Performance planning processes

### Performance planning processes have evolved leading to delivery of the PPRP in 2013/14 from which CP5 planning has been developed.

The base for CP4 planning was the Joint Performance Process and JPIPs, backed up by a refreshed Network Rail performance management process building on good practice from around the industry. At the time (at the end of CP3) this was a successful planning model with, normally, delivery beyond targeted levels.

During the course of CP4, with delivery turning adverse to targets and with assurance and check requirements building, it was recognised that planning and management processes needed to be refreshed and enhanced.

Initial focus included introduction of strengthened governance (the Performance Board), performance project managers in routes and a new planning system – iPAT.

In late 2012, the base remit for PPRP was established to:

- Change the planning process to enable delivery of the CP5 performance objective (92.5 per cent PPM) recognising growth including planned growth in CP5
- Widen focus and analysis across the spectrum of performance delivery including focus on principles of “right first time”
- Reinforce “bottom up” planning and the need to take a longer term view of performance
- Recognise and measure the need for a good train specification and timetable as a base, core product

The programme has been developed in 2013/14 including: introducing Performance Strategies to replace JPIPs and new analytical tools and community

## The NTF CP5 programme

### NTF has established a programme targetting better cross-industry engagement in CP5

Following a structured review of the causation of problems to performance delivery in CP4, NTF has created a programme for CP5 focussing on:

- Better asset performance
- Better match of train plan to recognise “reality”
- Better operational management
- Strengthened performance governance

This programme, linked with the wider and deeper analysis, investment, and a refreshed performance planning process presented in this document provides a base for CP5.

## Summary

A substantial programme of improvement, recovery and further mitigation has been undertaken. Much of this was through specific additional programmes in response to performance worse than planned, with other material improvement through more normal industry processes. The following table summarises the major benefits from this work.

Focus	Mitigation and response
Extreme weather, seasonal preparedness	Investment of nearly £100m in improved weather and seasonal resilience (as part of a much wider programme of improved resilience) Related increased investment in seasonal preparedness; increased vegetation work Major industry reviews of major weather events with recommendations implemented Enhanced forecasting and severe weather planning and processes, improved contingency planning including “Day A for B” timetables using the new train planning system – ITPS Establishment of Severe Crisis Management Team and enhanced focus on longer term resilience
Growth, efficiency and revenue, operator on operator delays	Supported customers and stakeholders seeking best industry solutions and efficiency Strengthening of processes for timetable review and acceptance: Event Steering Groups, Sale of Access Rights reviews Strengthened focus on franchise bid review towards alignment of objectives between franchises and regulatory targets; support to alliancing Enhancement programmes delivering material capacity benefits Major programme of timetable improvements established under PPRP Freight reform programme Regulation trials, service management improvement actions Avoidance of major increase in reactionary delay to LSE services
Failure rates and response times	Additional investment of over £100m in asset resilience improvement Accelerated and extended RCM programme including downstream analysis and response (including links into ORBIS and other systems) TSR reduction programme in 2013/14 and modelling of expected larger impact of TSRs than previously expected Funded operator focussed schemes (including fleet based RCM)
Subthreshold delay	Increased focus on station management – dispatch etc Rules Base+ programme Initiated programme of remote position monitoring, planned for major drive in CP5 Deeper analysis of subthreshold delay; development of tools
Strategic programmes	Cable theft programme Fatality reduction programme
2013/14 problems	Possession overruns reduction programme integrated into enhancement and renewals business improvement programmes Funding local improvement plans
General	Performance Planning Reform Programme Much enhanced analysis toolkit, criticality assessment, modelling Investment in innovation and research

**Table 8: Summary of response and improvement related to causation**

## Appendices

• <b>LD performance in 2013/14</b>	<b>34</b>
• <b>London and South East performance in 2013/14</b>	<b>35</b>
• <b>Regional performance in 2013/14</b>	<b>36</b>
• <b>Change in PPM, CaSL and delay between 2012/13 and 2013/14</b>	<b>37</b>
• <b>Traffic growth location</b>	<b>38</b>
• <b>Traffic growth by sector</b>	<b>39</b>
• <b>Major timetable changes</b>	<b>40</b>
• <b>Chronology</b>	<b>41</b>

## LD performance in 2013/14

The following charts and tables provide an overview of performance for both sector and individual operators during 2013/14

### LD Yearly Report Charts for 2013/14

Chart 1a

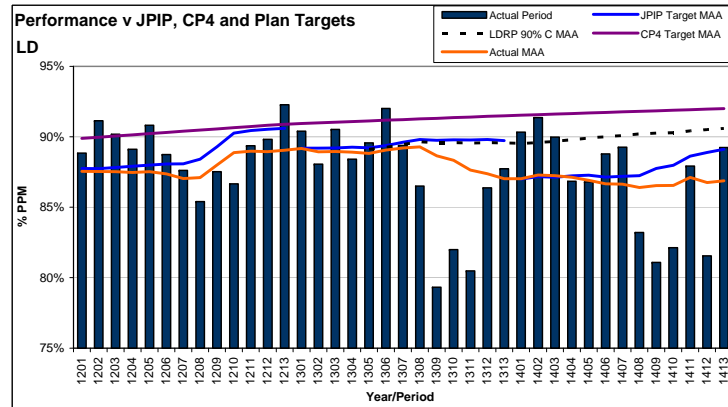


Chart 1b

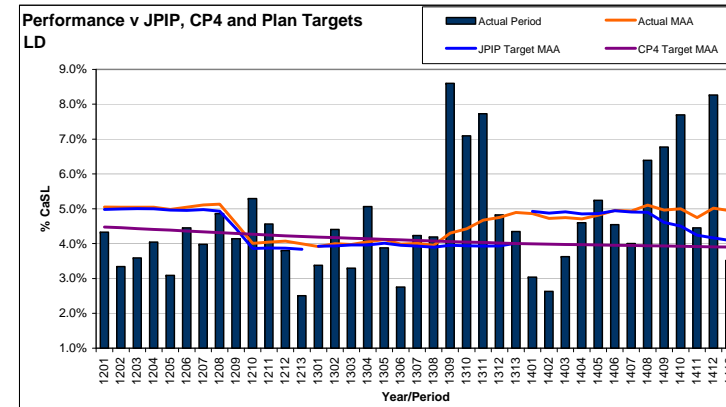


Table 6

		LD 2013/14						
JPIP Category		Actual	JPIP	Last year	Variance to JPIP Target	Variance to Last Year		
Network Rail	Non-Track Assets	643	580	656	63	11%	-13	-2%
Network Management/Other	Network Management & Other	520	422	491	98	23%	29	6%
	External	383	356	374	26	7%	9	2%
	Track	273	194	237	78	40%	36	15%
	Severe Weather, Autumn & Structures	352	256	363	96	38%	-11	-3%
	Total NR	2,170	1,809	2,121	361	20%	49	2%
TOC-on-Self	Fleet	267	293	301	-26	-9%	-34	-11%
	Traincrew	88	71	71	17	24%	17	24%
	Other	79	82	83	-3	-4%	-4	-5%
	Stations	44	40	41	4	9%	3	8%
	Operations	19	24	18	-5	-19%	1	6%
	Total TOC-on-self	497	510	514	-13	-3%	-17	-3%
TOC-on-TOC		606	535	552	71	13%	54	10%
All	Total	3,273	2,854	3,187	419	15%	86	3%

Table 7

	PPM 2013/14			CaSL 2013/14			Total delay 2013/14				
	JPIP	Actual	Var	JPIP	Actual	Var	JPIP	Actual	Var	LY	Var
FTPE	91.5%	90.4%	-1.1%	3.7%	4.6%	0.9%	415	452	37	431	21
GA (LD services)	89.0%	88.4%	-0.6%	3.4%	3.8%	0.4%	96	88	-8	85	3
Grand Central	85.5%	80.7%	-4.8%	7.4%	7.5%	0.1%	37	56	20	48	8
FGW (LD services)	85.2%	81.8%	-3.4%	5.4%	6.2%	0.8%	427	518	91	491	27
CrossCountry	90.3%	86.7%	-3.6%	4.3%	5.2%	0.9%	706	822	117	812	10
EMT (LD services)	93.8%	90.9%	-2.9%	2.9%	3.4%	0.5%	243	310	67	263	47
East Coast	87.0%	84.2%	-2.8%	5.5%	5.8%	0.3%	341	356	15	365	-9
Virgin	86.6%	85.8%	-0.9%	4.1%	4.9%	0.8%	563	639	76	666	-26
First Hull Trains	83.8%	82.0%	-1.8%	6.7%	7.2%	0.5%	27	32	5	27	4

## LSE performance in 2013/14

The following charts and tables provide an overview of performance for both sector and individual operators during 2013/14

### LSE Yearly Report Charts for 2013/14

Chart 2a

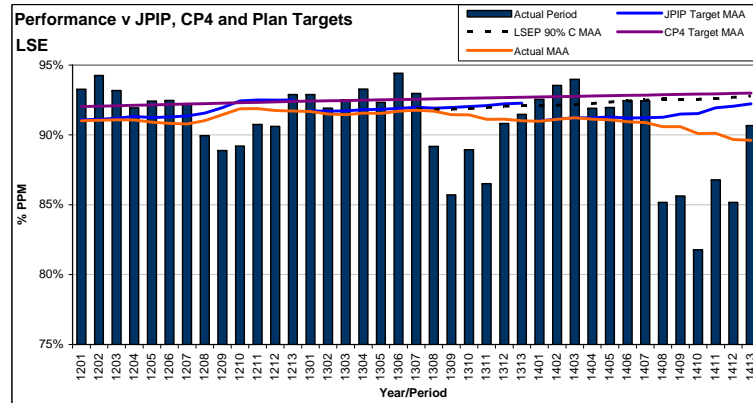


Chart 2b

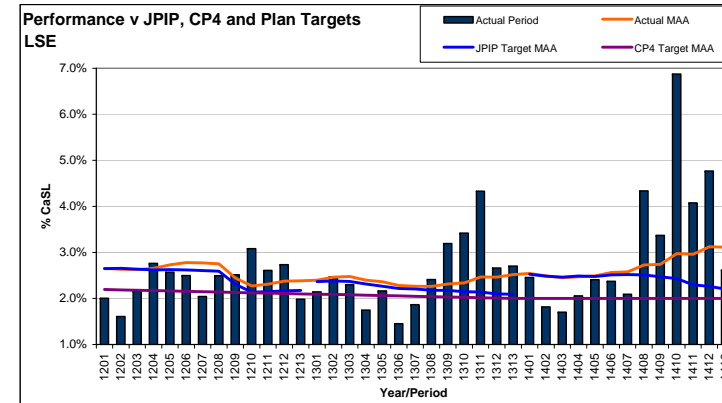


Table 9

		LSE 2013/14						
JPIP Category		Actual	JPIP	Last year	Variance to JPIP Target	Variance to Last Year		
Network Rail	Non-Track Assets	975	888	981	87	10%	-6	-1%
	Network Management & Other	1,064	743	882	321	43%	182	21%
	External	590	509	481	81	16%	108	23%
	Track	338	287	338	50	18%	0	0%
	Severe Weather, Autumn & Structures	648	285	425	363	127%	223	53%
	<b>Total NR</b>	<b>3,615</b>	<b>2,713</b>	<b>3,106</b>	<b>902</b>	<b>33%</b>	<b>509</b>	<b>16%</b>
TOC-on-Self	Fleet	589	591	622	-2	0%	-33	-5%
	Traincrew	316	273	306	43	16%	10	3%
	Other	312	335	334	-23	-7%	-23	-7%
	Stations	156	156	154	-0	0%	2	1%
	Operations	134	140	143	-6	-4%	-9	-6%
	<b>Total TOC-on-self</b>	<b>1,507</b>	<b>1,495</b>	<b>1,560</b>	<b>11</b>	<b>1%</b>	<b>-53</b>	<b>-3%</b>
TOC-on-TOC	443	402	421	41	10%	21	5%	
<b>All</b>	<b>Total</b>	<b>5,564</b>	<b>4,610</b>	<b>5,087</b>	<b>955</b>	<b>21%</b>	<b>477</b>	<b>9%</b>

Table 10

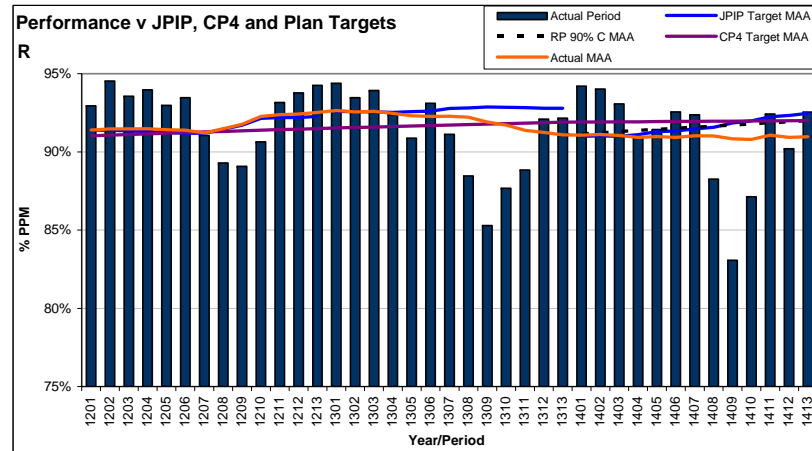
	PPM 2013/14			CaSL 2013/14			Total delay 2013/14				
	JPIP	Actual	Var	JPIP	Actual	Var	JPIP	Actual	Var	LY	Var
GA (LSE services)	91.9%	91.9%	0.0%	1.8%	2.2%	0.4%	709	671	-38	650	21
FGW (LSE services)	91.1%	88.6%	-2.5%	1.9%	2.6%	0.7%	360	449	89	405	44
FCC	90.7%	86.1%	-4.6%	3.0%	4.0%	1.0%	445	608	163	535	73
London Midland (LSE services)	87.2%	84.0%	-3.2%	3.7%	4.2%	0.5%	187	249	62	247	2
LOROL	97.0%	96.1%	-0.9%	2.0%	1.9%	-0.1%	146	142	-4	131	11
HEx	95.6%	93.8%	-1.8%	0.8%	1.2%	0.4%	30	38	8	38	-0
Chiltern	94.0%	94.9%	0.9%	1.7%	1.6%	-0.1%	200	176	-24	195	-18
c2c	97.2%	96.7%	-0.4%	1.2%	1.5%	0.3%	50	52	3	44	8
Southeastern	92.8%	89.0%	-3.8%	1.9%	3.3%	1.4%	724	970	247	864	106
Southern	89.5%	85.8%	-3.7%	2.5%	4.6%	2.1%	1,029	1,278	249	1,151	126
SSWT	92.6%	89.4%	-3.2%	2.6%	2.9%	0.3%	730	931	201	828	104

## Regional performance in 2013/14

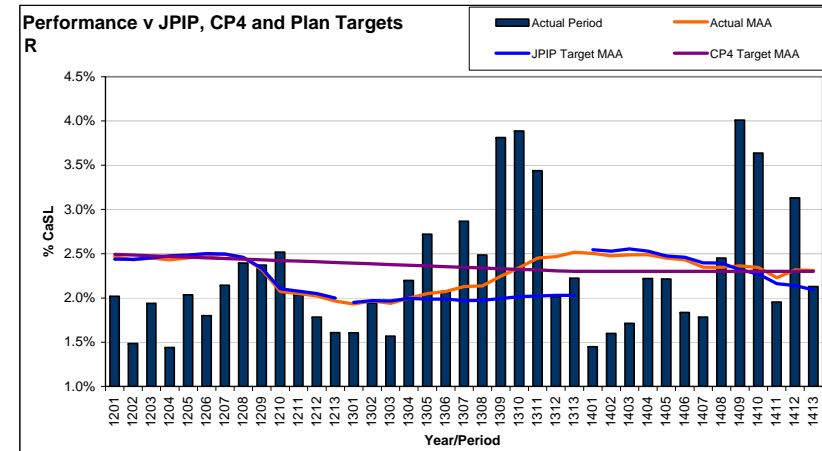
The following charts and tables provide an overview of performance for both sector and individual operators during 2013/14

### Reg Yearly Report Charts for 2013/14

Regional



Regional



Regional

Regional		Reg 2013/14					
JPIP Category	Actual	JPIP	Last year	Variance to JPIP Target	Variance to Last Year		
Network Rail	534	492	542	42	9%	-8	-1%
Network Manag	495	416	476	80	19%	20	4%
External	332	329	305	3	1%	28	9%
Track	162	137	158	25	18%	4	3%
Severe Weather, Autumn & Structures	324	236	343	88	37%	-19	-6%
Total NR	1,849	1,611	1,823	237	15%	25	1%
TOC-on-Self	495	527	547	-32	-6%	-52	-9%
Traincrew	195	178	196	18	10%	-0	0%
Other	147	136	139	10	8%	7	5%
Stations	152	139	135	13	9%	17	13%
Operations	70	86	63	-16	-18%	7	11%
Total TOC-on-self	1,060	1,066	1,080	-6	-1%	-20	-2%
TOC-on-TOC	429	320	357	110	34%	72	20%
All	3,338	2,997	3,261	341	11%	77	2%

Regional

Regional	PPM 2013/14			CaSL 2013/14			Total delay 2013/14				
	JPIP	Actual	Var	JPIP	Actual	Var	JPIP	Actual	Var	LY	Var
Northern Rail	91.7%	91.0%	-0.7%	1.8%	1.8%	0.0%	1,446	1,485	39	1,488	-3
FGW (R services)	92.2%	89.2%	-3.0%	2.2%	3.4%	1.2%	291	358	67	315	43
London Midland (R services)	90.5%	86.5%	-4.0%	2.6%	3.2%	0.6%	465	633	167	623	10
EMT (R services)	92.3%	91.6%	-0.7%	1.6%	1.9%	0.3%	145	155	10	139	16
Merseyrail	96.0%	95.8%	-0.2%	2.1%	1.8%	-0.3%	82	91	9	91	0
ATW	94.1%	93.1%	-1.0%	2.2%	2.6%	0.4%	568	615	48	605	10

## Change in PPM, CaSL and delay between 2012/13 and 2013/14

The following charts and tables evidence the causal link between growth and increased delay:

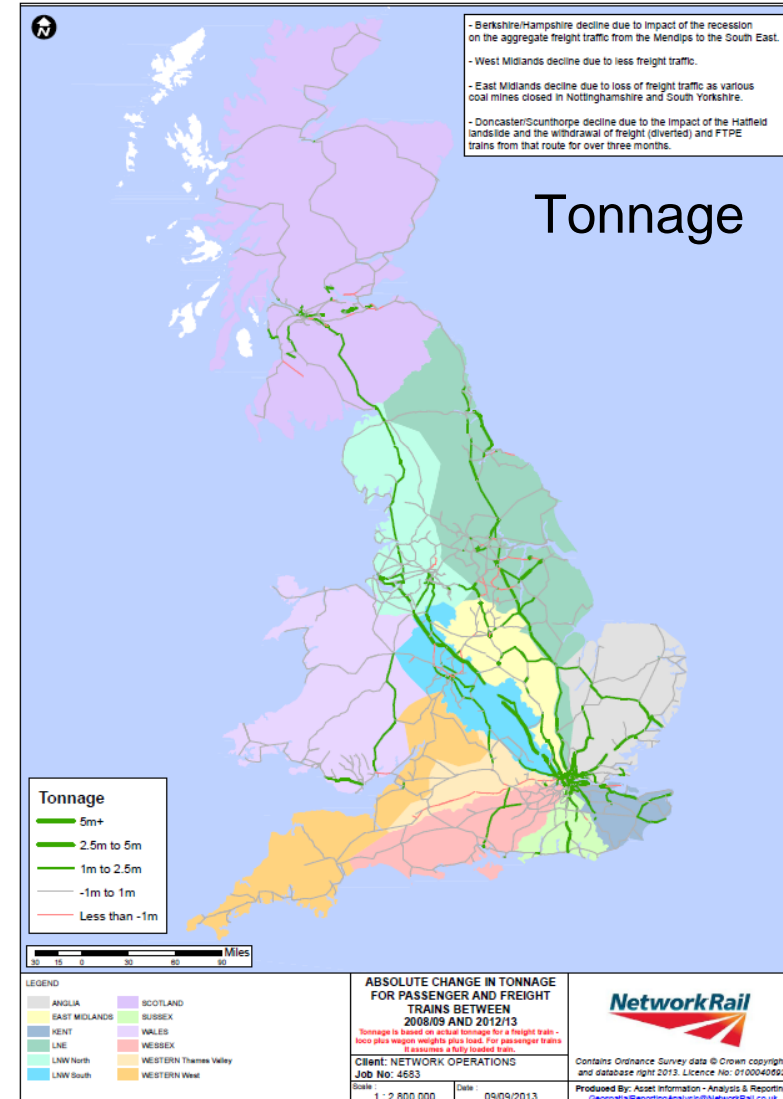
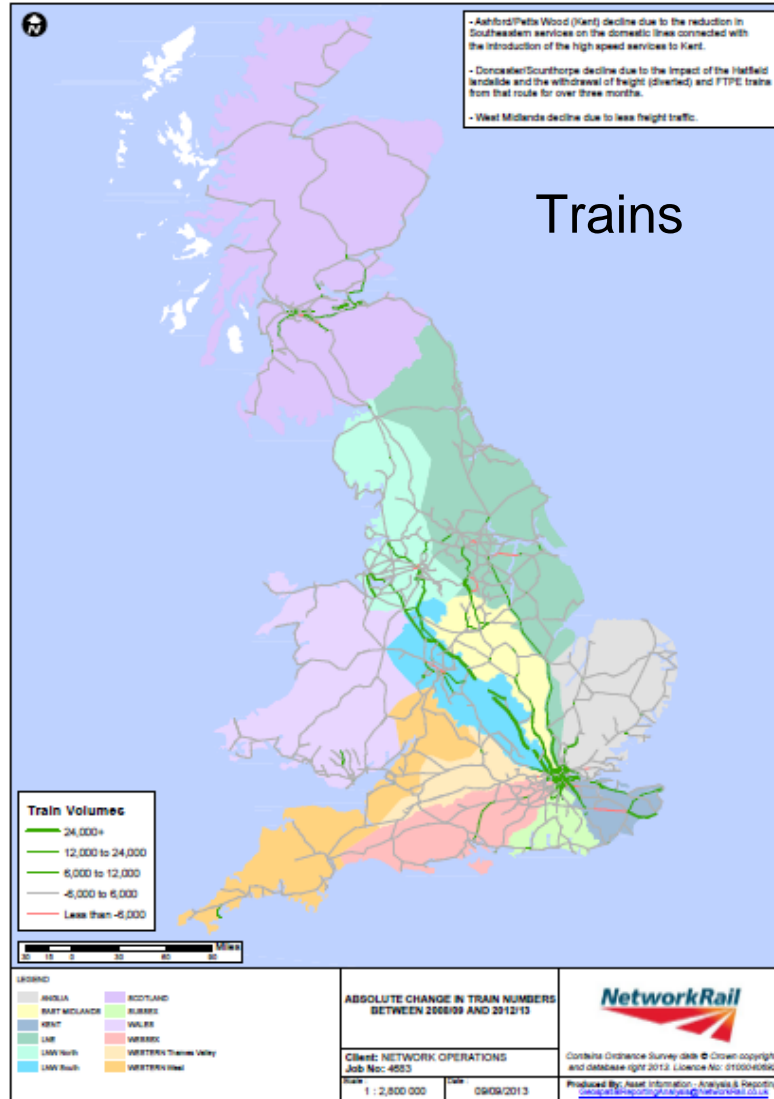
The following table (from the PPM attribution data series) shows the change in PPM, CaSL and delay compared to performance in 2012/13:

		LD	LSE	R
Network Rail	PPM	0.1%	-1.1%	0.0%
	CaSL	-0.2%	0.5%	-0.1%
	Full cancellations	0.0%	0.3%	-0.1%
	Part cancellations	-0.2%	0.1%	0.0%
	Significantly late	-0.1%	0.0%	0.0%
	Delay	-0.2%	-0.8%	-0.1%
TOC on Self	PPM	0.2%	0.1%	-0.1%
	CaSL	0.2%	0.1%	-0.1%
	Full cancellations	0.2%	0.0%	-0.1%
	Part cancellations	0.1%	0.0%	0.0%
	Significantly late	0.0%	0.0%	0.0%
	Delay	0.1%	0.1%	0.0%
TOC on TOC	PPM	0.2%	0.1%	0.2%
	CaSL	0.0%	0.0%	0.0%
	Full cancellations	0.0%	0.0%	0.0%
	Part cancellations	0.0%	0.0%	0.0%
	Significantly late	0.0%	0.0%	0.0%
	Delay	-0.2%	0.0%	-0.2%
Total	PPM	0.2%	1.3%	0.2%
	CaSL	0.1%	0.5%	-0.2%
	Full cancellations	0.2%	0.4%	-0.1%
	Part cancellations	0.0%	0.2%	0.0%
	Significantly late	-0.1%	0.0%	0.0%
	Delay	0.4%	0.8%	0.2%

Table 3: change in PPM, CaSL and delay by sector from 2012/13 to 2013/14

## Traffic growth locations

The following charts highlight the location of traffic growth – train miles – compared to usage measures. Most of the growth has been on routes that are already well used:





## Traffic growth by sector

The following table provides growth details by sector:

<b>Actual train kms (millions) - source PSS</b>							<b>Growth from 2008/09</b>				
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2009/10	2010/11	2011/12	2012/13	2013/14
LD	130	140	142	144	144	145	7.5%	9.2%	10.7%	10.5%	11.7%
LSE	179	181	188	192	193	198	1.3%	4.7%	7.2%	7.8%	10.5%
R	98	104	104	105	105	106	5.8%	5.6%	7.5%	6.8%	7.8%
E&W	407	425	433	441	442	449	4.4%	6.4%	8.4%	8.4%	10.2%
<b>Planned train kms (millions) within CP4 SBP</b>							<b>Growth from 2008/09</b>				
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2009/10	2010/11	2011/12	2012/13	2013/14
LD	125	134	135	136	137	138	7.1%	7.8%	8.5%	9.2%	9.9%
LSE	174	176	177	180	181	183	0.9%	1.7%	3.1%	3.9%	4.7%
R	95	96	96	97	98	99	0.8%	1.6%	2.4%	3.2%	4.0%
E&W	395	406	409	413	416	419	2.9%	3.6%	4.7%	5.4%	6.2%
<b>Actual Passenger Kms (billions) - source ORR website</b>							<b>Growth from 2008/09</b>				
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2009/10	2010/11	2011/12	2012/13	2013/14
LD	17.0	17.6	18.6	19.3	19.6	19.7	3.7%	9.6%	13.7%	15.3%	16.1%
LSE	24.2	23.8	25.0	26.5	27.4	28.4	-1.8%	3.4%	9.3%	12.9%	17.4%
R	9.4	9.7	10.4	11.2	11.1	11.4	3.1%	10.9%	18.5%	17.4%	21.2%
E&W	50.6	51.1	54.1	56.9	58.0	59.6	1.0%	6.8%	12.5%	14.6%	17.7%
<b>DfT Planned Assumed passenger kms (billions)</b>							<b>Growth from 2008/09</b>				
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2009/10	2010/11	2011/12	2012/13	2013/14
LD	16.0	16.6	17.1	17.5	18.0	18.5	3.8%	6.9%	9.4%	12.5%	15.6%
LSE	23.3	23.9	24.4	25.0	25.6	26.2	2.6%	4.7%	7.3%	9.9%	12.4%
R	9.7	10.0	10.1	10.3	10.5	10.7	3.1%	4.1%	6.2%	8.2%	10.3%
E&W	49.0	50.5	51.6	52.8	54.1	55.4	3.1%	5.3%	7.8%	10.4%	13.1%

## Major timetable changes

The following table provides an assessment of the performance impact of some of the major timetable changes in CP4:

Description	Positive / Negative affect
LOROL – May 2011 in line with North London Line signalling	Positive (part of a package of service improvement measures for LOROL)
ECML recast – May 2011 (the “Eureka” programme)	Positive
Birmingham Gateway project. Frequent change required to the timetable, often small and at short notice. Proven to be a high amplifier of delay contributing to poor performance	Negative
Reading project - similar but smaller than Gateway. Large change at Easter 2013 due to infrastructure change. Something similar in Dec 2012 for platform re-numbering.	Negative through construction, positive longer term
Brighton Main Line 4th path (Southern franchise requirement)	Negative
Chiltern Sept 12 change (this change targeted better performance, in part responding to problems in earlier new timetables)	Positive
LM 110 mph timetable change (Dec 12)	Positive initial integration, but may have driven some underlying increase in reactionary delay
West Anglia Dec 11	Positive
Southeastern Dec 08/09, benefit in CP4	Positive, but with teething challenges related to diagramming of train crew

# Chronology

The following chart presents a chronology of events and activity in CP5 and variation to targeted PPM MAA across the E&W sectors

