



OFFICE OF RAIL AND ROAD



# OFFICE OF RAIL AND ROAD: INDEPENDENT INQUIRY INTO THE TIMETABLE DISRUPTION IN MAY 2018

20 SEPTEMBER 2018



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- Annex B Terms of Reference
- Annex C Full timeline
- Annex D Passenger impact research
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- Annex F Record of evidence

# FOREWORD

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From 20th May 2018 rail passengers in two parts of the country suffered major disruption. People suffered inconvenience, financial and emotional cost over a period of several weeks. They were badly treated on a daily basis by the operators that they had paid in the expectation of a decent service.

The railway had introduced the largest ever revision to the national timetable, involving changes to 46 per cent of train times. The intention was—and remains—to offer more services and more reliability by bringing into use enhanced track, signalling and trains. But in the Northern Trains area (around the North West) and the Govia Thameslink area (some routes into London) things went badly wrong.

Everyone in the industry was surprised, and deeply disappointed, that we failed to deliver the improvements on the date promised. We now have to understand the causes. Unless improvements are made to the way the railway deals with changes like this, something similar may happen again in spite of best endeavours.

The Office of Rail and Road (ORR), which I chair, is an independent body that protects the interests of rail and road users. We are responding to a request from the Secretary of State for Transport for advice on what went wrong and what should be changed to prevent a recurrence. We will publish our recommendations by the end of 2018.

This is an interim report. It sets out an account of the events before and after 20th May. We have taken a forensic approach, with a degree of analysis and depth that has not occurred before. The facts have been checked with the respective parties. We make findings as to the root causes of the failures.

There is an honourable tradition in the rail industry that when things do go wrong employees will be resourceful enough to find a fix—as they do on a daily basis. In planning the May timetable revision over-optimism led to neglect of the risk that repeated slippage past known deadlines would leave

the operators with far too little time to uncover problems in implementation and find those fixes. In the event the operators were overwhelmed. They had made insufficient provision to help people in the event that things went wrong.

The railway is a complex set of inter-dependent activities. Decisions or failures in one activity can have implications for the delivery of service over a large geographical area, the more so as the numbers of trains and passengers have increased. It has become clear that there are inadequate mechanisms to ensure that decisions involving any one activity observe a due regard for implications for the system as a whole.

When a change to a system requires a sequence of stages the implementation plan must include deadlines for each stage designed to allow subsequent processes to complete in good time. A particularly large or complicated set of changes make it all the more important that the plan is respected. On the contrary, for the May timetable changes there were well-intentioned but counter-productive late adjustments to “de-risk” the situation. Network Rail’s timetable planning department, the System Operator, was best placed to notice that a problem was developing and they did recognise this. But they did not take sufficient action to manage the risks or the consequences. The present industry arrangements do not support clarity of decision making: it was unclear who was responsible for what. Nobody took charge.

The ORR started a formal investigation into a possible licence breach back in February when it became apparent that Network Rail would fail to publish a final timetable twelve weeks in advance. But that was on the relatively limited grounds that passengers would not be able to plan ahead. Like everybody else, ORR could have pursued the equally vital question as to whether this failure signalled that the operators would have insufficient time to assemble the necessary resources.

These are some of the issues we will address in the second phase of our work.

Our Inquiry is being advised by a panel of distinguished and highly experienced individuals, for which we are grateful. We recognised from the outset that the ORR itself is part of the industry and that we need to be as exposed to objective scrutiny as every other body. We set up a Prior Role Review under the chairmanship of the Chief Inspector of Railways, operating under protocols used when ORR is dealing with a possible breach of health and safety regulations. The findings from the Prior Role Review have been fully incorporated in this report.

I would like to acknowledge that, through no fault of their own, a number of railway employees were placed in circumstances that asked a very great deal of them: this includes those in passenger-facing positions and those being asked to write and endlessly re-write railway timetables to unreasonable deadlines.

We have enjoyed good cooperation from the rail industry, the Department for Transport and others in preparing this interim report, for which we are grateful: there is a consensus that there is a problem that needs to be understood and resolved.

The staff of ORR have been dedicated and selfless in securing, collating and checking the evidence and drafting this report. I am grateful to them all, but especially to Dan Brown as Inquiry Director and Claire Simpson as Project Director.



*Stephen Glaister*

**Stephen Glaister**  
Chair

# EXECUTIVE SUMMARY

## *“The timetable is our promise to passengers”*

Rail Delivery Group, 2015

1. On 20 May 2018, this promise was broken. This interim report into what happened focuses on identifying the factors that contributed to the failure to develop and implement an effective operational timetable in May 2018, and draws conclusions about the management of operational risks created by major timetable changes, based on information received from those involved. Phase 2 of the Inquiry will report before the end of 2018 to make recommendations for change. The Inquiry's Terms of Reference are in Annex B.
2. The Inquiry has reviewed over two thousand documents and conducted wide-ranging interviews with senior executives in the rail industry, other experts and government officials (listed in Annex F). We are grateful for the full and open engagement that the Inquiry has received from every participant. It is as clear as it is surprising that the scale of the disruption to passengers was not foreseen by any party until after it had begun. The full support that the Inquiry has received from participants illustrates the strong consensus among those involved that we must understand what has happened and make any necessary changes to ensure that it does not happen again.
3. This interim report finds that there were systemic weaknesses in the planning and delivery of major network changes, such as those required in preparation for the new timetable in May 2018, and concludes that there is a risk of repeated disruption if the lessons are not learnt and acted upon.
4. Although it is not the focus of this interim report, measures are being taken by the industry and government, in preparation for the planned timetable changes in December 2018 and May 2019, to address these risks.

The recommendations in the final report will consider these actions and whether further measures need to be taken.

## Disruption to passengers

5. In the weeks following 20 May 2018, many passengers travelling on the Northern and GTR networks were severely disrupted as a result of the failure of the introduction of a major new timetable, and passengers on many other networks suffered knock-on disruption to their services. This timetable was intended to deliver benefits to passengers as a result of major changes to the network but instead saw passengers experience significant cancellations and delays to their services. On the Northern network up to 310 scheduled trains did not run each weekday during the disruption and 470 scheduled trains per weekday did not run on the GTR network. Where trains did not run, there were significant delays and passengers were unable to rely on the timetable.
6. The impact of this experience has had a significant financial and emotional cost to those passengers affected, directly impacting upon their work and families and in some circumstances their personal safety. This has undermined the trust in the railway and the reliance they place upon it in their lives.

## Causes of the timetable disruption

7. The Inquiry has examined the different projects and processes that led up to the May 2018 timetable change, which stretch back many years in their planning and delivery. It finds that there are several critical points in

these processes where, had different decisions been taken, the subsequent disruption could have been avoided or significantly mitigated.

8. These different projects and processes were inter-dependent, which meant that risks and delays arising in one area were quickly passed to others. A bow-wave of risk built up through these interdependent elements over a period of several years.
9. These risks first emerged in delays to the planning and delivery of the North West Electrification Programme, combined with late changes to the scope of the Thameslink Programme, compressing the time available to develop the timetable and then further compressing the time left available for train operating companies to prepare for the implementation of new services. The scale and impact of these interdependent risks crystallised in May 2018, without any of the parties responsible apparently being aware of the scale of the consequences until after the disruption occurred.
10. The extended summary below outlines the Inquiry's findings in full and then examines why the governance structures that coordinate the rail industry failed to adequately identify and manage the systemic risks as they emerged. Among these, the Inquiry has found that there was a critical period during which, had different decisions been made, the disruption from 20 May 2018 onwards could have been avoided or significantly mitigated.
11. The Inquiry finds that in the autumn of 2017, two events combined that created critical risks to the timetabling process. As the North West electrification schemes fell behind schedule, a high-risk decision was taken to catch up the work over Christmas 2017 and, around the same time, a decision was taken to re-plan the introduction of the new Thameslink services. These decisions were taken in good faith, but without due regard for the schedule that needed to be followed to develop the timetable. When unexpected problems then occurred in consequence of both of these decisions (the Christmas works failed to be completed and the re-planning of the Thameslink services proved to be much more complex than expected), the timetable process began to fail because the volume of changes required was too great, at too late a point in the timetable development to be reasonably manageable.
12. These critical events are prior to the decisions made in January and February 2018 to proceed with the May 2018 timetable changes. The Inquiry considers that by this point the likelihood of disruption to passengers from the introduction of the timetable was probably unavoidable under any of the available options that were considered. If there was a final 'go / no-go' decision point that was missed, it was in autumn 2017, although judgements would have been better made earlier in August 2017 to align with the schedule for developing the timetable as set out in Part D of the Network Code.
13. The Inquiry has made findings attributable to Network Rail, the train operators, the Department for Transport (DfT) and the Office of Rail and Road (ORR) about the failures to identify these risks and properly manage them. It finds that:
  - Network Rail's System Operator managed the timetable process and was in the best position to understand and manage the risks, but did not take sufficient action, especially in the critical period in autumn 2017;
  - while the circumstances for Northern and GTR were quite different, neither were properly aware of or prepared for the problems in delivering the timetable and that they did not do enough to provide accurate information to passengers once disruption occurred;
  - DfT and ORR have responsibilities overseeing most aspects of the industry and neither organisation sufficiently tested the assurances that they received from the industry about the risk of disruption, despite having information and powers that would have allowed them to do so; and
  - the rail industry's processes for planning and managing major timetable changes do not adequately manage the risk arising from the engineering and other projects on

which they depend, or prioritise the impact on passengers when making decisions about these risks.

## Remit of the Inquiry

14. On 4 June 2018, the Secretary of State for Transport asked ORR, as the independent rail regulator, to undertake an Inquiry headed by ORR Chair, Professor Stephen Glaister CBE. The Inquiry was asked to review the reasons for the failed introduction of the new 20 May 2018 timetable.<sup>1</sup>
15. The Inquiry states in its terms of reference that it has three objectives to:
  - i. *“identify factors that contributed to the failure to develop and implement an effective operational timetable in May 2018;*
  - ii. *draw conclusions about the management of operational risks created by major timetable changes, based on evidence about the causes and consequences of the disruption in May 2018, and its subsequent management; and*
  - iii. *where appropriate, make recommendations to the industry and government in advance of future major network changes for the benefit of passengers, other users and railway staff.”*
16. The Inquiry is being held under Section 51 (1) of the Railways Act 2005 and full terms of reference of the Inquiry are set out in Annex B.
17. The Inquiry is being held in addition to and alongside ORR’s existing investigation into the compliance of Network Rail and the train operating with the terms of their licences in relation to the timeliness of the provision of timetable information to operators and passengers.
18. Alongside this interim report, ORR is publishing a separate Prior Role Review which examines ORR’s relevant actions in preparation for the May 2018 timetable.

## Conduct of the Inquiry

19. The Inquiry has recognised the importance of producing and publishing findings quickly, in order that the industry can better take account of them when planning future timetabling changes. This document is therefore an interim publication that addresses points i. and ii. of the stated purpose of the Inquiry. Phase 2 of the Inquiry will set out the proposed way forward on the industry engagement required over the remainder of 2018 and beyond to fully satisfy part iii. of the Inquiry.
20. Within the timescales of this interim publication, we have invited contributions from a wide range of parties. We have received and reviewed over 2,000 pieces of documentation and other representations provided by the parties noted above, freight companies, rail industry representative bodies, trades unions, railway experts and the public.
21. We have commissioned survey data from rail users:
  - Independent quantitative research with over 1000 rail users
  - Over 2,200 responses to a web-based survey on the ORR website
  - 4 independent qualitative focus groups with affected passengers and interviews with front-line rail staff
22. As well as numerous discussions with parties noted above and other experts across the rail industry, the Inquiry has conducted more than twenty formal interviews with key parties, including:
  - Interviews with Transport Focus and London TravelWatch
  - 12 interviews with Train Operating Companies
  - 5 interviews with the DfT
  - Interviews with the Chairs of the Thameslink Independent Readiness Board and Thameslink Independence Assurance Panel
  - 6 interviews with Network Rail

1. <http://orr.gov.uk/news-and-media/press-releases/2018/orr-launches-independent-inquiry-into-may-timetable-disruption>

## Accuracy of information received & disclaimer

23. The information on which this interim report is based is that provided by the parties to the Inquiry noted above and not from ORR's own verified sources. This Inquiry has not been undertaken using ORR investigative powers that would legally require participants to provide all information they hold. The information on which the findings are based is only that which the parties have volunteered to share and we are grateful for their cooperation.
24. While facts used in this report have been cross-referenced with the parties and verified wherever possible, ORR cannot independently assure the accuracy of all of the information that it has received during the course of this Inquiry. In several cases, different parties have offered conflicting information or different interpretations of events and this report highlights where that is the case and whether the Inquiry has made judgements about the weight of conflicting information.
25. Because the findings in this report are drawn from the limited information received, they should not be relied upon for commercial, legal or regulatory purposes. Any regulatory action that ORR subsequently takes will be based on source material.
26. ORR will correct the record if we become aware that factual inaccuracies have occurred.

## Consultation on Phase 2 of the Inquiry

27. ORR welcomes feedback on the findings in this interim report, and the focus that it should take in considering the development of its final report and recommendations in Phase 2 of the Inquiry.

## Structure of this report

28. This interim report is arranged in three parts:
  - Part A – Passenger experience and impact  
This section of the interim report explains what happened on 20 May 2018 to passenger services and describes the impact that this had on passengers and other rail users, and front-line staff experience;
  - Part B – Our findings into the failure of the May 2018 timetable  
This section of the interim report makes findings about the causes of the disruption attributable to the different projects and processes that needed to be delivered by the rail industry in preparation for 20 May 2018, focusing on the infrastructure projects that the timetable change depended upon, the process of developing the timetable itself, and the preparedness of the train operating companies to implement the timetable.
  - Part C – Our broader findings into industry processes and systemic risks  
This section on systemic issues makes broader findings about the systems of governance that oversaw the rail industry process of planning and preparation for the timetable change, including the role of ORR, and identifies why these failed to adequately identify and manage the risks.

## Summary of findings

29. Below we have summarised our findings which are set out in full in Parts B and C of this report.

### Infrastructure Programmes

30. The May 2018 timetable changes in the regions predominantly served by the Northern and GTR networks relied on the delivery of two major infrastructure schemes. The North West Electrification Programme (NWEPE) and the Thameslink Programme are intended to create transformational benefits for passengers in the north and the south east, combining new track, signalling, electrification of lines, upgraded stations and new rolling stock to increase the frequency and quality of services across London and the North West.
31. These programmes have been many years in their planning and development, and the structure and terms of the train operating franchises for Northern and GTR reflect the anticipated transformation of those networks over their term.
32. The Inquiry has examined whether any aspect of the development of these infrastructure schemes created risks resulting in the May 2018 disruption.

### The Thameslink Programme

33. The Thameslink Programme is intended to establish new cross-London services that will enable up to 24 trains per hour (tph) to operate in both directions from multiple destinations north and south of the Thames using new Class 700 rolling stock. It is intended to deliver new services, shorter journey times, reduced crowding on trains, and better interchange between services.
34. The development of the infrastructure required for the Programme has been delivered in two phases:
- Phase 1: the remodelling of Farringdon and Blackfriars stations which completed on time and on budget in 2011-12; and
  - Phase 2: included remodelling of London Bridge Station (which completed in January

2018) and introducing new track and signalling technology to enable 24tph trains per hour to operate through central London. Phase 2 is not yet complete, but important elements of it were required to be delivered in time to support the May 2018 timetable change.

35. In contrast to the experience in the North West, the Inquiry heard that the development of the Thameslink infrastructure required to be ready for the May 2018 timetable was completed on time. Participants to the Inquiry expressed considerable admiration for the way that Network Rail planned and delivered this extremely complex set of projects, while maintaining an operational railway during construction.
36. The Inquiry has found that the delivery of the necessary Thameslink infrastructure to support the May 2018 timetable was completed successfully and on time. The Inquiry has found no aspect of the delivery of the Thameslink infrastructure that contributed to the causes of the May 2018 timetable disruption.
37. The Inquiry has found that those elements of the Thameslink infrastructure that are still to be completed, including automatic signalling and turnbacks, are not material factors behind the May 2018 disruption because they were not relied upon in the specification of the timetable.
38. The Inquiry heard that one important piece of Thameslink infrastructure, the line through the Canal Tunnels in central London, opened one week later than planned in February 2018.
39. The Inquiry does not judge the one-week delay in the opening of the Thameslink Canal Tunnels in central London to be a material factor behind the disruption because it did not materially impede GTR's ability to prepare to introduce new services in time for May 2018.
40. The introduction into service of the new Thameslink timetable in May 2018, relied on more than the successful completion of the infrastructure projects. The delivery of these other projects and programmes, and their role in the causes of the Thameslink timetable disruption are discussed below.

## North West Electrification Programme

41. NWEPP is being developed in four phases between 2014 and 2018, to electrify and upgrade the lines between Blackpool, Wigan, Bolton, Liverpool and Manchester. The completion of Phases 3 and 4 were needed to support the changes to the May 2018 timetable. The project is being delivered by Network Rail, and since 2016 has been overseen by the North of England Programme Board, chaired by the DfT.
42. There was a one-year delay between December 2016 and December 2017 to the delivery of the Phase 4 electrification scheme between Wigan, Bolton and Manchester (the 'Bolton Corridor'), while the infrastructure was risk assessed and then redesigned to legally comply with electrical regulations, or in some places safely deviate from the regulations, which are enforced by ORR. ORR considered that Network Rail should have designed the scheme to the legal standard earlier, or carried out risk assessments for proposed deviations. Network Rail had assumed that it would be permitted to deviate from those standards without a risk assessment.
43. The Inquiry considers that the redesigned delivery of the Bolton Corridor electrification was known about sufficiently early in 2016 to not be a direct contributory factor to the May 2018 disruption, and so has not focused further on the merits of the decision at the time. However, it did compress the remaining timescales available to complete the project, creating a higher level of risk for the remaining project as further delays occurred during 2017.
44. During 2017, unexpected problems occurred with Phase 4, as worse than expected ground conditions caused delays to the construction of the electrification infrastructure. Network Rail relied on a risk-based survey of ground conditions, which did not identify the true extent of sandy ground and uncharted mine works along the route. Many more attempts at driving piles failed than had been expected. Innovative engineering solutions were developed to try to recover the delay and the works were re-planned several times throughout 2017 as each plan proved to be unrealistic.
45. Timescales for project completion were further compressed, costs increased, and there was significant disruption to passengers as the operational railway was periodically closed to allow works to recover at an accelerated pace. Network Rail's confidence in project delivery by December 2017 was put under pressure throughout 2017, such that the P-80 confidence level on which projects are planned (80% probability of completion on time and budget) would only be achievable with considerably more time on site to do works, requiring greater possession of the railway and disruption to passengers.
46. The Inquiry has found that Network Rail's approach to planning the construction of the Phase 4 Bolton Corridor electrification did not accurately estimate the actual construction risks and probable delays to its completion. While these risks were potentially manageable in themselves, the consequential risks to the introduction of the May 2018 timetable were compounded by an excessively optimistic approach to planning and re-planning mitigating actions to catch up construction works as timescales were compressed during 2017.
47. The Inquiry has considered the extent to which the subsequent risks to the timetabling process were taken into account in the timing of decisions to replan the projects. We heard from participants that the focus of the North of England Programme Board was on the delivery of the infrastructure projects. It was not specifically remitted to focus on the management of consequential systemic risks to the timetabling process or introduction of services by train operators, although its members including Network Rail's System Operator (the SO) were aware of these issues. The risks were noted to the Board in October 2017 by the SO, but no sufficient actions were taken by the SO to mitigate these risks. The Inquiry has heard that the Programme faced substantial pressure from senior levels of Network Rail to not defer the milestone while there remained a chance of success, despite the increasing risks.

48. The Inquiry has found that the DfT's North of England Programme Board was aware of the consequential risks to the May 2018 timetable of a failure to deliver the Phase 4 infrastructure projects on time. While it was not remitted to manage systemic risks, it did not sufficiently consider aligning the timing of its decisions with the timetabling process, and Network Rail's System Operator did not press for this despite being aware of these risks.
49. The final attempt to catch up construction work in time for the introduction of the May 2018 timetable occurred over Christmas 2017, when a blockade of the Bolton Corridor (closing the railway so that intensive construction works could take place) failed to complete all of the work needed.
50. While 3 of 4 key projects were successfully achieved during this blockade in an enormous effort by Network Rail, further problems were encountered relating to wet ground conditions, causing a failure to complete all of the necessary foundation works. This meant that there were no acceptable options remaining to complete the works in time for the May 2018 timetable change without causing substantial disruption to passengers by closing the operational railway in early 2018. In January 2018 a decision was made by the North of England Programme Board to delay the completion of the project until after the point needed for the May 2018 timetable change.
51. The Inquiry has found that the decision to rely on the successful delivery of the Christmas 2017 works to recover Phase 4 of the North West Electrification Programme created substantial risks for the introduction of the May 2018 timetable, leaving no margin for error or unexpected problems during the Christmas blockade. The subsequent failure to deliver these works directly delayed the development of the timetable which caused disruption to passengers in May 2018.
52. During early 2018, works continued on Phase 3 of the North West Electrification Programme, including a blockade of the line between Blackpool and Preston, which caused substantial disruption to passengers during this period. A series of problems which were not reasonably foreseeable by Network Rail caused the line to be reopened three weeks later than planned. A significant consequence of this delay was that train drivers operating on that route needed to be retrained due to the terms and conditions in their contracts, although this is not a regulatory requirement. This led to fewer suitably trained drivers being available than necessary when the new timetable was introduced in May 2018, which contributed to the disruption.
53. The Inquiry has found that delays to the NWEF Phase 3 works in early 2018 were not reasonably foreseeable by Network Rail and that Northern Rail had no reasonable expectation that it would face a consequential shortage of drivers. This worsened the disruption in May 2018, in the Northern region, but was not a factor behind the need to rewrite the Northern timetable.

## Timetable development & the System Operator

54. Network Rail's System Operator business unit (the SO) is responsible for the production and publication of the national timetables, including the timetable for May 2018. It works with train operators and with Network Rail routes (who may want to access the network for engineering works, for example) to decide the best allocation of network capacity. In doing this, it translates train operators' access rights and the train paths that they bid for into the timetable according to the processes set out in Part D of the Network Code. It coordinates the process for establishing a base timetable twice a year and for making nearer-term changes to it (e.g. to accommodate engineering works, special events and ad-hoc requests from passenger, freight or charter services).
55. The Inquiry has heard that the SO had good visibility across Network Rail's business of the risks arising from the infrastructure programmes as a member of the relevant programme boards, and its managing director's position as co-chair of the national Portfolio Board, alongside a DfT director. It

noted these risks to the North of England Programme Board and to the rail industry's National Task Force at meetings in the autumn of 2017.

56. The Inquiry has found that the SO had sufficient information to understand the risks and potential for disruption arising from the infrastructure programmes, and that it was in a unique position in the industry to understand these dependent risks to the timetable process for which it was responsible.
57. The Inquiry has considered whether the SO managed the process of planning and developing the timetable with appropriate regard to the risk of disruption, and managed these risks so far that it was able within its own process of developing the timetable.
58. The very large number of timetable changes required for May 2018 fully consumed the resources of the SO's timetabling function as it prepared to deliver its timetable offer to the industry. Neither the SO or train operators had the reasonable ability to prepare alternative versions of the timetable to reflect different potential outcomes from the infrastructure programmes. The option to 'roll forward' existing timetables was also limited because of the nature of the infrastructure and rolling stock changes and the inter-dependence of these changes.
59. The assumptions that the SO made in autumn 2017 about the likely availability of the NWEF Phase 4 infrastructure in May 2018 were therefore critical to the successful execution of its timetabling function.
60. The Inquiry heard a circular argument between IP and the SO about whose responsibility it was to make these judgements. The project team explained that its focus was exclusively on infrastructure delivery. DfT chaired the Programme Board and said that it relied on the advice of these professionals about what was deliverable. All parties were aware of the risks, but the Inquiry judges that, on balance, the SO was in the best position to understand the risk to the timetable and that it was the only body able to make decisions about the assumptions that were used to create that timetable. This is because of its position as member of the Programme and Portfolio boards
61. The SO said that it was not remitted in autumn 2017 to advocate different decisions by the Programme Boards and DfT. It explained its belief that, had it decided in autumn 2017 not to assume that the NWEF infrastructure would be ready, it would have been 'overruled' in favour of the advice from the project team because it would have delayed benefits to passengers. This may or may not have been the case, but while it highlighted the risks to the project team and DfT, it was also the body best placed to consider and advocate alternative options, which it did not do. Following the disruption in May 2018, these are exactly the sorts of mitigating options that are being actively developed and considered by Network Rail in preparation for the December 2018 and May 2019 timetables, providing a counterfactual illustration of the missed opportunities in autumn 2017.
62. The Inquiry has found that the SO was the body best placed to address the risks associated with the delivery of NWEF Phase 4 upon its timetable process in autumn 2017, but has seen limited evidence that it considered or pro-actively advocated alternative options. This significantly increased the risk that it would not be able to meet the industry schedule for producing a timetable in time for May 2018.
63. In correspondence relating to ORR's investigation into whether Network Rail has complied with the terms of its licence (a regulatory process initiated in February 2018 and conducted separately from this Inquiry, which has found Network Rail in breach of its licence), Network Rail has described the measures that it is now taking to introduce additional oversight and assurance review processes across its business, which were not in place prior to May 2018. The Inquiry considers, as explained above, that the SO was uniquely positioned to have performed these roles in preparation for May 2018.

64. The Inquiry has found that the SO did not have in place sufficient co-ordinated processes, co-operation and system-wide oversight to manage the effective delivery of the scale of change required for May 2018, although Network Rail is now taking measures to correct this.
65. The Inquiry has considered whether the SO and train operators took all reasonable steps to run a robust and efficient process in preparing the timetable once the scale of the challenge emerged in late 2017 and early 2018, with the resources and processes that were available to them at the time.
66. The Inquiry has found that the System Operator's timetabling team, and those of passenger and freight operators, were placed under extreme pressure in early 2018 as the unprecedented extent and complexity of the need to rewrite the timetable became clear. The teams involved made extraordinary efforts to complete the work then required, without any reasonable options to reduce or mitigate the scale of the task at that late stage.
67. The Inquiry has considered whether issues arising from the compliance with Part D of the Network Code contributed to the failure to introduce an operable timetable in May 2018. It has also considered whether Part D remains fit for purpose where major timetable changes are required, in contrast to the more incremental changes that are usually undertaken.
68. The Inquiry has found that the schedule prescribed by Part D of the Network Code for the timetabling process was applied flexibly by the SO and by train operators in preparing the May 2018 timetable, but does not judge that flexibility is inappropriate in certain circumstances. As found earlier, it is critical that decisions about infrastructure projects avoid compressing the time available to develop the timetable, by being made in alignment with the Part D process, even if this schedule varies in different circumstances.
69. The issue of whether compliance with Part D of the Network Code needs to be reviewed will be considered further in Phase 2 of the Inquiry.
- In particular, we propose to consider whether the management of risks to future timetable changes arising from major infrastructure or rolling stock programmes on which timetables are dependent can be accommodated through greater compliance with the Network Code.
70. The Inquiry has considered whether the overall capability and resources available to the SO are sufficient to deliver large timetable changes. This is also a focus of ORR's separate investigation into Network Rail's compliance with its licence requirements, and a feature of ORR's current Periodic Review of Network Rail.
71. The Inquiry has found that the resources available to the SO could not reasonably have been increased at short notice to mitigate problems as they emerged in the timetabling process for May 2018. However, the SO could have done more to estimate the resource demands at a much earlier stage and consider other mitigations, as is now being done in anticipation of future timetable changes. ORR stated in its PR18 draft determination the need for additional SO resources in the next control period.
72. We will consider the issue of the SO's long-term resources and capability further in Phase 2 of the Inquiry. We will also consider an issue that has been raised with the Inquiry regarding the use of technology to support the accuracy and efficiency of the timetabling process by the SO and train operators. However, we have found no evidence that this was a primary cause of the disruption in May 2018.

### **Northern's preparedness to operate the 20 May 2018 timetable**

73. The Inquiry has examined the role of the Northern train operating franchise in the timetabling process, and whether it did everything reasonably practicable in its preparations to introduce an operable timetable on 20 May 2018.
74. On 5 January 2018, the Extraordinary North of England Programme Board decided that implementing a further closure of the railway to deliver NWEF Phase 4 for May 2018

would be too disruptive for passengers. As a consequence, Northern was required to fundamentally re-cast its timetable, with 16 weeks available to complete work that would normally take 40 weeks under the schedule in Part D of the Network Code.

75. At the end of January 2018, Northern sent Network Rail a wholly revised series of bids for the May 2018 timetable. These were resource-led as the absence of the expected electrical infrastructure on the line meant that availability of diesel rolling stock became the fundamental determinant in working services back into the 'Bolton corridor'. This affected almost the whole of Northern's network, completely changing the plan that Northern had anticipated introducing in May 2018.
76. At the beginning of February 2018, Northern formally requested that the SO consider rolling forward the national December 2017 timetable to May 2018, in order to simplify the changes required and mitigate risks from the already compressed timescales. However, Northern had no reasonable way of knowing how severe the eventual disruption would turn out to be. The SO considered that this was not practicable as the decision was being made in the context of contractual offers to other operators and other irreversible infrastructure and rolling stock changes.
77. The Inquiry has found that Northern engaged properly with Network Rail's timetabling process and the factors that caused the timetable to be re-planned at a late stage were outside its control. The Inquiry has reviewed evidence that Northern was immediately aware of the risks that this late replan could create and that it explored options with Network Rail to mitigate these by requesting a national roll-over of the December timetable. The Inquiry has been unable to undertake independent technical analysis about whether this was a viable option.
78. The Inquiry has considered Northern's preparations to introduce the revised timetable into service, including the measures taken to ensure the availability and planning of rolling stock and train crew, which the Inquiry heard were material factors in the May 2018 service disruption.
79. The failure to electrify the Bolton Corridor created challenges for Northern's planning of available rolling stock, creating a need for Northern to reallocate 47 diesel vehicles. This led to reduced capacity and resilience on Northern's services as diesel units were taken from planned capacity enhancements and contingency stock at depots. The compressed timescales resulted in less time for optimising the unit diagrams than originally planned and Northern has stated it is probable the attempt to expedite the process "did impact on the quality of the train crew diagrams".
80. The Inquiry has found that Northern took reasonable measures to ensure that services were covered by corresponding train units. Based on the evidence received, the Inquiry finds that the ability of train crew to operate the rolling stock was a greater factor in the May 2018 timetable delivery than the availability of the rolling stock itself.
81. Like GTR, the compression of timescales meant that Northern had insufficient time to complete fully developed, optimised and quality assured train crew diagrams prior to consultation with staff. Emergency rostering was adopted but a major displacement of staff and trains developed, resulting in the new timetable quickly falling over and the subsequent introduction of an interim timetable on 4 June.
82. The Inquiry found that in the lead up to the timetable change, Northern did not have train crew rosters that had been fully optimised or agreed with the unions. The Inquiry finds that Northern could not have reasonably accelerated the train crew diagramming process, which followed a rolling stock plan that had not been fully optimised.
83. Northern explained that there were factors which limited its level of resilience at this late stage, and the Inquiry considers that Northern had less potential to stress test and plan contingency into its approach to train crew planning than GTR had in early 2018. These included having finite training resource to deliver an increased number of required training days and removal of potential training

opportunities through extended engineering activity; for example in the Bolton Corridor over weekends. There were also some operational difficulties in managing drivers under different terms and conditions and the end of the rest-day working agreement on 21 February 2018, although these were known quantities that could have been managed.

84. The Inquiry has found that the compressed driver training timescales from the failure of NWEF Phase 4 to electrify the Bolton corridor and the additional retraining burden of the NWEF Phase 3 overrun were the primary causes of Northern's inability to arrange for a sufficient level of driver competency to operate an effective service from 20 May 2018, and that Northern was constrained in its ability to manage these in the limited time available.
  85. The Inquiry has considered Northern's understanding of risks related to the successful delivery of the May 2018 timetable.
  86. Northern was able to identify risks to the delivery of the May 2018 timetable at various stages in its development, and a number of these are listed in Northern's timetable readiness dashboards. Nevertheless, by 9 May 2018 Northern expressed its view to Transport for the North that it still expected to be able to run a full service from 20 May. The Inquiry has not been able to fully establish the basis on which Northern provided this assurance.
  87. The Inquiry has found that in the lead up to the timetable change, Northern failed to adequately understand or communicate the risks arising from failing to have a sufficient number of trained drivers to operate the 20 May 2018 timetable. As a result, passengers faced severe disruption and were not provided with information that would have allowed them to manage the impact.
  88. In parallel with the disruption caused by the failure of the May 2018 timetable, Northern services experienced additional disruption caused by an ongoing industrial relations dispute. This further exacerbated the impact on staff and passengers, and complicated the short-term planning of rolling stock and crews. However this was planned industrial action and while it aggravated the impact of the timetable disruption, the Inquiry has seen no evidence to suggest that these on-the-day industrial relations issues were a primary causal factor behind the failure of the timetable itself.
- ### Northern's actions to mitigate the impact of disruption on passengers
89. The Inquiry heard that it became clear at a very early stage after 20 May, that Northern Rail had problems with the delivery of the timetable, so for the first two weeks there was a combination of planned changes and significant levels of unplanned cancellations based on available resources on the day. There were occasions when the train driver or conductor was delayed and services had to be cancelled without prior notice, even on services which were already full of passengers.
  90. The company had a hotspot map of where disruption was greatest and deployed extra staff at those locations to provide additional customer service assistance and to also feed back into their gold command structure. Short-term planning measures were put in place based on this feedback and customer demand, resulting in additional shuttles and 'sweeper' trains for example on the Bolton corridor. Ticket acceptance arrangements were put in place on Metrolink and restrictions on advance purchase tickets lifted.
  91. No additional arrangements were put in place for passengers who are disabled as many of the affected stations were staffed and they had the autonomy to make decisions. There are some examples that where trains were full, staff authorised use of taxis for vulnerable passengers. Nonetheless, the number of complaints received about accessibility issues increased and the impact on passengers who are disabled arising from inadequate information was severe.
  92. There is some evidence to conclude that there was a failure to provide services to passengers requiring assistance, as well as examples of good practice in other places. The Inquiry has found that Northern acted quickly to

introduce a revised interim timetable on 4 June, with more services operating than before 20 May, and that service reliability recovered somewhat.

### Northern's provision of information to passengers during disruption

93. The Inquiry heard that Northern was unable to ensure consistency of information across industry systems such as National Rail Enquiries and train company ticket engines. In the first week of the timetable change there were some routes where the Customer Information System (CIS) screens could not keep up with the amount of disruption. A two-hour cut-off for at-risk services was introduced; these services were cancelled to provide certainty to passengers and accurate information on CIS screens. The company used Twitter to provide updates every 30 minutes to front-line staff, adapting as required based on feedback from hot spot locations. Additional staff were deployed to help customers in line with procedures for normal large, planned events.
94. The Inquiry has found that information provided to passengers was inadequate which meant that passengers were unable to plan and make their journeys with any certainty. Whilst rail staff performed well in difficult and trying circumstances, the information provided to them for onward transmission to passengers was similarly inadequate; passengers often had the same inaccurate information.
95. The Inquiry has found that although Northern was aware that there would be problems in delivering the timetable in advance of its introduction and that there would be disruption to services, it did not warn passengers that this would be the case. Passengers were denied the opportunity to plan and make informed decisions about their journey.

### Govia Thameslink Railway's preparedness to operate the new timetable

96. The Thameslink, Southern and Great Northern (TSGN) train operating franchise awarded to Govia Thameslink Railway (GTR) in 2014 was unique in several respects. It was a particularly large franchise, combining operating areas from three earlier franchises. Further, it was structured as a management contract to provide commercial flexibility in the approach to the introduction of new passenger services delivered by the Thameslink Programme from May 2018 onwards, including the removal of revenue risk.
97. The complexity and ambition of the Thameslink Programme, including the intention to run up to 24tph in both directions through central London, meant that programmes to deliver new infrastructure, new rolling stock, the new timetable and preparations to meet the service specification in the franchise all needed to be developed in parallel and delivered in time for May 2018. The new services were initially intended to step up in frequency from 20tph to 24tph in May 2018 and December 2018 respectively, the higher specification being dependent on the completion of new automatic signalling technology which was not required for the lower frequency in May 2018.
98. In recognition of the complexity of the programme and the need to coordinate the introduction of the different elements, an Industry Readiness Board (IRB) was established by the Secretary of State in January 2017 at the recommendation of Chris Gibb, who also chaired the board. The IRB reported to the Thameslink Programme Board and both supported the idea that the DfT consider rephasing the introduction of services in May 2018 down to 18tph, in order to assure greater resilience and reliability of the new services, before then stepping up in three further phases in subsequent timetables to reach 24tph in December 2019.

99. There was an iterative process between GTR and DfT during which they considered the operational and commercial consequences of the rephasing proposal, which began when GTR submitted advice to DfT in May 2017, followed by a decision in principle communicated to GTR in August 2017, and final approval by the Secretary of State at the end of October 2017.
100. There is no evidence found by the Inquiry to suggest that the decision to replan the phased introduction of GTR's May 2018 timetable was driven by concerns in 2017 about GTR's operational capability or readiness.
101. The consequences for the timetabling process of the decision to move to 18tph were then realised to be more substantial than GTR, the SO or DfT had assumed. By October 2017, the development of the Thameslink timetable by the SO was well advanced, and the assumption by all parties was that the timetable could continue to be planned at a frequency of 24tph, before removing a further 2tph from the operating timetable in addition to the 4tph that were already expected to be removed. In practice, the consequence of this further removal of 2tph was to create severe gaps in service for some destinations that were considered to be unacceptable for passengers. This realisation meant that GTR had to rebid for a substantial rewrite of the timetable that was being developed, creating significant pressure on the timetable process and the System Operator.
102. In hindsight the only way in which these risks could have been avoided is for the advice on the re-planning of phasing to have been sought earlier. The commissioning of this advice by DfT was not triggered until after the creation of the IRB. This suggests that a more complete approach to understanding and managing system integration and risks would have been desirable at an earlier stage in the Thameslink programme, as explored further later in this report.
103. **With regard to the decision to replan the phased introduction of the Thameslink timetable, and the consequences for the timetabling process, the Inquiry makes the following findings:**
- GTR and DfT were each driven by their legal responsibilities during the process that arrived at the decision to re-plan the phased introduction of GTR's services. This meant that GTR was obliged by DfT to bid into the timetable process on the basis of a service frequency higher than required before a final decision was made, while DfT sought evidence that reducing the frequency of services would not undermine the Thameslink business case and value for money.
  - Neither GTR nor the SO predicted that the decision to remove an additional 2tph from the planned May 2018 timetable would result in the need for a more substantial timetable rewrite, and the Inquiry has found that this created unfounded confidence that the timetable would not be put at risk.
  - Although DfT could not have reasonably foreseen the risk of needing to rewrite the timetable, the length of time taken by DfT to make a final decision meant that this decision was not aligned with the Part D schedule for developing the timetable. This aggravated the challenge of rewriting the timetable, even before the later failure to deliver the Northern Infrastructure Programme created even greater problems.
  - In hindsight, had the final decision by DfT to phase the introduction of services from 18tph been aligned with the schedule for developing the timetable in August 2017, the unpredicted consequences for the Thameslink timetable may have been avoided and the consequential risks of a timetabling failure on the scale experienced would have been greatly reduced.
104. This reinforces our earlier finding about the importance of making critical decisions about programmes on which the timetable depends in line with the schedule in Part D of the Network Code.
105. A substantial iterative rewrite of the timetable to deliver a regular service planned at 20tph,

but with 2tph temporarily removed was then required at the end of 2017. This began a long and complex process in which many errors and service conflicts with other operators needed to be resolved, as described in greater detail later in this report. As referred to above, by this late stage in the timetabling process the challenge facing the teams in the SO and GTR was substantial, even before the additional challenge of needing to replan the Northern timetable was known in January 2018, and participants in the Inquiry have been in consensus about the extraordinary effort imposed on both teams by the process.

106. The schedule set out in Part D of the Network Code requires the SO to issue new timetables to operators twelve weeks in advance of their introduction so that accurately timed tickets can be sold to customers and train operators can plan and roster rolling stock and crews. This 'T-12' date on 23 February was anticipated to be missed, but by early April the timetable was still under development as greater than expected operational conflicts were being resolved. GTR proposed to DfT a 'rolling deployment' of the new timetable, by removing additional services at first, before reintroducing them over a period of three weeks following 20 May 2018. DfT consented to this on 10 May, with the expectation by GTR that 80-100 services would initially be removed per day before being reintroduced.
107. The compression of timescales meant that GTR had insufficient time to complete fully developed, optimised and quality assured train crew diagrams prior to consultation with staff.
108. The Inquiry finds that GTR could not have reasonably accelerated the train crew diagramming process, which followed the late delivery of the timetable from the SO.
109. GTR has provided the Inquiry with counterfactual analysis which suggests that with more time it could have developed better optimised driver plans that worked within its overall driver numbers. However the Inquiry cannot say with confidence that GTR would have been able to deliver a stable and reliable service if provided with a robust timetable at an earlier stage.
110. GTR had predicted as early as 2016 that it would not have enough drivers trained to be ready for May 2018, and planned mitigations accordingly. Even before the compression of the timetabling process, GTR was planning to use the 'workaround' of pilot drivers through central London to overcome the expected shortage of trained drivers on the new routes.
111. These mitigations had to be re-planned several times in the weeks prior to the new timetable. Nevertheless, GTR remained confident in its ability to operate services with only limited disruption and was surprised in the final days that its mitigations were insufficient. Mitigations were planned and re-planned on a responsive basis as new information became known.
112. The Inquiry has explored GTR's approach to preparing and stress testing its plans, and found that GTR's approach to predicting the risks around required driver numbers failed to reflect the real risks that it faced. GTR told us that it planned the level of driver resourcing using historical experience and 'professional judgement'. It did not apparently stress test its plans in light of realistically known risks about the exceptional nature of the May 2018 timetable change, or the gradual compression of the time available to them to develop optimised driver diagrams. The Independent Assurance Panel which reported to the Industry Readiness Board also failed to adequately challenge GTR on these plans when it examined them, despite identifying driver availability as a critical risk.
113. The Inquiry concludes that GTR had greater opportunity, in comparison with Northern, to plan and prepare its approach to driver training availability at an earlier stage, and that:
  - GTR's initial approach to planning and training drivers did not adequately recognise the exceptional scale of change and the risks arising from the May timetable;
  - GTR's plans were not adequately stress tested by either GTR or the DfT's Thameslink programme management boards, even

as the time available to prepare driver diagrams was reduced; and

- Sufficient contingency was not prepared for in advance, and was not available as problems emerged.

114. It is impossible for the Inquiry to judge whether, had this been done, GTR would have been able to fully compensate for the late finalisation of the timetable and manage the problems that arose from inefficient driver diagrams. The length of the Thameslink Programme and the knowledge that the May timetable change would be significant gave GTR a much greater ability to prepare and test its plans than Northern had. Earlier stress testing of the risks and knowledge of the likely shortage of drivers would have given GTR some opportunity to further understand and communicate the likelihood of disruption to passengers.
115. The Inquiry has found that GTR did not adequately understand the magnitude of the risks around driver resources. GTR gave assurance to the industry and government based on inadequate understanding of the risks. The assurances that it gave were in good faith but wrong.

## GTR response to passengers following 20 May

### GTR's action to mitigate the impact

116. The Inquiry heard that, close to the timetable change, GTR found that it would not be possible to run the full service immediately and PDF timetables showing the later introduction of some services were produced. GTR stated that it started to have problems from 23 May. The service was poor in week two of the timetable but the impact on passengers was lessened due to the school half-term break. On the third week, GTR started to identify real impacts with significant gaps in services.
117. In some areas a single Thameslink service replaced local stopping services previously operated by Southern and Great Northern, which led to large gaps in services. The Inquiry heard that every effort was taken to

run additional trains where crew and stock permitted. Sometimes this involved running services at short notice, meaning that trains which had been showing as cancelled or that had been deleted from passenger information systems did actually run.

118. As there were large gaps in some train services, standby buses were introduced at some locations. Restrictions on the use of taxis were relaxed so that station staff could arrange them where passengers were facing extended waits. A station feed e-mail thread was set up which allowed staff to contact control to advise of crowding at their station or to request stop orders. Ticket acceptance was quickly introduced between Southern, Thameslink and Great Northern but there were delays in arrangements on Gatwick Express as it had to be agreed with DfT.
119. The Inquiry has found that trains ran without prior notice, information about intermediate stations or platform information. Although running additional trains where crew and stock permitted was a good response to passenger needs, doing so without providing any prior information was unhelpful. The use of special stop orders was a reasonable and proactive short-term response to addressing passenger needs. The specific arrangements put in place for disabled passengers who had booked assistance was positive and welcome. Nonetheless, the impact on these passengers arising from inadequate information would have been particularly severe.

### GTR's provision of information to passengers during disruption

120. The Inquiry heard that none of the lists of cancelled trains were communicated to passengers who were told to check journey planners frequently; by 10pm in the evening and then again in the morning. Trains were deleted so that they did not appear on screens as cancelled; at busy stations there was a risk that the list of cancelled trains would hide those that were running. GTR used the term "operational incident" to describe the issues with services in preference to "a shortage of train crew" as it felt that the issue was crews

in the wrong place rather than insufficiency of numbers.

121. Knowing that it was exam time for some students, GTR contacted schools in the area to ensure that students could get to their exams. The solution was a combination of trains, buses and taxis. Further resource was added to the social media team to respond to tweets and provide on-the-go travel support as passengers could not always rely on the information they were seeing and there was an escalation in tweets from them to GTR.
122. During the morning and evening peak there was a management presence at stations with the objective of trying to provide explanations to customers. Ticket inspectors or passenger hosts were also positioned on stations, supplemented by the rail enforcement officers if there were security problems. In response to passenger feedback at key stations such as Harpenden additional staff were deployed. Extra staff were also added at St Pancras to address issues of overcrowding and to resolve any safety issues by opening gates where there was a potential risk.
123. The Inquiry has found that information provided to passengers was inadequate which meant that passengers were unable to plan and make their journeys with any certainty. GTR's realisation that the timetable was not working as planned was not communicated effectively to passengers who were given no assurance that the company had the situation under control.
124. GTR carried out a detailed programme of engagement in the months prior to the launch of the new timetable. GTR's communications plan in particular was detailed and extensive, and the Inquiry's research showed that levels of awareness amongst passengers in advance of the change was high.
125. The Inquiry has found that although GTR was aware that there would be problems in delivering the timetable in advance of its introduction and that there would be disruption to services, it did not properly warn passengers that this would be the case. Passengers were

denied the opportunity to plan and make informed decisions about their journey.

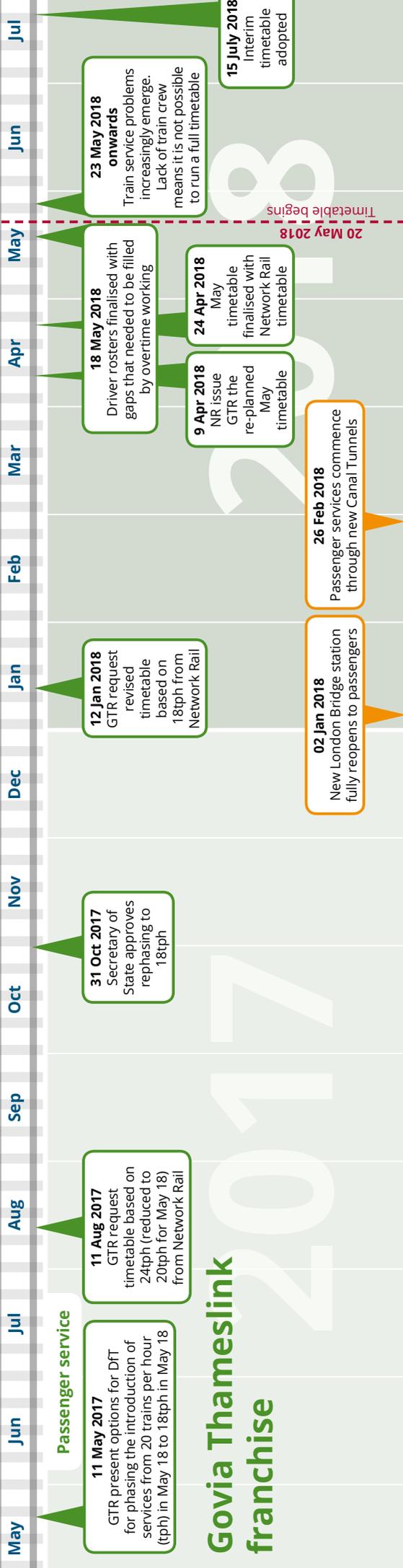
## Systemic risks and their management

126. The Inquiry has sought to understand whether elements of the industry's organisation and processes may have contributed to an environment in which risks to successful implementation of the May 2018 timetable were greater than they could have been. Information received by the Inquiry suggests that risks were often underestimated or not understood at all because they were interdependent and systemic in nature, rather than being owned by individual parties.
127. These issues will be a focus for Phase 2 of the Inquiry as we work towards recommendations for change.
128. Participants in the Inquiry have suggested that industry processes, which have generally been successful for the past twenty years, have revealed weaknesses in the preparation and implementation of the May 2018 timetable because of the scale and complexity of the infrastructure changes combined with the volume of consequential timetable changes required. If this is the case then it is important because major network changes will continue to influence future timetables, driven by unprecedented levels of investment in new infrastructure and rolling stock currently underway or being planned.
129. Major train service change such as for May 2018, and planned future timetables, is dependent on the parallel delivery of at least four major programmes, which are currently each subject to separate governance and assurance processes. These are:
  - The commissioning of new infrastructure (usually developed by Network Rail under Programme Management Boards chaired by the DfT, but this can also be led other authorities like Crossrail, TfL or independent developers outside the DfT's programme structure);
  - the specification and tendering of franchises, with service specifications embedded in contracts (let by DfT and

- devolved authorities in Scotland, Wales or Northern England);
    - the procurement and introduction of new rolling stock (which can be commissioned by DfT, other devolved commissioning authorities, or train operators); and
    - timetable development (led by Network Rail's System Operator).
130. These elements cannot afford to be considered separately because they are interdependent. Delay or changes to one element forces change in the others, but industry processes are not built to accommodate this. As noted earlier in this report, the System Operator was in the best position for May 2018 to manage dependent risks between infrastructure programmes and timetable development, as described earlier. The body that has greatest visibility of all dependent elements is DfT. However, while DfT is responsible for making big decisions about projects and changes to them, and is accountable for most of the costs, it is the industry that best possesses the information and capability needed to manage these and advise DfT about them. This did not happen at the rights points in advance of May 2018.
131. The Inquiry has found that the diffuse nature of accountability for different programmes across the industry and government results in a lack of clarity about roles and responsibilities for the oversight and control of complex system risks. There is an apparent gap in industry responsibility and accountability for the management of systemic risks, and industry process needs to change to accommodate these responsibilities.
132. The inquiry has considered whether the programme management structures created following the Bowe Review and chaired by DfT are structured and sufficiently remitted to consider dependent risks arising from the interaction of the multiple programmes.
133. The Inquiry considers that the creation of the DfT-chaired Programme Boards was a necessary strengthening of infrastructure programme governance and control of costs. However, the Boards are focused on the development of infrastructure and are not remitted to consider systemic risks arising from the programmes. The creation by DfT of the Thameslink Industry Readiness Board was a recognition of the importance of focusing on system integration issues, and demonstrated that a more integrated approach can help avoid risks. However, the IRB model is not a sufficiently integrated or resourced approach to be an alternative to integration of systemic risks into formal programme management architecture. Among other things, a stronger focus on systemic risks may drive better alignment between the timing of programme decisions and the schedule for timetable development.
134. Phase 2 of the Inquiry will consider, in consultation with all industry parties, whether further measures should be taken to oversee and manage systemic risks arising from interdependence rail programmes, including franchising, rolling stock and non-Network Rail led schemes. It will also specifically address the question of the role of independent regulation.
- ## The role of regulation and the ORR
135. Alongside this Inquiry, ORR established a 'Prior Role Review' to investigate actions that ORR took which may be material to the disruption in May 2018. That is published alongside this report.
136. ORR is the independent economic and safety regulator for Britain's railways. It is accountable to Parliament and the public to protect the people who use, interact with or work on the railway. It regulates Network Rail including the setting of targets it has to achieve and reports regularly on its performance. It also enforces consumer law and certain consumer requirements in train operator licences.
137. ORR does not have the powers or visibility to consider systemic risk across the whole industry, because it does not have regulatory powers to oversee franchise terms, rolling stock contracts or DfT decisions with regard

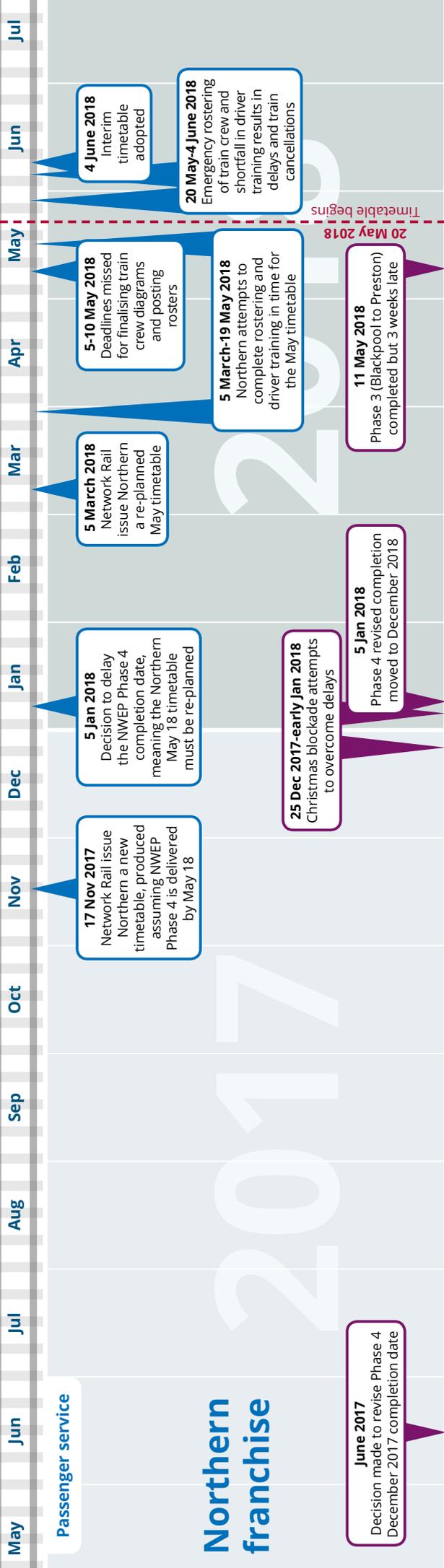
to the oversight or change control of Network Rail's enhancement projects. However, it does oversee Network Rail's compliance with the terms of its network licence and so has visibility of both the infrastructure programmes and the timetable process which depended on them for May 2018. It also enforces consumer law and certain consumer requirements in train operator licences.

138. ORR exercises these responsibilities through a process that escalates from regular monitoring and reporting on Network Rail's delivery of its regulated outputs (set in 5-yearly Periodic Reviews), targeted investigations of potential failings to deliver these, followed by enforcement action if failings are found.
139. In light of the emerging delays to the process for developing the May 2018 timetable following the failure to deliver the NWEF programme on time in December 2017, ORR initiated an investigation into Network Rail's compliance with its licence with regard to the timetabling process. This focused on the risks to passengers from the SO's inability to then provide a timetable in time for the T-12 date from which services are planned and tickets sold.
140. ORR's approach in monitoring Network Rail's preparation for the timetable was to assure itself that Network Rail was properly consulting with industry partners through its decision-making. We saw the options that Network Rail was considering in February 2018 for the May timetable and considered that we had no additional knowledge or any basis to challenge these or suggest alternatives. We checked that Network Rail had consulted train operators in considering these options and were satisfied that it had been through a processes that had considered criteria including passenger impact. We did not conduct further analysis beyond this.
141. ORR did not predict the potential disruption that occurred in May 2018 because it derived its information from the industry, which itself did not predict the disruption before it occurred. ORR also considered that Network Rail was working cooperatively with the industry in early 2018 when it was deciding whether to proceed with the May 2018 timetable change or not.
142. The Inquiry has found that ORR has sufficiently broad powers that it could consider the risks that Network Rail's infrastructure programmes create for timetable changes if it chose to do so. It has not previously identified this as a critical risk or priority based on previous largely successful timetable changes. ORR failed to identify this risk in the approach to the May timetable change, including through the investigation that it initiated into Network Rail, which correctly focused on the potential impact on passengers but did not focus on risks to operational preparedness.
143. Through Phase 2 of the Inquiry, ORR will consider whether, alongside changes to the management of systemic risks across Network Rail, the wider rail industry and government, the role of the regulator also needs to change, in particular where stronger independent assurance is thought to be required for timetable changes.
144. It is reasonable to consider whether the ORR should have acted sooner to investigate risks to the timetable process as delays to the infrastructure projects emerged in 2017. It is also reasonable to consider whether the scope of ORR's subsequent investigation was sufficiently broad, given that it did not focus on the risk of disruption to operators and consequential impact on passengers from the late timetable.



# Govia Thameslink franchise

Infrastructure



North West Electrification Programme

Infrastructure

# **PART A: PASSENGER EXPERIENCE AND IMPACT**

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# PASSENGER EXPERIENCE AND IMPACT

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## Summary

Following the timetable change on 20 May 2018, thousands of passengers travelling on the rail network were severely disrupted as a result of the failure to implement an effective timetable of services. The disruption led to widespread confusion, stress, discomfort and anxiety; and the prolonged nature of the disruption had a direct impact upon peoples' work life, social life and financially. Overall service passengers received during this period was not acceptable.

This chapter sets out the passenger experience of the disruption. We have particularly focussed on the areas served by Northern Rail and Govia Thameslink Railway. We explain:

- the experience of passengers using the services in the days following 20 May 2018, including the types of disruption they endured; and
- the impact the disruption had on passengers in respect of their jobs, social activities, stress and inconvenience, finances, personal safety and the choices they now make about how they travel.

In Chapters four and five, we assess the effectiveness of the steps taken by GTR and Northern following 20 May 2018 to mitigate the impact upon passengers.

## Our passenger evidence base

To ensure that we have a robust evidence base to inform our consideration of the experiences and impact of the timetable change on passengers we have gathered a considerable volume of information from a range of sources. As well as analysis of the data we routinely collect in our regulatory monitoring role detailed in the annex, this includes:

- direct engagement with Northern Rail and GTR, as well as other train operators;
- engagement with Transport Focus and London TravelWatch in their roles as statutory consumer advocates;
- conducting independent qualitative focus group research with passengers in the Northern Rail area and the GTR area;
- independent quantitative research with over 1000 rail users nationally;
- conducting independent research interviews with four Northern Rail and GTR staff to gain high-level insight into the disruption;
- contacting members of parliament and city mayors in the areas affected by the change to seek their views as well as those of the people in the areas they represent;
- gathering information from rail user groups;
- analysing posts made by passengers on twitter;
- receiving contacts directly from the public; and
- responses to our own web-based survey with rail passengers running 27 June – 31 July to which we received over 2,200 responses.

In this chapter we have largely focussed on the period leading up to 20 May timetable change and the period which immediately followed. We recognise that some of the issues affecting passengers may have subsequently been resolved whilst others remain ongoing. Some of the results below for example some responses to our survey, may therefore reflect experiences outside our period of focus.

We are grateful to Transport Focus for their welcome insight into the passenger experience and impact, and in particular their assistance in developing our research evidence base.

## Our research

Whilst we know that in many areas the new timetable worked well and we have observed improvements in service in many areas, passengers in some areas served by Northern Rail and GTR have been particularly hit hard. Notable examples are Harpenden where we also received a helpful response to the Inquiry from the Harpenden Thameslink Commuters' Group, and the Lakes Line where we received a number of responses including Transport Focus' recent research on the experience of passengers on the Lakes Line.

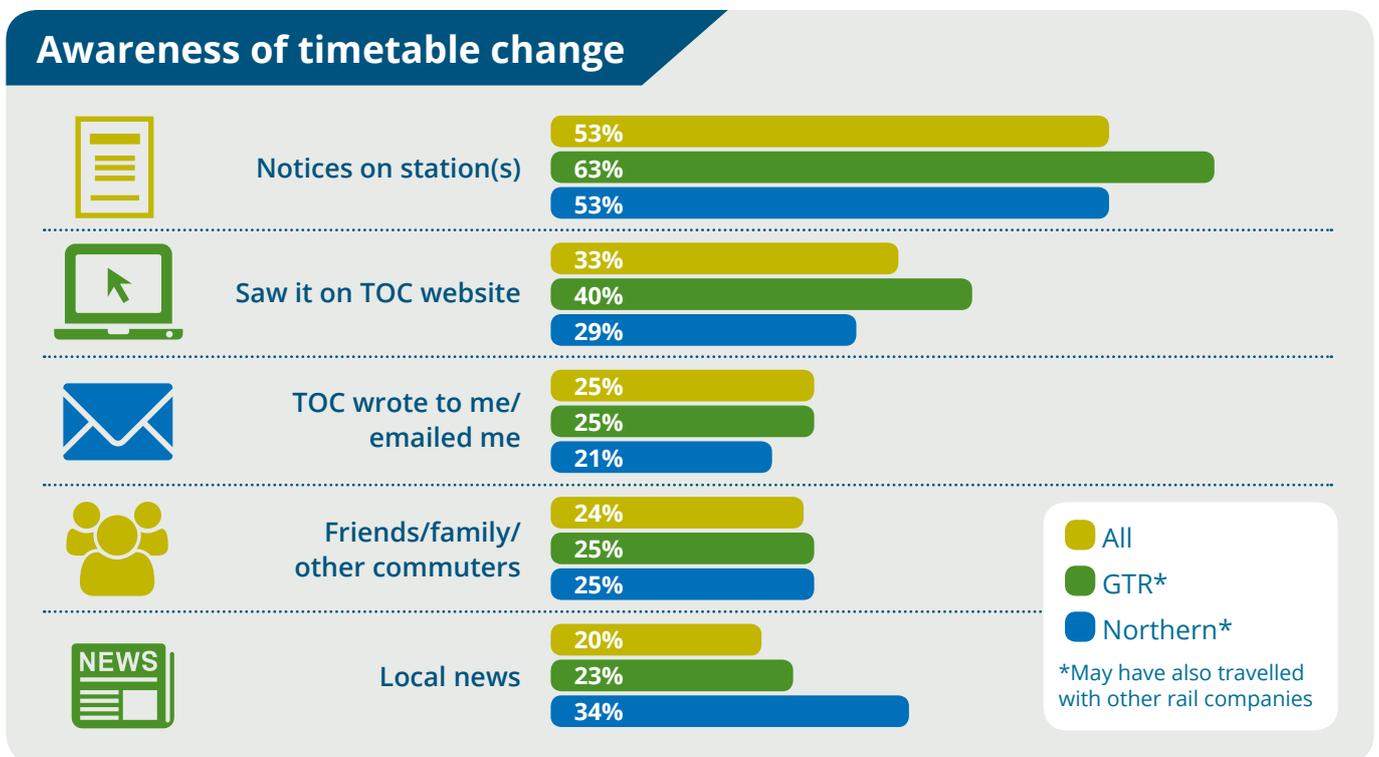
To understand the passenger experience resulting from the 20 May timetable changes we have carried out independent research with 1000 rail users, focus groups with Northern Rail and GTR passengers, and interviews with rail staff into:

- what passengers understood in advance of the timetable change and the information which was provided on the changes and any expected disruption;
- what the passenger experience was in the days following the timetable change and what information was made available to them at the time; and
- what the front line staff experience was in the days following the timetable change.

# PASSENGER EXPERIENCE

## Experience in advance of the timetable change

In our research 75% of GTR passengers were aware about the timetable change in advance compared with 62% of Northern Rail passengers, and 55% nationally. Amongst those who were aware, they were more likely to be commuters and as the table below shows, notices on station(s) was the most commonly mentioned way of finding out.



Some passengers noted that information provided on websites was difficult to find or read, complex and off-putting.

Rail staff highlighted the range of information passengers were provided with about the new timetable but were unsure that they had fully read all of it. Staff also mentioned the range of information they themselves had been provided with but added that they would have welcomed more about what to expect.

Of the passengers who were aware of the changes, there was a general sense that communications talked about a 'change' but did not convey the scale of this change or whether there would be any short-term impacts on the service provided.

*"You had to make a bit of effort yourself. You had to log on, you had to look for your station, you have got to see where am I going. I found it a bit difficult to work out what I was doing so I didn't even bother with the website. I looked up the National Rail app and just checked what my future train time was."*

GTR Commuter



*"Instead of timetable change maybe [poster should have said] timetable overhaul or complete restructure of the timetable or something along those lines. Might have made it seem like a bigger change."*

Commuter, Northern

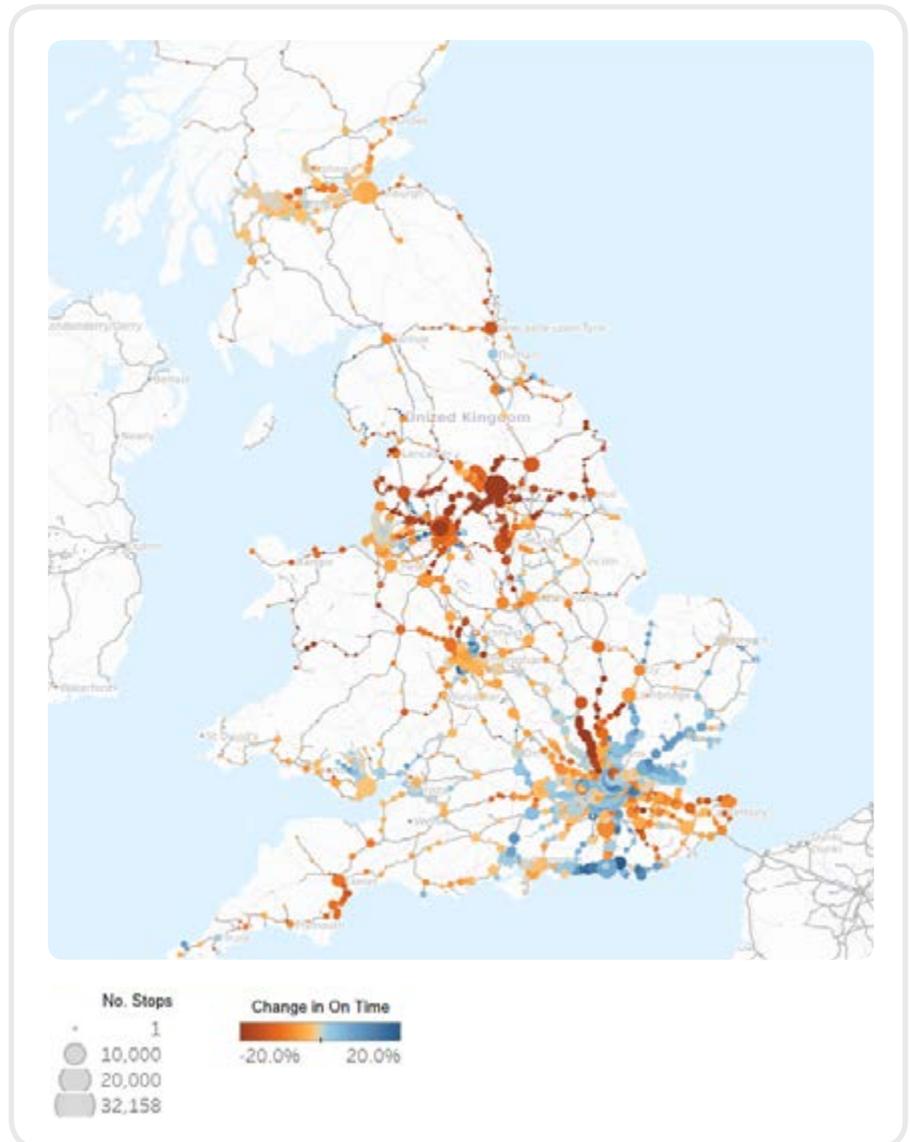


Similarly there was generally not a clear understanding of why the changes were taking place beyond an assumption that timetable changes were to make improvements – some referred to were improved trains, longer trains, more seats, and improved security. However, this ambiguity has the potential to generate high expectations about the actual service improvements.

## Experience following the timetable change

Following the timetable change disruption was not seen across the whole of the UK rail network. Services across a number of routes and operators were largely unaffected, while there was a significant level of disruption on the Northern route and on GTR's Thameslink and Great Northern routes.

The map shows the "on-time" performance<sup>1</sup> of passenger services calling at stations across the national network in the weeks between the 20th May and 3rd June, compared to the weeks immediately prior to the timetable change. The disproportionate levels of disruption experienced by passengers on the Northern route and GTR services are clearly shown.



1. "On time" measures the proportion of recorded station stops that trains arrive at within one minute of the scheduled arrival time with no distinction made for long distance services. This covers 80% of all station stops which are equipped with the necessary recording equipment.

Our passenger survey and research found that train delays and cancellations were the most frequently cited reasons for those passengers who experienced disruption.

### Case study: Lucy

**Commuter, GTR, Mill Hill Broadway to St.Pauls (and sometimes travels to Gatwick for work)**

Lucy is a solicitor and regular commuter. Since the timetable changes her journeys have been significantly affected.

In the first week of the timetable changes she was disrupted most mornings and evenings, by at least half an hour and often longer because of delays and cancellations. She tried to leave work early so she could go home and continue working there but was letting clients and colleagues down because she couldn't guarantee when she would be home.

*"That first morning, my journey is usually 33 minutes and it took me 2 hours. As soon as you are going past West Hampstead you have got two other lines connecting and it was absolute havoc, chaos! In the evenings I was saying to my boss yes call me at 7pm I will be home by then and I just wasn't, it was appalling. It makes you really anxious because it is piling on stress added to everything else"*



These reasons were also a key feature of the results of our twitter analysis. This showed that there were 54,000 posts from 22,000 twitter users from 15 May to 15 June mentioning the rail companies (in the table below) and 'timetable'.

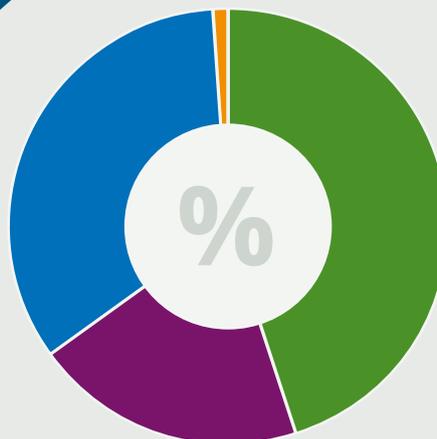
### Passenger Mentions



Northern - 34% (18.6K)



Great Northern - 20% (10.8K)



TransPennine - 1% (300)



Thameslink - 45% (24.3k)

## Delays and cancellations are often compounded by a lack of information and overcrowding

Frustration around delays and cancellations in our research were exacerbated by lack of information and last minute changes.

*"It was horrible, more people waiting and getting frustrated, you were getting more and more stressed and didn't know when the train was coming."*

**GTR Commuter**



*"They put two carriages on. There's people rammed in with their shopping... I have never got on a train yet where I've sat on a seat coming back from Manchester."*

**Northern Commuter**



One regular commuter using Northern Rail summed up his experience thus.

*During the first week of the train timetable changes I had problems getting to work due to delays and I felt that the journeys home were even more difficult.*

*On one occasion I started by going to my usual station – Deansgate. However, I found that all of the trains were cancelled so decided to get the tram to Manchester Victoria because trains ran more regularly from that station. Once I got to Victoria it was very busy but I went to the platform I would usually use if getting a train from that station.*

*A train pulled up so I got on it and sat down and waited for 10 minutes. There was then a tannoy announcement to say that there was not a driver for the train so to go to a different platform. I went to the other platform and got on the train, and waited. There was then another announcement to say that passengers should go back to the original train, so I went back to the first train. During the first week of disruption, I was at least an hour late home every night.*

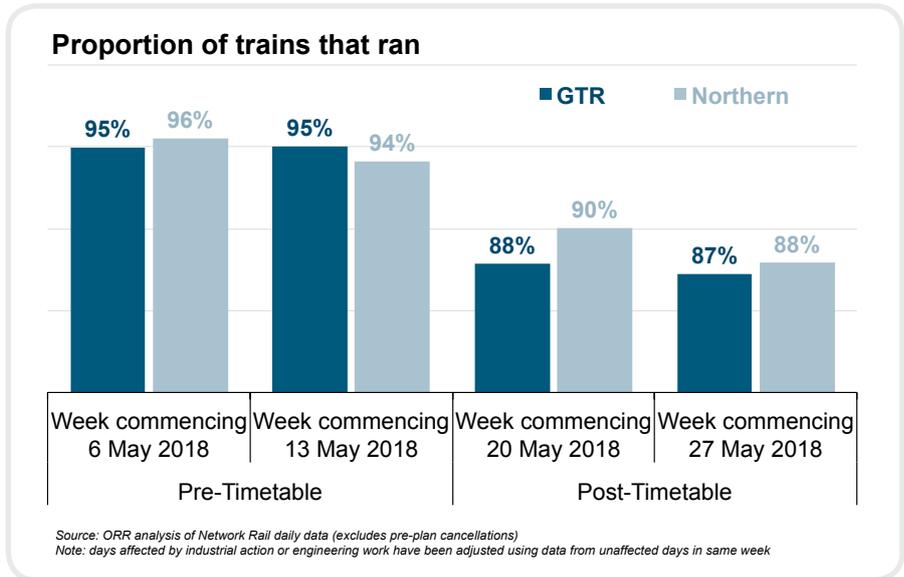
**Northern Commuter**



## Cancellations

We have assessed the number of trains that GTR and Northern planned to run during the period against the number that actually ran.

Northern Rail planned to run on average 2810 trains on a weekday, approximately 310 of which did not run. GTR planned to run on average 3880 trains on a weekday, approximately 470 of which did not run. For each company this equates to around 1 in 10 trains.

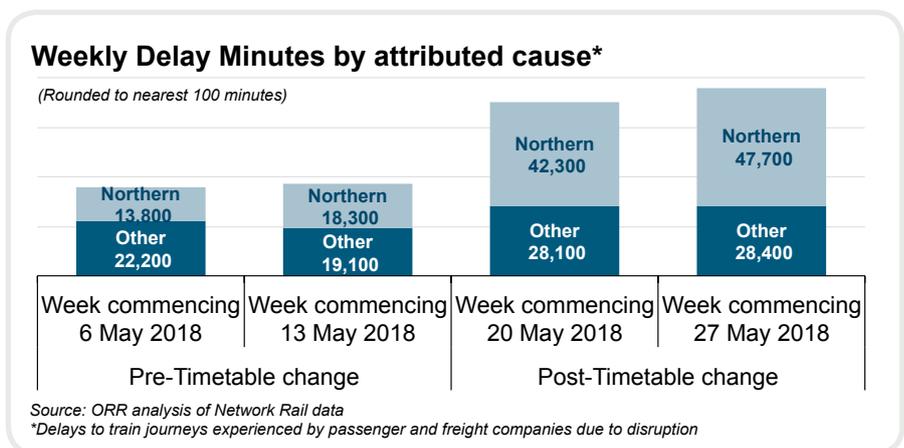
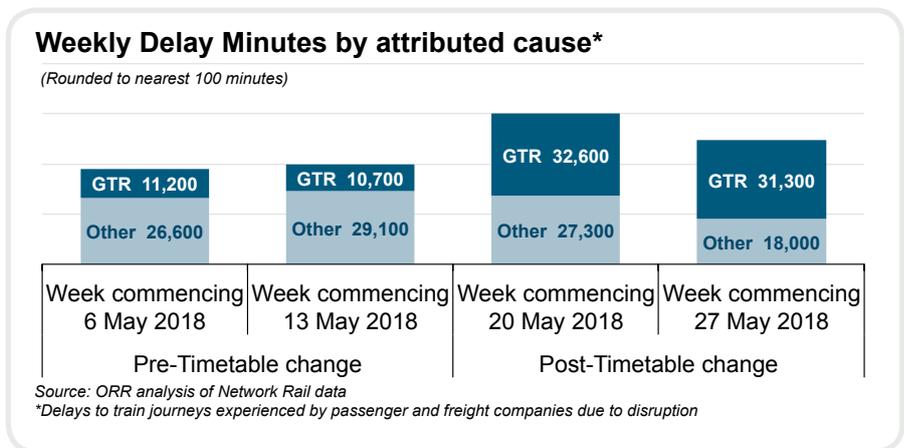


## Delays

For those trains that did run, passengers experienced a sharp decline in punctuality.

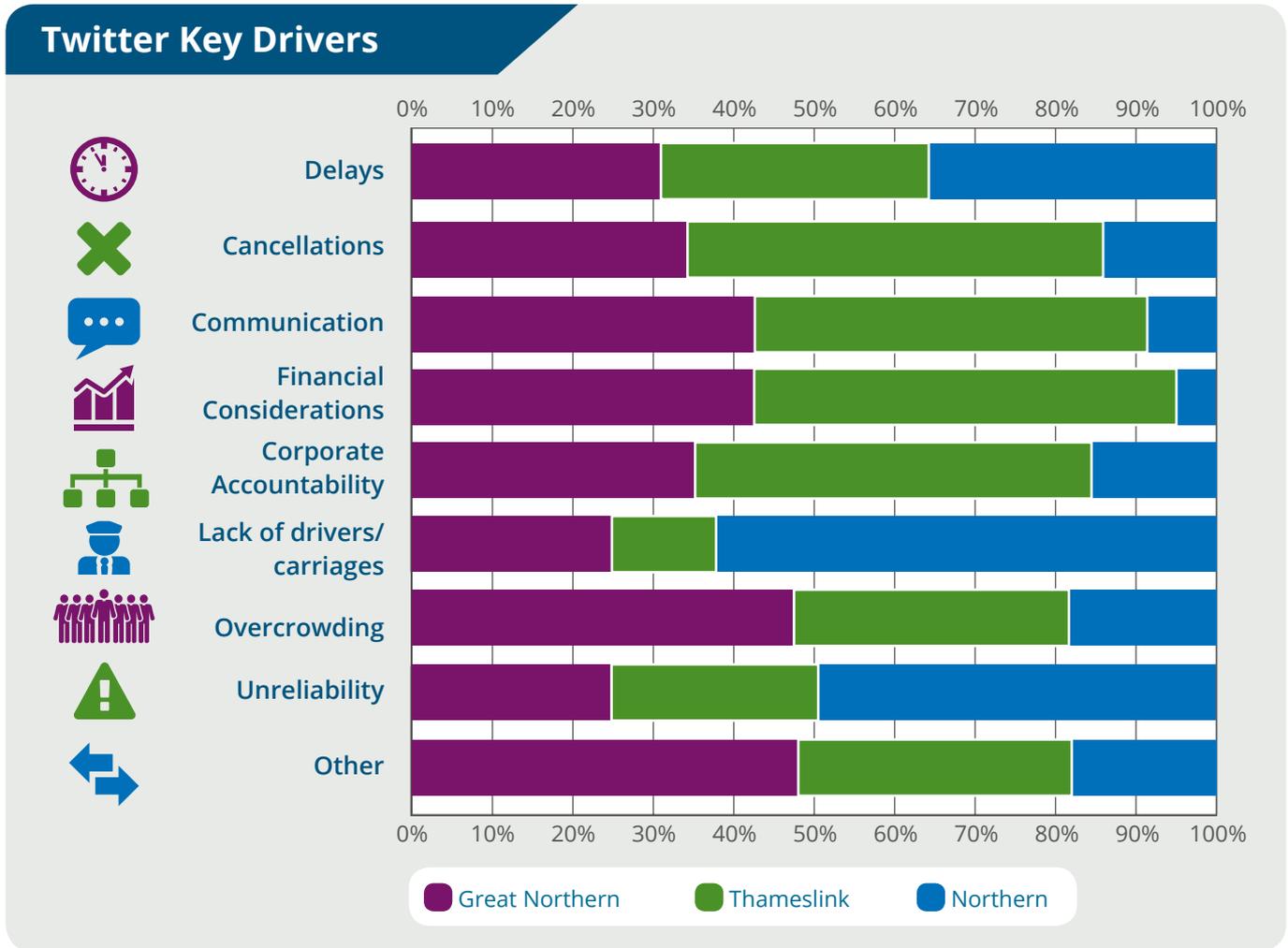
The number of minutes that GTR's services were delayed (attributed to GTR itself not other network causes) more than trebled in week one and had not returned to pre-20 May levels by late June.

The number of minutes that Northern services were delayed (attributed to Northern itself not other network causes) more than doubled in week one and two, before recovering following the introduction of a revised timetable on 4 June.



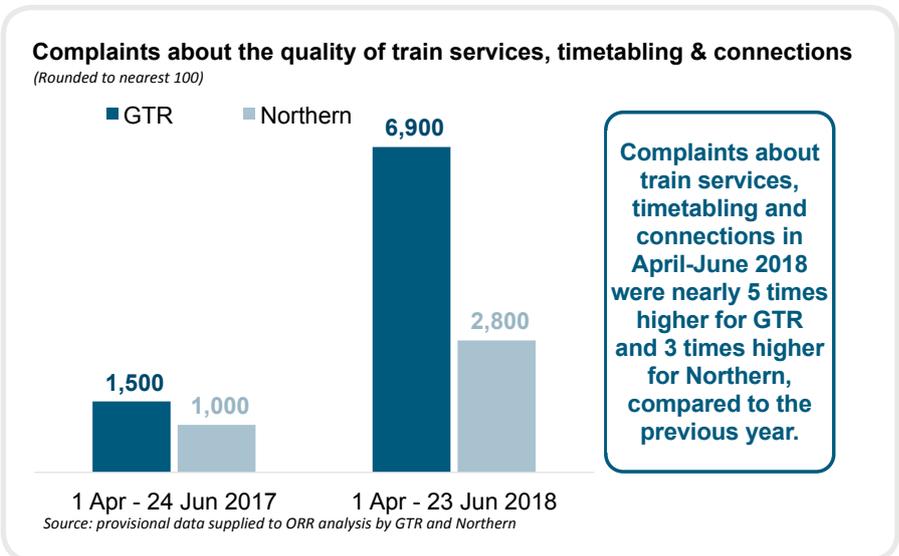
## Complaints and compensation

There were frequent criticisms from commuters on twitter regarding cancellations and delays as well as complaints regarding the availability and accuracy of information.



Both GTR and Northern saw sharp rises in passenger complaints and compensation claims:

- Northern Rail have seen the number of claims for delay compensation increase in each rail period in 2018/19. Claims increased by 145% to 22,006 in period two, and by 68% to 36,968 in period three.
- Delay compensation claims to GTR increased by 45% to 84,292 in period two, and in period three by 190% to 244,921.



## The quality of information was not helpful and very limited

Passengers, not unreasonably, expect to be provided with accurate information to enable them to make decisions about whether, and when, to make their rail journey. For their part, train companies such as Northern Rail and GTR are required to ensure that they provide passengers with appropriate, accurate and timely information to enable them to plan and make their journeys with a reasonable degree of assurance, including when there is disruption. Fewer than one in 10 respondents to the ORR survey found the communication from the rail company during the disruption to be helpful.

Providing accurate information to passengers both in advance of the timetable change - which set passenger expectations of what train services they would receive - and during the period of disruption itself is critical. Ensuring that it was provided at the right time, and in a form which the passenger could easily engage with and understand, had a direct impact on passengers.

### Information provided

**Delays kept creeping up by 1 minute**

*"I will get to Deansgate for my train and it is 22 minutes past, it will say it is due at 23 minutes past, that is fine, it is only one minute. Then it will get up to say 20 past and then it gets a bit closer and before you know it, it has been 20 minutes but instead of saying there is a 20 minute delay, I know obviously they are not mind readers, but it's just seeming like that they tack a minute on every time and you are waiting and you don't know whether shall I go to another station? Or shall I wait here and hopefully it will come eventually?"*

Northern  
Commuter



**Information was only provided at the last minute**

*"Surely they know way before minutes before the service that they are not going to make that journey. Surely it doesn't have to be that last minute."*

GTR  
Commuter



**Announcements were not always heard**

- Some noted that they usually used headphones on their journeys so may have missed announcements.
- A couple felt that announcements on trains were more detailed/ useful than those at station/ on platform

*"They explain things on the tannoy, they are quite good at explaining things, quite apologetic, if it is going slow they will give you an inkling of why it was or why it is."*

GTR Commuter



## Information provided

**Staff had no more information than passengers could access via apps (National Rail)**

- Some relied on apps to find information
- Although these were not always helpful
- One mention of Northern Fail app

*"I just think I had the exact information on my app as they did in the station...I swear some of the staff were looking on the national rail line to give information out...they should probably have better information rather than just a public service app."*

Northern  
Commuter



*"[The Trainline app just says] there might be a replacement service, I need to know that, so I can make a decision."*

Northern  
Commuter



**Information was not consistent with mismatches between station screen information and apps**

*"Sometimes I am halfway to a station when I look on the app and it says your train is cancelled or still running and it doesn't actually reflect what is happening at the station. When you get there the board says something else, the train is doing something else."*

GTR  
Commuter



**There was lack of clarity about the reason for the delays**

- Northern passengers talked about the reasons for delays and cancellations being lack of drivers/ not knowing where drivers were
- GTR passengers talked about signal failures
- GTR commuters would have liked more detail, enabling them to use their own knowledge of transport options to decide how to continue their journey



The most commonly used channel for information was the information screens on arrival at the train station. Passengers who had experienced disruption on GTR and Northern were more likely to look at app/website before leaving for the train station than the average for all train companies.

Our research found that whilst passengers had some sympathy toward rail staff and felt that they did their best, they were frustrated that they did not have enough information to help them and they were not sufficiently visible.

*I thought I wouldn't see them again, they probably are going for dinner or whatever, or coffee break, but he came back and he was like I am really sorry, I don't really know what the situation was, but I will keep checking, you know. I didn't get an answer out of him, but he did at least try and help, so I did feel a bit sorry for people like that.*



**Staff did not have enough information**

*"Anyone you did ask didn't give you any information of when trains were going to turn up, what the changes were, I went online to find out what was going on."*

Northern, Commuter



**Staff not visible**

- Some noted that there were not any staff at their station
- A couple already had a negative opinion of staff (Northern) and this was emphasised during the disruption
- A couple felt like more staff were at the station than usual (GTR)

*"There was no more staff than what there normally is on the train and there is no more information by them, there wasn't anybody stood there saying this is happening or you know. I feel like they were a bit rude."*

Northern, Business passenger



But there were examples of where staff provided help where the passenger would otherwise have been stranded.

*"I was like really annoyed at first. I thought I'm going to be stranded in Preston...sat in Preston train station not really knowing what to do, and someone just shouted anyone for Wigan go to the front of the station."*



*"I was actually really impressed with how they dealt with it."*



## Views from Rail Staff

Whilst passengers were concerned about delays and cancellations, rail staff expressed their concerns too. A lack of information and last minute platform changes were identified as problems contributing to overcrowding.

*"The overcrowding started to become a safety issue, we were having to keep people off the platform...and because people were getting desperate, if they thought a train was going to where they wanted to go they were running for it, regardless of whether it was safe to do so or not."*



Staff recalled examples where platform staff were informed that a train had been cancelled (and therefore did not send passengers to the train), only to be reinstated at the last minute. This meant that some trains left without being at full capacity. Although the reason for creating express services was understood by staff as a way to keep trains on track, staff felt that turning a train into an express service at the last minute was detrimental to the passenger experience, and only caused further frustration.

*"If a timetabled train eventually did leave, to get it back on course, they made it express and they miss all the stopping points...so you have to detrain all of the passengers that thought they were on their way home, which just fuelled the frustration."*



In our research, rail staff echoed many of the comments made by passengers and said that their greatest challenge during the disruption was the lack of information. They reported struggling to get through to control room staff during the disruption, and did not receive information to update passengers.

*"The worst thing, we couldn't get any information, we were trying to find out why trains weren't stopping at certain stations, we tried to get through to control...we couldn't get information to give."*



*"Trying to call Control was very hard because everyone was trying to get them at the same time."*



Whilst this was frustrating, staff recognised that everyone was in the same boat and nobody had information. This meant that they often used National Rail to find information – and were aware that this meant that they had no more information than passengers could themselves access. Whilst some staff appreciated emails, others found that this type of information was not instant enough and would have preferred verbal/ instant updates.

*"It wasn't just that it happened, it's that we couldn't explain, we couldn't give an alternative and this was down to information dissemination and I think the problem there was the people trying to sort it out...and the information dissemination wasn't the top of their priority."*



When staff did get information this was often last minute and was not always heard by passengers. Platforms were crowded and noisy, and there was not enough board space to display all train information (given that so many were showing as delayed).

*"It was so busy on the platforms, and the platform staff were so stretched, they couldn't hear the radios, they couldn't hear the announcements. Trains were being cancelled, and then put another train on, on another platform, and the message didn't get through to the passengers so trains were going half empty, we could have filled with passengers if we'd had time to get them over. It was a logistical nightmare to get people on to the right train."*

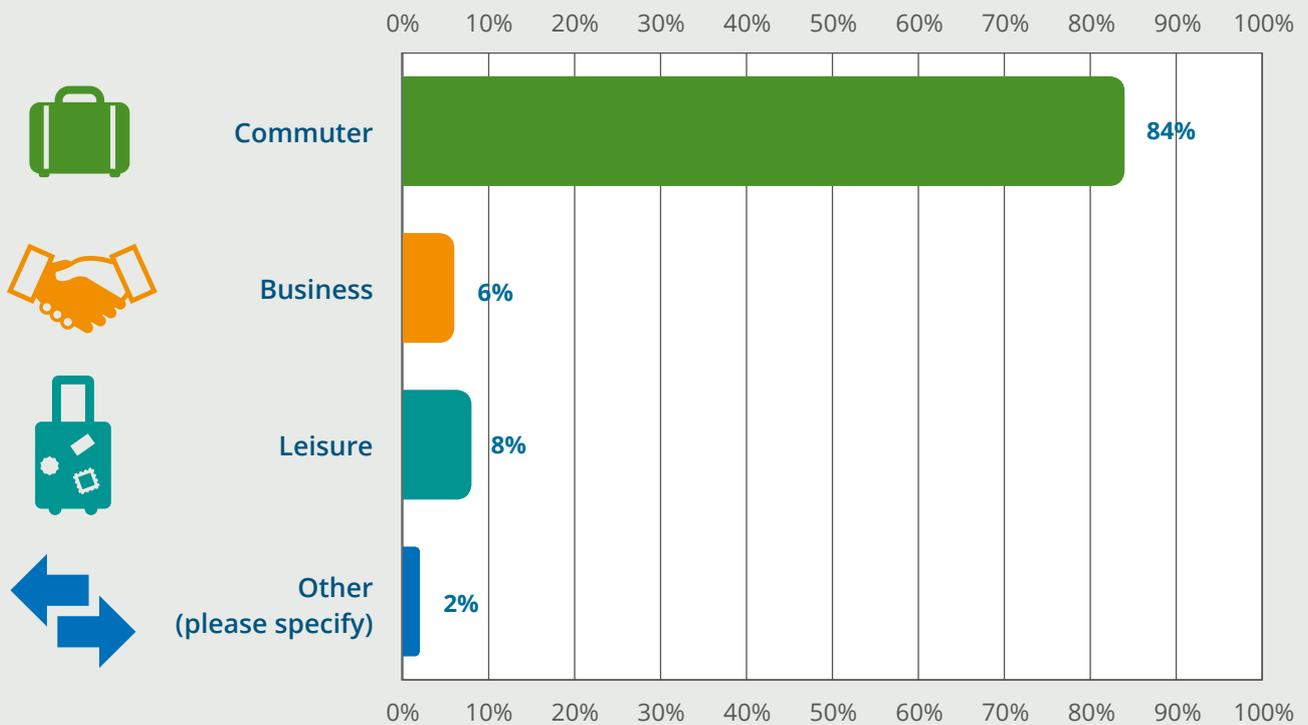


# IMPACTS ON PASSENGERS

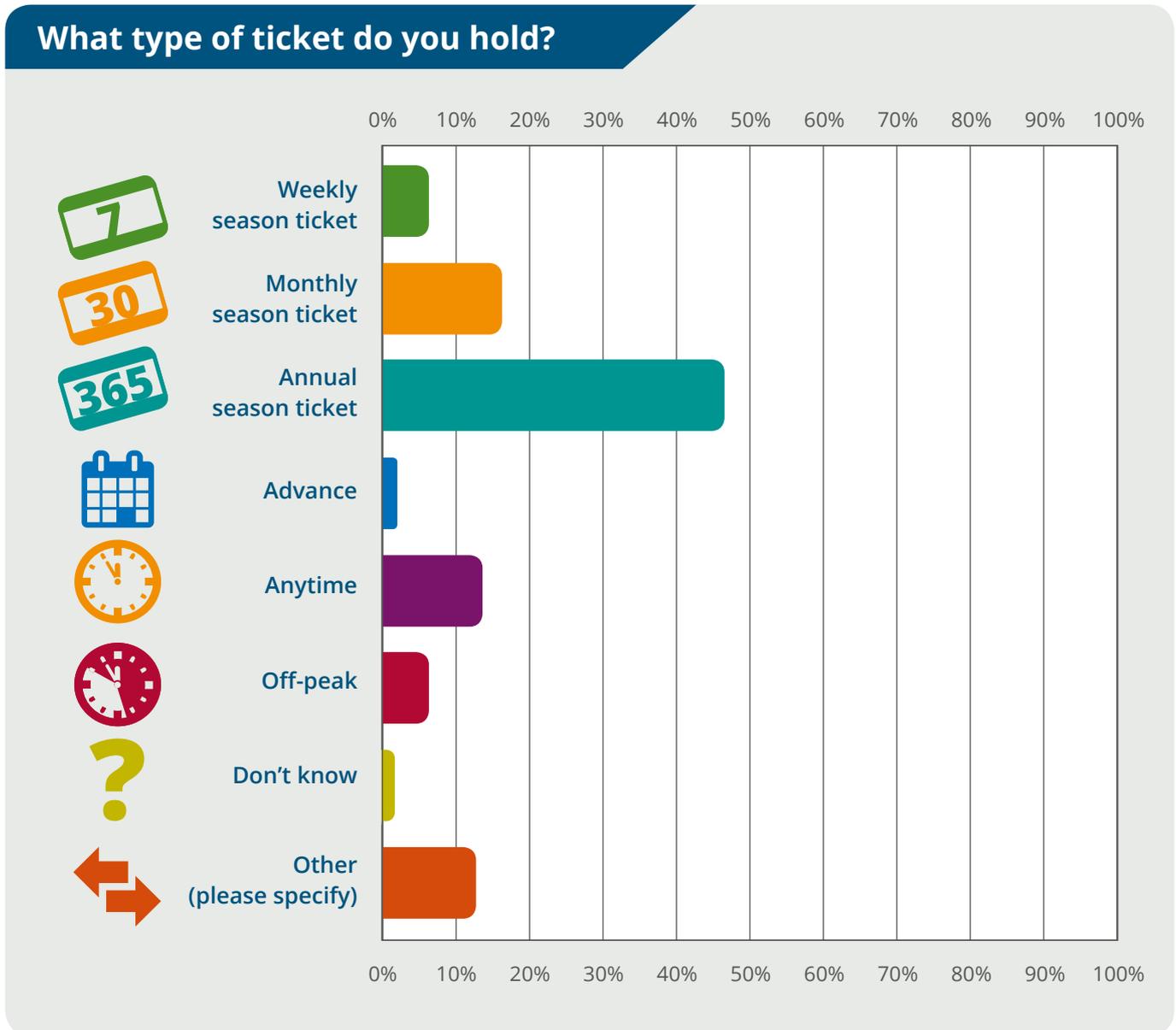
In this section we set out the impact on passengers of the disruption; who was affected and what those effects were. This is drawn from the findings of the independent quantitative and qualitative research and responses from passengers to our own survey, as well as to the Inquiry.

Most of the respondents to our passenger survey identified themselves as commuters.

## What sort of traveller type would you describe yourself as?



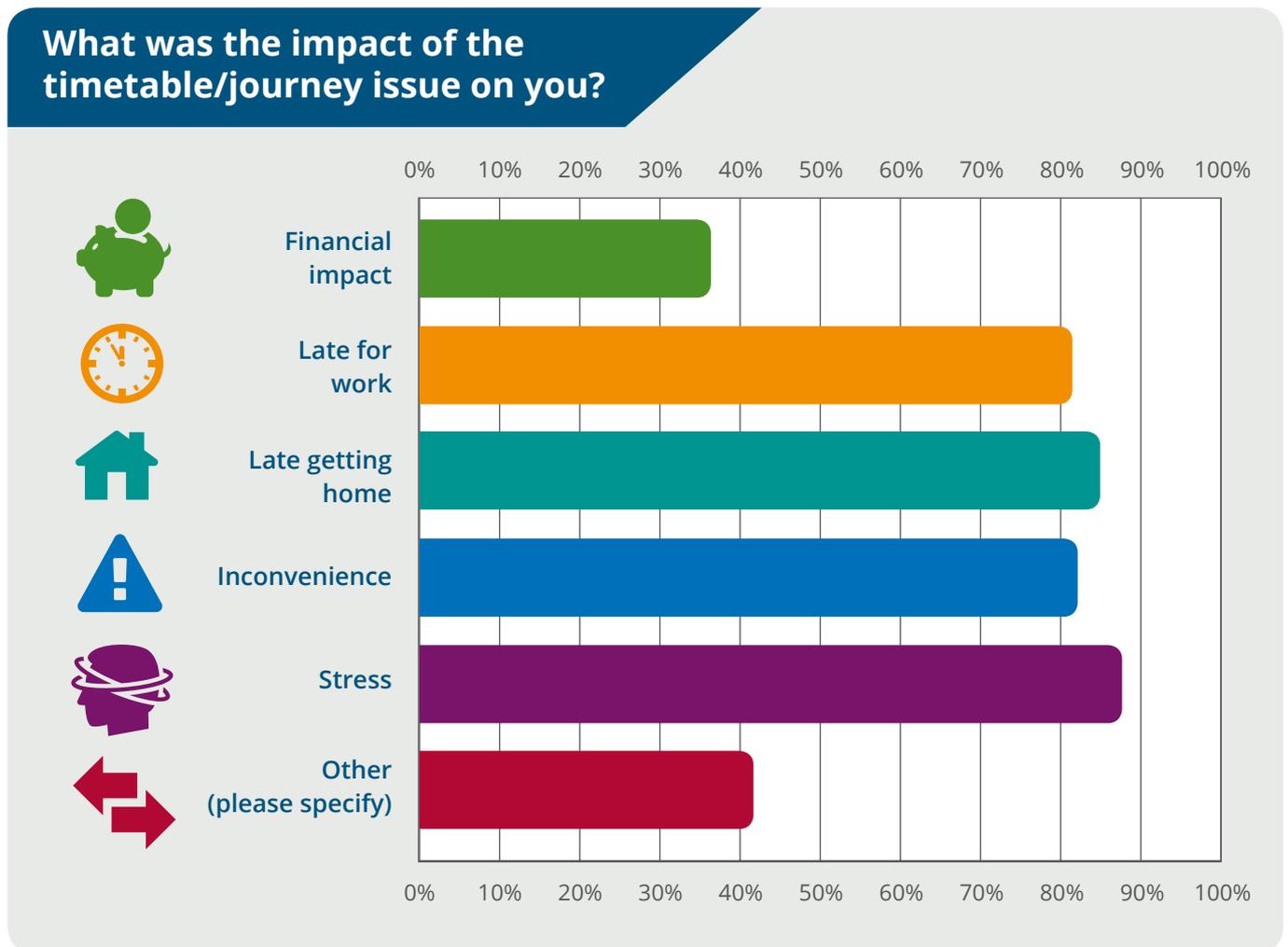
This was largely reflected in the type of ticket held by these rail users with more than half using a season ticket.



In general, these daily commuters have naturally developed travel patterns to fit in with their usual hours of work around which they have built their family and social lives. Whilst they have been the group most adversely affected by the timetable change, other passengers such as business and leisure travellers have also experienced impacts. For example, missing important family events or holiday flights.

Fewer than 2% of respondents to our survey identified themselves as requiring assistance from the rail company in order to travel.

A range of impacts were cited by passengers in our survey as well as in the responses we received from bodies such as Transport Focus and Which?, rail user groups, and in our research, as a result of the 20 May timetable disruption. The chart below taken from our passenger survey highlights the main impacts identified by rail users.



Whilst there was commonality in the impact reasons across the different research methods and our survey, the quantitative and in particular the research focus groups enabled us to drill down further into these effects.

We have therefore set out below a number of the impacts on passengers, together with illustrations of the impact on individual travellers drawn from personal experience expressed in our focus groups. These are typical impacts and similar to the experience of other passengers who have responded individually or as part of a wider response to our Inquiry. We have identified a number of headings into which these impact examples fall.

## Financial

The costs to passengers resulting from the timetable disruption have a range of financial impacts on passengers. These might be short-term such as increased childcare costs due to late arrival home or paying for a taxi when the train is cancelled or delayed, buying refreshments at the station whilst waiting for a delayed train, buying dinner because of getting home too late to cook, and paying for public transport to travel to alternative stations. Some financial impacts may be longer-term. These might be taking a new route to work resulting in an increased travel ticket cost, routinely choosing to take a taxi when travelling home late at night to avoid being 'stuck' at a station late at night, and a loss of earnings.

### Case study: Omar

**Commuter, GTR, Mill Hill Broadway to Farringdon**

Omar found that his journeys during the disruption were most difficult getting home after work. He struggled to get onto the platform at Farringdon, and often missed two trains before he was able to get on a train home.

Colleagues at work were in the same position during this time, so he found that they were understanding about the delays to his journey. During the time of disruption, and since then, he has started thinking about his return journey home much earlier than he used to. Around 3pm he now starts thinking about his home journey. When he and colleagues can see that there are lots of delays and problems with the trains, they will decide to get an Uber home.

*"On the way home it really affects me. I can't get onto the platform...it's just an uncomfortable journey home."*

*"Sometimes we just Uber it to avoid the stress of having to get on the train. Obviously that is incurring a higher cost than any other method of travel would incur."*



### Case study: Michelle

**Commuter, Northern, Bolton to Manchester/ Bolton to Blackpool**

Michelle works for a company where she is paid based on the hours that she works, and commission. During the disruption she was late for work, and this directly impacts on her salary for the month.

*"Obviously if I am two hours late, then you don't get paid for that time."*



### Case study: Sasha

**Commuter - 2 days a week, GTR, New Cross Gate to Brighton**

Sasha used to take either a Southern or ThamesLink train to work from New Cross Gate to Brighton, via East Croydon.

Since the timetable changes she now has to go via London Bridge which not only takes longer but is also more expensive

*"My old train doesn't exist any more and I have no knowledge of it's coming back. I don't know if its a result of the timetable change. I am out of pocket twice a week by £3 because of having to go into Central London to change to a Brighton train"*



## Stress and inconvenience

Being unable to rely on a consistent train service such as late notice cancellations or delays or station skipping can increase the stress experienced by passengers and heighten levels of anxiety as passengers are unable to meet work commitments or family events. This can have a detrimental impact on health as increased stress levels manifest themselves.

*"It was pretty horrendous, people were coming up literally crying because trains had been that delayed, they were going to be late at work, they were going to get the sack... it was absolute chaos."*

Rail staff



### Case study: Cynthia

**Leisure passenger, Great Northern, travelling from Kings Cross to Baldock**

Cynthia was travelling up to Baldock to see her sister and stay with her for the weekend which she does at least twice a month.

Cynthia got on the train at Kings Cross as usual. There was no announcement on the train, but it did not stop at Baldock as indicated at Kings Cross. Cynthia had to phone her sister and tell her to come and pick her up from a different station.

*"It wasn't communicated on the train that it wasn't stopping. I had to get off at the next station after Baldock and wait for my sister so that caused a bit of inconvenience for her as she had to drive farther to get me."*



## Employment

The detrimental impact on passengers' working lives was often in the form of arriving late to work or meetings. Aside from the possible reputational damage to the individual or the employer including the loss of business, this might be a time cost meaning that the person will be required to stay later at work to complete tasks or to do so because they felt obligated having arrived late.

### Case study: Jake

**Commuter, Northern, Wigan to Deansgate**

Jake was frequently late into work during the first two weeks of disruption. Whilst he felt that his boss was fairly understanding, he is worried that it may have a lasting impact on the way in which he is perceived by his boss, in a competitive work environment.

*"It didn't help that the first couple of weeks coincided with quite a busy period at work. So I mean he never shouted at me or anything, but there was passive aggressive comments and a few times I stayed late in the evening, to 6pm instead of 5pm to make up the time. Just to make it up to get the work done. So yeah things like that. Just put a bit of strain on the relationship I would say, it was quite a stressful time at work and that added to the stress, which probably could have been avoided."*



### Case study: Raj

**Commuter and Leisure passenger, GTR, St Albans to Central London**

Since the timetable change Raj's journeys to work were disrupted by more than 30 minutes. During the disruption he had a meeting scheduled with some international clients. Due to delays on the train he arrived 45 minutes late. Not only did he miss a large portion of the meeting, but he also felt embarrassed that clients travelling from another country had turned up on time, but he had not.

*"I got to a meeting 45 minutes late, it looks very unprofessional."*



## Social

Getting up earlier and getting home later was a consistent issue for passengers particularly commuters who build their family and social lives around the time of their daily travel. Journeys were being planned on the basis that services will be cancelled or delayed which meant getting earlier trains in the morning and later ones in the evening. Some rail users did not feel comfortable travelling and chose not to do so at all. Such a situation may be exacerbated for those passengers who rely on assistance either booked with the rail company or via friends/family.

### Case study: Paul

#### Leisure passenger, Northern, Manchester to Preston

Paul has a degenerative health condition. He frequently travels by rail for socialising, travelling with a friend. Both require assistance when travelling and often book Passenger Assistance.

Paul and his friend made the decision not to travel during the first two weeks of the timetable change, having heard of the disruption. They decided to cancel their plans. This was because Paul was concerned that he would have to wait a long time for a train.



*"It's the same old same old. They apologise but nothing changes, there's nothing you can do, you have no options, it's lump it or leave it"*

Commuter Northern



*"After 5.15 at Farringdon it's literally cancellation after cancellation to any destination. I think the only one that works is the one to Gatwick"*

Commuter Thameslink



*"I'm all right getting into work, it doesn't affect my punctuality but on the way home really affects me, I can't get on to the platform, I maybe miss 2 trains before the one I thought I would originally might get and it's just an uncomfortable journey home."*

Commuter Thameslink



## Personal safety

The impact of the unreliability of services means that personal safety has become an increasing concern. There is a worry that trains late at night will be cancelled or delayed and they will be at increased risk and vulnerable.

### Case study: Susan

#### Commuter, GTR, West Sutton to Fenchurch Street

Susan enjoys going out in the evening with friends after work.

Susan usually plans to get the second to last train home from Fenchurch Street, and before the change to the train timetable she knew her alternative route from another nearby station if needed.

During the disruption Susan found that later trains were cancelled and her previous alternative route was no longer available and had been removed from the new timetable. This makes her question staying out late, as she is aware that she is travelling alone.

*"In the evenings I have a drink and I want to be able to know that I have a train [to get home]."*

*"Already when you are a single woman traveling alone home, you just don't really want to be chasing around London."*



## Trust in the railway (and changing travel behaviour)

Passengers' experiences during the disruption caused by the rail timetable changes had a negative impact on their feeling of trust, and relationship with the rail company. The lack of clear explanation on why the timetable changes were happening or the scale of the changes, and the lack of improvement in services as a result of the timetable changes had exacerbated the impact. This lack of trust, combined with a change in travel behaviour, may have a financial impact on the rail company.

*"It has to get worse before it gets better, I'm hoping it's for the greater good either 6 months or a year down the line."*

Commuter  
Northern



*"I've talked to loads of people and I don't see what benefits it's had. I didn't speak to anyone who saw it as this being this great new change."*

Commuter  
Thameslink



*"Even now, three months later when I'm looking at how I'm going to get home and they all say cancelled, cancelled, cancelled, this is why I'm not sure what they've done. I don't understand"*

Commuter  
Northern



*"On the improvement thing I don't think I've had more trains coming. The big thing they said was more trains and I definitely haven't had more. I've got the same. They might be different services, but we've got the same amount of trains"*

Commuter, Thameslink



*"It's not changed for me. I still want the train to be on time, I expect it to be on time. There are still delays, people are still complaining. Replacement buses aren't good enough, it's more stress. It's not reliable."*

Commuter Northern



### Case study: Becky

**Leisure passenger, Northern, Manchester to Blackpool**

Becky enjoys socialising with friends in the evening. Since the disruption she has started to think more about what time train she gets home and how safe the journey will be.

Becky now avoids getting the last train home because she is worried that it will be cancelled, and that she will be stranded at the train station. Also, the station is often dark and unmanned at night.

*"You don't want to get the last train home because you don't know what's going on, we end up sharing a taxi back."*



The impact of disruption on travel behaviour can be either short-term or result in longer-term changes. In the short-term these might be avoiding using the train for the first couple of weeks or avoiding using intermediate stations where they are less likely to get a train during disruption.

### Case study: Kerry

**Leisure passenger, Northern, Kearsley to Manchester Victoria/  
Swinton/ Bolton**

Kerry's daughter has a long-term health condition. Kerry usually takes the train with her daughter to hospital appointments.

Kerry decided not to use the train to get to the hospital during the disruption as she felt that the environment would be too distressing for her daughter.

Instead, Kerry arranged a lift by car.

*"It would have been an absolute nightmare, and upsetting for my daughter, so I wouldn't take that risk."*

*"I can't afford not to be there so I had lifts off people."*



There will also be some impacts which result in longer-term changes in travel behaviour. These might include not using the train where there is an alternative public transport option available, using the car more often, using taxis if travelling in a group, and not risking using the train for going to the airport.

### Case study: Elaine

**Commuter, GTR, West Sutton to Fenchurch Street**

Before the rail timetable changes, Elaine travelled from West Sutton to London Bridge using Southern. She always got a seat on this journey.

On the first day of the timetable change there were no direct trains from West Sutton so she has to take a train to Sutton where she changed to a Thameslink train. This train did run on the day, but she had to stand for the journey which took an hour.

Elaine now either drives to Sutton or Cheam, parks and takes the train, rather than going to her closest station, West Sutton. This costs her more and is having to change her season ticket to reflect the different transport modes/zones she is using.

*"It's more of an effort, it messes up your vibe, you're thinking too much about what you need to do."*

*"By the time I got to work I was exhausted."*



## Diary of a GTR rail passenger

The following travel diary provides an example of the disruption experienced by a regular commuter over the course of a typical week's travel.

### Monday

Journey from Welwyn North to and from Scarborough, Thameslink connecting trains to and from Stevenage worked perfectly both ways.

### Tuesday

Welwyn North to London in the afternoon. 1447 to Kings Cross cancelled so took 1517.

Return Finsbury Park to Welwyn North. 2031 shown as running then cancelled; 2101 also cancelled. Staff had no idea when next Welwyn North train would be so I took a local train to Welwyn Garden City. Found out from NRES that they were stopping a fast Baldock train at WGC and WN and this was confirmed at WGC. Unfortunately the platforms at WGC were blocked with local trains so it was delayed by 25 minutes (incidentally delaying an already late Newcastle train by 8 minutes and no doubt causing problems with connections further north).

### Wednesday

Took 0800 from Welwyn North to Cambridge, on time. But I couldn't help but notice multiple cancellations of London-bound trains including nothing between 0731 and 0840. Apparently was an IT failure at the taxi service GTR use for positioning drivers.

Return from Kings Cross on 1754 uneventful.

## Thursday

Meeting at 1530 in London. Normally would take 1417 but it and the 1347 both removed from the timetable. 1317 shown as running but given there was no obvious train to form it I was doubtful and it was indeed cancelled at the last minute. Good job I took the 1247.

Returned on 1754 from KX fast to WN due 1811. An Edinburgh train apparently reported overhead line damage at Welwyn so we were diverted (too late to be detrained anywhere) via Hertford to Stevenage where we arrived at 1856. Line to Welwyn now reopened but no trains because cancelled/removed from timetable. Fortunately there were buses (no rail staff supervising but the bus drivers were very sensible) and we got back to Welwyn North at 1930, 79 mins late.

## Friday

Needed to be in London by 0930. All trains to London shown not running or cancelled. So took 0800 to Stevenage and picked up a Kings Lynn train making an extra stop and fast to Kings Cross (it was 14 mins late because of the extra stops it had made).

Returning to catch 2001 from Finsbury Park to Welwyn North. Caught 1931 running 28 minutes late. Good job I did as the 2001 was delayed by a Horsham - Peterborough train in front presumably awaiting crew relief and left 10 mins late, skipping intermediate stops including Welwyn North.

## Saturday

Had to be in London by 1000. 0917 removed from timetable so had to take 0847.

On return 1631 from Finsbury Park to WN did not run. 1701 ran but 10 mins late. Rather than waiting for it I took a stopper to WGC and got a lift from my wife.

## Sunday

Had to be in London by 1030. 0919 and 0948 trains from WN both cancelled so I took 0906 bus to Stevenage and then a train to KX. Bus in live departure boards but no information or staff at WN station.

On return, 1409 from Finsbury Pk to WN cancelled and next two trains at 1509 and 1609 taken out of timetable. So I took stopping train to WGC. May have been a connecting bus at WGC (not on live departure boards but WGC station staff thought it was running) but I got a lift instead. Signage for buses at WGC poor.

The best comment I heard was a driver PA announcement. "Sorry about the delays. If it's any consolation you are not the only ones who are fed up."

# **PART B: FINDINGS INTO THE FAILURE OF THE MAY 2018 TIMETABLE**

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## Part B: Our Findings

This section of the interim report makes findings about the causes of the disruption following the failure of the introduction of the May 2018 timetable.

These findings are in relation to:

- the different projects and processes that needed to be delivered by the rail industry in preparation for 20 May, focusing on the infrastructure projects that the timetable change depended upon;
- the process of developing the timetable; and
- the preparedness of the train operating companies to implement the timetable and subsequent response to passengers;

The structure of our findings are as follows:

1. Context and background
2. Infrastructure
3. Timetabling and role of the System Operator
4. Northern
  - a. Preparedness to operate the new timetable; and
  - b. Response to passengers following 20 May
5. Govia Thameslink Railway (GTR)
  - a. Preparedness to operate the new timetable; and
  - b. Response to passengers following 20 May

# 1. Background and context

## Context

- 1.1. This chapter explains the background to the May 2018 timetable change. It summarises the roles of the key players; the intended effects and timescales of improvements to infrastructure and how the timetable planning process works.

## Industry structure

- 1.2. **Department for Transport** (DfT) provides the strategic direction and funding to the railways and procures rail franchises and infrastructure projects. The Secretary of State for Transport has overall responsibility for the policies of DfT.
- 1.3. **Network Rail** is a public company, answerable to DfT, which runs, maintains and develops Britain's rail infrastructure. Network Rail gets the majority of its funding from the taxpayer, from train operators' access fees for using the network and from other commercial activity. Network Rail organises itself in a 'matrix' structure. For the purposes of this report, the most important parts of this structure are:
- **System Operator** (SO) - a business unit within Network Rail responsible for industry wide coordination of activities required to optimise the overall use of the network. This includes responsibility for the production and publication of the rail timetable;
  - **Infrastructure Projects** (IP) - a business unit within Network Rail which develops, designs and delivers enhancements and other large complex capital projects; and
  - **Route businesses** - Network Rail has recently split its management into nine devolved route businesses. These routes operate, maintain and renew infrastructure in their regions. The SO and IP provide services for the Routes.
- 1.4. **Train Operating Companies** (TOCs) run the trains that use Network Rail's network. TOCs pay Network Rail for use of railway infrastructure, and, in most cases, have franchise contracts with DfT. TOCs have a direct relationship with passengers, and have licence condition obligations regarding provision of information to passengers. For the purposes of this report, the two TOCs that have received the greatest focus are:
- **Arriva Rail North** (Northern) – a subsidiary of Arriva UK Trains which holds the Northern franchise from April 2016 to 2025; and
  - **Govia Thameslink Railway** (GTR) – a subsidiary of Govia, which is a joint venture between the Go-Ahead Group and Keolis, which holds the Thameslink, Southern and Great Northern (TSGN) franchise from September 2014 to 2021.

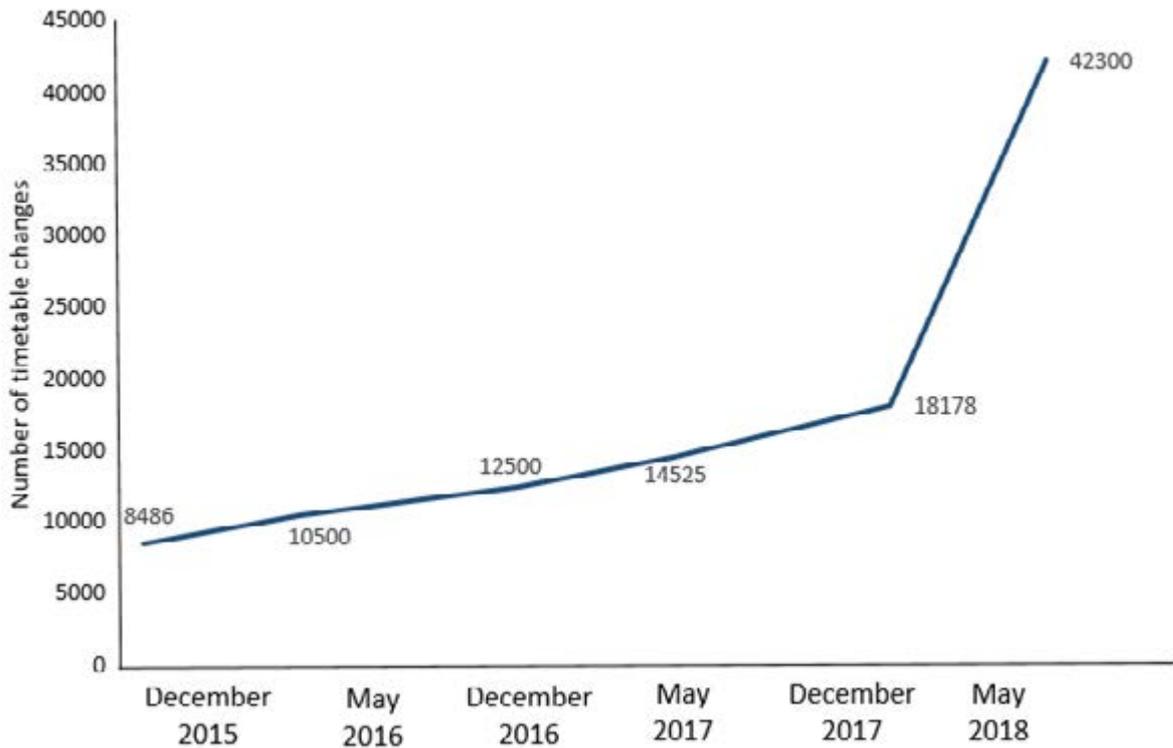
1.5. **Office of Rail and Road (ORR)** is the independent economic and safety regulator for Britain’s railways. It regulates Network Rail including setting targets and reporting on its performance. ORR regulates health and safety standards across the whole rail industry and oversees competition and consumer rights issues in the industry. The Secretary of State for Transport asked ORR to carry out this independent inquiry.

## Timetable changes

1.6. Timetable changes are the culmination of complex rail industry programmes, where the benefits of new infrastructure and rolling stock are brought together to provide improvements in the service offered to passengers. These benefits can include better trains and station facilities; and infrastructure upgrades that deliver improvements to capacity, journey time and performance.

1.7. Timetable changes are delivered bi-annually (May and December) and the network improvements are delivered incrementally through these changes. The introduction of a new system-wide timetable on 20 May 2018 was intended to deliver benefits from two major investment programmes. It was significant in scale with 42,300 planned changes to the timetable. As Figure B1 shows, this was a significant increase compared to previous changes. This meant that 46% of passenger services across the national network would be amended.<sup>1</sup>

Figure B1: Timetable changes – number of planned changes (as of May 2018)



<sup>1</sup> Appendix 4, *PAPER TO THE NATIONAL TASK FORCE-OPERATORS GROUP: Train Planning Resource*, 9 May 2018. NB: The figure for December 2018 has been downscaled following the issues encountered in May 2018

## New infrastructure and rolling stock

- 1.8. Rail infrastructure programmes are complex engineering and railway system projects. The works are delivered by Network Rail, and are typically specified and funded by DfT or Transport Scotland as either a whole programme, a series of discrete projects, or to deliver specific outcomes (such as capacity improvements, or reduction in journey time).
- 1.9. In March 2016 a Memorandum of Understanding (MoU) was agreed between DfT and Network Rail which set out their respective roles and accountabilities in relation to the delivery of Government funded railway enhancements in England and Wales. In particular sets out:
- that DfT is the funder and client and Network Rail is the System Operator and principal delivery partner for enhancements; and
  - establishes the principles for enhancement development, based on the funder having clear decision points to permit projects to proceed and value for money, to be assessed via business case options.
- 1.10. Within Network Rail, IP is usually responsible for delivering major engineering works, both enhancements and renewals. Last year IP delivered £5.7bn of work on behalf of Network Rail. IP contains engineering and project management capabilities which interface with Network Rail's Supply Chain to deliver complex and high value projects on behalf of the route businesses. The two programmes which are the focus of this report are both overseen by IP.
- 1.11. The scale of the planned changes in May 2018 was a result of two major infrastructure programmes that were due to reach completion – the North West Electrification Programme Phase 4 (NWEP 4), and Thameslink.

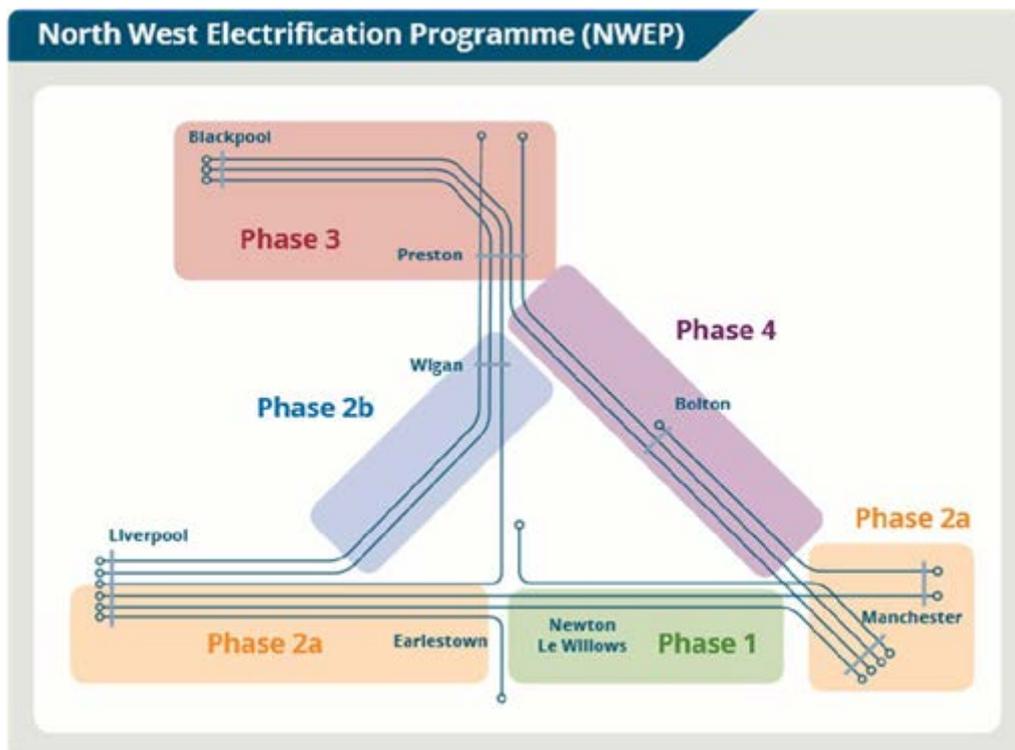
## North West Electrification Programme

- 1.12. NWEP4 (also known as the Bolton corridor) is part of a wider programme managed by DfT as the North of England Programme or The Great North Rail Project. This incorporates infrastructure works from The Northern Hub and North West Electrification Programmes. The anticipated benefits of the programme will be realised through trains operating faster, and more frequently, into central Manchester and between cities in the north. By 2020, it is planned that there will be over 2,000 extra services a week, 500 new carriages with space for 40,000 more passengers a day. There will be brand-new or completely refurbished trains, and all Pacer trains will be replaced. An additional 27,000 jobs are expected to be supported by this project in Liverpool, Leeds and Manchester by 2022.
- 1.13. NWEP4 was originally conceived in 2009. The scope of the project is to provide overhead electrification and infrastructure improvements to enable journey-time savings. In addition to

the electrification works, NWE4 also includes improvements to the signaling, the re-boring of Farnworth tunnel, remodeling of Bolton station and several bridge reconstructions. The changes would allow the replacement of diesel with electric rolling stock.

- 1.14. The date for completion was moved in 2015 from December 2017 to December 2016. In September 2017 this was moved again to May 2018.

Figure B2: North West Electrification Programme

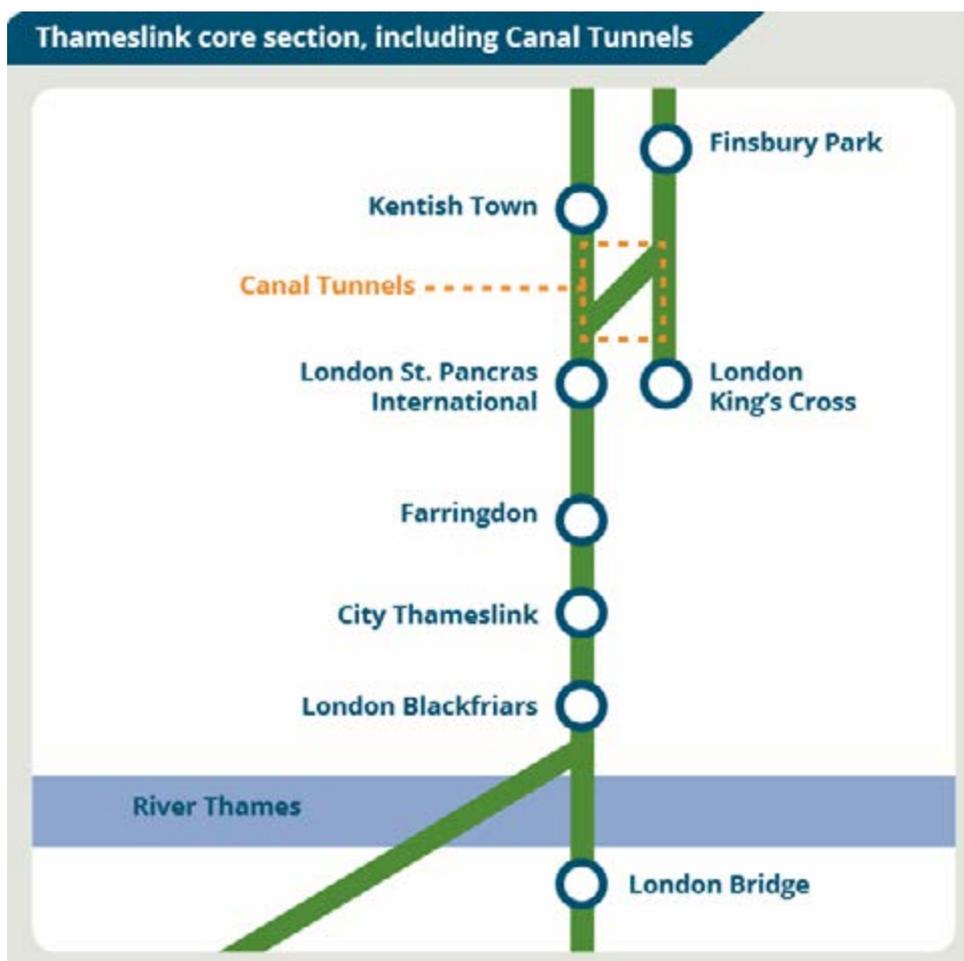


## Thameslink

- 1.15. Thameslink is a complex programme involving the planned introduction of 115 new trains on new infrastructure through central London. The anticipated benefits of the programme will be realised through shorter journey times, reduced crowding on trains and better interchange between services.
- 1.16. More stations outside of London will be connected to the Thameslink route giving passengers more options for travel. Larger and improved stations at Blackfriars, London Bridge and Farringdon will provide passengers with more space and better connections between services.
- 1.17. The programme has been delivered in two phases:

- Phase 1 - the remodelling of Farringdon and Blackfriars stations which was completed on time and on budget in 2011.
- Phase 2 – included remodelling of London Bridge Station (which completed in January 2018) and introducing new track and signalling technology to enable 24 trains per hour to operate through central London (Thameslink core section). Phase 2 is not yet complete.

Figure B3: Thameslink core section



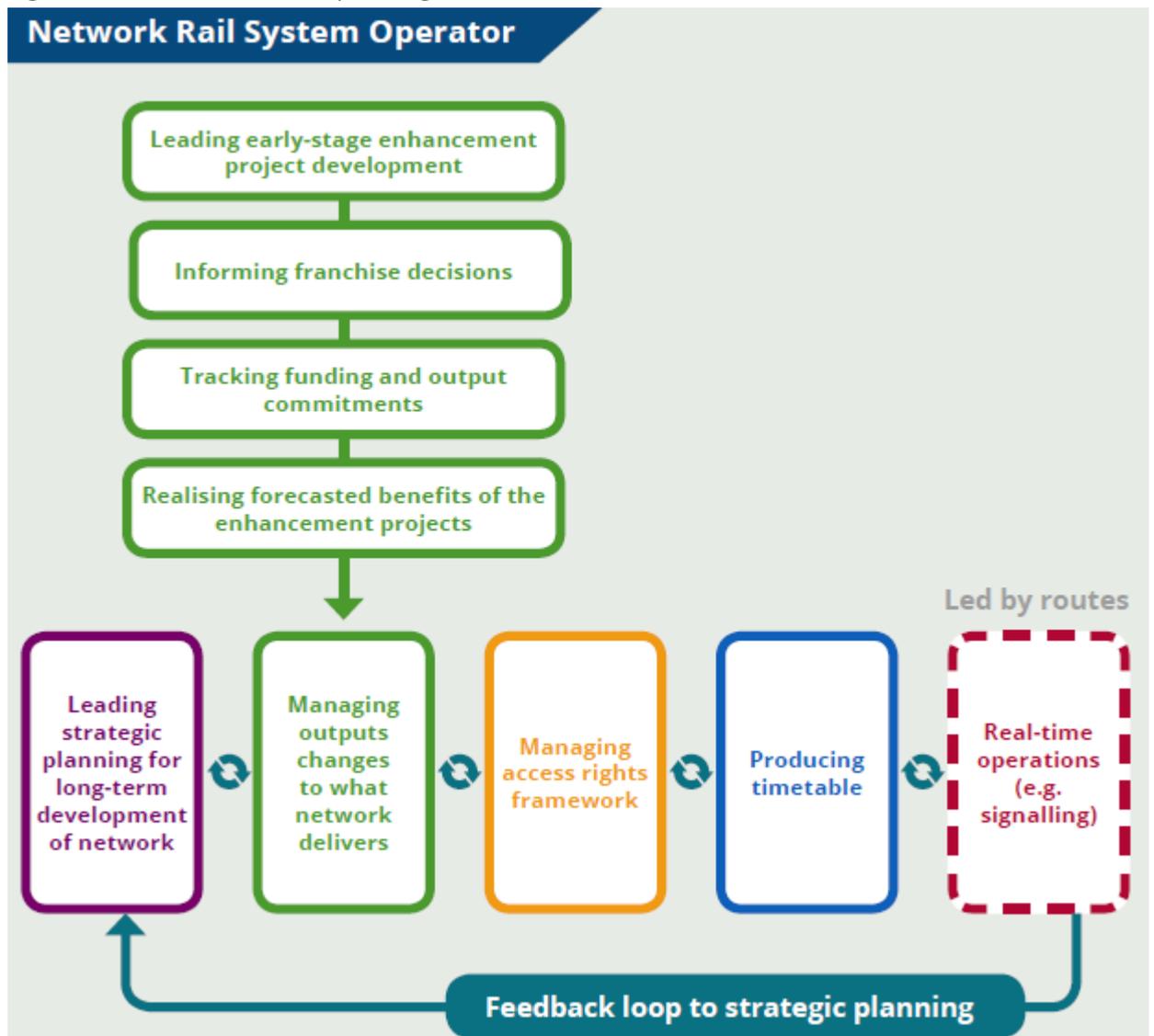
- 1.18. DfT committed to the programme in 2007. The original date for the completion of the Programme was 2015; in 2013 this was changed to 2018. The reasons for this change were addressed by the NAO in its report in June 2013.<sup>2</sup>

<sup>2</sup> *Progress in the Thameslink programme*, National Audit Office, 5 June 2013. This may be accessed [here](#).

## System operation and process for timetable change

- 1.19. The SO has overall responsibility for the production and publication of the rail timetable, among other activities. The SO works with train operators to decide the best allocation of capacity, and with Route businesses (who may want to access the network to conduct engineering works). In doing this, it translates the TOCs' access rights and the train paths that they bid for into the timetable. The SO coordinates the process for establishing a base timetable twice a year and also for making short-term changes to it.
- 1.20. The SO was established recently. Its role and position has developed in response to wider industry changes, such as the devolution of responsibilities to Route businesses, to ensure that planning decisions remain joined-up, and to support a more incremental 'pipeline' approach to developing and funding enhancements. Before 2016 the SO's functions were undertaken separately throughout Network Rail. In 2016, these functions came together to form 'Network Strategy and Capacity Planning', which subsequently evolved into the SO. Its current operating model is illustrated in Figure B4.

Figure B4: The SO's current operating model



- 1.21. The timetable is the SO's final product which it produces as part of a set of wider and longer-term activities, namely:
- managing the access rights framework;
  - managing changes to what the network delivers, including managing the overall enhancement projects portfolio, advising franchising authorities about the services the network can accommodate and managing Event Steering Groups that bring industry together to prepare for major timetable changes; and
  - leading the industry's long-term planning process including analysing the future needs of the network and working with industry to advise funders on the options for how the network should develop.
- 1.22. Network Rail's recent SO Strategic Business Plan states:
- 'Timetable development is our most complex, resource demanding and time critical process. It involves decisions on how to accommodate requests for track access from over thirty operating companies each holding different contractual 'rights' in a manner which is consistent with the industry's Network Code.'<sup>3</sup>
- 1.23. The Network Code is a common set of rules and industry procedures that apply to all parties, such as TOCs and freight companies who have contractual right of access to the track owned and operated by Network Rail. Part D of the Network Code code sets out the process which Network Rail and TOCs must follow in order to compile the timetable. The Network Code is incorporated by reference into each Track Access Contract so is contractually binding.

## Implementing the new timetable – role of TOCs

- 1.24. TOCs are closely involved in the timetable process and, for major timetable changes and infrastructure improvements, train operating companies need to undertake significant preparation in order to ensure that the new timetable can be implemented successfully into service.
- 1.25. Requirements associated with network improvements will be specified in franchise contracts, including (where relevant) the procurement and/or receipt of new rolling stock. TOCs will be involved in the planning, roll-out and implementation of new infrastructure, and will attend the relevant project or programme governance boards to help ensure that they are fully aware of timings and requirements.
- 1.26. Such requirements may include the recruitment of new drivers, training of drivers (including the learning of new / signaled routes and new technology) and procurement of additional or new rolling stock. Once the draft timetable has been put together, unit and driver diagrams must be

<sup>3</sup> *System Operator Strategic Business Plan* – Network Rail, February 2018

developed taking into consideration a number of factors including unit mileage, maintenance, refueling and cleaning schedules, driver work rosters, annual leave and training requirements amongst others.

## 2. Infrastructure

### Context

- 2.1. This chapter examines the issues associated with the delivery of infrastructure planned for the May 2018 timetable.
- 2.2. We have assessed whether factors associated with the following areas directly contributed to the failure of the May timetable:
- Thameslink infrastructure changes;
  - North West Electrification Phases 3 and 4; and
  - the enhancements portfolio being delivered in Control Period 5 (CP5) by Network Rail on behalf of DfT.
- 2.3. The infrastructure being delivered enables transformational changes to passenger experiences of train services. For the rolling stock to run, the additional services and the improved journeys promised by the May 2018 timetable, there was a critical dependency on the infrastructure being ready.

### Chronology

North West Electrification Programme	Thameslink Programme
<b>2007</b>	
	<ul style="list-style-type: none"> <li>■ In 2007, the Government committed to delivering the Thameslink Programme infrastructure for 2016.<sup>4</sup></li> </ul>
<b>2008</b>	
	<ul style="list-style-type: none"> <li>■ In 2008, DfT, Network Rail and ORR agreed a protocol defining how they would work together to deliver the Thameslink Programme.</li> </ul>
<b>2009</b>	
<ul style="list-style-type: none"> <li>■ In 2009 electrification in the Manchester area, known as the Lancashire Triangle,</li> </ul>	<ul style="list-style-type: none"> <li>■ During 2009 cost pressures emerged on Phase Two of the Thameslink Programme.<sup>6</sup></li> </ul>

<sup>4</sup> *Progress in the Thameslink Programme*. National Audit Office, 5 June 2013. This may be accessed [here](#).

<sup>6</sup> *Progress in the Thameslink Programme*. National Audit Office, 5 June 2013

was conceived. It would be spilt into four phases. <sup>5</sup>	
<b>2010</b>	
	<ul style="list-style-type: none"> <li>In 2010, Thameslink Phase Two was re-baselined to complete in 2018.<sup>7</sup></li> </ul>
<b>2011</b>	
<ul style="list-style-type: none"> <li>In 2011, Network Rail was served with a Safety Improvement Notice for its approach to risk assessments as part of the electrification designs on the NWEF Phase 1.<sup>8</sup> This is significant because similar issues would arise on NWEF4 and push back the completion date from December 2016 to December 2017.<sup>9</sup></li> </ul>	<ul style="list-style-type: none"> <li>Throughout 2011, key outputs for Thameslink Phase 1 were delivered on time and budget to enable a timetable change in May 2012.<sup>10</sup></li> </ul>
<b>2014</b>	
<ul style="list-style-type: none"> <li>In February 2014, during the development stage of the project, Network Rail undertook a risk based approach to ground investigations for NWEF 4 in line with standard practices. Ground conditions would cause the completion date to be revised from December 2017 to May 2018 once construction commenced.<sup>11</sup></li> </ul>	
<b>2015</b>	
<ul style="list-style-type: none"> <li>In 2015 Network Rail had to redesign NWEF 4 to comply with the law on electrical clearances. The project had been designed to an internal Network Rail standard that was not compliant with the Electricity at Work Regulations (1999). ORR had previously served an improvement notice in 2011 on Network Rail for their design of electrification.<sup>12</sup></li> <li>On 23 November 2015, the Hendy Review was published, which set out a revised</li> </ul>	

<sup>5</sup> *North West Electrification – Programme Management Review*. Report by Nichols, July 2012. This may be accessed [here](#).

<sup>7</sup> *Progress in the Thameslink Programme*. National Audit Office, 5 June 2013

<sup>8</sup> ORR inspectors normally enforce health and safety standards by giving advice on how to comply with the law. Sometimes they must order people to make improvements by issuing them with a notice, for example an improvement notice, which allows time for the recipient to comply.

<sup>9</sup> Network Rail interview, by ORR (transcribed). 1 August 2018.

<sup>10</sup> *Progress in the Thameslink Programme*. National Audit Office, 5 June 2013.

<sup>11</sup> *North West Electrification Programme Phase 4 Manchester Victoria to Euston Junction – OLE Delay Assessment*. Report by Arcadis for Network Rail.

<sup>12</sup> *North West Electrification Programme Phase 4 Manchester Victoria to Euston Junction – OLE Delay Assessment*. Report by Arcadis for Network Rail.

<p>cost baseline for Network Rail's Enhancements Portfolio for CP5 and beyond. The NWE4 milestone was moved from December 2016 to December 2017.<sup>13</sup></p> <ul style="list-style-type: none"> <li>■ On 25 November 2015, the Bowe Review was published, which set out lessons learned from the planning of rail investments for CP5. In response, Network Rail and DfT set up nine Programme Boards to govern the enhancements portfolio. NWE4 falls under the North of England Programme Board, bringing together DfT, Network Rail, and TOCs.<sup>14</sup></li> </ul>	
<b>2016</b>	
	<ul style="list-style-type: none"> <li>■ In 2016, the Gibb Review was commissioned to review performance on the Southern part of the GTR network.<sup>15</sup></li> </ul>
<b>2017</b>	
<ul style="list-style-type: none"> <li>■ Potential slippage of NWE4 planned for December 2017 was discussed by Northern at an internal timetable progress meeting in April 2017.<sup>16</sup></li> <li>■ During June 2017, NWE4 completion in time for the December 2017 timetable change was abandoned and the project was replanned for May 2018.<sup>17</sup></li> <li>■ During August 2017 a 16 day blockade was planned to do work on NWE4 to recover the programme after slow progress due to difficult ground conditions. An incident near Moses Gate station prevented the project from accessing the worksite and doing the work they had planned. This required a further replan of the project to deliver for May 2018.<sup>18</sup></li> </ul>	<ul style="list-style-type: none"> <li>■ During May 2017, GTR said they requested access to Canal Tunnels in advance of the planned opening of April 2018 to increase their driver training programme. The Canal Tunnels would be open for empty coaching stock moves from September 2017 but not for passenger services.</li> </ul>

<sup>13</sup> Report from Sir Peter Henty to the Secretary of State for Transport on the replanning of Network Rail's Investment Programme. Network Rail, November 2015. See also [here](#).

<sup>14</sup> Bowe review into the planning of Network Rail's enhancements programme, 2014 to 2019. Dame Collette Bowe, DfT, 25 November 2015. This may be accessed [here](#).

<sup>15</sup> Changes to improve the performance of the Southern network and train services, and restore passenger confidence. An independent report by Chris Gibb, 30 December 2016. This may be accessed [here](#).

<sup>16</sup> December 17/May 18 Progress Meeting, Northern, 19 April 2017.

<sup>17</sup> 2018 Thameslink Operational Readiness LNE&EM Route Readiness Board, 20 June 2017

<sup>18</sup> Network Rail interview, by ORR (transcribed). London 01 August 2018. Also Network Rail interview, by ORR (transcribed). Crewe, 23 August 2018.

<ul style="list-style-type: none"> <li>■ In October 2017, Network Rail designed a new way of installing foundations on NWEF 4 to cope with the difficult ground conditions. This was expected to increase the likelihood of successful delivery of the project.<sup>19</sup></li> <li>■ On 13 October 2017, Network Rail noted at the North of England System Review Group that NWEF 4 was required and that there was no timetable contingency plan, indicating that the risks around non-delivery for May were known at that point.<sup>20</sup></li> <li>■ On 26 October 2017 the North of England Programme Board briefing note included analysis undertaken by Network Rail which outlined the potential consequences of not delivering NWEF 4 and the mitigating actions which could be undertaken to prevent them.<sup>21</sup></li> <li>■ On 29 November 2017 the North of England Programme Board discussed a possible NWEF 4 delay.<sup>22</sup></li> <li>■ During December 2017 a North of England Programme Board was held, plus an additional conference call on 15 December. On 15 December arrangements were put in place for an extraordinary meeting to be held on 5 January 2018 to assess progress of the Christmas works. 5 January was also the earliest timetable planning resources would be available if required.<sup>23</sup></li> <li>■ During December 2017 the Christmas blockade for NWEF 4 delivered 75% of the planned foundations meaning that the project had to be replanned to deliver the infrastructure that was needed to enable the May timetable change.<sup>24</sup></li> </ul>	
<b>2018</b>	
<ul style="list-style-type: none"> <li>■ On 5 January 2018 the Extraordinary North of England Programme Board was</li> </ul>	<ul style="list-style-type: none"> <li>■ On 9 February 2018 the Industry Readiness Board heard GTR's request access to Canal</li> </ul>

<sup>19</sup> *North West Electrification Programme Phase 4 Manchester Victoria to Euston Junction – OLE Delay Assessment*. Report by Arcadis for Network Rail.

<sup>20</sup> North of England Programme System Review Group Meeting, Network Rail, 13 October 2017

<sup>21</sup> *NoEP – Board. Amended paper*. Network Rail, 20 October 2017. Presented to the North of England Programme Board, DfT on 26 October 2017

<sup>22</sup> North of England Programme Board, DfT, 29 November 2017

<sup>23</sup> Email summary of 5 January 2017 North of England Programme Board decision, DfT, 15 December 2017.

<sup>24</sup> Network Rail interview, by ORR (transcribed). 1 August 2018

<p>presented with options by Network Rail for completion of NWEP 4 by May 2018.<sup>25</sup> This was rejected as being too disruptive for passengers as it would have required the closure of the line between Bolton and Manchester for five weeks (the line between Blackpool and Preston is already closed). The project now aims to be ready for December 2018.</p>	<p>Tunnels by 19th February; a compromise of 26 February was agreed.<sup>26</sup></p> <ul style="list-style-type: none"> <li>■ On 26 February 2018 the Canal Tunnels opened for “preview” passenger services.</li> </ul>
<ul style="list-style-type: none"> <li>■ On 15 March 2018 Network Rail gave notice that the NWEP 3 (Electrification between Blackpool and Preston) blockade would be delayed by 3 weeks due to three separate extraordinary events.<sup>27</sup> The line had been planned to close for 19 weeks and open in late March 2018.</li> <li>■ On 11 May 2018 NWEP Phase 3 was ready for passenger services, three weeks late.</li> </ul>	

## Findings

### The North West Electrification Programme

- 2.4. This report will first address the impact on the May timetable of NWEP 4 and then the impact of NWEP 3 because they affected preparations in that order chronologically.
- 2.5. Projects broadly progress through three high-level stages:
- Development – options to deliver the outputs required by funders are explored, a single option is selected at the end of this stage.
  - Design – The single option is worked up in more detail. Procurement activities are undertaken, and access to the railway for work may be booked.
  - Delivery – The project is constructed and commissioned.
- 2.6. The work on NWEP 4 Bolton Corridor was originally planned to complete in December 2016. Network Rail progressed towards GRIP Stage 3,<sup>28</sup> the stage within Network Rail’s project lifecycle

<sup>25</sup> DfT Interview, by ORR (transcribed). 8 August 2018

<sup>26</sup> Thameslink 2018 Industry Readiness Board, 9 February 2018

<sup>27</sup> *Chronology of Key Events*, Northern, 16 July 2018

<sup>28</sup> Guide to Railway Investment Projects. A Network Rail formal procedure through which every investment project on Network Rail’s network must pass. It consists of eight stages; at the end of each of these a review is carried out and if the project cannot meet the pass criteria it is stopped or held until it does.

where a single option to take forward is selected, in 2015. It was funded to deliver this for March 2016.

- 2.7. The project had been designed in accordance with Network Rail's internal standard on electrical safety. Network Rail had already been notified that their designs did not comply with the law in 2011 by ORR in relation to Phase 1 of NWEF, specifically the Electricity at Work Regulations (1999) and ORR served a Safety Improvement Notice in respect of Network Rail's approach to risk assessing deviations from the regulations. This was one of the first electrification schemes that Network Rail had been commissioned to deliver since the introduction of the regulations. ORR expected Network Rail to comply with the regulations, or carry out a risk assessment to support any proposed deviation. This was an issue which affected all the electrification projects within Network Rail's portfolio. Changes to the design were then required following risk assessment which meant that Network Rail were a year late in achieving their GRIP 3 milestone.

'We went from a position of, "Oh, we'll just get everything derogated", to a regulatory position of, "No, actually we're going to hit the standard."'<sup>29</sup>

- 2.8. As a result of this delay, the milestone for completion of NWEF 4 was moved from December 2016 to December 2017 by the Hendy Review.<sup>30</sup>

- 2.9. **The Inquiry has found that the replanned delivery of the Bolton Corridor electrification was known about sufficiently early in 2016 to not be a direct contributory factor to the May 2018 disruption, and so has not focused further on the merits of the decision at the time. However it did compress the remaining timescales available to complete the project, creating a higher level of risk for the remaining project as further delays occurred during 2017.**

## Delays during construction between April and August 2017

- 2.10. Once construction had commenced in spring 2017, Network Rail began to encounter problems. The problems were in particular in relation to the construction of foundations which support the masts for the Overhead Line Equipment (OLE).
- 2.11. From the 18th century, this area of Lancashire had a large amount of mining activity. Many of these mining works are uncharted and Network Rail needed to be careful not to create a void when carrying out ground work for foundations that would cause the railway to collapse. A bespoke solution had to be developed for each mining site.<sup>31</sup>

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<sup>29</sup> Network Rail interview, by ORR (transcribed). 1 August 2018

<sup>30</sup> *Report from Sir Peter Hendy to the Secretary of State for Transport on the replanning of Network Rail's Investment Programme*. Network Rail, November 2015. See also [here](#).

<sup>31</sup> *North West Electrification Programme Phase 4 Manchester Victoria to Euxton Junction – OLE Delay Assessment*. Report by Arcadis for Network Rail.

- 2.12. In addition Network Rail had assumed ground conditions when planning the work that, when they arrived on site, proved to be inaccurate. Network Rail told us that they had carried out a risk based review of information available to them based on standard practices; this included a desktop review and ground investigations at 60 out of 1700 sites during the design phase.<sup>32</sup> Network Rail told us that the access requirements to the railway to undertake a full survey of the ground conditions would have meant that they would not have completed the work in time for the December 2017 timetable because the available access would have been used surveying the ground rather than for construction.
- 2.13. Between April 2017 and June 2017 production on site was slow, and there was a failure rate of 65% on augured piles due to poor ground conditions.<sup>33</sup> The minutes of the North of England Programme Board in May 2017 indicate that Northern had significant concerns about Network Rail's ability to deliver the infrastructure.
- 2.14. In June 2017 the decision was taken at the North of England Programme Board to abandon plans to complete the work in time for the December 2017 timetable and to focus on delivering the infrastructure for the May 2018 timetable change. Completion of works is recorded in the July Programme Dashboard as unrecoverable for December 2017. A Change Control Request was processed through the Portfolio architecture put in place by DfT and Network Rail, and was approved at the September 2017 Portfolio Board.
- 2.15. While the change control process was underway, a plan was put in place to accelerate works in order to deliver for May 2018. This included work during a 16 day blockade of the railway in August 2017. Blockades can be the most efficient way to deliver infrastructure works as plant, labour, and materials do not have to be taken off site to allow the train service to start again as it does when work is carried out overnight. Some major works cannot be undertaken in normal engineering hours as the railway cannot be returned to a safe operating configuration in short timescales, and therefore durations of several days' working day and night are required.
- 2.16. The disruptive nature of blockades means their frequency and availability is limited. The consequence for a project of not completing all the planned work in a blockade can be significant as a further blockade may not be available for some months, potentially impacting on overall project timescales.
- 2.17. At the start of the blockade in August 2017, some works were being undertaken near Moses Gate Station. During this work a burst water main caused a supporting wall to collapse, flooding the railway. In addition, support for a bridge over the railway was compromised, and this prevented the resources and plant required for NWE4 from reaching the parts of the railway where they were going to work.

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<sup>32</sup> *North West Electrification Programme Phase 4 Manchester Victoria to Euxton Junction – OLE Delay Assessment*. Report by Arcadis for Network Rail.

<sup>33</sup> *North West Electrification Programme Phase 4 Manchester Victoria to Euxton Junction – OLE Delay Assessment*. Report by Arcadis for Network Rail.

- 2.18. Consequently, the work planned for the August blockade could not proceed as planned. This required a further rework of the plan. An internal report undertaken by Network Rail in September 2017 noted that in the replanning exercises: 'There is a risk that rebase-lining to meet the May 2018 milestone is over optimistic based on current production levels and performance'.<sup>34</sup> This comment is marked as critical by the report writer which is described as: 'Do Now – to increase the likelihood of a successful outcome it is of the greatest importance that the programme/project should take action immediately'.
- 2.19. In order to catch up with the works schedule during the autumn of 2017, Network Rail attempted to complete work during overnight and weekend works. In addition, they changed the design of their foundations to cope with the ground conditions they were encountering.<sup>35</sup> Network Rail's IP have also told us that at this point in time its contractor Carillion was encountering problems with the retention of key resources as the problems leading up to their liquidation in January 2018 were being seen within the company: 'They're all individuals, they could all see. They could only listen to the press. Some of the staff were moving on; some were leaving.'<sup>36</sup>
- 2.20. **The Inquiry has found that Network Rail's approach to planning the construction of the NWEP 4 Bolton Corridor electrification did not accurately estimate the actual construction risks and probable delays to its completion. While these risks were potentially manageable in themselves, the consequential risks to the introduction of the May 2018 timetable were compounded by an excessively optimistic approach to planning and replanning mitigating actions to catch up construction works as timescales were compressed during 2017.**
- 2.21. A significant factor in the cause of the delays to the delivery of the infrastructure was Network Rail's failure to resolve the ongoing issues with the ground conditions within the Bolton Corridor. Network Rail stated that it followed standard practices by undertaking a risk based approach to the ground investigations for NWEP 4.<sup>37</sup> The evidence suggests that at each replanning stage, the replan proved to be optimistic as a result of underestimating the extent to which ground conditions would affect construction, and that historical productivity levels were not sufficiently taken into account when planning work.<sup>38</sup>
- 2.22. Network Rail revised their plans to undertake a blockade with the aim of overcoming existing delays. Issues that occurred, such as the burst water main, were not reasonably foreseeable.

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<sup>34</sup> *Network Rail Peer Review, PRO Programme Review: North of England Programmes – NWEP*. Network Rail, 22 September 2017.

<sup>35</sup> *North West Electrification Programme Phase 4 Manchester Victoria to Euxton Junction – OLE Delay Assessment*. Report by Arcadis for Network Rail and Network Rail interview, by ORR (transcribed). London, 1 August 2018

<sup>36</sup> Network Rail interview, by ORR (transcribed). 1 August 2018

<sup>37</sup> *ORR Timetable Inquiry, NR response to further questions*. Network Rail, 20 August 2018

<sup>38</sup> *Network Rail Peer Review, PRO Programme Review: North of England Programmes – NWEP*. Network Rail, 22 September 2017.

This had an impact on the ability of Network Rail to recover time in the construction of the infrastructure.

## Delays affecting the recovery of the programme to meet the May timetable milestone from September 2017 – January 2018

- 2.23. Progress on site remained slow over the remainder of 2017. We have seen from the Programme Board minutes and reports privately provided to DfT by Northern that they were not confident that Network Rail would be able to deliver the infrastructure in time.<sup>39</sup>
- 2.24. The Programme Board remit did not cover system risk. The Board concentrated on the delivery of the infrastructure, however the organisations from across the system were represented, including the SO. We have not seen any evidence that the Programme Board properly considered the risks of making these go/no-go decisions in alignment with the industry timeline for timetable development set out in the Network Code, this is in contrast to when a similar decision was taken in June 2017 (see Chapter 3: Timetabling and the role of the System Operator).
- 2.25. A further blockade was planned for the Christmas period 2017. Network Rail's IP stated that through autumn and leading up to the blockade that they were not confident of being able to deliver the infrastructure, but they had a plan that they thought was 'doable'.<sup>40</sup>
- 2.26. In the October Programme Board, analysis of the consequences of not delivering the infrastructure required for May 2018 was presented for information in a bow-tie format (a risk evaluation method used to analyse and demonstrate the causal relationships in risk scenarios). It noted that because the National Timetable was being changed, in particular to accommodate new Thameslink services, the consequences of non-delivery could lead to widespread disruption across the national network.<sup>41</sup>
- 2.27. DfT have said to us that it could not get a clear view of risk from Network Rail. DfT stated that the individual parts of Network Rail – Route businesses, SO and IP - were not speaking with one voice.<sup>42</sup> In addition DfT said that when faced with similar situations on other projects on the portfolio Network Rail have been able to deliver.
- 2.28. Northern had raised concerns with the impact on delay to the timetable and this is documented through North of England Programme Board minutes; most notably at meetings held in December 2017.<sup>43</sup> In addition, together with TransPennine Express (TPE), it wrote to IP and Route managing directors to raise its concerns about delivery of the project, the importance of

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<sup>39</sup> *Infrastructure Period Report to Department for Transport*. Northern, 24 October 2017.

<sup>40</sup> Network Rail interview, by ORR (transcribed) 21 August 2018.

<sup>41</sup> North of England Programme Board, DfT, 26 October 2017.

<sup>42</sup> DfT Interview, by ORR (transcribed). London, 8 August 2018.

<sup>43</sup> North of England Programme Board, DfT, 4 December 2017.

it for the May 2018 timetable change and potential significant risks to the timetable if not delivered.<sup>44</sup> It was agreed for the Christmas blockade to go ahead despite Northern and TPE's concerns.<sup>45</sup>

- 2.29. **The Inquiry has found that the North of England Programme Board was aware of the consequential risks to the May 2018 timetable of a failure to deliver the NWEF 4 infrastructure projects on time. While it was not remitted to manage systemic risks, it did not sufficiently consider aligning the timing of its decisions with the timetabling process, and the SO did not press for this despite being aware of these risks.**
- 2.30. Northern were at this time providing reports on the progress of the infrastructure to Passenger Services in DfT via a Periodic Infrastructure Report. In the report for October 2017, Northern say that it has little confidence in Network Rail delivering the required infrastructure for May 2018, and that the current plan from Network Rail expects 'Entry Into Service' (EIS) in August 2018.<sup>46</sup>
- 2.31. We heard from DfT that they do not have a systematic, formal way of sharing these reports between Passenger and Network Services.<sup>47</sup>
- 2.32. When the decision to proceed with the blockade was taken in the December 2017, arrangements were put in place for an Extraordinary Programme Board to be held on 5 January 2018, to review the delivered works and next steps.<sup>48</sup>
- 2.33. During the Christmas blockade, Network Rail's IP out-performed its plan in three out of four areas, however it only completed 75% of its planned work on foundations due to difficult ground conditions.<sup>49</sup>
- 2.34. At the 5 January Extraordinary Programme Board, Network Rail presented an update on the Christmas works, and consequent options for delivering the infrastructure. The only option which allowed for completion before May 2018 required the railway between Bolton and Manchester to be blockaded for a further five weeks. This would have required putting on replacement bus services to serve c10,000 people per day.<sup>50</sup>

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<sup>44</sup> TransPennine Express and Northern joint letter to Network Rail, 5 December 2017.

<sup>45</sup> DfT Interview, by ORR (transcribed) 8 August 2018.

<sup>46</sup> *Infrastructure Period Report to Department for Transport*. Northern, 24 October 2017.

<sup>47</sup> DfT interview, by ORR (transcribed) 16 August 2018.

<sup>48</sup> Email summary of 5 January 2017 North of England Programme Board decision, DfT, 15 December 2017.

<sup>49</sup> Network Rail interview, by ORR (transcribed). 1 August 2018.

<sup>50</sup> Network Rail interview, by ORR (transcribed). 23 August 2018.

- 2.35. The Programme Board decided that this level of disruption to passengers was unacceptable and decided on 5 January 2018 to abandoned plans to provide the infrastructure required for the planned timetable in May 2018 and replan for December 2018.<sup>51</sup>
- 2.36. **The Inquiry has found that the decision to rely on the successful delivery of the Christmas 2017 works to recover NWEP 4 created substantial risks for the introduction of the May 2018 timetable, leaving no margin for error or unexpected problems during the Christmas blockade. The subsequent failure to deliver these works directly caused delays to the development and introduction of the timetable resulting in disruption to passengers in May 2018.**
- 2.37. We have considered whether the decision to defer to December 2018 was appropriate following an assessment of the ongoing risks, and whether, given the interactions with the May timetabling process, it was made at the most appropriate time.
- 2.38. We have received evidence from DfT, IP, TPE and Northern that there was little confidence of delivering the infrastructure for May 2018. Concerns were raised monthly at Programme Boards and re-appeared as a red risk following the failure of the blockade in August 2017, where a significant opportunity to access the railway to carry out work was lost (as described above).
- 2.39. Given the issues with construction, we consider that the decision by the Programme Board to further defer the delivery of NWEP 4 to December 2018 was appropriate. However the timing of the decision was not aligned with the timeframe for the standard timetable process. If the decision had been taken in line with the timetabling process then the subsequent risks may not have arisen. We have heard that the Programme faced substantial pressure from within Network Rail to not defer works while there remained a chance of success, despite the risks. Network Rail ascribes the source of this pressure as arising from its desire to meet its commitments to Government.<sup>52</sup>

## NWEP Phase 3 Failed to Handback on Time

- 2.40. NWEP 3 is the electrification of the line between Blackpool and Preston. Similar to NWEP 4, the work includes signaling, work to the track, track lowering and bridge reconstructions.
- 2.41. A 19 week blockade was planned to deliver this work ending in April 2018. On 15 March 2018 Network Rail reported that the blockade would need to be extended by three weeks.<sup>53</sup> During the blockade three events happened which between them caused the delay:

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<sup>51</sup> DfT Interview, by ORR (transcribed). 8 August 2018. Network Rail, by ORR (transcribed). C 23 August 2018.

<sup>52</sup> Network Rail interview, by ORR (transcribed). 21 August 2018

<sup>53</sup> Network Rail interview, by ORR (transcribed). 1 August 2018 / Network Rail interview, by ORR (transcribed). 23 August 2018

- the blockade occurred at the same time as an extraordinary weather event which made it unsafe to carry out work. This weather event, known commonly at the time as 'The Beast from the East', also affected other electrification projects within Network Rail's portfolio;
- a wiring train was involved in a road traffic accident which rendered it unusable for the work planned; and
- A part on a second wiring train broke. The part was not readily available and had to be acquired from a manufacturer in Germany.

2.42. The infrastructure was Approved for Passenger Use and entered into service on 11 May 2018, three weeks after the planned entry into service.

2.43. Northern have said that the total length of the blockade, 22 weeks, meant that their drivers on the route were entitled to ask for additional training. This was a contributory factor in Northern's inability to arrange for a sufficient level of driver competency to operate an effective service from 20 May 2018 (see Chapter 4a: Northern preparedness to operate the new timetable).

2.44. **The Inquiry has found that the NWEF 3 delays in early 2018 were not reasonably foreseeable by Network Rail, and that Northern Rail had no reasonable expectation that it would face a consequential shortage of drivers. This worsened the disruption in May 2018 in the Northern region, but was not a factor behind the need to rewrite the Northern timetable.**

## The Thameslink Programme

### Network Rail's Delivery of Infrastructure to Enable the May 2018 Timetable

2.45. Network Rail are responsible for the construction of the infrastructure (aside from train depots) to support a timetable that can deliver 24 trains per hour through the Thameslink Core (a section of track running between London Blackfriars and London St Pancras stations). To support this, the scale of the changes in the London Bridge and Farringdon areas has required a huge amount of disruptive work to be undertaken during blockades. GTR told us 'The physical assets in the core are there and we tested ETCS [European Train Control System] and ATO [Automatic Train Operation] in the core.'<sup>54</sup>

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<sup>54</sup> GTR interview, by ORR (transcribed). 1 August 2018

- 2.46. To achieve this, 50 different configuration states of track and signaling were put in place over the construction period. Network Rail had to deliver the work which was planned within each blockade over several years and this was achieved.
- 2.47. **The Inquiry has found that the delivery of the necessary Thameslink infrastructure to support the May 2018 timetable was completed successfully and on time. The Inquiry has found no aspect of the delivery of the Thameslink infrastructure that contributed to the causes of the May 2018 timetable disruption.**

## Canal Tunnels

- 2.48. GTR has highlighted to us that the section of track known as Canal Tunnels was a factor in the failure of the timetable introduction in May 2018. Canal Tunnels is a section of the railway which links the Thameslink Core to the Great Northern Mainline outside of St Pancras. The section was constructed when the Channel Tunnel Rail Link (now known as High Speed 1) was being built in 2007. The tunnel has previously been used for movement of empty stock but did not receive 'authorisation for placing into service' (APIS) until February 2018 – a requirement for passenger services.
- 2.49. GTR stated that that in May 2017, it requested that the Canal Tunnels be opened for passenger use earlier than the planned date of April 2018 so that it could train more drivers on the infrastructure as the number of available train movements per day would consequently be increased to support driver training.<sup>55</sup> They were opened in September 2017 for Empty Coaching Stock moves and testing.
- 2.50. GTR explained to us that because the Canal Tunnels were not APIS it would have had to ask passengers to leave trains at Finsbury Park and then run the trains through to St Pancras where they would be allowed to pick up passengers.<sup>56</sup> An additional benefit of commencing services early has been described to us as being one less 'new thing' to be introduced on 20 May 2018 and therefore reducing the risks of something going wrong due to inexperience of the operation.<sup>57</sup>
- 2.51. The programme had planned for the Canal Tunnels to receive APIS in April 2018. In particular, Airwave Radio was required to receive permission from the British Transport Police before Network Rail could submit its files to the ORR for authorisation. We have heard evidence that GTR wanted to commence what was known as 'Preview Services' from 19 February 2018.<sup>58</sup>

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<sup>55</sup> GTR interview by ORR (transcribed). 1 August 2018

<sup>56</sup> GTR interview by ORR (transcribed). 1 August 2018

<sup>57</sup> Network Rail interview, by ORR (transcribed). London, 21 August 2018 and Industry Readiness Board interview, by ORR (transcribed). London, 22 August 2018

<sup>58</sup> GTR interview by ORR (transcribed). 1 August 2018

- 2.52. Network Rail submitted the authorisation pack to the ORR and APIS was granted on 22 February time for services to commence on 26 February 2018.
- 2.53. **The Inquiry does not judge the one-week delay in the opening of the Thameslink Canal Tunnels in central London to be a material factor because it did not significantly impede GTR's ability to prepare to introduce new services in time for May 2018.**
- 2.54. We consider that Network Rail did everything reasonably practicable to open Canal Tunnels once the requirement to open before April 2018 was identified. We do not consider that the one week delay contributed to the failure of the May timetable but may have contributed to the scale of the disruption by weakening the resilience of GTR's operation once disruption occurred following 20 May 2018 (see Chapter 5a: GTR preparedness to operate the new timetable).

## Turnbacks

- 2.55. We also heard from GTR that the capability to turn around 12 car trains at five locations on the Brighton Mainline had not been completed,<sup>59</sup> although we have not seen a formal requirement for these works to be completed prior to the May timetable. These turnback facilities are to be delivered by the IP Signaling team. We heard from GTR that it had little confidence in Network Rail delivering these turnback facilities and had not relied upon them when constructing its timetable for May 2018, 'we've engineered it out to overcome the risk of what has actually happened, that the infrastructure is not there. So if we had planned to use it we would have been possibly in a worse situation at that point.'<sup>60</sup>
- 2.56. We have heard evidence that the dates for the delivery of these turnback facilities have been fluid and that they were once planned for the May timetable but were moved.<sup>61</sup>
- 2.57. **The Inquiry has found that those elements of the Thameslink infrastructure that are still to be completed, including turnbacks, are not material factors behind the May 2018 disruption because they were not relied upon in the specification of the timetable.**
- 2.58. We have found that the turnback facilities not being in place is not a primary cause of the timetable failure in May as GTR had not planned to use them, and we have not seen evidence that they were part of the specified infrastructure for the May 18 timetable. However, had the turnbacks been in place they may have reduced the scale of the disruption by providing additional flexibility for GTR in optimising its train and driver diagrams. It may also have provided additional resilience once disruption occurred on 20 May 2018 by allowing GTR to recover services more quickly during disruption.

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<sup>59</sup> GTR interview by ORR (transcribed). 1 August 2018

<sup>60</sup> GTR interview by ORR (transcribed). 1 August 2018

<sup>61</sup> GTR interview by ORR (transcribed). 1 August 2018

## Other issues

### Automatic Train Operation (ATO) and Traffic Management System

- 2.59. As part of our evidence gathering it has been mentioned to us that a contributory factor to the failure of the GTR timetable in May has been that ATO and a Traffic Management System are not currently being used.”<sup>62</sup>
- 2.60. Both technologies are new for the mainline UK rail network. We have found that the ATO technology has been tested and commissioned but is only required to deliver more than 20 trains per hour through the Thameslink Core. The May 2018 timetable only introduced 18 trains per hour through the core, therefore the technology is not currently in regular use following the May timetable introduction.
- 2.61. The Inquiry has found that those elements of the Thameslink infrastructure that are still to be completed, including ATO and TMS, are not material factors behind the May 2018 disruption because they were not relied upon in the specification of the timetable.
- 2.62. We understand from the programme that there remain challenges with its delivery, <sup>63</sup>however, it cannot be considered to have been a factor in the failure of the May timetable.

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<sup>62</sup> London North Eastern Railway (LNER) submission to ORR Inquiry, 16 July 2018.

<sup>63</sup> Network Rail interview, by ORR (transcribed). 1 August 2018.

## 3. Timetabling and the role of the System Operator

### Context

- 3.1. This chapter examines the role of the SO within Network Rail in carrying out its functions to plan, develop and deliver the May 2018 timetable in accordance with industry practices and processes. It considers whether the SO took all reasonable steps to manage, with the industry, the issues, interdependencies and events which impacted these timetable processes.
- 3.2. The SO consists of around 700 people. It is led by the SO managing director who reports directly to the Network Rail CEO and is a member of Network Rail's executive committee. The SO has responsibility for leading long-term planning, managing changes to the network (e.g. about changes to train services from a re-franchising exercise) and producing the timetable.
- 3.3. In this chapter we assess:

#### **Pre-January 2018**

- Whether the SO understood the risks and issues arising from the delivery of the infrastructure projects and whether it had access to the necessary information to carry out an assessment of the risks to the timetable process.
- How the SO considered the risks and the steps it took to address them.
- How the SO managed the risks specifically in three areas where only the SO was capable of managing them:
  - the scale of the timetable changes for May 2018;
  - the resources and capability of its timetabling function to deliver the May 2018 timetable; and
  - the management of the timetabling process and compliance with Part D of the Network Code.

#### **January 2018 to May 2018**

- whether the SO took all reasonable steps once the issues with the infrastructure had materialised to deliver an operable timetable for May 2018.
- 3.4. We have only considered the SO's activities in producing the May 2018 timetable and do not make observations relating to its roles in managing the access rights framework; leading the early stage development of enhancement; or managing the long-term strategic planning

process, as the inquiry has not found that these played a specific role in the failure of the May 2018 timetable.

## Chronology

Network Rail/ Network Code/Other TOCs	North West Electrification Programme (NWEF)	Thameslink Programme
<b>2010 - 2016</b>		
<ul style="list-style-type: none"> <li>In August 2014, an Event Steering Group (ESG) is created for the preparation of the May 2018 timetable, led by the SO.<sup>64</sup></li> </ul>		<ul style="list-style-type: none"> <li>Between 2010 and 2014, Network Rail and consultants work on Development Timetables for accommodating 24 trains per hour through the Thameslink Core, in order to inform the Thameslink Southern and Great Northern (TSGN) franchise.<sup>65</sup></li> <li>In July 2015 Network Rail finalised its Development Timetable 2014 report (DTT2014).<sup>66</sup></li> <li>In July 2016, the SO created a dedicated team of 12 planners, the Thameslink Advanced Timetable Team.<sup>67</sup></li> <li>In December 2016, The Gibb Report, providing advice on how to deliver improvements to train services across GTR, was completed.<sup>68</sup></li> </ul>

<sup>64</sup> Thameslink Event Steering Group, Meeting Number 1 Minutes, 1 August 2014.

<sup>65</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/ NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018.

<sup>66</sup> *Thameslink DTT 2014*, Network Rail, 2 July 2015.

<sup>67</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/ NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018.

<sup>68</sup> *Gibb Report: review of Southern Rail network and other related issues*, 30 December 2016.

2017		
		<ul style="list-style-type: none"> <li>■ During January 2017, further to recommendations in the 2016 Gibb Report, an Industry Readiness Board (IRB) and Independent Assurance Panel (IAP) were created with the explicit intention of bringing together parties closely involved with the increase in railway operations through the Thameslink core.<sup>69</sup></li> </ul>
		<ul style="list-style-type: none"> <li>■ During April 2017 the Thameslink Programme Board recognised that there may be opportunities to reduce risks by taking a more phased approach and asked GTR to investigate how this might be done.</li> <li>■ In parallel, the IRB was also considering how to de-risk the impact of the planned 2018 timetable introduction.<sup>70</sup></li> <li>■ On 28 April 2017 – GTR submit a “Notification of Significant Change Statement” based on advanced timetable work. This requires 20 trains per hour through the Thameslink core, rather than the full 24 assumed in the advanced timetable work for the final Thameslink requirements.<sup>71</sup></li> </ul>
		<ul style="list-style-type: none"> <li>■ On 11 May 2017 at a workshop titled: “De-risking the implementation of the 2018 outputs”<sup>72</sup> GTR presented revised phasing options to the DfT based around a four-staged approach of 18, 20, 22 and eventually 24tph.</li> </ul>

<sup>69</sup>TL2018IRB Kick-off Session. Thameslink 2018 Industry Readiness Board, Board meeting 1, 17 January 2017.

<sup>70</sup> Chris Gibb interview, by ORR (transcribed). 22 August 2018.

<sup>71</sup> GTR submission to Inquiry, 16 July 2018.

<sup>72</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment, Network Rail submission to Inquiry, 31 July 2018; and GTR submission, 16 July 2018.

	<ul style="list-style-type: none"> <li>■ At the end of June 2017, DfT officials presented advice to the Secretary of State on how to mitigate the risks that the delayed delivery of NWEF4 had on the December 2017 timetable. This advice was to put in place a diesel timetable for Manchester to Preston.</li> </ul> <p>The Secretary of State was advised that a decision was required urgently as the timetable planning process required Northern and TPE to finalise their December 2017 timetable by 7 July 2017, in order to comply with industry planning timescales, i.e. before Network Rail issued the new working timetable for the December 2017 timetable change.<sup>73</sup></p>	
<ul style="list-style-type: none"> <li>■ On 7 July 2017 [Network Code D-45] Network Rail provided operators with the Prior Working Timetable for them to use in submitting their timetable at D40.<sup>74</sup></li> </ul>		
<ul style="list-style-type: none"> <li>■ 11 August 2017 [Network Code D-40]: All TOCs submit "Priority Date Notification Statement" for the May 2018 timetable. This contains all their requirements for the May 2018 timetable.</li> </ul>	<ul style="list-style-type: none"> <li>■ On 11 August Northern submitted its timetable proposal for May 2018.<sup>75</sup> The submission included the assumption that the Manchester to Preston section of the route (NWEF4) would be electrified.</li> </ul>	<ul style="list-style-type: none"> <li>■ On 11 August 2017 GTR submitted its Access Proposal to Network Rail for the May 2018 timetable<sup>76</sup> based on a full 24tph timetable in line with its existing franchise terms but highlighting the four train services to be removed for the May 2018 timetable.<sup>77</sup></li> <li>■ August 2017 also saw the gradual transfer of members of</li> </ul>

<sup>73</sup> *Secretary of State Submission – NoE Programme Update Northern and TPE*, DfT. 29 June 2017.

<sup>74</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018; and GTR submission, 16 July 2018.

<sup>75</sup> Northern submission to Inquiry, 16 July 2018.

<sup>76</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018;

<sup>77</sup> GTR submission to Inquiry, 16 July 2018.

		Network Rail's Thameslink Advanced Timetable Team to work on the general timetable. <sup>78</sup>
<ul style="list-style-type: none"> <li>On 28 October 2017 Network Rail and Operational Planning Sub Group (OPSG) presented to the National Task Force (NTF) a paper highlighting the scale of change, risks and resources implications for the May 2018 Timetable as well as significant levels of "Short Term Planning" work.<sup>79</sup></li> </ul>	<ul style="list-style-type: none"> <li>On 13 October 2017, the North of England Programme, System Review Group (SRG) meeting<sup>80</sup> met and Network Rail noted that the delivery of both NWEF3 and NWEF4 by May 2018 was essential to enable the May 2018 timetable to work. Network Rail also noted that continuing the December 2017 timetable after May 2018 was not an option due to the Thameslink timetable change and the wider rolling stock cascade.</li> <li>At the 26 October 2017 North of England Programme Board, Network Rail presented a briefing note, including a risk assessment which outlined the potential consequences of not delivering NWEF4 and the mitigating actions which could be undertaken to prevent them. The assessment stressed that both NWEF3 and 4 were essential for the May 2018 timetable and that a timetabling solution did not exist if NWEF4 was not delivered.<sup>81</sup></li> </ul>	<ul style="list-style-type: none"> <li>On 31 October 2017 the DfT provided approval for the adoption of GTR's proposals for a longer period of 'phasing' to develop the full operational capacity of 24tph through the Thameslink core.<sup>82</sup></li> </ul>
<ul style="list-style-type: none"> <li>On 17 November 2017 [Network Code D-26] Network Rail published</li> </ul>	<ul style="list-style-type: none"> <li>On 17 November 2017 Northern received the new timetable offer for May</li> </ul>	<ul style="list-style-type: none"> <li>On 17 November 2017, GTR received the new timetable offer for May 2018 from</li> </ul>

<sup>78</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment, Network Rail submission to Inquiry, 31 July 2018;

<sup>79</sup> May 2018 timetable change update, report to NTF, 28 October 2017. Rail Delivery Group submission to Inquiry, 20 July 2018

<sup>80</sup> NoEP SRG meeting, Network Rail, 13 October 2017.

<sup>81</sup> NoEP – Board. Amended paper, Network Rail, 23 October 2017, presented to North of England Programme Board, DfT, 26 October 2017.

<sup>82</sup> Email from DfT to Network Rail and others, 31 October 2017.

<p>the national timetable offer in accordance with agreed industry timescales.<sup>83</sup></p>	<p>2018 from Network Rail.<sup>84</sup> As with Northern's timetable submission in August 2017, it was produced on the basis that the Manchester to Preston section of the route (NWEF4) would be electrified.</p>	<p>Network Rail. This was on the basis of an initial operational capacity of 20tph through the Thameslink Core at Peak as bid on 11 August 2017.<sup>85</sup></p> <ul style="list-style-type: none"> <li>From November 2017 to January 2018, GTR and Network Rail worked to resolve the rejections and 'flexes' made to GTR services and packs of resolved issues were resubmitted to Network Rail as Train Operator Variation Requests.<sup>86</sup> This allowed Network Rail and GTR to agree a base timetable using the 20tph timetable assumption.</li> </ul>
	<ul style="list-style-type: none"> <li>During December 2017 the Christmas blockade for NWEF4 delivered 75% of the planned foundations meaning that the project had to be replanned to deliver the infrastructure that was needed to enable the May 2018 timetable change.<sup>87</sup></li> </ul>	
<b>2018</b>		
<ul style="list-style-type: none"> <li>On 19 January 2018 OPSG discussed a timetable options paper which set out options to manage May rewrite and T-12 timescale issues.</li> </ul>	<ul style="list-style-type: none"> <li>At the 5 January 2018 Extraordinary North of England Programme Board, Network Rail presented options for completion of NWEF4 by May 2018, which were rejected as being too disruptive for passengers. It was agreed that the delivery date of the NWEF4</li> </ul>	<ul style="list-style-type: none"> <li>On 12 January 2018, GTR requested the amendments required to reduce the May timetable from 20tph to 18tph<sup>91</sup>. This request included the required 18tph phasing as well as other late-notice changes to services between Bedford and London. This was the first time that Network Rail</li> </ul>

<sup>83</sup> Northern submission to Inquiry, 16 July 2018; and Network Rail submission to Inquiry, 16 July 2018.

<sup>84</sup> Northern submission to Inquiry, 16 July 2018; and Network Rail submission to Inquiry, 16 July 2018.

<sup>85</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018.

<sup>86</sup> GTR submission to Inquiry, 16 July 2018.

<sup>87</sup> Network Rail interview, by ORR (transcribed) 1 August 2018.

<sup>91</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018.

	<p>project should be moved back to be completed for the December 2018 timetable.<sup>88</sup></p> <ul style="list-style-type: none"> <li>■ On 10 January 2018, Network Rail, Northern and TPE met to discuss plans for May 2018 in light of the NWEF4 delay. In correspondence following the meeting, Network Rail set out a number of base assumptions for planning a revised timetable for May 2018, with the recognition from Network Rail that timings to complete the work were very tight.<sup>89</sup></li> <li>■ At the end of January 2018, Northern sent Network Rail a series of bids which constituted a re-write of the timetable, now without the assumed completion of NWEF4 electrification.<sup>90</sup></li> </ul>	<p>had formally seen the 18tph timetable and its requirements.<sup>92</sup></p> <ul style="list-style-type: none"> <li>■ 18 January to 28 March, GTR submit a further 46 packages of changes for the May 2018 timetable, totalling 3,136 schedules.</li> </ul>
<ul style="list-style-type: none"> <li>■ A National Task Force meeting on 14 February 2018, attended by industry stakeholders, confirmed the decision to defer Network Rail finalising the Informed Traveller timetable by six weeks in order to allow the timetable changes to be completed.<sup>93</sup></li> <li>■ On 22 February 2018 Scotrail confirmed that</li> </ul>	<ul style="list-style-type: none"> <li>■ On 1 February 2018, Northern formally requested that the SO consider rolling forward the national December 2017 timetable to May 2018.<sup>96</sup> It was confirmed at a NTF meeting on 14 February 2018 and an OPSG meeting on 16 February 2018<sup>97</sup> that this option would not be taken forward.<sup>98</sup></li> </ul>	

<sup>88</sup> DfT Interview, by ORR (transcribed). 8 August 2018

<sup>89</sup> Email correspondence relating to the non-electrification of Bolton, between Network Rail, Northern and TransPennine Express, 10 January 2018.

<sup>90</sup> *Timetable Process – Timeline*, Network Rail submission to Inquiry, 16 July 2018.

<sup>92</sup> GTR submission to Inquiry, 16 July 2018.

<sup>93</sup> Minutes of National Task Force Meeting, 14 February 2018.

<sup>96</sup> Email correspondence relating to rolling over the December 2017 timetable to May 2018, between Northern and Network Rail, 1 February 2018.

<sup>97</sup> Minutes of Operational Planning Strategy Group Meeting, 16 February 2018.

<sup>98</sup> Minutes of National Task Force Meeting, 14 February 2018.

<p>385 rolling stock would not be available for the implementation of the May timetable. This meant a rework of the Scotland timetable for May 2018 would be required.<sup>94</sup></p> <ul style="list-style-type: none"> <li>23 February 2018 was the deadline for Network Rail to publish the new weekly timetable that allows operators to offer advanced tickets to customers for May 2018. However, Network Rail announced it could not meet this regulated obligation but had a plan to recover the position by December 2018.<sup>95</sup></li> </ul>		
	<ul style="list-style-type: none"> <li>On 5 March 2018, Network Rail provided a revised timetable offer to Northern.<sup>99</sup> There remained a number of rejected schedules to finalise, including for passenger services.<sup>100</sup></li> </ul>	<ul style="list-style-type: none"> <li>The majority of the GTR timetable was completed by 23 March, however Network Rail subsequently received a further 25 bids between 19 April and 11 May 2018 to, make a further 1223 amendments to the GTR timetable.<sup>101</sup></li> </ul>
		<ul style="list-style-type: none"> <li>On 9 April 2018 GTR received a new timetable offer from Network Rail. This left a shorter time than normal for GTR to carry out the necessary planning activities for in advance of 20 May.</li> </ul>
<ul style="list-style-type: none"> <li>The new timetable was introduced on 20 May 2018.</li> </ul>		

<sup>94</sup> *May 18 Timetable Development Summary*, Abellio Scotrail submission, 16 July 2018.

<sup>95</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission: 31 July 2018, and GTR submission to Inquiry, 16 July 2018.

<sup>99</sup> *Timetable Process – Timeline*, Network Rail submission to Inquiry, 16 July 2018.

<sup>100</sup> Northern interview, by ORR (transcribed) 24 August 2018.

<sup>101</sup> Network Rail submission to Inquiry, 10 September 2018.

## Findings

### The SO's role in industry wide decision making

- 3.5. The SO has overall responsibility for the production and publication of the national timetables. It works with train operators and with Network Rail Route businesses (who may want to access the network for engineering works, for example) to decide the best allocation of network capacity. In doing this, it translates TOCs access rights and the train paths that they bid for into the timetable according to the processes set out in Part D of the Network Code.<sup>102</sup> It coordinates the process for establishing a base timetable twice a year and for making nearer-term changes to it (e.g. to accommodate engineering works, special events and ad-hoc requests from passenger, freight or charter operators).
- 3.6. The timetable is the SO's final product which it produces as part of a set of wider and longer-term activities, namely:
- managing the access rights framework, principally through Network Rail's Sale of Access Rights (SoAR) Panel for agreeing access rights to the network;
  - managing changes to what the network delivers, which includes managing the early development of enhancements and the overall enhancement projects portfolio and the 'pipeline' of early stage enhancements (recommending which projects should be prioritised for further development);
  - advising franchising authorities about the services the network can accommodate and managing Event Steering Groups that bring the industry together to prepare for major timetable changes; and
  - leading the industry's long-term planning process to analyse the future needs of the network and working with the industry to advise funders on the options for how the network should develop over a 30-year horizon.
- 3.7. At the beginning of CP5, the SO's functions were undertaken separately throughout Network Rail. In 2016, these functions were grouped to form 'Network Strategy and Capacity Planning', which subsequently evolved into the SO. Its role and position has developed in response to wider industry changes, such as in supporting the devolution of responsibilities to Network Rail's routes to ensure planning decisions remain joined-up and in supporting a more incremental 'pipeline' approach to developing and funding enhancements.

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<sup>102</sup> The Network Code is incorporated by reference into each Track Access Contract so is contractually binding. Part D of the code sets out the process which Network Rail and train operators must follow in order to compile the timetable.

## Understanding of the issues and information availability

- 3.8. Chapter 2 examines the issues associated with the delivery of infrastructure for the May 2018 timetable and highlights where delays in the delivery of the NWEF4 directly contributed to the failure of the May 2018 timetable.
- 3.9. We have considered whether the SO understood the issues arising from the delivery of NWEF4 and phasing of the Thameslink timetable and whether the SO had sufficient visibility across Network Rail's business of the various risks, including the infrastructure risks identified in the previous chapter, to determine the risks to the May timetable process.
- 3.10. The SO had a role in engaging internally within Network Rail and externally on key infrastructure project boards and Portfolio boards over the course of the lifecycle of infrastructure projects such as NWEF and Thameslink, and had a number of functions to fulfil in its roles as SO in these forums.
- 3.11. We note from the range of infrastructure Programme Board meetings, papers and minutes provided as part of this inquiry that SO representatives from a range of disciplines and seniority attended these meetings between 2016 and 2018. The managing director of the SO is also a co-chair of the Portfolio Board. The information provided to these boards included updates of progress, including risks and issues.
- 3.12. SO presence at these meetings provided it with good visibility of the development of major projects including those in the North and Thameslink on which its timetabling process is dependent. The SO was already constituted during the development of the May 2018 timetable in a way that should have allowed it to take a joined-up approach to understanding and managing risks between dependent projects across its businesses.
- 3.13. **The Inquiry has found that the SO had sufficient information to understand the risks and potential for disruption arising from the infrastructure programmes, and that it was in a unique position in the industry to understand these dependent risks to the timetable process for which it was responsible.**

## SO consideration of delays to NWEF4

- 3.14. We have assessed whether the SO took all reasonable steps to work with the industry to ensure the impact of the infrastructure delays upon timetable development were properly understood and taken into consideration in decision making.
- 3.15. The SO was represented on the North of England Programme Board and co-chaired the Portfolio Board, as well as playing a part in a range of Network Rail internal meetings. The SO is also one of the consultees on enhancement Change Control process request forms,<sup>103</sup> including those

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<sup>103</sup> For control period 5 (CP5 from 2014-2019), any projects to enhance the rail network are listed in Network Rail's Enhancement Delivery Plan. If Network Rail need to make changes to the

associated with the NWE4 change controls in 2017. The SO has a role in tracking the funding and output commitments across the overall infrastructure portfolio, as well as in producing timetables.<sup>104</sup>

- 3.16. The SO based its May 2018 timetable development on the assumption of timely delivery of NWE4 and this assumption was written into the timetable offer provided to the industry on 17 November 2017.<sup>105</sup> These assumptions were based on assurances provided by IP earlier in the timetable process.
- 3.17. NWE4 regular risk reports which were visible to the SO showed amber / red RAG ratings from September 2017 onwards,<sup>106</sup> and the project had previous history of delays and deferrals. In particular, the SO had been party to discussions relating to the previous deferment of NWE4 from December 2017 to May 2018 (that led it to the decision to roll forward delivery into the timetable from the December 2017 timetable to the May 2018 timetable). The agreed change control form did not provide a confirmed entry into service date in the Enhancements Delivery Plan. The September 2017 entry of 'tbc - by May 2018', recommended by the SO at the Portfolio Board<sup>107</sup> as a new milestone date, was yet to be confirmed.
- 3.18. The SO and Network Rail's London North Western route (as route sponsor) raised the dependency of the delivery of the May 2018 timetable on the NWE4 from autumn 2017 onwards at a range of project meetings.<sup>108</sup> However, the SO confirmed it was not working on contingency plans relating to the May 2018 timetable based on potential non-delivery of NWE4 works in autumn 2017 despite growing concern with progress building up to the December 2017 works.<sup>109</sup> The SO considered that neither Network Rail nor operators could practically resource the development of timetables based on contingency plans given the linear timetable process, particularly once the Timetable Preparation Period had started (D-40) and when such a large and complex national change was taking place.<sup>110</sup>
- 3.19. The SO confirmed its approach to the risks to the delivery of NWE4 in time for the May 2018 timetable was through continuous reminders to the project boards and stakeholder communities in Autumn of 2017 that:

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Enhancements Delivery Plan, for example if a delivery milestone has to be delayed, Network Rail must agree it with their funders and submit a formal Change Control request. ORR reviews these Change Controls to make sure that all the affected stakeholders (such as train companies and local councils) have been consulted and that Network Rail are addressing their concerns.

<sup>104</sup> NR SO CP6 Strategic Business Plan, February 2018. [Link](#).

<sup>105</sup> Northern submission to Inquiry, 16 July 2018; Network Rail submission to Inquiry, 16 July 2018.

<sup>106</sup> Minutes of the Northern PDG meeting, 22 September 2017.

<sup>107</sup> *NWE4 Peer Review*, Network Rail, 22 September 2017.

<sup>108</sup> Network Rail submission to Inquiry, 10 September 2018.

<sup>109</sup> Response to ORR's licence investigation case to answer letter, Network Rail, 6 July 2018 [Link](#).

<sup>110</sup> Network Rail submission to Inquiry, 10 September 2018.

- there were no contingency plans; and
- there could be no absolute reliance on delivery of NWEF4 on time.

3.20. For example, the North of England Programme System Review Group<sup>111</sup> meeting held on 13 October 2017 was provided with a clear statement on the timetable implications associated with late delivery of NWEF4, and informed the group that there was no contingency timetable solution.<sup>112</sup> The SO and Route sponsor subsequently presented a similar paper to the North of England Programme Board on 23 October 2017 explaining the risks, which also stated that an option to roll forward the December 2017 timetable beyond May 2018 was not possible due to Thameslink timetable changes and the rolling stock cascade.<sup>113</sup> The SO and OPSG also presented an update on the May 2018 timetable, including the scale of change and implications, to the NTF meeting on 28 October 2017,<sup>114</sup> however, there is no clear evidence of proactive decisions or actions taken by these Boards or meetings as a result of these papers.

3.21. In its letter to the ORR of the 6 July 2018<sup>115</sup> the SO explained that:

‘The System Operator (SO) was aware of concerns with the NWEF Phase 4 project and had identified the critical link to completion of the electrification project for the May 2018 timetable with the System Review Group (providing reports to the North of England Programme Board). The System Review Group was repeatedly assured that the project would deliver to time and understood that there was no timetable contingency available’.

3.22. Through December 2017, the SO attended a range of meetings, including North of England Programme Board and Project Delivery Group, where the issues and risks of non-delivery were discussed. This included points at which go-no go decisions were made. For example, the decision in December 2017 to proceed and undertake the NWEF Christmas blockade.<sup>116</sup>

3.23. We consider that the SO was aware of the issues associated with the potential non-delivery of NWEF4 and the impact that this would have upon the timetable process. While there is evidence that the SO raised the risks at the appropriate programme boards, there is limited evidence that the SO then sought to either align the timing of decisions with the timetabling process, or consider how to mitigate the risks within its own processes.

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<sup>111</sup> NR System Review Group provides reports to the North of England Programme Board.

<sup>112</sup> NoEP Board amended paper, Network Rail, 23 October 2017; presented to North of England Programme Board, DfT, 26 October 2017.

<sup>113</sup> NoEP Board amended paper, Network Rail, 23 October 2017; presented to North of England Programme Board, DfT, 26 October 2017.

<sup>114</sup> May 2018 timetable change update, Network Rail report to NTF, 28 October 2017.

<sup>115</sup> Response to ORR’s licence investigation case to answer letter, Network Rail, 6 July 2018. [Link](#).

<sup>116</sup> DfT internal email, 15 December 2017.

- 3.24. The decision to defer the delivery of NWEF4 made on 5 January 2018, was too late to inform the normal timetable planning process for the May 2018 timetable (which had already formally 'offered' the timetable to TOCs on 17 November). This required significant work to rewrite the May timetable at the same time as the SO was managing the rewrite of the GTR timetable to accommodate phasing of GTR services for May 2018. This resulted in the need to develop options to manage these rewrites, compressing timetable timescales and also led to the adverse implications for informed traveller timescales.
- 3.25. The events relating to NWEF in Autumn of 2017 were taking place in parallel to issues elsewhere impacting the development of the May 2018 timetable, such as the 31 October decision to phase the Thameslink / GTR services from May 2018, and the development of the long term plan timetable for the May 2018 and timetable offer to the industry on 17 November 2017.
- 3.26. The assumptions that the SO made in autumn 2017 about the likely availability of the NWEF4 infrastructure in May 2018 were therefore critical to the successful execution of its timetabling function.
- 3.27. The Inquiry heard a circular argument between the IP and the SO about whose responsibility it was to make these judgements. IP explained that their focus was exclusively on infrastructure delivery. DfT chaired the Programme Board and said that it relied on the advice of these professionals about what was deliverable.<sup>117</sup> All parties were aware of the risks, but the Inquiry judges that on balance the SO was in the best position, because of its position as member of the Programme and Portfolio boards to understand the risk to the timetable, and that it was the only body able to make decisions about the assumptions that were used to create that timetable
- 3.28. The SO says that it did not have the remit in autumn 2017 to advocate different decisions to those made by the Programme Boards and DfT. It explained its belief that had it decided in Autumn 2017 to not assume that the NWEF infrastructure would be ready, it would have been 'overruled' in favour of the advice from the IP because it would have delayed benefits to passengers. This may or may not have been the case, but while it highlighted the risks to the IP and DfT it was also the body best placed to consider or advocate alternative options, and it did not do this. Following the disruption in May 2018, these are exactly the sorts of mitigating options that are being actively developed and considered by Network Rail in preparation for the December 2018 and May 2019 timetables, providing a counterfactual illustration of the missed opportunities in autumn 2017.
- 3.29. **The Inquiry has found that the SO was the body best placed to address the risks associated with the delivery of NWEF4 upon its timetable process in autumn 2017, but have seen limited evidence that it considered or pro-actively advocated alternative options. This significantly increased the risk that it would not be able to meet the industry schedule for producing a timetable in time for May 2018.**

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<sup>117</sup> DfT Interview by ORR (transcribed) 8 August 2018

- 3.30. Interface weaknesses and lack of timely judgements were also acknowledged by the SO in its 6 July 2018 letter to ORR:<sup>118</sup>

“In relation to NWE4, we recognise that the current problems are partly related to the planning, management and delivery of infrastructure projects and the interface between route businesses and the SO timetabling function. In future, the route sponsorship role will be strengthened to address this issue. It is also clear that consideration will need to be given to strengthening the role of the SO to make earlier judgment calls so as to better manage risks to train service changes that are reliant on the successful delivery of major timetable changes”.

## The SO’s preparation for the timetable process up to November 2017

- 3.31. The scale of changes for the May 2018 timetable was unprecedented, with a significantly higher number of individual timetable changes than previously seen. Overall, 46% of all schedules in the timetable were revised and consequential re-timings brought this to around 60% of all services being altered.<sup>119</sup> We have considered whether the SO sufficiently understood the scale of the changes and whether it managed the risks such a large undertaking would have upon the overall timetable process.

- 3.32. The Inquiry cannot determine if the scale of change was unachievable in itself and a direct cause of the failure of the May 2018 timetable, or if the lack of co-ordinated processes, co-operation and system-wide oversight meant the consequences that affected the delivery of the timetable were not managed effectively to deliver this level of change. In evidence to the Transport Select Committee and to the Inquiry the SO was non-committal about whether the volume of future timetable changes ought to be capped:

“I have not formed a clear view on the level at which a cap should be set. That is a discussion that needs to be thought through long and hard, rather than just alighting on a number in short order. I would not say that we were over-ambitious, but we were very ambitious, and rightly ambitious, because we were ambitious for the people we wanted to deliver benefits for. With hindsight, you might describe it as over-ambitious, but at the time we were rightly committed to making those changes in the way we wanted.”<sup>120</sup>

- 3.33. We do however consider that the scale of the changes contributed to the pressure upon the SO when the timetable process was compressed in January 2018 as a result of impacts such as the NWE4 deferral. However, despite having some understanding of the risks associated with the scale of change, the SO did not implement any additional system-wide assurance review processes as part of the May timetable process.

<sup>118</sup> Response to ORR’s licence investigation case to answer letter, Network Rail 6 July 2018. [Link](#).

<sup>119</sup> *May 2018 timetable change update*, report to NTF, 28 October 2017.

<sup>120</sup> Transport Select Committee, evidence from Jo Kaye, MD Network Rail System Operator, 18 June 2018.

- 3.34. Additional whole industry review processes may have enabled earlier recognition of risks and informed more timely and decisive decisions; helping to assess key deliverability of projects such as the NWEF4 in 2017, timing of the phasing decision of GTR services and the scale of change for the May 2018 Timetable.
- 3.35. The Inquiry considered whether the SO had additional system-wide oversight, risk management arrangements and project management processes in place prior to the development of the May 2018 timetable to manage the complexities of the unprecedented level of change for the original May 2018 timetable, and we note that there were some limited additions made to SO planning resources (18 additional staff).<sup>121</sup>
- 3.36. Following the failure of the May 2018 timetable, Network Rail wrote to ORR on 8<sup>th</sup> June 2018 noting how it intends to address weaknesses in the coordination and preparation of timetable changes in the future;
- 3.37. "... [there are] relevant issues to be regarded such as the interface between the SO and operators and the interface between SO and franchising authorities. These interfaces have impacted timetable planning assumptions and dependencies such as rolling stock cascades and franchise driven timetable changes."
- "It is for this reason that ...we have already begun to establish a wider set of assurance reviews to assess all future timetable dependencies and assumptions. This work is already in progress and will be concluded for the upcoming working timetable changes through the SCMT<sup>122</sup> work. Longer term consideration has to be given to how the whole industry, including Network Rail, train operators and wider stakeholders, better share the status and risks of associated timetable planning assumptions and dependencies, beyond current contractual commitments. There is now National Task Force support to establish a whole industry Project Management Office."<sup>123</sup>
- 3.38. **The Inquiry has found that the SO did not have in place sufficient co-ordinated processes, co-operation and system wide oversight to manage the effective delivery of the scale of change required for May 2018, although Network Rail is now taking measures to correct this.**

## The SO's development of the May 2018 Timetable

- 3.39. The Inquiry has considered whether the SO and train operators took all reasonable steps to run a robust and efficient process in preparing the timetable once the scale of the challenge

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<sup>121</sup> Network Rail interview, by ORR (transcribed), 1 August 2018.

<sup>122</sup> NR Strategic Crisis Management Team.

<sup>123</sup> Response to ORR licence investigation initiation letter, Network Rail 8 June 2018. [Link](#).

emerged in late 2017 and early 2018, with the resources and processes that were available to them at the time.

### The SO's development of GTR's timetable offer in November 2017

- 3.40. A range of advanced work was undertaken from 2010 to 2017, prior to the production of the timetable. Work originally focused on a timetable of 24 trains per hour (tph) through the Thameslink Core. A number of Development Timetables were produced between 2010 and 2014 to inform the Thameslink Southern Great Northern (TSGN) franchise Train Service Specification. These were undertaken by Network Rail and consultants, based on a remit agreed with DfT and the wider industry.<sup>124</sup>
- 3.41. An Event Steering Group (ESG) was established in 2014 for the May 2018 timetable. This was led by the SO, in line with Network Code requirements and met 20 times – the first meeting being in August 2014.<sup>125</sup>
- 3.42. The SO created a dedicated team of 12 planners for Thameslink in July 2016 – the Thameslink Advanced Timetable Team.<sup>126</sup> This dedicated team worked on the GTR timetable between July 2016 and August 2017. The Capacity Planning advanced timetable team transferred to work on the 'Production timetable' at the start of the formal Part D May 2018 timetable preparation period. The SO advised us the advanced timetable team was merged with the wider working timetable team planning and core individuals and leadership of the team remained in place.<sup>127</sup> This also meant the GTR Priority Date notification statement now was being considered alongside other operator bids. As the SO moved into the formal development of the timetable aligned with Part D, the workload naturally increased and a wider management view of the development of the May 2018 National working timetable was taken. It considered its approach enabled the same experienced planners and managers leading the work to continue with the development of the timetable.<sup>128</sup>
- 3.43. On 17 November 2017, the SO published the national timetable offer in accordance with agreed industry timescales (Network Code D-26). For GTR this included 600 rejected trains and around 2700 other changes in line with accommodating all operators.<sup>129</sup> The SO confirmed that this timetable offered was based on 20tph running through the core.<sup>130</sup> The timetable structure

<sup>124</sup> *Thameslink DTT 2014*, Network Rail, 2 July 2015. Network Rail submission to Inquiry

<sup>125</sup> Thameslink Event Steering Group meeting number 1, 1 August 2014.

<sup>126</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018.

<sup>127</sup> Network Rail submission to Inquiry, 10 September 2018.

<sup>128</sup> Network Rail submission to Inquiry, 10 September 2018.

<sup>129</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018.

<sup>130</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018.

supported a reduction in the services in this way with the simple removal of whole unit diagrams. Plans for reduced phasing down to 18tph were still being considered at this time.<sup>131</sup>

- 3.44. On 20 November 2017, the SO moved extra resources from the long term planning team down to six people to complete the phasing task. Some planners only moved back to their normal roles after being in the Thameslink Advanced Timetable Team for up to 18 months. The SO advised this arrangement was based on discussions with GTR and the forecast size of the phasing bid (between 800 and 1000 amendments) expected from GTR to the SO in late December 2017 / early January 2018.<sup>132</sup>
- 3.45. Despite the significant amount of work that had taken place by both GTR and the SO in run up to November 2017, the companies had divergent views. GTR submitted what it believed to be an agreed timetable plan,<sup>133</sup> while the SO found numerous issues and areas for further work.<sup>134</sup>
- 3.46. During November 2017, GTR considered it spent the month reviewing the SO's timetable offer and "putting right what was fundamentally wrong".<sup>135</sup> This view is disputed by the SO regarding the quality of the offer.<sup>136</sup> The SO states that the offer response submitted by GTR on 15 December 2017 (Network Code D-22) contained 600 rejected trains and 2,700 other services changes to the May 2018 timetable.<sup>137</sup>

### The May 2018 Timetable rewrite process post 5 January 2018

- 3.47. The Inquiry has considered whether the SO took all reasonable steps to provide an operable timetable for implementation in May 2018 following the decision on 5 January to defer the delivery of NWEF4 infrastructure; in particular, in relation to GTR and Northern services.
- 3.48. It had been recognised by the industry in autumn 2017<sup>138</sup> that the industry-wide short term plan timetabling process was not working as well as it should. For example, nearly half of all operators were already bidding late according to the schedules set out in Part D of the Network Code. This is considered by the SO and the industry to be the result of factors such as late change to engineering delivery, operator commercial changes and / or industrial relations.<sup>139</sup> An industry review was commissioned to look at these issues in response.<sup>140</sup> This issue was also

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<sup>131</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018.

<sup>132</sup> Network Rail submission to Inquiry, 10 September 2018.

<sup>133</sup> GTR submission to Inquiry, 16 July 2018.

<sup>134</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment*, Network Rail submission to Inquiry, 31 July 2018.

<sup>135</sup> GTR submission to Inquiry, 16 July 2018.

<sup>136</sup> Network Rail submission to Inquiry, 10 September 2018.

<sup>137</sup> Network Rail submission to Inquiry, 10 September 2018.

<sup>138</sup> Transport Focus informed traveller (TW-12) complaint letter to RDG, NTF papers October 2017, January 2018

<sup>139</sup> *Bolton Electrification Phase 4 deferral – Informed Traveller Impact*, Network Rail report, January 2018.

<sup>140</sup> *Informed Traveller Review*, paper to NTF, 11 January 2018.

considered to impact timetable planning resources of the SO and operators during 2017 and 2018 during the development of the May 2018 timetable.<sup>141</sup>

- 3.49. Against this background and the events relating to NWE4, in January 2018 the SO needed to substantially rewrite the May 2018 timetable seven weeks after it had published its offer to the industry in November 2017 (at the D-26 point in the Network Code). And in February 2018, there was notice by Abellio ScotRail that the new fleet of Class 385 trains would be unavailable for the May timetable which also impacted timetable planning.<sup>142</sup>
- 3.50. The withdrawal of the May 2018 Working Timetable resulted in operators being unable to bid amended timetables based on planned engineering work. This directly caused the Informed Traveller planning timescales to be missed for all operators as the May Timetable re-write prevented the industry from publishing an amended Short Term Planning (STP) timetable within the contractual timescales of 12 weeks before trains were due to run (TW-12 Informed Traveller timescales). This issue affected not just Northern and TPE but other operators impacted by the rewrite of the new working timetable.<sup>143</sup> The SO considered that due to the scale of change and the wide range of services, the majority of Network Rail Routes would be impacted.
- 3.51. The SO and the industry discussed the options available to secure a new workable May 2018 Timetable over the course of January and February 2018,<sup>144</sup> with a focus on the impact of the re-write and specifically to enable STP planning to be managed and then recovered. This culminated in options papers being developed and discussed at OPSG, Rail Delivery Group and the NTF in January – mid February 2018.
- 3.52. The SO presented five potential options to the industry to discuss and endorse.<sup>145</sup> The SO recommended option 4:
- Option 1: Localise impacts to the North West of England – where the principal issues particularly related to NWE4. This would particularly affect Northern and TransPennine Express (TPE), but have minimal impact on other operators;
  - Option 2: As per option 1, but other operators' services "flexed" to accommodate Northern and TPE services, once timings for the latter are confirmed;
  - Option 3: Provide timetables to operators other than Northern and TPE at normal timescales, other than affected service groups. For example, Virgin Trains West Coast

<sup>141</sup> *May 2018 Timetable Change Update*, paper to the NTF, 28 October 2017.

<sup>142</sup> *May 18 Timetable Development Summary*, Abellio Scotrail submission to Inquiry, 16 July 2018.

<sup>143</sup> *Bolton Electrification Phase 4 deferral – Informed Traveller Impact*, Network Rail report, January 2018.

<sup>144</sup> *Notes and Actions from NTF Meeting*, 14 February 2018.

<sup>145</sup> *Notes and Actions from NTF Meeting*, 14 February 2018.

(VTWC) would receive timetables at normal timescales, other than in affected Service Groups (in this case London to Manchester services);

- Option 4: Reduce the timescales for all operators for the STP timetable from T-12 to T-6. One effect of this would be that timetables would be confirmed to passengers 6 weeks, rather than 12 weeks, in advance; or
- Option 5: Extend (roll forward) the existing December 2017 timetable. Northern had formally requested that the SO consider this option on 1 February 2018.<sup>146</sup>

3.53. NTF considered the five options and the industry came to the following conclusions to secure a new workable May 2018 timetable, and in particular, the delivery of the May 2018 STP planning process:<sup>147</sup>

- Option 1 was discarded based on an inconsistent approach across operators and the network;
- Option 2 was also discarded, as the need to flex times previously agreed was deemed unnecessarily disruptive;
- Option 3 was discarded on the same basis as Option 1;
- Option 4 was chosen. This was formally confirmed following a working group meeting between NR and those operators who stood to be most affected by the decision (Northern, TPE and VTWC);<sup>148</sup> and
- Option 5 was discarded as the significant benefits likely to be delivered by the May 2018 timetable elsewhere in the country would be sacrificed, the workload that would be necessary to undo the changes already planned would be significant and that contractual issues with franchise commitments would arise.

3.54. In evidence to the TSC, when questioned who had made the overall decision about the trade-off of potential benefits against potential risks relating to the option to rewrite the timetable; the SO managing director stated:

'...at a national level there is no single organisation or guiding mind that would make that decision. Those things are done appropriately, and had DfT involvement in the specific

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<sup>146</sup> Email correspondence relating to rolling over the December 2017 timetable to May 2018, between Northern and Network Rail, 1 February 2018.

<sup>147</sup> *Notes and Actions from NTF Meeting*, 14 February 2018.

<sup>148</sup> *Minutes of OPSG meeting*, 16 February 2018.

circumstances. Ultimately, the decision to proceed with the rewrite was something that the system operator proposed, after discussions with the industry, and it was accepted.<sup>149</sup>

- 3.55. Network Rail subsequently announced plans to finalise timetables six weeks in advance and a plan to get the TW-12 timetabling schedule back to normal and progressed with the industry finalising the May 2018 timetable.<sup>150</sup>
- 3.56. The Inquiry has interviewed members of the timetabling teams in the SO and in TOCs involved in the subsequent re-write of the timetable after these decisions were made.<sup>151</sup> While it is beyond the scope of the Inquiry to validate the quality of work that was done between January 2018 and May 2018, the huge commitment and exceptional efforts of those teams has been apparent. They were placed under enormous pressure to re-write the timetable at short notice, to a scale and schedule that is unprecedented. The Inquiry has found consensus among the industry that these teams were coping with an extremely challenging task following the decisions that were made.
- 3.57. **The Inquiry has found that the SO's timetabling team, and those of passenger and freight operators, were placed under extreme pressure in early 2018 as the unprecedented extent and complexity of the need to re-write the timetable became clear. The teams involved made extraordinary efforts to complete the work then required, without any reasonable options to reduce or mitigate the scale of the task at that late stage.**

## ORR's Investigation into timetable delays

- 3.58. In light of the emerging delays to the process for developing the May 2018 timetable following the failure to deliver the NWEF4 in December 2017, ORR initiated an investigation into Network Rail's compliance with its licence with regard to the timetabling process.
- 3.59. The ORR investigation focused on: Network Rail's development, management and delivery of the T-12 recovery plan; TOC's provision of appropriate, accurate and timely information to allow passengers to plan and make their journeys with a reasonable degree of assurance, including when there is disruption; and root causes and lessons learned.<sup>152</sup>
- 3.60. In July 2018, ORR's investigation into Network Rail's timetable planning capability found that it is in continuing breach of its licence. It found that Network Rail did not implement best practice in this role. ORR's investigation identified failings and required Network Rail to take specific actions to provide more assurance around the December 2018 and May 2019 timetables, to boost Network Rail's timetabling capability and to conclude on structural reforms in Network

<sup>149</sup> Transport Select Committee, evidence from Jo Kaye, MD Network Rail System Operator, 18 June 2018.

<sup>150</sup> *Rail Timetable Issues*, ORR website [link](#).

<sup>151</sup> Network Rail interview, by ORR (transcribed) 1 August 2018; GTR interview, by ORR (transcribed) 1 August 2018; Northern interview, by ORR (transcribed) 30 July 2018; DfT interview, by ORR (transcribed) 27 July 2018.

<sup>152</sup> *Rail Timetable Issues*, ORR website [link](#).

Rail. The decision has required Network Rail to take four actions to improve services for passengers.

- 3.61. This ORR investigation did not however identify or investigate the impending operational timetable problems in advance of its May implementation, and this is discussed further in Part C on management of systemic risks.
- 3.62. Prior to this most recent investigation, ORR has investigated previous performance issues with Network Rail's system operations and timetabling functions. ORR identified a number of weaknesses in the performance and capability of the timetabling function, both formally through licence investigations, and informally through other work for example on open access applications, including:
- the implementation of the integrated train planning system (ITPS) computer system in 2010.
  - Network Rail's delivery to Southern and in Scotland in 2014-15 which highlighted timetabling weaknesses<sup>153</sup>

## Other passenger and freight operators and the timetabling process

### Other train operators

- 3.63. The Inquiry has sought the experience of a wide range of other TOCs about the timetable process for May 2018, to compare against or corroborate the experience of GTR and Northern. Representations received included, but were not limited, to:
- Abellio noted that ScotRail's new fleet of Class 385 trains became unavailable for the May timetable which further impacted timetable planning in February 2018. This was considered to have been managed effectively; ScotRail was proactive in proposing a roll-over solution to the SO of its existing timetable which was able to be worked up and implemented by the SO planning teams.
  - CrossCountry Trains' view was that the need to re-write the North of England timetable in January 2018 resulted in resourcing problems at the SO, leading to quality issues and rushed or late delivery of the initial timetable offer. It also considered that there were inefficiencies in the process that led to duplication of work with schedules effectively being unnecessarily validated multiple times. It also raised concerns with the multiple ESGs taking place, many with shared geographic boundaries. They were not able to benefit from work carried out by others due to differing timescales, resources and a lack of communication between the different groups.<sup>154</sup>

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<sup>153</sup> *Licence Enforcement*, ORR website. [Link](#).

<sup>154</sup> CrossCountry submission to Inquiry, 16 July 2018.

- East Midland Trains highlighted positively that during the timetable bidding phase a timetable working group was established with Network Rail to find workable solutions to fit its timetable around the planned GTR timetable. While this did not resolve all issues, it did resolve a number of timetable conflicts. It did however also raise issues with ESG as it did not resolve timetable conflicts in good time.<sup>155</sup>
- TransPennine Express highlighted that it had to rewrite and rebid its May 2018 timetable plan to Network Rail at very short notice, and with a number of additional constraints.<sup>156</sup>
- Some TOCs, such as SouthEastern trains<sup>157</sup> considered the new timetable delivered improvements to its capacity and performance; though it also considered there were quality problems with the original November offer from the SO, but that these were resolved through collaborative effort with the SO.

## Freight operators

3.64. We received representations from the Rail Freight Group and two Freight Operating Companies (FOCs); Freightliner Group and Direct Rail Services, which set out the impacts on FOCs and customers of the failure of the May 2018 timetable in the following areas:<sup>158</sup>

- Some important freight paths were not being offered by Network Rail, or offered at different times or different routes than requested. This includes some existing services being cancelled and some paths not being offered, where they might normally have reasonably been expected. Even where trains are not being cancelled, FOCs have seen a decrease in productivity and higher costs as increases in efficiency, such as improved plans and rosters, cannot be realised.
- One FOC specifically complained of some paths not appearing in the May 2018 Timetable as expected, with others being outside the contractual provisions. This led to increased resources being devoted to developing short term paths in the aftermath.
- FOCs have relatively small train planning teams and their workloads have increased to deal with timetabling issues. The rescheduling of services has led to increased staff costs.
- FOCs have experienced shorter notice from Network Rail of engineering work. Notification periods slipped from 14 weeks to 6 weeks.

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<sup>155</sup> East Midland Trains submission to Inquiry, 16 July 2018.

<sup>156</sup> TransPennine Express submission to Inquiry, 13 September 2018.

<sup>157</sup> SouthEastern submission to Inquiry, 16 July 2018.

<sup>158</sup> Rail Freight Group submission, 16 July 2018, Freightliner submission, 16 July 2018 and DRS submission, 16 July 2018.

- FOCs have experienced a decline in performance measures generally but particularly on key routes such as London-East Midlands which they have associated with the timetabling problems.
- Longer term issues were also raised. There are concerns of contagion affecting the efficiency and robustness of future timetables due to the rolling-over of unresolved issues and resourcing implications for Network Rail. The withdrawal of the December 2018 Timetable offer to FOCs by Network Rail has led to concerns about the future quality of paths offered to FOCs.

## Management of the timetable process and compliance with Part D of the Network Code

- 3.65. We have considered whether the SO took all reasonable steps to run a robust and efficient process and whether issues arising from the compliance with Part D of the Network Code contributed to the failure of the May 2018 timetable. The main milestones in the industry timetabling process are set out in detail in Part D of the Network Code.<sup>159</sup>
- 3.66. Under its Network Licence and the requirements of the Part D of the Network Code, it is the responsibility of Network Rail to establish timetables. It uses industry processes set out in Part D of the Network Code to plan and produce the national timetables with shared accountability with train operators to work collaboratively in carrying out timetable processes efficiently and establishing and maintaining the necessary systems and resources.<sup>160</sup>
- 3.67. The Network Code has been updated on a number of occasions, including undergoing a significant rewrite in 2010 and a number of smaller changes since then. From our enquiries, we have no information to suggest there were issues raised prior to the May 2018 timetable development process regarding the need for further changes to Part D of the Code. There do not appear to have been issues raised specific to the unprecedented scale of change expected for the May 2018 timetable change, as part of revisions to the Code. The scale of change was later highlighted by the SO and OPSG in its paper to the NTF in October 2017.<sup>161</sup>

### Event steering groups

- 3.68. Part D also sets out the process for the setting up of Event steering groups (ESGs), which are designed to manage the transition of major timetable changes.
- 3.69. From our enquiries in particular Thameslink and GTR, it is recognised by the SO that the ESG process is not working as well as it should. Although it was recognised that the Thameslink ESG was the first ESG that has delivered major change there is a need for greater commitment and

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<sup>159</sup> Part D of the Network Code sets out the process which Network Rail and train operators must follow in order to compile the timetable. [Link](#).

<sup>160</sup> Condition D1 of Network Code.

<sup>161</sup> *May 2018 Timetable Change Update*, paper to the NTF, 28 October 2017.

engagement in this process.<sup>162</sup> Concerns with the effectiveness of these groups were also raised by other TOCs in this inquiry. In its own capacity planner internal review of the timetable production, Network Rail also highlighted lessons learned for the ESG process.<sup>163</sup>

## Part D milestones

3.70. The information provided in the development of our timeline confirms that, for the original ‘Working’ May 2018 timetable, key Part D milestones were generally achieved. This included the SO providing its offer of the May 2018 Timetable to the industry on 17 November 2017 (“D-26” for the May 2018 Timetable).<sup>164</sup> Figure B5 below sets out a summary of the Part D milestones.

Figure B5 – Part D Network code summary table

<b>Preparation of the timetable</b>	
The timetable is changed twice each year; at the Principal Change Date in December and the Subsidiary Change Date in May. The process is set out in Part D of the Network Code.	
<b>D-X</b> is used to show the number of weeks before the start of a new timetable for each step or milestone in the process.	
<b>D-55</b>	Train operators intending to introduce significant new services or make significant changes to its services should notify NR at the earliest opportunity and, where possible, before D-55.
<b>D-55 to D-40</b>	Train operators should discuss their proposals with NR which carries out a consultation and facilitation process with other operators. Where NR considers an operator’s changes may necessitate a substantial timetable change it may start this initial consultation before D-55.
<b>D-45</b>	NR issues the Prior Working Timetable, against which train operators should bid their changes.

<sup>162</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment, Network Rail submission to Inquiry, 31 July 2018.

<sup>163</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment, Network Rail submission to Inquiry, 31 July 2018.

<sup>164</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment, Network Rail submission to Inquiry, 31 July 2018; Northern submission to Inquiry, 16 July 2018 and GTR submission to Inquiry, 16 July 2018.

<b>D-40</b>	At D-40, known as the Priority Date, Train operators formally submit their new proposed timetables. This is called an Access Proposal in Part D, and colloquially know as a 'bid'.
<b>D-40 to D-26</b>	During the 14 week Timetable Preparation Period, Network Rail develops the new national timetable from all these bids, checking and resolving any conflicts between different operators' bids to arrive at the best overall timetable. Train operators can make additional bids or revise their bids during this period.
<b>D-26</b>	Network Rail provides the rail industry with a national timetable, enabling train operators to start planning logistics, produce rotas and train staff.
<b>D-0</b>	The new timetable comes into operation.
<p>According to Part D, the timetable issued at D-26 is supposed to be the final version of the 'base' timetable and only amended if determined following any formal appeals to the Timetable Panel of the Access Disputes Committee or ORR. However, for some time Network Rail and train operators have been treating this timetable as a draft, asking operator's for a response by D-24 and finalising it at D-22.</p>	
<p>Once the 'base' timetable is finalised, work starts on a rolling programme to refine each week of the timetable (Timetable Week) to take account of engineering works. The intention is that the timetable for each Timetable Week is finalised twelve weeks in advance ('T-12'), in order that it can be published to passengers and enables advance tickets to go on sale. This is known as the Informed Traveller obligation.</p>	

- 3.71. However, from our enquiries it has become clear that in practice the SO approaches certain elements of the schedule contained in Part D with a degree of flexibility, particularly with regard to negotiations with operators.
- 3.72. The SO advised us that, in practice, it tries to work iteratively with operators between D-40 and D-26 (as required by Part D) with varying degrees of success.<sup>165</sup> Industry timetable planning teams continue with a custom practice of a New Working Timetable being offered by the SO, and operators then having a period of time to review the offer and respond with queries or counter proposals for further changes.<sup>166</sup> The SO then further considers the operator's counter suggestions and amends the timetable accordingly. Current practice is that this happens between D26 and D22. This 'in practice' approach is not set out in Part D of the Network Code.

<sup>165</sup> Network Rail submission to Inquiry, 10 September 2018.

<sup>166</sup> Network Rail submission to Inquiry, 10 September 2018.

- 3.73. In practice, the SO effectively splits the Part D-26 to D-22 appeal period in two by seeking an offer response. The logic being that operators review their published timetable by D-24 and make the SO aware of anything they disagree with. The SO then fixes what it can by D-22 and this is aimed at avoiding operators having to lodge formal Access Dispute Resolution Committee disputes at D-22 for areas that are more easily resolved. Network Rail can and does work both ways with different operators.
- 3.74. There is a suggestion from TOCs, in particular GTR<sup>167</sup>, that the timetable offered in November 2017 was not robust, although the SO dispute this view. However, this original timetable as planned was not implemented because it subsequently had to be re-written as a result of the impacts of the deferment of the NWEF4 electrification and impacted by other factors such as the phasing decision of GTR services, and ScotRail rolling stock availability issues. Any robustness and / or success of this original timetable in implementation was not therefore tested.
- 3.75. The Inquiry could not assess whether the flexibility in working practice of the milestones in the Part D process had any part in the issues relating to the implementation of the May 2018 timetable. Participants to the inquiry explained that these tend to be pragmatic judgements, and offered different examples which illustrate that these may work for or against the success of the process depending on the circumstances.
- 3.76. From our enquiries, we have also heard from NR and the industry that Part D is considered to be a process which was developed at a time of more constant position on the network and therefore more suited to managing incremental change.<sup>168</sup> In light of the recent issues and with hindsight, it may not now be sufficient to manage the complexities and scale of major timetable changes.
- 3.77. The need for a major rewrite of a base timetable post the D-26 deadline was an exceptional event and one never envisaged in the Part D process - it does not have guidance or any specific process for any such an instance. Part D does include a process for changes after D-26 but these are only ever expected to be minor changes.
- 3.78. While the specifics of this 'in practice' approach to Part D was not a primary factor in the need to re-write and subsequent issues with the implementation of the May 2018 Timetable, there is evidence the timetabling process in Part D of the industry Network Code is not being applied as envisaged and that deadlines are treated somewhat flexibly (although we recognise that this may be to facilitate further engagement between NR and its customers). Where the industry process is not working and / or could be improved, it is the responsibility of the SO to lead this work with engagement from the industry as a whole. The success of any such process is reliant on its application in practice, industry behaviours and resources given to it.

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<sup>167</sup> GTR submission to Inquiry, 16 July 2018.

<sup>168</sup> Transport Select Committee, evidence from Jo Kaye, MD Network Rail System Operator, 18 June 2018.

- 3.79. **The Inquiry has found that the schedule prescribed by Part D of the Network Code for the timetabling process was applied flexibly by the SO and by train operators in preparing the May 2018 timetable, but does not judge that flexibility is inappropriate in certain circumstances. As found earlier, it remains critical that decisions about infrastructure projects avoid compressing the time available to develop the timetable, by being made in alignment with the Part D process, even if this schedule varies in different circumstances.**
- 3.80. The SO has however acknowledged the timetabling process set out in Part D of the industry's Network Code is not working as envisaged and has proposed the industry should review these arrangements, particularly to strengthen the SO's ability to manage risk and industry change.<sup>169</sup> ORR's recent licence breach decision relating to the Network Rail's timetabling obligations considered a review of Part D would be sensible and that it is essential that this is done with industry cooperation. The ORR proposed to include the review timescales as part of its proposed final enforcement order.<sup>170</sup>

## Resource and capability of the SO

- 3.81. A consistent issue raised by participants to the Inquiry is whether the SO had the necessary resources to conduct such a large timetable change.<sup>171</sup> We have heard conflicting accounts about the development of the timetabling function over recent years, as new technology has been applied and timetabling teams consolidated in a single national hub. The Inquiry makes no firm conclusions about this recent history. However, the SO has explained certain challenges that it has faced in retaining skilled timetabling experts, and the measures it is taking to address this.
- 3.82. ORR's 'Prior Role Review' investigated actions that the ORR took which may be material to the disruption in May 2018. We have considered whether decisions made at PR13 in relation to timetabling resource and capability could have been a contributory factor.
- 3.83. As part of its 2013 Periodic Review of Network Rail (PR13), ORR made in its determination for Control Period 5 (2014-2019) efficiency assumptions for areas of NR's activities that included resources allocated to timetable planning. These were greater than NR had proposed itself, and Network Rail disagreed with the assumptions. ORR was aware that Network Rail had been reducing its resource levels in this area in Control Period 4 and had already indicated in their

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<sup>169</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment, Network Rail submission to Inquiry, 31 July 2018.

<sup>170</sup> Response to ORR investigation and monitoring of current informed traveller/T-12 issues, Network Rail 27 July 2018. [Link](#).

<sup>171</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment, Network Rail submission to Inquiry, 31 July 2018; and GTR submission to Inquiry, 16 July 2018.

PR13 submission that they were proposing to make further efficiencies in timetabling resource.<sup>172</sup>

3.84. Although ORR did not explicitly demand a reduction, Network Rail did reduce its resources in this area during the first part of the control period as it had planned to do. A different approach by ORR in PR13 may have identified the increase in demand or lack of capability, and supported a possible decision by Network Rail to increase resourcing in this area. Timetable planning has now been subject to a significant increase in resource. In evidence to the Transport Select Committee in June 2018, the managing director of the SO said:

'I do not think that was a material factor. It is right that in the original control period five settlement there was an expectation of significant efficiencies in the team towards the last two years of the control period, where we are now. We realised those when we were assessing the workload for the last couple of years, and we reversed the changes.'<sup>173</sup>

3.85. In addition, as part of PR13 ORR proposed in the draft determination an enabler to measure the performance of system operations functions including timetable planning functions. This would include a dashboard agreed with Network Rail. A draft of the dashboard was consulted on in August 2015, with a revised dashboard published in August 2016. However, by 2017 Network Rail said that it intended instead to develop a SO Scorecard. The ORR did not enforce the need for this dashboard prior to CP5 which could have helped to provide an easy to reference snapshot of SO performance.

3.86. The SO has set out in its Strategic Business Plan for 2019-2024<sup>174</sup> the need for further resources for CP6 given the level of planned change. As part of ORR's July 2018 licence breach decision, in relation to Network Rail's planning and delivery of its timetabling obligations, we have asked the SO to accelerate its plans regarding resource and capability, which we will monitor.<sup>175</sup>

3.87. The SO role and how it undertakes its role is likely to undergo further change over CP6. Through the PR18 determination, we expect the SO's budget to increase from around £145m in CP5 to £272m over CP6.<sup>176</sup> This represents in full what the SO has sought and should support the industry's desire for an expert, transparent and impartial SO that acts in the best interests of the system.

3.88. In terms of capability, the SO's Train Planning System is not used to full functionality and corresponding systems used by the industry are not fully integrated. Where data is transferred between different systems, the opportunity for errors can arise. Where operators plan and amend their own services in differing systems, clashes can become apparent when the SO

<sup>172</sup> Network Rail Strategic Business Plan, 2014-2019 [Link](#).

<sup>173</sup> Transport Select Committee, evidence from Jo Kaye, MD Network Rail System Operator, 18 June 2018.

<sup>174</sup> <https://cdn.networkrail.co.uk/wp-content/uploads/2018/02/System-Operator-Strategic-Plan.pdf>

<sup>175</sup> *Rail Timetable Issues*, ORR website. [Link. http://orr.gov.uk/rail/consumers/rail-timetable-issues](http://orr.gov.uk/rail/consumers/rail-timetable-issues)

<sup>176</sup> [PR18 Draft Determination](#), ORR, 12 June 2018.

merges datasets. A number of train operators have raised that this can lead to issues with risks of duplication and errors, particularly in the compressed time period to develop the timetables. An example includes NR and GTR interactions during the May 2018 timetable development and rewrite adding a further complexity and resource pressure during an already complex timetable process.<sup>177</sup>

- 3.89. **The Inquiry has found that the volume of resources available to the SO could not reasonably have been increased at short notice to mitigate problems as they emerged in the timetabling process for May 2018. However the SO could have done more to estimate the resource demands at a much earlier stage and consider other mitigations, as is now being done in anticipation of future timetable changes. ORR stated in its PR18 draft determination the need for additional SO resources in the next control period.**
- 3.90. We will consider the issue of the SO's long-term resources and capability further in Phase 2 of the Inquiry. We will also consider an issue that has been raised with the Inquiry, but which we have found no evidence of being a primary cause behind the disruption in May 2018, regarding the use of technology to support the accuracy and efficiency of the timetabling process by the SO and train operators.

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<sup>177</sup> GTR submission to Inquiry, 16 July 2018; NR submission to Inquiry, 10 September 2018.

## 4a Northern - Development and preparedness to deliver 20 May 2018 timetable

### Context

- 4.1 This chapter examines Northern's contribution to developing a new timetable for introduction in May 2018, in the context of the fundamental replan required after late confirmation that NWEF4 would not be delivered on time.
- 4.2 A nine year franchise contract was let by the Secretary of State for Transport to Northern on 22 December 2015.<sup>178</sup> The franchise was let alongside a new franchise contract with First TransPennine Express Limited and both contracts are managed by the Rail North Partnership. Jointly the deal was reported by the Department for Transport to "provide an unprecedented package of improvements, bringing about the biggest transformation to rail journeys in the north of England and Scotland in decades."<sup>179</sup>
- 4.3 The Inquiry has examined the challenges faced by Northern in developing its revised timetable to fit into the national timetable, in a much reduced timescale of 16 weeks, compared to the normal 40 weeks available, and its preparedness to organise and deploy trains and competent staff to deliver an effective service from the start of the new timetable.
- 4.4 The Inquiry has examined whether any of the following factors were material in contributing to the 20 May 2018 timetable disruption:
- the governance structures of the Northern franchise;
  - the development of the Northern timetable;
  - availability and planning of train crew;
  - managing driver competencies and training;
  - rolling stock; and
  - Northern's understanding of risks to the May 2018 timetable.
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<sup>178</sup>Franchise agreement available [here](#).

<sup>179</sup>See DfT website [here](#).

# Chronology

## 2017

- Potential slippage of the NWEF4 planned for December 2017 was discussed by Northern at an internal timetable progress meeting in April 2017.<sup>180</sup>
  - At the end of June 2017 a significant risk of delayed delivery of NWEF4 led to DfT officials presenting advice to the Secretary of State to mitigate risks to the proposed December 2017 timetabling change by assuming a diesel timetable for Manchester to Preston. The Secretary of State was advised that a decision was required urgently as the timetable planning process required Northern and TransPennine Express to finalise their December 2017 timetable by 7 July 2017, in order to comply with industry planning timescales, i.e. before Network Rail issued the new working timetable for the December 2017 timetable change.<sup>181</sup>
  - On 11 August 2017, Northern submitted its timetable proposal for May 2018 to Network Rail in accordance with Part D of the Network Code.<sup>182</sup> The submission was made 40 weeks out from the proposed May 2018 timetable change, and was generated on the basis that the Manchester to Preston section of the route (NWEF4) would be electrified.
  - At the 13 October 2017 North of England Programme, System Review Group (SRG) meeting, Network Rail noted that the delivery of both NWEF3 and NWEF4 by May 2018 was essential to enable the May 2018 timetable to work.<sup>183</sup> Network Rail also noted that continuing the December 2017 timetable after May 2018 was not an option due to the Thameslink timetable change and the wider rolling stock cascade.
  - At the 26 October 2017 meeting of the North of England Programme Board, Network Rail presented a briefing note, including a risk assessment, which outlined the potential consequences of not delivering NWEF4 and the mitigating actions which could be undertaken to prevent them. The assessment stressed that both NWEF3 and 4 were essential for the May 2018 timetable and that a timetabling solution did not exist if NWEF4 was not delivered.<sup>184</sup>
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- On 17 November 2017 Northern and other operators received the national timetable offer for May 2018 from Network Rail, in accordance with agreed industry timescales.<sup>185</sup> As with

<sup>180</sup> December 17 – May 18 Progress Meeting, Northern, 19 April 2017. Northern submission to Inquiry, 16 July 2018.

<sup>181</sup> *Secretary of State Submission – NoE Programme Update Northern and TPE*, DfT, 29 June 2017.

<sup>182</sup> *Chronology of Key Events*, Northern submission to Inquiry, 16 July 2018.

<sup>183</sup> NoEP SRG meeting, Network Rail, 13 October 2017.

<sup>184</sup> *NoEP – Board. Amended paper*, Network Rail, 23 October 2017; presented to North of England Programme Board, DfT, 26 October 2017.

<sup>185</sup> *Chronology of Key Events*, Northern submission to Inquiry, 16 July 2018; *Timetable Process – Timeline*, Network Rail submission to Inquiry, 16 July 2018.

Northern's timetable submission in August 2017, it was produced on the basis that the Manchester to Preston section of the route (NWE4) would be electrified.

- During December 2017 Northern continued the normal timetable development process, including provision of an initial response to Network Rail's new working timetable.<sup>186</sup>
- During December 2017 the Christmas blockade for NWE4 delivered 75% of the planned foundations meaning that the project had to be replanned to deliver the infrastructure that was needed to enable the May timetable change.<sup>187</sup>

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## 2018

- On 5 January 2018, an Extraordinary North of England Programme Board was held. Network Rail presented options for completion of NWE4 by May 2018, but these were deemed to be too disruptive for passengers. It was agreed that the delivery date of the NWE4 project should be moved back to be completed for the December 2018 timetable.
- On 10 January 2018 Network Rail, Northern and TransPennine Express met to discuss plans for May 2018 in light of the NWE4 delay. In correspondence following the meeting, Network Rail set out a number of base assumptions for planning a revised timetable for May 2018, with the recognition from Network Rail that timings to complete the work were very tight.<sup>188</sup>
- At the end of January 2018, Northern sent Network Rail a series of bids which constituted a re-write of the timetable, now without the assumed completion of NWE4 electrification.<sup>189</sup>
- On 1 February 2018, Northern formally requested that the Network Rail System Operator (the SO) consider rolling forward the national December 2017 timetable to May 2018.<sup>190</sup> It was confirmed at a National Task Force meeting on 14 February 2018 and an Operational Planning Strategy Group meeting on 16 February 2018 that this option would not be taken forward.<sup>191 192</sup>

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<sup>186</sup> Email between Northern and Network Rail regarding retiming and flex response to timetable offer, 8 December 2017.

<sup>187</sup> Network Rail interview, by ORR (transcribed) 1 August 2018.

<sup>188</sup> Email correspondence relating to the non-electrification of Bolton, between Network Rail, Northern and TransPennine Express, 10 January 2018. Northern submission to Inquiry 16 July 2018.

<sup>189</sup> *Timetable Process – Timeline*, Network Rail submission to Inquiry, 16 July 2018.

<sup>190</sup> Email correspondence relating to rolling over the December 2017 timetable to May 2018, between Northern and Network Rail, 1 February 2018. Northern submission to Inquiry, 16 July 2018.

<sup>191</sup> Minutes of Operational Planning Strategy Group Meeting, 16 February 2018

<sup>192</sup> Minutes of National Task Force Meeting, 14 February 2018. Rail Delivery Group submission to Inquiry 20 July 2018.

- The existing Northern Rest Day Working Agreement with ASLEF ended on 17 February 2018.<sup>193</sup> This later impacted on Northern's ability to deliver its driver training plan in some regions following the additional training burdens created by the delay to NWEF Phase 3 and revised May timetable.<sup>194</sup>
- On 5 March 2018, Network Rail provided a revised May 2018 timetable offer to Northern.<sup>195</sup> There remained a number of rejected schedules to finalise, including for passenger services.<sup>196</sup>
- On 15 March 2018 Network Rail provided notice that the NWEF Phase 3 (electrification between Blackpool and Preston) blockade would be delayed by three weeks. The line had been planned to close for 19 weeks and open in late March.<sup>197</sup> Northern reported that the delayed re-opening of this route created an additional burden on the number of drivers it had to re-train.<sup>198</sup>
- Northern started working on a new set of train crew diagrams on 16 March 2018. Normally this would only take place once there was a complete set of unit diagrams.<sup>199</sup>
- By 30 March 2018, Northern had a base set of unit diagrams that covered every train service.<sup>200</sup>
- Between 17 and 25 April 2018, train crew diagram consultation began across Northern's regions.<sup>201</sup>
- On 9 May 2018 Northern wrote to Transport for the North setting out the challenges it had faced in preparing for the May 2018 timetable. At this stage Northern expected to be in a position to run a full service on 20 May.<sup>202</sup>
- Deadlines were set between 5 and 10 May 2018 for train crew diagrams to be finalised and rosters posted, which required agreement with trade unions. A number of rosters across the

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<sup>193</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>194</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>195</sup> *Timetable Process – Timeline*, Network Rail submission to Inquiry, 16 July 2018.

<sup>196</sup> Northern interview, by ORR (transcribed), 24 August 2018.

<sup>197</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>198</sup> *Chronology of Key Events*, Northern submission to Inquiry, 16 July 2018.

<sup>199</sup> Northern interview, by ORR (transcribed), 24 August 2018.

<sup>200</sup> Northern interview, by ORR (transcribed), 24 August 2018.

<sup>201</sup> *Chronology of Key Events*, Northern submission to Inquiry, 16 July 2018.

<sup>202</sup> *Northern Performance* letter, Northern to Transport for the North, 9 May 2018. Transport for the North submission to Inquiry, 17 July 2018.

regions were posted after these deadlines, which later led to the introduction of emergency rostering.<sup>203</sup>

- The new timetable was introduced on 20 May 2018, with emergency rostering affecting approximately 700 drivers and 2,300 trains each day.<sup>204</sup>
- On 4 June an interim timetable was introduced which removed 6% (168 a day) of Northern's services in an attempt to stabilise service levels and reduce late-notice cancellations.<sup>205</sup>
- The Rest Day Working Agreement was re-instated on 13 June 2018.<sup>206</sup>
- From 30 July 2018, 75% of the removed services in Northern's interim timetable were re-instated.<sup>207</sup>

## Findings

### The Northern franchise

- 4.5 The Inquiry has considered whether the unique governance structures that oversee the Northern franchise were material factors contributing to the failure to deliver an operational timetable on 20 May 2018.
- 4.6 A nine year franchise contract was let by the Secretary of State for Transport to Northern on 22 December 2015.<sup>208</sup>
- 4.7 The franchise incorporated service requirements through its term that anticipated the development of the northern infrastructure schemes, including the electrification of the Preston to Manchester via Bolton line (NWEF 4 scheme) and the Blackpool to Preston line (NWEF 3 scheme), allowing consequential service changes and introduction of electric rolling stock. It also incorporated into the Northern franchise some services previously operated by the TransPennine franchise, including for example the line in Cumbria between Oxenholme and Windermere that had no services until 2 July following the May 2018 timetable disruption.
- 4.8 Northern operates under a governance structure where its client is the Rail North Partnership. Its contract remains with the Secretary of State for Transport but is managed by the Rail North

<sup>203</sup> *Chronology of Key Events*, Northern submission to Inquiry, 16 July 2018.

<sup>204</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>205</sup> Temporary Timetables, Northern website, accessed 30 August 2018.

<sup>206</sup> *Chronology of Key Events*, Northern submission to Inquiry, 16 July 2018.

<sup>207</sup> Temporary Timetables, Northern website, accessed 30 August 2018.

<sup>208</sup> Franchise agreement available [here](#).

Partnership, which acts on behalf of Transport for the North and the Department for Transport (DfT) to manage both the Northern and TransPennine rail franchises.

- 4.9 The unique devolved governance structure under which the Northern and TransPennine franchises operate, involving authorities from the north of England alongside the DfT, is complex and subject to a separate review in light of the May 2018 timetable disruption; the Blake Review. On the basis of the evidence reviewed by this Inquiry, we find no reason why this structure created risks that were material to the failure to introduce an operational timetable by Northern, subject to the conclusion of that review.

## The development of the Northern timetable

- 4.10 The Inquiry has considered Northern's engagement with Network Rail's timetabling process in preparation for May 2018, and whether there are factors in their engagement that contributed to the failure to introduce a working timetable.
- 4.11 Network Rail published the national timetable offer on 17 November 2017 in accordance with agreed industry timescales, which should have concluded the Long Term Planning element of the May 2018 timetable preparation. This was based on the assumption that NWEF4 would be delivered.
- 4.12 Following the decision at the 5 January 2018 Extraordinary North of England Programme Board that implementing a blockade to deliver NWEF4 for May 2018 would be too disruptive for passengers, Northern was required to fundamentally re-cast its timetable, with 16 weeks available to complete work that would normally take 40 weeks. The challenge of the compressed timescales was recognised at a meeting between Network Rail, Northern and TransPennine Express on 10 January 2018, where some processes that would normally take place sequentially were planned to run in parallel.
- 4.13 At the end of January 2018 Northern sent Network Rail a wholly revised series of bids for the May 2018 timetable. These were resource led as the absence of electrical infrastructure on the line meant that availability of diesel rolling stock became the fundamental determinant in working services back into the Bolton corridor. Enhancements to services that had originally been planned for May 2018 had to be stripped out to release diesel rolling stock. Any spare rolling stock or contingency available at depots to strengthen services, or react to train failures, was moved back to Bolton. The replanning was not a localised issue in the North-West, it affected almost the whole of Northern's network, completely changing the plan that Northern had anticipated introducing in May 2018.
- 4.14 At the beginning of February 2018, Northern formally requested that the Network Rail System Operator (the SO) consider rolling forward the national December 2017 timetable to May 2018. A number of concerns were expressed by Northern's Performance and Planning Director to support the request, including the position of other schemes and timetable changes elsewhere in the country, the impact of the compressed timescales on the quality of the train plan, and the

likelihood Northern would be late in informing its customers of what the timetable would look like.<sup>209</sup> However, in evidence provided to the Transport Select Committee on 18 June 2018, Northern recognised that at the point key decisions were taken in January and February, it “could not quantify how serious the issue would be”.<sup>210</sup>

- 4.15 In mid-February, National Task Force<sup>211</sup> and Operational Planning Strategy Group<sup>212</sup> meetings confirmed that the December 2017 national timetable would not be rolled forward to May 2018.
- 4.16 The Managing Director of the SO described to the Inquiry considerations given to rolling forward the December 2017 timetable for Northern. It was noted that whilst a rollover was considered, the decision was being made in the context of contractual offers to other operators that had already been made under the Network Code in November 2017. The SO also noted that the decision was not made unilaterally and involved conversations with the National Task Force.<sup>213</sup>
- 4.17 Following the decision to not roll forward the December 2017 national timetable, Network Rail submitted a revised timetable offer to Northern on 5 March 2018. This was the equivalent offer for the original timetable that was made on 17 November 2017 and there remained a number of rejected schedules to finalise, including for passenger services.<sup>214</sup>
- 4.18 The Inquiry has found that Northern engaged properly with Network Rail’s timetabling process, and the factors that caused the timetable to be replanned at a late stage were outside of its control. The Inquiry has reviewed evidence that Northern were immediately aware of the risks that this late replan could create, and that they explored options with Network Rail to mitigate these by requesting a national roll-over of the December timetable. The Inquiry has been unable to undertake independent technical analysis about whether this was a viable option. However, the Inquiry is aware of the reasons for not taking the option to roll-over the December timetable, as presented fully in Chapter 3.

## Availability and planning of train crew

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<sup>209</sup> Email between Northern and Network Rail System Operator, 1 February 2018. Northern submission to Inquiry, 16 July 2018.

<sup>210</sup> Transport Select Committee – Oral Evidence, 18 June 2018.

<sup>211</sup> Minutes of National Task Force Meeting, 14 February 2018. Rail Delivery Group submission to Inquiry, 20 July 2018.

<sup>212</sup> Minutes of Operational Planning Strategy Group Meeting, 16 February 2018. Northern submission to Inquiry, 16 July 2018.

<sup>213</sup> Network Rail interview, by ORR (transcribed) 31 July 2018.

<sup>214</sup> Northern interview, by ORR (transcribed), 24 August 2018.

- 4.19 The Inquiry has considered Northern’s preparations to introduce the revised timetable into service, including the measures taken to ensure the availability and planning of train crew, which the Inquiry heard were material factors in the May 2018 service disruption.
- 4.20 Northern described the process to develop and implement a new timetable as starting with creating a full set of schedules and then unit diagrams, from which a set of train crew diagrams are created.<sup>215</sup> Train crew diagrams are converted into links, which group train crew within each depot, and then into rosters for individual train crew. The steps are largely sequential with some iteration as the detail of the unit and train crew diagrams become available in order to optimise the diagrams.
- 4.21 In a normal six monthly timetable change, Northern aim to ensure they begin the staff consultation of proposed train crew diagrams with a set of well-developed, optimised and quality assured diagrams.
- 4.22 The consultation of proposed train crew diagrams with staff includes reviews with:
- Local managers, to consider improvements based on local knowledge;
  - Company council, to discuss material changes from the previous arrangements;
  - Local Union representatives, to discuss any local improvements and the proposed links and shift patterns;
  - Local management, to review and approve the links.
  - At the end of the process local management approve and post staff rosters.
- 4.23 Council level union consultation would normally commence at T-8, six weeks prior to the posting of the new rosters, leaving two weeks before the timetable change is implemented. For the original May 2018 timetable implementation Northern had planned to start the Council level process at T-12, four weeks earlier than normal “because of the magnitude and complexity of the changes being introduced”.<sup>216</sup> However, for the revised May 2018 timetable change, compression of the timetable planning timescales resulted in late production of train crew diagrams. In consequence, consultations with union representatives could not begin until T-5 and were against draft train crew diagrams “that were neither well-developed, optimised nor quality assured”.<sup>217</sup>

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<sup>215</sup> Northern interview, by ORR (transcribed), 24 August 2018.

<sup>216</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>217</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

- 4.24 Prior to the introduction of the 20 May timetable the necessary agreements had not been made at Manchester Piccadilly, Manchester Victoria and Leeds, 'owing to the scale of the changes and the limited amount of time to undertake the necessary consultations'.<sup>218</sup>
- 4.25 As the May 2018 timetable was introduced, the failure to develop and implement train crew diagrams and rosters caused the introduction of emergency rostering at Manchester Piccadilly, Manchester Victoria and Leeds, affecting approximately 700 drivers and 2,300 trains per day.<sup>219</sup>
- 4.26 Emergency rostering required Northern to revert to the last agreed roster and manage the allocation of work on the day, matching available resources to work requirements on an hour-by-hour basis, resulting in services being at risk of cancellation until all options for cover (including overtime, cross-depot cover or alternative work times) had been exhausted.
- 4.27 Northern described the problems in delivering services were related to 'having the right people in the right places, as opposed to a deficit in the resource'. Northern attributed short-term cancellation problems that occurred following 20 May 2018 to crews being displaced on a major scale.<sup>220</sup>
- 4.28 Problems in delivering the timetable continued until some degree of stabilisation was made two weeks following the change with a reduced service interim timetable being introduced on 4 June 2018.
- 4.29 Like GTR, the compression of timescales meant that Northern had insufficient time to complete fully developed, optimised and quality assured train crew diagrams prior to consultation with staff.
- 4.30 The Inquiry found that in the lead up to the timetable change, Northern did not have train crew rosters that had been fully optimised or agreed with the Union. It finds that Northern could not have reasonably accelerated the train crew diagramming process, which followed a rolling stock plan as noted in the Rolling Stock section below.
- 4.31 Emergency rostering was adopted but a major displacement of staff and trains developed, resulting in the new timetable quickly falling over. Passengers in some areas were hit particularly hard; we describe the example of the Lakes Line later in this chapter. The steps Northern took to mitigate the impact upon passengers experiencing severe disruption is set out in Chapter 4b.

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<sup>218</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>219</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>220</sup> Northern interview, by ORR (transcribed), 18 July 2018.

## Managing driver competencies and training

- 4.32 The Inquiry has considered Northern’s preparations to introduce the revised timetable into service, including issues relating to managing driver competencies and training. Northern explained to the Inquiry that it had sufficient driver training resource to maintain and develop the safety-critical traction and route knowledge competencies of its drivers in preparation for the original May 2018 timetable change. Northern informed the Inquiry that during February and March 2018 the driver training plan was being delivered to schedule, within what it defined as “tolerance limits”.<sup>221</sup> The Inquiry has not been able to conduct a counter-factual analysis to validate this account.
- 4.33 On 15 March 2018 a three week delay to NWEF Phase 3 was announced, extending the duration of the Blackpool to Preston blockade to 22 weeks, and rescheduling delivery from 26 March to 16 April 2018. As a result of the delay Northern identified a 3 day training requirement for 450 drivers. Northern explained to the Inquiry that this was a requirement of its Safety Management System procedure, relating to the maintenance of drivers’ route knowledge over specified periods of time. Northern have informed the Inquiry that the originally planned 19 week blockade was not deemed as “approaching” six months, which was the trigger for requiring additional driver training, whereas the 22 week blockade was considered as “approaching” six months.<sup>222</sup> The additional 1,350 training days represented a significant increase over the existing training plan and was scheduled for completion by 29 July 2018, substantially beyond the 20 May timetable implementation date.
- 4.34 The failure of NWEF4 to deliver electrification to the Bolton corridor resulted in the need to plan a revised timetable using diesel rolling stock in place of the planned electric units. The revised timetable created 310 additional training days, which was a circa 8% increase against Northern’s original training plan, with the same resource available to deliver the plan.<sup>223</sup>
- 4.35 Northern has stated that the “revised training requirement became clear when the train crew diagrams were issued on 13 April 2018”. Until that point Northern explained it was “continuing to deliver the original May timetable training plan, albeit revised to take account of the additional training required as a consequence of the delay to NWEF 3.”<sup>224</sup>
- 4.36 This additional training burden created by the delay to NWEF Phase 3, added to the training being delivered for the revised May timetable change, was described to the Transport Select Committee hearing on 18 June 2018: “Blackpool [NWEF Phase 3] overrunning tipped the training profile over the edge. That was the straw for us. We had a plan and we could do the training, but, when Blackpool went wrong, it imposed a load more training on us at the last

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<sup>221</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>222</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>223</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>224</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

moment.”<sup>225</sup> In a letter to Transport for the North on 9 May 2018, the Managing Director of Northern stated that the delay had “overwhelmed our operational planning capability.”<sup>226</sup>

- 4.37 Northern explained to the Inquiry that there were other factors which limited their level of resilience at this late stage. These include having finite training resource to deliver an increased number of required training days and removal of potential training opportunities through extended engineering activity, for example in the Bolton corridor over weekends. There were also some operational difficulties in managing drivers under different terms and conditions<sup>227</sup> and the end of the rest-day working agreement on 17 February 2018, although as mentioned below in the “Staffing and industrial relations” section, these were known quantities that could be managed.<sup>228</sup>
- 4.38 On 20 May, as the new timetable was introduced, Northern had an outstanding training requirement of 1,450 days.<sup>229</sup> The outstanding training comprised undelivered training from the original plan, training arising in consequence of late delivery of NWEF 3, and training arising from the revised timetable introduced after non-delivery of NWEF 4.
- 4.39 Following major disruption to passengers an interim timetable was introduced on 4 June. Northern stated that the necessity to train drivers on new routes and to operate different trains caused it to “have a reduction in availability of drivers to run our scheduled train services whilst they complete their training”.<sup>230</sup> This resulted in a significant number of last minute cancellations. Northern has stressed that it has enough drivers, “far more than we need to operate the timetable,” and the number of drivers employed was not a contributing factor to the disruption following the implementation of the new timetable on 20 May.<sup>231</sup>
- 4.40 **The Inquiry has found that the compressed driver training timescales from the failure of NWEF4 to electrify the Bolton corridor and the additional re-training burden of the NWEF3 overrun were the primary causes of Northern’s inability to arrange for a sufficient level of driver competency to operate an effective service from 20 May 2018, and that Northern was constrained in its ability to manage these in the limited time available.**

## Rolling stock

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<sup>225</sup> Transport Select Committee – Oral Evidence, 18 June 2018.

<sup>226</sup> *Northern Performance* letter, Northern to Transport for the North, 9 May 2018. Transport for the North submission to Inquiry, 17 July 2018.

<sup>227</sup> Northern interview, by ORR (transcribed), 30 July 2018.

<sup>228</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>229</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>230</sup> Temporary Timetables, Northern website, accessed 30 August 2018.

<sup>231</sup> Transport Select Committee – Oral Evidence, 18 June 2018.

- 4.41 The Inquiry has considered Northern's preparations to introduce the revised timetable into service, including issues relating to the availability of rolling stock. Northern stated it "had more than enough rolling stock" in January 2018 and there would not have been any shortfall to deliver the original May 2018 timetable, as offered by Network Rail in November 2017, 26 weeks out from 20 May.<sup>232</sup>
- 4.42 The failure of NWEF 4 to deliver electrification to the Bolton corridor resulted in the need to plan a revised timetable where diesel rolling stock would be used in place of electric vehicles. When the NWEF 4 announcement was made, an initial assessment was undertaken by Northern, where it was calculated that approximately 40 diesel vehicles would be required to compensate for the electric multiple units (EMUs) that could no longer be used to operate on the Bolton corridor. These diesel vehicles were taken from planned capacity enhancements and contingency units at depots.<sup>233</sup>
- 4.43 The process for designing the final unit diagrams was iterative and 47 vehicles were ultimately re-allocated by Northern, with 30 taken out of service enhancements originally planned for the May 2018 timetable, and 12 from other depots. In addition, an option was secured to utilise part time availability of diesel vehicles from a co-located TOC in West Yorkshire, and TransPennine Express was directed by Rail North Partnership to continue a sub-lease agreement that provided Northern with the use of Class 185s. This provided enough units to operate the revised May 2018 service, though there were capacity and resilience concerns resulting from having too few carriages on some services and a lack of contingency units at depots.
- 4.44 By 30 March 2018, Northern had produced unit diagrams whereby every train service was covered by a corresponding train unit. There followed an iterative process that would normally have been started in January, which included refining movements between key stations and depots, as well as empty stock movements.
- 4.45 The compressed timescales that Northern worked to meant that diagram optimisation was done on a reactive basis. This was exacerbated by Northern's attempt to preserve as much of the six week time period it had allocated for drawing up and consulting with trade unions on the train crew diagrams. Northern have stated it is probable the attempt to expedite the process "did impact on the quality of the train crew diagrams."<sup>234</sup>
- 4.46 The Inquiry has found that Northern took reasonable measures to ensure that services were covered by corresponding train units. Based on the evidence received, the Inquiry finds that the ability of train crew to operate the rolling stock was a greater factor in the May 2018 timetable delivery than the availability of the rolling stock itself.

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<sup>232</sup> Transport Select Committee – Oral Evidence, 18 June 2018.

<sup>233</sup> Northern interview, by ORR (transcribed), 24 August 2018.

<sup>234</sup> Northern interview, by ORR (transcribed), 24 August 2018.

## Northern's understanding of risks to the May 2018 timetable

- 4.47 The Inquiry has considered Northern's understanding of risks related to the successful delivery of the May 2018 timetable.
- 4.48 In communications with the SO in February 2018, Northern demonstrated an awareness of the risks that a late replan of the timetable posed and the potential effects of these risks. These included the detrimental impact of the compressed timescales on the quality of the train plan and the likelihood that Northern would be late in informing its customers of what the timetable would look like.<sup>235</sup> Despite showing an awareness of May 2018 timetable risks in January and February, Northern later recognised that at this point when key decisions were taken it "could not be clear what the full consequences would be."<sup>236</sup> The impact on passengers is considered in Part A.
- 4.49 On 15 March 2018 Network Rail provided notice that the NWEF Phase 3 (electrification between Blackpool and Preston) blockade would be delayed by three weeks. Northern reported that the delayed re-opening of this route created an additional burden on the number of drivers it had to re-train.<sup>237</sup> Northern informed the Inquiry that "the revised training requirement became clear when the train crew diagrams were issued on 13 April 2018."<sup>238</sup>
- 4.50 On 9 May 2018 Northern wrote to Transport for the North, at this point possessing knowledge of the additional training requirement from the delayed NWEF Phase 3 blockade and the ongoing challenges of the compressed timescales involved in delivering a revised timetable. In this letter the train planning team was described as "already overwhelmed by the replanning of the May 2018 timetable" before it undertook the replanning of services to reflect the delayed handback of the blockade. Despite this, Northern expected "to be in a position to run a full service from the implementation of the new timetable on 20 May".<sup>239</sup>
- 4.51 On 17 May 2018 Northern briefed the DfT on the high risk of poor operational performance and identified potential hotspots for capacity and service decrements.<sup>240</sup> A day later an email bulletin was sent to its stakeholders warning of some localised service disruption at potentially very short-notice.<sup>241</sup> When the new timetable was introduced, on 20 May 2018, Northern had an outstanding driver training requirement of 1,450 days and emergency rostering was required,

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<sup>235</sup> Email between Northern and Network Rail System Operator, 1 February 2018. Northern submission to Inquiry, 16 July 2018.

<sup>236</sup> Transport Select Committee – Oral Evidence, 18 June 2018.

<sup>237</sup> *Chronology of Key Events*, Northern submission to Inquiry, 16 July 2018.

<sup>238</sup> Northern answers to ORR follow-up questions, received 31 August 2018.

<sup>239</sup> *Northern Performance* letter, Northern to Transport for the North, 9 May 2018. Transport for the North submission to Inquiry, 17 July 2018.

<sup>240</sup> Northern email to Department for Transport, 17 May 2018. Northern submission to Inquiry, 16 July 2018.

<sup>241</sup> Northern email bulletin to stakeholders, 18 May 2018. Northern submission to Inquiry, 16 July 2018.

following the failure to develop and implement train crew diagrams and rosters. On 4 June an interim timetable was introduced which removed 6% (168 a day) of Northern's services in an attempt to stabilise service levels and reduce late-notice cancellations.<sup>242</sup>

- 4.52 Northern was able to identify risks to the delivery of the May 2018 timetable at various stages in its development, and a number of these are listed in Northern's timetable readiness dashboards. However, Northern did not demonstrate it understood the full ramifications of the events leading up to the timetable change, and as the Managing Director of Northern explained to the Transport Select Committee on 18 June 2018, 'the full impact only became apparent when the timetable went live'.<sup>243</sup>
- 4.53 **The Inquiry has found that in the lead up to the timetable change, Northern did not adequately understand or communicate the risks arising from failing to have a sufficient number of trained drivers to operate the 20 May 2018 timetable. As a result, passengers faced severe disruption and were not provided with information that would have allowed them to manage the impact.**
- 4.54 **The information provided to passengers in advance of the timetable change, in particular whether it was sufficiently appropriate, accurate and timely to enable them to plan and make their journeys with a reasonable degree of assurance, is considered further in Chapter 5b.**

## Other issues

### The Lakes Line

- 4.55 Passengers using the service between Oxenholme and Windermere (the Lakes Line) had faced a high number of cancellations and delays prior to the timetable change.<sup>244</sup> In the days and weeks immediately following the introduction of a reduced service interim timetable on 4 June 2018, Northern offered no train service on the Lakes Line. The lack of any train service on this line received national press coverage through a campaign led by Tim Farron MP.
- 4.56 Northern have explained that the decision to remove Windermere services was taken as part of a "bigger package of service reductions across the north-west" and allowed release of former TransPennine Express drivers so they could undertake required training on rolling stock.<sup>245</sup> The Lakes Line has reduced resilience due to being resourced by staff who can only serve these services (see below for details on staffing and industrial relations).

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<sup>242</sup> Temporary Timetables, Northern website, accessed 30 August 2018.

<sup>243</sup> Transport Select Committee – Oral Evidence, 18 June 2018

<sup>244</sup> *Northern Performance* letter, Northern to Transport for the North, 9 May 2018. Transport for the North submission to Inquiry, 17 July 2018.

<sup>245</sup> Northern interview, by ORR (transcribed), 24 August 2018.

- 4.57 Following the partial reintroduction of services on Monday 2 July, a full service (35 trains a day) on the Lakes Line was reintroduced from Monday 30 July.<sup>246</sup>

## Staffing and industrial relations

- 4.58 The Inquiry has considered whether staffing and industrial relations issues within Northern are factors that caused or exacerbated the disruption to services in May 2018.
- 4.59 The Northern franchise is comprised of three legacy companies, representing the services previously provided by the North East and North West franchises, as well as some Trans-Pennine services transferred along with staff in the current franchise. One consequence of this is that Northern employ staff on different terms and conditions, to which they are entitled from their previous organisations. As described above with relation to the Windermere services previously operated by TransPennine Express, this limits Northern's ability to redeploy staff between different parts of the business. These limitations reduce Northern's overall operational resilience across its network when localised disruption occurs. However these restrictions were known quantities in advance of the May timetable change. As such the Inquiry does not find that these factors contributed to the causes of the May 2018 disruption, even while they may have limited the mitigations available to Northern in light of the disruption.
- 4.60 In parallel with the disruption caused by the failure of the May 2018 timetable, Northern services experienced additional disruptions caused by an ongoing industrial relations dispute. This further exacerbated the impact on staff and passengers, and complicated the short-term planning of rolling stock and crews. However this was planned action and while it aggravated the impact of the timetable disruption, the Inquiry has seen no evidence to suggest that on-the-day industrial relations issues were a primary causal factor behind the failure of the timetable itself.
- 4.61 The Inquiry is aware, from the evidence submitted by Northern and from ORR's routine inspection activity in the period after 20 May, that the impact of disruption on Northern's staff was severe. As described in Chapter 4b, staff often suffered from the inaccurate or absent information about services alongside passengers, as well as being subject to the disruption to travel and working patterns that this caused. Both Northern and DfT have emphasised sympathy for the pressures on rail staff, and admiration for the endurance with which they managed through the disruption, and the Inquiry endorses this.

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<sup>246</sup> Temporary Timetables, Northern website, accessed 30 August 2018.

## 4b Northern passenger response

### Context

- 4.62. In this chapter we examine the steps taken by Northern to ensure that passengers were provided with appropriate, accurate and timely information to enable them to plan and make their journeys with a reasonable degree of assurance. This includes information supplied in advance of the timetable change which set passenger expectations of the possibility of disruption as well as during the period of disruption itself. The chapter does not consider changes to services made as part of the 20 May timetable.
- 4.63. We also examine what steps Northern Rail took to mitigate the impact upon those passengers experiencing severe disruption in the days that followed the timetable change and whether those steps were sufficient.

### Chronology

- 4.64. We have set out below a high-level summary timeline of key communications and action taken by Northern based upon their response to our request for information and interview with the company.<sup>247</sup>

#### 2017

- In June 2017, the consultation on the original 20 May timetable commenced.

#### 2018

- In January 2018, Northern learnt that the electrification of Bolton corridor would not be complete for 20 May and commenced resource led replanning to deliver a revised May 2018 timetable. In working to replan the timetable Northern recognised risks around changes to service intervals and reduced services from intermediate stations at peak times.
- In February 2018, Northern's request to rollover the December 2017 timetable beyond May 2018 was refused by Industry.
- On 21 March 2018, a consultation with stakeholders and local employers regarding the delays to the infrastructure enhancements took place.

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<sup>247</sup> Northern submission to Inquiry 24 July 2018 and 25 July 2018 and Northern interview, by ORR (transcribed). 18 July 2018.

- On 7 April 2018, the timetable was published and available on Journey Planner.
- On 20 April 2018, the customer campaign '*Have you checked your new train times*' commenced. This would run for the four weeks prior to the timetable change.
- In late April/early May 2018, briefing notes were sent to staff covering each of the regions they serve and setting out the timetable enhancements and changes to services.
- On 24 April 2018, a special briefing note 'Communicating to our customers' advised staff of the reasons for the timetable changes and the advice to be relayed to customers to check their train times.
- Pre-May 2018, additional permanent customer support staff were recruited, and there was a call to arms for experienced customer support people in the business in line with normal practice, and for volunteers.
- On 7 May 2018, line guides were made available to download on the Northern and National Rail websites.
- Between 8 and 10 May 2018, meet the manager visits took place at 12 stations.
- In the week commencing 13 May 2018, two email prompts to check their train times were sent to the 300,000 customers on the Northern database.
- On 18 May 2018, a stakeholder update was issued highlighting expected short-notice local disruption.
- From 20 May to 3 June 2018, staff were deployed to hotspot locations for additional customer service assistance. Trains and crews were deployed as per customer demand and feedback from hotspot locations.
- From 20 to 26 May 2018, attempts were made to announce cancellations two hours before the due time. Twitter updates were deployed every 30 minutes. Automated announcements at Victoria station ceased. CIS screens were struggling to keep up to date.
- On 22 May 2018, tickets were accepted on Metrolink and restrictions were lifted on time bound tickets such as advanced purchase.
- 24 and 26 May 2018, were RMT strike days.
- On 1 June 2018, Northern put out a press release announcing that an interim timetable would operate from 4 June.
- From 8 June 2018, tickets were accepted on all other operators' routes.

## Findings

### Information provided to passengers ahead of 20 May

- 4.65. The Inquiry has considered whether the information provided to passengers in advance of the timetable change was appropriate, accurate and timely to enable them to plan and make their journeys with a reasonable degree of assurance.<sup>248</sup>
- 4.66. As noted in the Chapter 3 above, there was a detailed programme of engagement in the months prior to the launch of the new timetable. The passenger communications plan commenced in earnest four weeks prior to the timetable change.<sup>249</sup>
- 4.67. Stakeholder groups were advised shortly before the introduction of the new timetable that there may be some local disruption to services.
- 4.68. **Northern's communications plan appears to have been successful in raising awareness.** Noting the results of our research set out in Part A, the company's efforts to raise awareness of the 20 May timetable did engage passengers. However, there is no indication that the message was tested at any point with passengers. The Inquiry noted the success of EMT's branded campaign which included commissioning research by Transport Focus with passengers about the timetable in advance of, during, and after the change. We are also aware that TPE, in contrast to Northern Rail, devoted highly visible staffing resource on the concourse at Manchester Piccadilly station for the two weeks prior to the timetable change to explain its effects.
- 4.69. **Passengers were denied the opportunity to plan and make informed decisions about their journey.** In Chapter 4a the Inquiry has found that in the lead up to the timetable change, Northern did not adequately understand or communicate the risks arising from the failure to deliver their driver training programme required to operate the 20 May 2018 timetable. As a result, passengers faced severe disruption and were not provided with information that would have allowed them to manage the impact; information was largely limited to generic messages that timetables were changing and to check before travelling.
- 4.70. **The messages to stakeholders downplayed the scale of the problems.** We note that Northern's stakeholder update two days before the new timetable was introduced stated that "we do expect some localised service disruption". Rail staff received a copy of this on the same day. The message downplayed the scale of the problems which were likely to emerge and the opportunity to warn passengers of likely problems, even at this late stage, was not taken. The levels of awareness highlighted above indicate that passengers would have taken notice of this message.

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<sup>248</sup> Part A Passenger experience and impact evidence base and Chapter 4a.

<sup>249</sup> Northern submission to Inquiry 24 July 2018 and 25 July 2018 and Northern interview, by ORR (transcribed). 18 July 2018. References apply to paragraphs 4.65-4.66.

## Information to passengers during the disruption

- 4.71. The Inquiry has considered whether the information provided to passengers during the period of disruption following the timetable change was appropriate, accurate and timely to enable them to plan and make their journeys with a reasonable degree of assurance.<sup>250</sup>
- 4.72. Northern was unable to ensure consistency of information across industry systems such as National Rail Enquiries and train company ticket engines. Displacement of train units and unplanned cancellations meant that information for the next part of the process was delayed. As a result the downstream systems did not get the information because it was still being worked on.<sup>251</sup>
- 4.73. In the first week of the change there were some routes where the CIS screens could not keep up with the amount of disruption. The company used Twitter to provide updates every 30 minutes to front-line staff, adapting as required based on feedback from hot spot locations. The hours of operation for the social media team was extended to 7am-10pm and information they generated was duplicated on the Northern Rail website. These staff were co-located with the control team so that information was passed directly to them for onward transmission via Twitter.
- 4.74. Later in the first week of the timetable change a two-hour cut-off for at-risk services was introduced. These services were then cancelled to provide certainty to passengers and accurate information on CIS screens.
- 4.75. Northern commented that keeping rail staff informed of the latest timetable changes for onward dissemination to passengers was a harder challenge than just having Twitter. The information flow was either by e-mail or verbally from the additional people on the ground at the larger stations who would feed live information in and out, through a phone call. The Tyrell messaging system would also be used. The advice was to try not to phone control during disruption which took up resources. At the smaller stations there would have been e-mail updates, Tyrellcheck, access to live running and also the notification of services at risk. Where additional services running additional resources were put on to announce them and alter the CIS screens locally.
- 4.76. Northern recruited additional permanent customer support staff in advance of the timetable change, deployed existing staff familiar with helping customers through previous training, and volunteers from within the business. They were given a basic briefing and a volunteer action pack which included a high visibility vest to help them stand out. This was in line with normal large, planned events.
- 4.77. A stakeholder update on 1 June explained that an interim timetable was being introduced on 4 June, together with an explanation of why it was necessary.

<sup>250</sup> Part A Passenger experience and impact evidence base and Chapter 4a.

<sup>251</sup> Northern submission to Inquiry, 24 July 2018 and 25 July 2018 and Northern interview, by ORR (transcribed). 18 July 2018. References apply to paragraphs 4.71-4.76 inclusive.

- 4.78. **The information provided to passengers was inadequate.** The methods used to relay information, and the content of the messages provided, during the period of disruption were largely unsuccessful. As described in Part A, many passengers did not find the information given to them to be accurate or helpful. This meant that many passengers were unable to plan and make their journeys with any certainty.
- 4.79. **The information provided to rail staff for onward transmission to passengers was inadequate.** Rail staff largely performed well in difficult and trying circumstances. However, passengers often had the same information that was available to staff which indicates that the mechanisms in place for disseminating information to rail staff was insufficient and they were unable to provide the assistance which passengers could reasonable expect to be given about their journey.
- 4.80. **There was a failure to ensure information was consistent across industry systems.** We recognise that it is a challenge to ensure that information is correct across industry systems when it is busy and information is changing at short notice. However, it is not reasonable for information to not be consistent across those systems, which would provide reliability for passengers as well as providing greater detail to frontline staff to enable them to give better advice to passengers.
- 4.81. Extending the use of Twitter and co-locating the team providing twitter updates with colleagues in the control team was sensible. However, is not clear why this was not used in addition to using the existing Tyrell system which would in turn update for example, Journeycheck, the Northern website and apps, to provide up to date information. The extent to which these were used remained unclear.

## Action taken to mitigate impact of delays and cancellations

- 4.82. The Inquiry has considered the steps taken by Northern to mitigate the impact of the disruption on passengers and whether those steps were sufficient.<sup>252</sup>
- 4.83. Northern confirmed that it became clear at a very early stage that they had problems with the delivery of the timetable so for the first two weeks there was a combination of planned changes and significant levels of unplanned cancellations based on resources on the day. Rather than a deficit of resource this was train crew being displaced on a major scale.<sup>253</sup>
- 4.84. There were occasions when the train driver or conductor was delayed and services had to be cancelled without prior notice, even on services which were already full of passengers. They suggested that this type of occurrence helped them to quickly realise that they needed to respond, which prompted the interim timetable.

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<sup>252</sup> Part A Passenger experience and impact evidence base and Chapter 4a.

<sup>253</sup> Northern submission to Inquiry, 24 July 2018 and 25 July 2018 and Northern interview, by ORR (transcribed). 18 July 2018. References apply to paragraphs 4.82-4.90 inclusive.

- 4.85. The company reported that they had capacity issues before they started the new timetable because of infrastructure delays which caused unit cascade issues. Whilst they tried hard to match capacity to demand it was not always possible.
- 4.86. Northern commented that the short timescale available for producing the timetable curtailed their ability to undertake a forensic examination to identify its impact at intermediate stations for example ensuring that children got to school on time. They suggest that they therefore only became aware of these issues as they were raised by local stakeholders following publication of the timetable. Northern reported that they were trying to respond to these matters right up until 20 May.
- 4.87. The company had a hotspot map of where the timetable was tight, with extra staff deployed at those locations to provide additional customer service assistance and to also feedback into their gold command structure. Short-term planning measures were put in place based on this feedback and customer demand, resulting in additional shuttles and sweeper trains for example on the Bolton corridor. As the greatest impact of the company's services was on the commuter market these passengers were prioritised around the morning and evening peak.
- 4.88. The company put in place ticket acceptance arrangements on Metrolink on 22 May. Arrangements on all rail companies was agreed across the industry on 8 June. Metrolink acceptance was announced on stations and then the wider acceptance via the usual methods. It also lifted restrictions on advance purchase tickets which were time-bound.
- 4.89. Northern reported that they did not need to do anything specifically for passengers who are disabled during this period as many of the affected stations are staffed and they have autonomy to make decisions. Where the train was full, staff would have got the passenger a taxi and would not have sought any special authority to do that. They highlighted that Blackpool Transport procured a fleet of brand new buses which were fully accessible. They had a contract with them to support services on the Blackpool to Preston route, and felt that this was the blueprint on how they should do rail replacement going forward. However, their ability to procure additional buses at times was limited due to the level of planned engineering work on the network.
- 4.90. On 4 June 2018 the timetables were due to change again to accommodate the closure of Liverpool Lime Street for planned improvement works. It was decided to remove complete crew diagrams from the timetable, largely reducing off peak services. This gave more certainty to passengers and although there were still additional cancellations, the number of trains operated increased to more than that before the May 2018 timetable change. The interim timetable operated until the end of July 2018 when the Liverpool works ended.
- 4.91. The company continued to promote Delay Repay on the front page of its website and via the use of social media.
- 4.92. Passengers had greater certainty in what train services would be running following the swift introduction of the interim timetable on 4 June. In Annex E the Inquiry has compared train service performance before, during and after the disruption. It is clear that more trains were running after the interim timetable was introduced than were operating before the timetable of

20 May, and the number of minutes Northern's services were delayed recovered to pre-20 May levels from week three onwards.

- 4.93. **Northern appeared to cope well when faced with the additional challenge of strike days.** We recognise that an already difficult period for the company was exacerbated by strike days during the period. The new timetables that were already being amended at short notice had to be amended again to take into account the routes that would operate with limited train crew availability.
- 4.94. **Northern's decision to prioritise commuters in the morning and evening peak by providing additional services was a sensible and practical response.** The company's decision to focus on services on the Bolton corridor into Manchester was understandable, particularly given the volume of passengers and the lack of viable alternative transport available.
- 4.95. **The company took reasonable steps to recruit additional customer service staff in advance of the timetable change.** This was sensible and good practice. Positioning extra staff at hot spot locations during the disruption where there were large volumes of passengers to provide feedback was a sensible approach, as was using volunteers and customer-trained staff.
- 4.96. **It is not unreasonable to expect that wider ticket acceptance should have happened sooner.** The introduction of ticket acceptance arrangements on Metrolink on 22 May was welcome. It may be that informal arrangements were put in place with other local operators. However it is disappointing that ticket acceptance on all other train companies was not put in place by the Rail Delivery Group until 8 June.
- 4.97. There is some evidence to conclude that there was a failure to provide services to passengers requiring assistance, as well as examples of good practice in other places. The company relied on the continuation of existing processes which give staff autonomy to help these passengers. However, we note that the number of complaints received about accessibility issues in the period 27 May – 23 June, whilst remaining at low levels, was the highest since July/August 2017. It is also clear that the impact on passengers who are disabled arising from inadequate information would have been more severe and magnified. For example for passengers with mobility issues who have to change platforms at short notice, and those with hidden disabilities reliant on rail staff proactively identifying that they need assistance. As noted in Part A, passengers may have been deterred from travelling due to the disruption.
- 4.98. **The use of fully accessible buses on the Blackpool to Preston route was welcome.** We note the intention to use this as a blueprint on how the company should do rail replacement going forward.
- 4.99. **The company appear to have taken some reasonable steps to communicate passengers' rights about compensation.** The increase in the number of claims submitted for compensation noted in Part A suggests that Northern's efforts were successful. We note that the additional compensation scheme has since been agreed and efforts have been made to communicate those arrangements.

## 5a GTR – Development and preparedness to deliver 20 May timetable

### Context

5.1 This chapter examines GTR's introduction of the new timetable in May 2018. The GTR timetable in May 2018 was the culmination of a two-decade process of planning and developing the Thameslink Programme, underpinned by the major infrastructure programme described in Chapter 2: Infrastructure to establish new cross-London services that will enable up to 24 trains per hour (tph) to operate in both directions through the central core system on new Class 700 rolling stock. This chapter examines GTR's introduction of the new timetable in May 2018. The GTR timetable in May 2018 was the culmination of a two-decade process of planning and developing the Thameslink Programme, underpinned by the major infrastructure programme described in Chapter 2: Infrastructure to establish new cross-London services that will enable up to 24 trains per hour (tph) to operate in both directions through the central core system on new Class 700 rolling stock. Department for Transport (DfT) judged that a new franchise area should be created by combining the existing Great Northern, Thameslink and Southern franchise areas, in recognition that the configuration of these new services required a single integrated operator to cover the full routes to the north and south of the Thames (the TSGN franchise). The franchise was signed by GTR in June 2014.<sup>254</sup> The Gatwick Express and Southern services were added in 2015, as part of the planned integration. The Inquiry has examined whether any of the following factors are material to causes of the timetable disruption:

- the structure or terms of the TSGN franchise;
- the Thameslink Programme specification and phasing;
- the development of the GTR timetable;
- planning train crew availability and driver competencies; and
- GTR's understanding of the risks to the May timetable.

### Chronology

#### 2014

- On 11 June 2014, GTR entered into the TSGN franchise at the conclusion of the usual competitive tendering process.<sup>255</sup>

<sup>254</sup> GTR is a subsidiary of Govia Limited which in turn is a joint venture between Go-Ahead Group PLC (65%) and Keolis (UK) Limited (35%), see [here](#).

<sup>255</sup> *TSGN franchise agreement* June 2014. GTR submission to Inquiry, 16 July 2018

## 2015

- In July 2015, Network Rail finalised report DTT2014 which contained analysis in response to a DfT Change Order.<sup>256</sup> This report explored the development of a timetable for the implementation of operational running over newly commissioned Thameslink infrastructure due by May 2018. DTT2014<sup>257</sup> concluded that the aim of the Thameslink Programme to deliver 24tph through the core section at peak times could not be achieved without both infrastructure works external to the project works and changes to the franchises of train operators on the geographic routes used by the Thameslink services (Sussex, Kent, the East Coast Mainline and the Midland Main Line).<sup>258</sup>
- During August 2015, GTR and DfT began to discuss remapping the TSGN Train Service Specification (TSS) with a view to reducing the risks identified in July.<sup>259</sup>

## 2016

- In February 2016, GTR presented to Network Rail and DfT its work on the concept of remapping and how it might be applied to mitigate the risks identified.<sup>260</sup> The DfT invited GTR to develop the work further.
- In September 2016, GTR informed DfT of the list of changes needed to deliver the timetable required by the TSS to enable 24tph through the Thameslink core.<sup>261</sup> These changes included new trains, more drivers and other requirements around rolling stock, maintenance and infrastructure works.<sup>262</sup>

## 2017

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<sup>256</sup> DfT Thameslink Programme Network Rail Infrastructure Programme Change Order Form CO-NR 0191. Referred to in GTR submission to Inquiry 16 July 2018.

<sup>257</sup> GTR submission to Inquiry, 16 July 2018. *Thameslink DTT 2014*, Network Rail, 2 July 2015.

<sup>258</sup> *Thameslink DTT 2014*, Network Rail 2 July 2015.

<sup>259</sup> GTR submission to Inquiry 16 July 2018.

<sup>260</sup> Note of GTR/SE/DfT/NR meeting, GTR, 17 February 2016, circulated by email 23 February 2016. GTR submission to Inquiry, 16 July 2018.

<sup>261</sup> GTR submission to Inquiry, 16 July 2018.

<sup>262</sup> Letter from GTR to DfT, 19 September 2016. GTR submission to Inquiry, 16 July 2018.

- During January 2017, further to recommendations in the 2016 Gibb Report,<sup>263</sup> an Industry Readiness Board (IRB) and Independent Assurance Panel (IAP) were created with the explicit intention of bringing together parties closely involved with the increase in railway operations through the Thameslink core.<sup>264</sup>
- On 13 February 2017, DfT formally issued Network Rail with a new Thameslink TSS (operative from December 2018) designed to reflect the changes to the TSGN franchise as a consequence of the re-mapping work done in 2016.<sup>265</sup>
- During April 2017, the Thameslink Programme Board (TPB) recognised that there may be opportunities to reduce risks by taking a more phased approach and asked GTR to investigate how this might be done.<sup>266</sup>
- In parallel, the IRB was also considering how to de-risk the impact of the planned 2018 timetable introduction.<sup>267</sup>
- In spring 2017, DfT and GTR discussed the significance of the longer period of 'phasing' and what changes would be required to the GTR franchise terms.<sup>268</sup> GTR reports that DfT invited it to work up proposals and it informed DfT, that in order to work up a rational timetable bid in August 2017 for the May 2018 timetable, a decision on phasing would be needed by June 2017.<sup>269</sup> The DfT reports no record of this specific request.
- In May 2017, in anticipation of the need to train drivers on new class 700 trains and the new Canal Tunnels route it would use, GTR asked Network Rail to bring forward the completion of the Canal Tunnels from the proposed date of April 2018.<sup>270</sup>
- On 11 May 2017, at a workshop titled: "De-risking the implementation of the 2018 outputs" GTR presented revised phasing options to the DfT based around a four-staged approach of 18, 20, 22 and eventually 24tph.<sup>271</sup>

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<sup>263</sup> *Gibb Report: review of Southern Rail network and other related issues*, 30 December 2016.

<sup>264</sup> *Thameslink 2018 Industry Readiness Board, Board 1: TL2018IRB Kick-off Session*. 13 January 2017

<sup>265</sup> *DfT Thameslink Programme Network Rail Infrastructure Programme Change Order Form: Development and modelling of 24tph timetable*. Referred to in Thameslink DTT 2014 (see footnote 258).

<sup>266</sup> Thameslink Programme Board 26 April 2016: minutes.

<sup>267</sup> Chris Gibb interview, by ORR (transcribed). 22 August 2018.

<sup>268</sup> Department for Transport interview, by ORR (transcribed). 10 August 2018.

<sup>269</sup> GTR submission to Inquiry, 16 July 2018.

<sup>270</sup> GTR submission to Inquiry, 16 July 2018.

<sup>271</sup> GTR/DfT Workshop De-risking the implementation of the 2018 timetable outputs presentation, 11 May 2017.

- On 7 July 2017, [Network Code D-45] Network Rail provided GTR (and other operators) with the Prior Working Timetable for it to use in submitting their timetable at D40.<sup>272</sup> GTR continued to engage with Network Rail before submission of its D-40 bid.
- On 11 August 2017, [Network Code D-40] GTR submitted its Access Proposal to Network Rail for the May 2018 timetable based on a full 24tph timetable in line with its existing franchise terms but highlighting the four train services to be removed for the May 2018 timetable.<sup>273</sup>
- On 18 August 2017 the DfT emailed GTR regarding the alternative phasing proposed on 11 May 2017. This confirmed the DfT's agreement to the phasing proposal *in principle* but subject to submission of cost implications before it could be formally approved.<sup>274</sup>
- On 25 August 2017 GTR replied to the DfT emphasising the time-critical nature of the decisions needed by DfT and emphasising that GTR had already bid its May 2018 timetable and was exploring the monetary implications of what would now be required.<sup>275</sup>
- August 2017 also saw the gradual transfer of members of Network Rail's Thameslink Advanced Timetable Team to work on the general timetable.<sup>276</sup> They had been working with GTR since July 2016.
- On 31 October 2017 the DfT, following receipt of GTR cost implications on 20 October 2017, provided approval for the adoption of GTR's proposals for a longer period of 'phasing' to develop the full operational capacity of 24tph through the Thameslink core. This meant the development of an alternative 2018 Thameslink timetable could be progressed.<sup>277</sup>
- In line with the established timetabling process, on 17 November 2017 Network Rail issued the May 2018 offer timetable to GTR (and the wider industry). This was on the basis of an initial operational capacity of 20tph through the Thameslink Core at peak as bid on 11 August 2017.<sup>278</sup>

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<sup>272</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment, Network Rail, submitted to the Inquiry on 31 July 2018.

<sup>273</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment, Network Rail, submitted to the Inquiry on 31 July 2018. GTR submission to Inquiry, 16 July 2018.

<sup>274</sup> GTR submission to Inquiry, 16 July 2018.

<sup>275</sup> GTR submission to Inquiry, 16 July 2018.

<sup>276</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment. Network Rail, submitted to the Inquiry on 31 July 2018.

<sup>277</sup> Email from DfT to Network Rail and others dated 31 October 2017. GTR submission to Inquiry, 16 July 2018.

<sup>278</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment NR. Network Rail submission to Inquiry, 31 July 2018.

GTR contended at the time that the technical content of the offer was ‘not fit for purpose’ and that it was not an operable timetable.<sup>279</sup>

- From 17 November 2017 to January 2018, GTR and Network Rail worked to resolve the rejections and ‘flexes’ made to GTR services and packs of resolved issues were resubmitted to Network Rail.<sup>280</sup> This allowed Network Rail and GTR to agree a base timetable using the 20tph timetable assumption.

## 2018

- Having ostensibly resolved the rejections and flexes from the 17 November 2017 offer, on 12 January 2018, GTR bid anew to Network Rail the timetable amendments required for the May 2018 timetable. This bid now included the required phasing as well as other late-notice changes to services between Bedford and London. This was the first time that Network Rail had formally seen the 18tph timetable and its requirements.<sup>281</sup>
- 23 February 2018 was the deadline for Network Rail to publish the new weekly timetable that allows operators to offer advanced tickets to customers. However, Network Rail announced it could not meet this regulated obligation but had a plan to recover the position for the December 2018 timetable change.<sup>282</sup>
- On 26 February 2018, Canal Tunnels were opened for limited preview passenger train services, allowing GTR to run trains through them for driver training.<sup>283</sup>
- On 6 April 2018, with no weekly timetable published, GTR proposed a ‘rolling deployment’ recommendation to the DfT proposing the phasing-in of new services over a three week period from the start of the May 2018 timetable. This involved cancelling up to 100 services each day over the transition weekend of 19/20 May 2018, then introducing additional services over each week of the three week deployment plan as rolling stock was better distributed around the network.<sup>284</sup> This was intended to ensure a more stable service.

<sup>279</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment NR*. Network Rail submission to Inquiry, 31 July 2018.

<sup>280</sup> GTR submission to Inquiry, 16 July 2018 and *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment NR*. Network Rail submission to Inquiry, 31 July 2018.

<sup>281</sup> GTR submission to Inquiry, 16 July 2018.

<sup>282</sup> GTR submission 16 July 2018 and *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment NR*. Network Rail submission to Inquiry, 31 July 2018.

<sup>283</sup> See Chapter 2 on Infrastructure.

<sup>284</sup> GTR submission to Inquiry, 16 July 2018 and *Rolling Deployment: GTR Recommendation to the Department for Transport 6th April 2018*.

- On 9 April 2018, GTR received a new timetable offer from Network Rail. This left a much shorter time (six weeks) than normal in which to carry out the necessary planning activities to ensure that the diagram workload could be efficiently aligned with the available driver resource.<sup>285</sup>
- Between 9-20 April 2018, GTR had begun to realise the number of drivers needed to resource the increased diagram workload to implement the timetable it had received and it looked at developing additional mitigation such as involving driver trainers in service delivery.<sup>286</sup>
- On 20 April 2018, GTR issued diagrams to the trade union ASLEF for scrutiny<sup>287</sup>. Further meetings took place on 25 April 2018. These diagrams were not optimised whereas normally they would have been through several iterations. ASLEF did not agree them.<sup>288</sup> Therefore the roster process could not commence.
- On 10 May 2018 DfT approved (with conditions) the 'rolling deployment'<sup>289</sup> that had been recommended by GTR on 6 April 2018.<sup>290</sup>
- On 18 May 2018, the drivers' weekly rosters were posted, but this allowed GTR only two days to ask drivers to cover gaps on overtime.<sup>291</sup>
- On 20 May 2018 GTR implemented the May 2018 timetable, using non-optimised driver and rolling stock diagrams.

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<sup>285</sup> GTR submission 16 July 2018 and *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment NR*. Network Rail submission to Inquiry, 31 July 2018.

<sup>286</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>287</sup> GTR submission to Inquiry, 16 July 2018.

<sup>288</sup> GTR submission to Inquiry, 16 July 2018.

<sup>289</sup> Email from DfT to GTR dated 11 May 2018. GTR submission to Inquiry, 16 July 2018

<sup>290</sup> GTR submission to Inquiry, 16 July 2018.

<sup>291</sup> GTR submission to Inquiry, 16 July 2018.

## Findings

### The TSGN franchise

- 5.5 The Inquiry has considered whether there are factors related to the structure or terms of the TSGN franchise that are material to the causes of the timetable disruption for passengers in May 2018.
- 5.6 The Inquiry heard from DfT that the TSGN franchise is unique in several ways, which reflect the scale and operational complexity of the new Thameslink network and the anticipated delivery risks.<sup>292</sup>
- 5.7 The TSGN franchise was created by combining the Thameslink, Southern and Great Northern franchise areas to become the largest franchise in Great Britain.<sup>293</sup> This was in recognition that the configuration of the new Thameslink services required a single operator to integrate the full routes to the north and south of the Thames in order to plan and operate services reliably.<sup>294</sup>
- 5.8 The transition during the term of the franchise to the new operating model meant that the franchise needed to reflect the commercial risks to the operator from unpredictable revenue changes. The franchise was set up as a management contract, which served to limit the revenue risk faced by the operator but with exposure to the operational costs and efficiency savings.<sup>295</sup> The terms of the franchise provides for different TSRs from time to time and clauses entitling the parties to vary the contract in certain circumstances.
- 5.9 The Inquiry heard that the franchisee was regarded by DfT as a ‘delivery partner’ for the Thameslink Programme as a whole,<sup>296</sup> and GTR adopted specific responsibilities within the programme for the delivery of elements of critical infrastructure, including some new depots and stabling.<sup>297</sup> The Inquiry heard that GTR delivered the infrastructure schemes for which it was responsible successfully, and was a full participant in the Thameslink Programme structure.
- 5.10 The Inquiry has found no evidence to suggest that the structure of the TSGN franchise was a factor in the failure to deliver the May 2018 timetable. Many aspects of the franchise were

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<sup>292</sup> Department for Transport interview, by ORR (transcribed). London, 27 July 2018.

<sup>293</sup> National Audit Office, The Thameslink, Southern and Great Northern rail franchise [HC 528](#) Session 2017–2019 10 January 2018; and Govia website [here](#).

<sup>294</sup> Department for Transport interview, by ORR (transcribed). London, 27 July 2018.

<sup>295</sup> Department for Transport interview, by ORR (transcribed). London, 27 July 2018. Govia Thameslink Railway interview, by ORR (transcribed). London, 1st August 2018.

<sup>296</sup> Department for Transport interview, by ORR (transcribed). London, 27 July 2018.

<sup>297</sup> GTR submission to Inquiry, 16 July 2018.

designed to mitigate predicted risks around the development and introduction into operation of the Thameslink Programme by bringing GTR into the development of the programme and managing contract risks flexibly.

## Thameslink Programme specification and phasing

### Specification of the Thameslink Programme

- 5.11 The Inquiry has considered whether the specification to run up to 24tph through the core section of Thameslink infrastructure, at peak hours, was material to GTR's failure to introduce the timetabled service for passengers in May 2018.
- 5.12 This frequency of service is unprecedented on the mainline railway. It would require highly reliable infrastructure and new rolling stock with the integration of automatic digital signalling technology that allows trains to run close together safely.
- 5.13 In recognition of the complexity of the specification, GTR was originally expected to implement the increases in service frequency in the core in two phases, one in May 2018 increasing frequency to 20tph and another in December 2018 to 24tph.<sup>298</sup> Phasing, and the subsequent decision to re-phase the project over four steps (18, 20, 22 & 24tph) are discussed in the next section of this report.
- 5.14 Network Rail advised in its Thameslink Development Timetable DTT2014 report that 24tph could not be achieved through the Thameslink core without infrastructure works at Windmill Bridge Junction in the South; around Welwyn in the North; and changes to the service configurations of other operators, including East Midlands Trains as its operating area overlap the new Thameslink services.<sup>299</sup> DTT2014 was formally signed off in 2015 and GTR says that it became aware of it in July 2015.<sup>300</sup>
- 5.15 Franchise service configuration changes require authorisation by DfT. In August 2015 GTR and DfT discussed alterations that might be needed to the TSS in order to reduce the risk to implementation of services through the Thameslink core. DfT invited GTR to propose how service specifications would need changing to achieve the 24tph service frequency. Between September and October 2015 GTR worked with other TOCs to develop options for how overlapping train paths might be remapped to allow 24tph. In November 2015, GTR responded

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<sup>298</sup> Govia Thameslink Railway interview, by ORR (transcribed). London, 1 August 2018.

<sup>299</sup> *Thameslink DTT 2014*, Network Rail, 2 July 2015.

<sup>300</sup> GTR submission to Inquiry, 16 July 2018.

to DfT's invitation to propose how services for 24tph might be operated, with a revised proposal following in December 2015. In January 2016, DfT issued a new TSS to Network Rail.<sup>301</sup>

- 5.16 In the spring and early summer of 2016, GTR worked to develop and re-map the services to operate through the Thameslink core. It provided its consultation proposals for timetable changes for May 2018 to key industry partners in July 2016 for comment.<sup>302</sup>
- 5.17 In December 2016 GTR proposed to DfT a list of changes that it believed would be needed to deliver the 24tph timetable required by the DfT's TSS.<sup>303</sup>
- 5.18 East Midlands Trains told the Inquiry that although the changes to its services created dis-benefits for some of its customers, the process of negotiating and agreeing the changes to its franchise was run well by DfT. This predicted and mitigated a potential risk to the May 2018 timetable at the appropriate time.<sup>304</sup> The Inquiry has seen no evidence to suggest that the reconfiguration of other operators' services in this period was a causal factor in the delays to the timetabling process by Network Rail or the later disruption to the introduction of new GTR services in May 2018.
- 5.19 All parties to the Thameslink Programme told the Inquiry that 24tph remains a technically achievable outcome. All parties have endorsed the expectation that 24tph will be delivered as the programme completes. GTR maintains that it was preparing to operate at a frequency of up to 24tph (initially phased at 20tph as described below) before the decision was taken in October 2017 to re-phase to 18tph from May 2018, and was confident of its ability to do so in line with the terms of the franchise.

## Thameslink system integration and risk management

- 5.20 In 2016, Chris Gibb was asked by the Secretary of State to report on performance problems that had occurred on the Southern network around that time and caused by infrastructure and operational issues.<sup>305</sup> The IRB was created by the Secretary of State following the recommendations of the Gibb Review<sup>306</sup> to "independently review, direct and challenge industry programmes delivering Thameslink 2018 operational readiness, and to minimise all risks associated with entry into service and ongoing sustained operations".<sup>307</sup>

<sup>301</sup> GTR submission to Inquiry, 16 July 2018.

<sup>302</sup> GTR submission to Inquiry, 16 July 2018.

<sup>303</sup> GTR submission to Inquiry, 16 July 2018.

<sup>304</sup> East Midlands Trains interview, by ORR (transcribed). London, 3 August 2018.

<sup>305</sup> Chris Gibb interview, by ORR (transcribed). London, 22 August 2018.

<sup>306</sup> *Gibb report: review of Southern Rail network and other related issues*, 30 December 2016.

<sup>307</sup> Thameslink 2018 Industry Readiness Board. First meeting pack, 17 January 2017

5.21 This was an important step in the emerging recognition of the need for an integrated system approach to the introduction of the Thameslink Programme. Programme management and the IRB's role is discussed in more detail in Part C: Broader findings.

## Phasing the introduction of Thameslink services

5.22 The Inquiry considered whether the various decisions to phase the introduction of services from May 2018, and the timing of these decisions, were material factors behind the failure to introduce an operational timetable for passengers.

5.23 The IRB met for the first time in January 2017. By April 2017, the TPB and IRB looked at how the Thameslink Programme and the May 2018 timetable could be de-risked and whether a more protracted move to 24tph would be effective.<sup>308</sup>

5.24 Phasing the introduction of higher frequency services had been envisaged in the original TSGN franchise, which required a frequency of 20tph to be operated from May 2018 using conventional signally technology, before stepping up at the next timetable change in December 2018 to 24tph.<sup>309</sup> The 24tph operational capacity would be dependent on several factors including:

- the introduction of fully functional European Rail Traffic Management System (ERTMS).<sup>310</sup>
- the availability of trains capable of operating under the above;
- the granting of access rights to facilitate the operation of 24tph though the Thameslink core at peak times and;
- the availability of drivers trained for both the rolling stock and the route.

5.25 DfT recognised the scale of the change represented by the introduction of Thameslink<sup>311</sup> and that progressive introduction would reduce operational risks and benefit service reliability in May 2018. One DfT official described the approach: "So we do it in bite size chunks and for each one...we implement, we review, we revise, we get it stable and then we go again. And that's very much how London Underground have done it."<sup>312</sup>

5.26 DfT indicated that in 2016, during the Gibb Review, officials began viewing phasing as "a sensible thing we should be looking at". In February 2017, the DfT requested a proposal from GTR regarding phasing over a longer period and how it might be done.<sup>313</sup>

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<sup>308</sup> Thameslink 2018 Industry Readiness Board: 4<sup>th</sup> meeting, April 2017

<sup>309</sup> Thameslink, Southern and Great Northern Franchise Invitation to Tender, DfT.

<sup>310</sup> A European train control system, ERTMS see webpage [here](#).

<sup>311</sup> Department for Transport interview, by ORR (transcribed) London, 27 July 2018 and others.

<sup>312</sup> Department for Transport interview, by ORR (transcribed) London, 10 August 2018.

<sup>313</sup> Department for Transport interview, by ORR (transcribed) London, 10 August 2018.

- 5.27 GTR record that it responded to DfT in late April 2017<sup>314</sup>, followed up by a workshop on 11 May 2017 with a phasing proposal for:<sup>315</sup>
- 18tph at May 2018;
  - 20tph at December 2018;
  - 22tph at May 2019; and
  - 24tph at December 2019.
- 5.28 GTR maintains that it verbally advised DfT that it needed a decision by June 2017, if it were to develop a May 2018 timetable based on the revised approach to phasing and to bid to Network Rail's timetable planning process on 11 August 2017.<sup>316</sup> The consequence of not receiving a firm decision from the DfT by this time would be that GTR would have to enter a bid based on the terms in its franchise contract. The DfT contends that it does not have a record of this, and GTR has been unable to provide a record to the Inquiry.
- 5.29 However, the process DfT was required to follow to understand the commercial revenue consequences for the Thameslink business case of the phasing proposal took much longer than the time required in the schedule for developing the May 2018 timetable. Following several meetings between officials and GTR in the previous weeks to understand the consequences of the proposal, the Secretary of State agreed on 1 August 2017 to a recommendation in principle that the phasing proposal should go ahead. This was confirmed to GTR on 18 August 2017 but it was noted that final approval would be subject to understanding the implications of phasing over the existing programme, and the impact on the Thameslink business case and potential costs to taxpayers.<sup>317</sup>
- 5.30 The Inquiry reviewed the iterative process between DfT and GTR in the period from 18 August 2017, to the final approval by the Secretary of State to proceed with the new phasing proposal on 31 October 2017 around the costs and consequences of the phasing proposal.<sup>318</sup> It was not until this firm decision was confirmed that GTR was able to submit a bid to the SO for a timetable on the basis of the replanned phasing. The Inquiry has seen evidence that DfT officials confirmed to GTR in September 2017 their expectation that GTR would continue to plan, in the absence of a firm decision, on the basis of the full 24tph service in December 2018, as required under their contract.<sup>319</sup>

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<sup>314</sup> GTR submission to Inquiry, 16 July 2018.

<sup>315</sup> DfT/GTR workshop on 11 May 2017 *Thameslink Programme 2018 Timetable Issues*. GTR submission to Inquiry, 16 July 2018.

<sup>316</sup> GTR interview, by ORR (transcribed) London, 1 August 2018.

<sup>317</sup> DfT email to GTR 18 August 2017. GTR submission to Inquiry, 16 July 2018.

<sup>318</sup> *Timeline for Agreement of Thameslink Phased Introduction*, supplied by DfT after the interview on 10 August 2018.

<sup>319</sup> *Timeline for Agreement of Thameslink Phased Introduction* supplied after the interview with DfT on 10 August 2018.

- 5.31 GTR stated to the Inquiry that at this stage, in making its bid, it remained confident that it had in place (or could get in place) the levels of driver capacity and competence to deliver the higher frequency of service.<sup>320</sup> GTR was not relying on the replanned phasing for its own operational delivery or resilience, and explained to the Inquiry that the decisions to replan phased introduction of the timetable were driven by concerns regarding infrastructure capability and service resilience, rather than GTR's operational capability.
- 5.32 The Inquiry has considered several factors related to the process between GTR and DfT over the period leading up to the decision on 31 October 2017.
- 5.33 In the absence of independent technical advice, the Inquiry is unable to make a judgement about the need to replan the phased introduction of the Thameslink timetable, and considers that this is outside the Inquiry's terms of reference. It does note that the proposal was pursued with the objective of introducing services that were operationally resilient as the frequency stepped up from May 2018 onwards, which is obviously desirable. The chair of the IRB noted that participants at the 17 November 2017 meeting endorsed the decision "with relief" that it had finally been made.<sup>321</sup>
- 5.34 The Inquiry has considered whether both parties executed their responsibilities properly throughout this process. GTR had responsibilities to provide DfT with the advice and information requested so that a decision could be arrived at; and also had a legal responsibility to fulfil its contract by bidding for the timetable on the basis of the existing specification before the decision was taken to change it. DfT's responsibility was to understand the consequences, and especially the revenue costs of the proposal, to ensure the integrity of the business case behind the Thameslink Programme, and understand any costs.
- 5.35 There is no evidence to suggest that the decision to replan the phased introduction of GTR's May 2018 timetable was driven by concerns in 2017 about GTR's operational capability or readiness.
- 5.36 The Inquiry heard from GTR, Network Rail (including the SO) and DfT that the assumption behind the phased introduction of services was that GTR would bid on the basis of the 24tph end-state and then services would be removed from the timetable to achieve the interim frequency of 20tph for the May 2018 timetable.<sup>322</sup> These services could then be readily re-introduced in later timetable changes.
- 5.37 It was on this basis that GTR bid to Network Rail in line with its Train Service Requirement (TSR) (a 24tph end state) on 17 August 2017 and highlighted the four trains that would need to be removed to produce 20tph. This was also in line with the TSS issued by the DfT to Network Rail on 13 February 2017.

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<sup>320</sup> GTR interview, by ORR (transcribed). London, 1 August 2018.

<sup>321</sup> Chris Gibb interview, by ORR (transcribed). London, 22 August 2018.

<sup>322</sup> 24 trains per hour at peak times, Monday-Friday, on the core network.

- 5.38 Network Rail published the national timetable offer on 17 November 2017 in accordance with agreed industry timescales. This was based on the 24tph end state but with four trains removed to produce 20tph. On the same day the IRB endorsed the alternative phasing proposal to move down to 18tph.
- 5.39 GTR was now obliged to go back to the SO with a new bid to reduce services from 20tph to 18tph through the Thameslink core in both directions in the peak. However, under the terms of the timetabling process this could only realistically be done after the issues around the November 2017 offer rejections and flexes were resolved, thus providing a clear basis on which to make the changes to 18tph.
- 5.40 In practice, the apparently simple approach of removing services from the higher-frequency timetable proved to be challenging. The complex nature of the new Thameslink network and service patterns meant that it was difficult to isolate the impact of removing individual services from the timetable. This was further complicated by inclusion of a DfT direction regarding East Midlands Trains' services. Following this it became apparent that the phased introduction of services would require more changes to the timetable as a result.<sup>323</sup>
- 5.41 In hindsight the only way in which these risks could have been avoided was for the advice on the replanning of phasing to have been sought earlier. The commissioning of this advice by DfT was not triggered until after the creation of the IRB in January 2017. This suggests that a more complete approach to understanding and managing system integration and risks would have been desirable at an earlier stage in the Thameslink Programme, as explored further later in this report.
- 5.42 In the Inquiry's interview with Network Rail's then CEO he noted: 'I think it should have been much clearer that T minus 40 was the drop-dead date. Again, with the benefit of hindsight, I think both we and GTR were not strong enough in highlighting to the Department that, 'Come on, a decision is needed'.<sup>324</sup>
- 5.43 **With regard to the decision to replan the phased introduction of the Thameslink timetable, and the consequences for the timetabling process, the Inquiry makes the following findings:**
- **GTR and the DfT were each driven by their legal responsibilities during the process that arrived at the decision to replan the phased introduction of GTR's services. This meant that GTR was obliged by DfT to bid into the timetable process on the basis of a service frequency higher than required before a decision was made, while DfT sought evidence that reducing the frequency of services would not undermine the Thameslink business case and value for money.**
  - **Neither GTR or the SO predicted that the decision to remove an additional 2 trains per hour from the planned May 2018 timetable would result in the need for a more**

<sup>323</sup> ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment NR. Network Rail submission to Inquiry, 31 July 2018.

<sup>324</sup> Interview with Mark Carne, Network Rail (transcribed) by ORR, 21 August 2018.

**substantial timetable re-write, and this created unfounded confidence that timetable would not be put at risk.**

- **Although DfT could not have reasonably foreseen the risk of needing to rewrite the timetable, the length of time taken by DfT to make a final decision, meant that this decision was not aligned with the Part D schedule for developing the timetable. This aggravated the challenge of rewriting the timetable, even before the later failure to deliver the Northern Infrastructure Programme created even greater problems.**
- **In hindsight, had the final decision by DfT to phase the introduction of services from 18tph been made in alignment with the schedule for developing the May 2018 timetable the unpredicted consequences for the Thameslink timetable may have been avoided and the consequential risks of a timetable failure on the scale experienced would have been greatly reduced.**

## The development of the GTR timetable

5.44 The Inquiry has considered GTR's engagement with Network Rail's timetabling process in preparation for May 2018 and whether there were factors in its engagement that contributed to the failure of the introduction of a working timetable.

5.45 There were other complicating factors as the developing timetable was iterated between the SO and GTR, which lengthened the time taken to deliver a reliable timetable, such as:

- Had 18tph been bid at the outset the SO would have considered it in the round with the other bids. When a new bid is made the SO can only consider it in terms of the offers already made to all the other train operating companies involved and seek accommodations and adjustments. Each proposal must therefore be resolved individually and this process is resource and time intensive.
- GTR further records that the 17 November 2017 offer "was not fit for purpose" as it included 600 rejected trains and 4000 'flexes' (timetable adjustments to accommodate other operator's needs). The GTR interview records that "every single one of those trains that's rejected, for whatever reason, needs a bespoke fix to it".<sup>325</sup>
- On 11 August 2017, the GTR timetable bid for 20tph, and ultimately 24tph, had been developed through extensive discussion with a dedicated group of Network Rail's timetable planners. Once the bid was made GTR recorded this group was disbanded however Network Rail maintains that dedicated support continued to be provided.<sup>326</sup>

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<sup>325</sup> GTR interview, by ORR (transcribed). London, 1 August 2018.

<sup>326</sup> See Chapter 3: Timetabling and the system operator.

- 5.46 The Inquiry found some disagreement between GTR<sup>327</sup> and the SO<sup>328</sup> about the attribution of cause for the apparent poor quality of timetable development from late 2017. The Inquiry heard from some other TOCs, including those not seriously and directly affected by the timetable changes that the offer they received in November 2017 was also of poor quality.<sup>329</sup>
- 5.47 In counterpoint to GTR's assertion that the timetable offer was 'not fit for purpose', Network Rail records that on 15 December 2017 it received a response from GTR to its offer, which had included 600 rejected trains and 2,700 questions.<sup>330</sup> Network Rail records that it had sought to place its timetable planning staff with GTR or alternatively GTR's staff at its planning venues to work collaboratively in forming the phasing bid, both of which were declined.
- 5.48 Nonetheless, GTR and the SO worked together to resolve the various issues so that GTR could submit a new bid for timetable amendments in line with the rules of the Timetable planning process.
- 5.49 On 12 January 2018 GTR submitted a new bid for timetable amendments for the May 2018 timetable.<sup>331</sup> This included the required changed phasing down to 18tph through the Thameslink core at peak. It also included changes to accommodate East Midlands Train's requirements at the request of DfT. GTR notes in its submission that this was the first sight the SO planners had formally received of the 18tph timetable, which coincided with the need to re-cast the Northern timetable, as described in Chapter 3: Timetabling and System Operator.<sup>332</sup>
- 5.50 There continued to be a considerable volume of timetable changes between January and 9 April 2018, following bids by GTR. Bids were received by the SO on 5 and 12 January 2018 (1,134 schedules), and throughout February and March (3136 schedules). The SO considered the large volume of late change bids was a key factor in its late offer back on the timetable as it compromised its ability to finalise a timetable while new bids were still being received and added to the workload of the team.<sup>333</sup> GTR consider the volume of work to be in part a reflection of the poor quality of outputs from the SO.
- 5.51 T-12 for the May 2018 timetable was 23 February 2018. This was the date by which the SO was required to release an agreed timetable to the train operators. This would allow them to work up diagrams and rosters for staff engagement and reach agreement with the trade unions and

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<sup>327</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>328</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment NR*. Network Rail submission to Inquiry, 31 July 2018 and Network Rail Briefing paper, *GTR May 2018 New Working Timetable Development*, 19 April 2018.

<sup>329</sup> Chiltern Railways interview, by ORR (transcribed). 2 August 2018 and other sources.

<sup>330</sup> *ORR Inquiry into May 2018 timetable disruption: GTR/NR working on Timetable: Bottom up assessment NR*. Network Rail submission to Inquiry, 31 July 2018

<sup>331</sup> GTR submission to Inquiry, 16 July 2018.

<sup>332</sup> GTR submission to Inquiry, 16 July 2018.

<sup>333</sup> Network Rail interview, by ORR (transcribed). 31 July 2018.

if necessary carry out any additional training required. The SO was unable to issue a complete timetable at T-12 and so this work was set back.

5.52 The IRB Chair, Chris Gibb, told the Inquiry:

'A train operator needs that final timetable in order to manage the logistics of the train crew workforce, and even in a scenario where there are only minor changes to the timetable you still have to go through that process of re-diagramming and re-rostering. In Thameslink, the scale of that was always going to be enormous and very challenging, and not something that you could do [or redo] in a rush'.<sup>334</sup>

5.53 On 6 April 2018, with the final timetable not available, GTR proposed to DfT that the implementation of the May 2018 timetable would need to be undertaken on a 'rolling deployment'. Since there was likely to be insufficient time to fully develop a workable timetable they planned that this could be mitigated by cancelling some services and then re-introducing them over a period of three weeks after 20 May.<sup>335</sup> DfT agreed this on 10 May 2018 on the advice from GTR that this would require the removal of between 80-100 services per day initially.<sup>336</sup>

5.54 On 9 April 2018 GTR finally received a new timetable offer from Network Rail. This left just six weeks for GTR to optimise and roster staff to deliver the new passenger timetable. A period of 12 weeks (T -12) is normally allowed for this.

## Planning train crew availability and driver competencies

5.55 The Inquiry has considered GTR's preparations to introduce the revised timetable into service, including the measures taken to ensure the availability and training of drivers, which the Inquiry has heard are material factors in the May 2018 service disruption.

5.56 At the start of the TSGN franchise in September 2014, there had been a shortfall in driver numbers<sup>337</sup> and GTR commenced development of a driver resilience plan<sup>338</sup> with the intent of increasing the driver complement to align with the ultimate objective of the Thameslink Programme, the operation of 24tph through the Thameslink core. As GTR managers

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<sup>334</sup> Chris Gibb interview, by ORR (transcribed). 22 August 2018.

<sup>335</sup> GTR submission to Inquiry 16 July 2018 and *Rolling Deployment: GTR Recommendation to the Department for Transport 6<sup>th</sup> April 2018*.

<sup>336</sup> GTR submission to Inquiry, 16 July 2018.

<sup>337</sup> GTR submission to Inquiry, 16 July 2018 and Govia Thameslink Railway interview, by ORR (transcribed). 1 August 2018.

<sup>338</sup> GTR interview, by ORR (transcribed). 1 August 2018.

summarised in their interview with us, GTR had “a history as a franchise of running with far less drivers than what we needed”.<sup>339</sup>

- 5.57 As part of this process new train crew depots were required and GTR approached this through the ‘Big Change’ project.<sup>340</sup> This also had implications on rolling stock, station staffing and the numbers and location of drivers. It is preferable to recruit drivers in locations close to the depots from which they will operate.
- 5.58 GTR recognised that its drivers would need training over the new Thameslink core infrastructure and that this would be an extensive process, a factor flagged in May 2017, when GTR asked Network Rail to bring forward the completion of the Canal Tunnels works to enable early driver access for training.
- 5.59 IRB also noted the significance of driver training at its 5 May 2017 meeting where the IAP report for 23 April 2017 noted under the activity relating to train crew that “Driver training planned but slipping” and marked the matter amber.<sup>341</sup>
- 5.60 GTR also carried out an impact assessment on the phasing plan agreed by the DfT in October 2017.<sup>342</sup> Based on this, it projected that it would need 854 drivers across Thameslink and Great Northern to operate the May 2018 timetable.<sup>343</sup> GTR managers explained in their interview with us that GTR based this projection on “professional judgment”. GTR further explained when interviewed that “it was not viable to do complete diagram runs for every single change [to the timetable] because those diagram runs take a period of time to set up and a period of time to optimise and that there was only so much that could be done in the time available”.<sup>344</sup>
- 5.61 GTR explained that it had used this approach to projecting driver resource requirements “throughout the whole of the Thameslink Programme”. However this approach had an in-built assumption that there would be sufficient time to optimise the timetable effectively.<sup>345</sup> GTR held that running a timetable that required 854 drivers was “do-able but tight”.<sup>346</sup> It is clear that GTR’s view was that “even if sub-optimal diagrams were received it would still have enough resource and overlays and mitigation to make the timetable work”.<sup>347</sup>

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<sup>339</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>340</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>341</sup> Thameslink 2018 Industry Readiness Board: Minutes, 5 May 2017.

<sup>342</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>343</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>344</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>345</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>346</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>347</sup> GTR interview, by ORR (transcribed). 1 August 2018.

- 5.62 GTR contends that it felt confident it would reach a position of having up to 870 available drivers for the May 2018 timetable change by continuing, or enhancing, the mitigations it had identified and had already put in place. These included:
- a driver transfer agreement with Southeastern, where up to 64 of its drivers were used by GTR, and
  - continued use of rest-day working.<sup>348</sup>
- 5.63 GTR had recognised that it would have insufficient drivers with route knowledge to operate through Canal Tunnels and had from an early juncture proposed the use of ‘pilot drivers’ to assist with these moves.<sup>349</sup>
- 5.64 On 20 April 2018, when the diagrams for the January 2018 submission for the May 2018 timetable were provided, GTR realised that 930 drivers would in fact be needed and it would have a shortfall.<sup>350</sup> Further, as the diagrams had been developed late following receipt of Network Rail’s timetable on 9 April 2018,<sup>351</sup> this in turn meant that GTR had less time to negotiate the rosters with the drivers’ trade unions and optimise them fully to have sufficient drivers, with the right route and rolling stock knowledge at the right depots with the right shift length available.<sup>352</sup>
- 5.65 Consequently between 20 April and 20 May 2018, GTR further developed additional mitigation measures, including:
- plans for cancelling some late night services;
  - transferring driver trainers and competence managers to driving roles;
  - transferring Southern drivers to Thameslink and Great Northern routes; and
  - seeking drivers with relevant training from freight train operators.<sup>353</sup>
- 5.66 These mitigations were either extremely limited<sup>354</sup> (for example only four or five drivers could be found from freight operators) or created additional issues<sup>355</sup> (driver trainers moved to driving roles could not continue to alleviate the backlog by training new drivers).
- 5.67 On 14 May 2018, GTR completed master rosters and posted them for drivers on 18 May 2018, just two days before the 20 May timetable change came into effect (rosters would normally be posted around 6 weeks before commencement of operations).

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<sup>348</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>349</sup> GTR submission to Inquiry, 16 July 2018.

<sup>350</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>351</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>352</sup> GTR submission to Inquiry, 16 July 2018.

<sup>353</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>354</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>355</sup> GTR interview, by ORR (transcribed). 1 August 2018.

- 5.68 The compression of timescales meant that GTR had insufficient time to complete fully developed, optimised and quality assured train crew diagrams prior to consultation with staff.
- 5.69 The Inquiry finds that GTR could not have reasonably accelerated the train crew diagramming process, which followed the late delivery of the timetable from the SO.
- 5.70 In summarising the effects of the May 2018 timetable and its ultimate impact for passengers, GTR maintains that the short time frames allowed to develop diagrams and rosters resulted in a timetable that was operationally undeliverable. The core issues being:
- incorrect work balance across depots;
  - imbalanced rosters;
  - low ratios of diagrams to drivers (less than 2); and
  - the shortfall in training.
- Each of which contributed to GTR being unable to deliver a stable and reliable service<sup>356</sup> upon the introduction of the May 2018 timetable.
- 5.71 The then GTR Chief Executive, observed subsequently at the Transport Select Committee hearing: “It was only in that final week, on the Thursday before the timetable came in, that we realised the problem was more serious than we expected”.<sup>357</sup>
- 5.72 DfT, however, presented the causation from a different perspective. DfT summarised that “GTR plainly were just not ready” and would not have been ready even if all the issues around the timetabling and rostering had been taken away.<sup>358</sup>
- 5.73 As both GTR and the DfT’s positions here rely on assumptions around a counterfactual situation in which a robust timetable was provided at an earlier stage; the Inquiry has explored GTR’s approach to preparing and stress-testing its plans, and found that GTR’s approach to predicting the risks around required driver numbers failed to reflect the real risks that it faced.
- 5.74 GTR has provided the Inquiry with counterfactual analysis to estimate the extent to which the timetable it received on 9 April 2018 could have been optimised had time been available to do so.<sup>359</sup> This suggests that with more time they could have developed better optimised driver plans that worked within their overall driver numbers. The Inquiry has had no opportunity to independently verify or validate the analysis, and the Inquiry cannot say with confidence that GTR would have been able to deliver a stable and reliable service if provided with a robust timetable at an earlier stage.

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<sup>356</sup> GTR submission to Inquiry, 16 July 2018.

<sup>357</sup> Charles Horton – Evidence to the Transport Select Committee. 18 June 2018.

<sup>358</sup> DfT interview, by ORR (transcribed). 10 August 2018.

<sup>359</sup> *GTR Supplementary Information for ORR Inquiry*. Counter Factual Exercise – May 2018 Diagram re-run. GTR submission to Inquiry, 31 August 2018.

- 5.75 GTR had predicted as early as 2016 that they would not have enough drivers trained to be ready for May 2018, and planned mitigations accordingly. Even before the compression of the timetabling period introduced by submitting a new bid to accommodate changed 'phasing' in January 2018, GTR was planning to use the 'workaround' of pilot drivers through the Canal Tunnels to overcome the incompleteness of driver training on the new routes.
- 5.76 These mitigations had to be replanned several times in the weeks prior to the new timetable. Nevertheless, GTR remained confident in its ability to operate services with only limited disruption, and was surprised in the final days that these mitigations were insufficient. Mitigations were planned and replanned on a responsive basis, rather than a predictive basis as new information became known.
- 5.77 There is no evidence to suggest that having planned the level of driver resourcing using historical experience and 'professional judgement', GTR had adequately stress-tested its plans in light of realistically known risks about the exceptional nature of the May 2018 timetable change, or the gradual compression of the time available to them to develop optimised driver diagrams. The Independent Assurance Panel (IAP) which reported to the IRB also failed to adequately challenge GTR on these plans when it examined them, despite identifying driver availability as a critical risk.
- 5.78 **The Inquiry concludes that GTR had greater opportunity, in comparison with Northern, to plan and prepare their approach to driver training availability at an earlier stage, and that:**
- **GTR's initial approach to planning and training drivers did not adequately recognise the exceptional scale of change and the probable risks arising from the May timetable;**
  - **GTR's plans were not adequately stress tested by either GTR or the DfT's Thameslink Programme management boards, even as the time available to prepare driver diagrams was reduced;**
  - **Sufficient contingency was not prepared for in advance, and was not available as problems emerged.**
- 5.79 It is impossible for the Inquiry to judge whether, had this been done, GTR would have been able to prepare sufficient contingency to compensate for the late finalisation of the timetable, and manage the problems that arose from inefficient driver diagrams. The length of the Thameslink Programme and the knowledge that the May timetable change would be significant gave GTR a much greater ability to prepare and test their plans than Northern had. Earlier stress-testing of the risks and knowledge of the likely shortage of drivers would have given GTR some opportunity to further understand and communicate the likelihood of disruption to passengers.

## GTR's understanding of risks to the May 2018 timetable

- 5.80 GTR told us that it took steps to communicate the situation within the industry. However, GTR still felt in early May 2018 in the direct run up to the timetable change and following learning of the driver shortfall on 20 April 2018, that it was 'still do-able'.<sup>360</sup>
- 5.81 On 9 March 2018, the IRB had posed the question to GTR's Operations Planning Director of whether sufficient drivers would be in place and be route trained for 20 May 2018. The biggest risk identified by GTR and presented to the IRB was "Trade Union consultation" and "having sufficient drivers in place due to a lack of agreement of changes to working conditions".<sup>361</sup>
- 5.82 The IAP also reported to IRB on 9 March 2018, following its 'Super Review' of operational readiness for May 2018 on 23 February 2018. Based on evidence provided to the panel by an 'expert witness', GTR's Operations Planning Director, it advised that train crew "should deliver in May". The main risk highlighted was that not all drivers would be route trained by May – this was flagged as a red risk, but was to be mitigated by piloting through the new core section.<sup>362</sup>
- 5.83 At the next IRB on 6 April 2018, the IAP provided a further risk update, dated on 23 March 2018. IRB noted that "Driver recruitment to be adequate for May establishments" and was recorded as "achieved" and a green risk. Also, "All drivers to be route trained for May timetable" had reduced from a red to an amber risk, with it being noted as "risks mitigated".<sup>363</sup> At the IRB on 4 May 2018, the IAP again provided a risk update, with driver training and driver recruitment risks remaining at amber and green respectively.<sup>364</sup> GTR managers confirmed in our interview with them that they felt these were accurate representations of the risks as they understood them at that point.<sup>365</sup>
- 5.84 GTR was also asked to provide an update directly to the Secretary of the State on 2 May 2018. At this meeting, GTR said that plans for the timetable transition were at an advanced state of preparation and mitigations identified which were being worked on.<sup>366</sup>

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<sup>360</sup> GTR interview, by ORR (transcribed), 1 August 2018.

<sup>361</sup> Thameslink Industry Readiness Board meeting, 9 March 2018, minutes.

<sup>362</sup> Thameslink Industry Readiness Board meeting, 9 March 2018, meeting papers.

<sup>363</sup> Thameslink Industry Readiness Board meeting, 6 April 2018, meeting papers.

<sup>364</sup> Thameslink Industry Readiness Board meeting, 4 May 2018, meeting papers.

<sup>365</sup> GTR interview, by ORR (transcribed), 1 August 2018.

<sup>366</sup> GTR briefing for SoS meeting, 2 May 2018.

- 5.85 At this meeting GTR stated that the scale of likely cancellations was 80 to 100 per day.<sup>367</sup> A DfT official present at this briefing, recalled to the Inquiry that explicit questions about readiness had been aired and that positive confirmations had been given.<sup>368</sup>
- 5.86 When we explored with GTR why it still felt assured in May, its representative responded that on previous occasions GTR had been able to develop 'workarounds' and that in this instance it had simply run out of viable options.<sup>369</sup>
- 5.87 **The Inquiry has found that GTR did not adequately understand the magnitude of the driver resource risk issue. GTR gave assurance to the industry and government based on inadequate understanding of the risks. The assurance that it gave were in good faith but wrong.**

## Other Issues

### Infrastructure availability for driver training

- 5.88 The Thameslink Programme and delivery of the infrastructure under it is covered in Chapter 2: Infrastructure, which found that:
- The infrastructure being delivered by Network Rail's specialist Thameslink organisation delivered the infrastructure required for the May 2018 timetable.
  - The availability of the Canal Tunnels was a critical element of the Thameslink project and Network Rail did everything reasonably practicable to open Canal Tunnels once the requirement to open before April 2018 was identified. Canal Tunnels opened a week later than GTR had requested but this was not a primary causal factor in the failure of the May 2018 timetable.
- 5.89 The availability of the Canal Tunnels was a critical element of the Thameslink Programme as the Canal Tunnels links the Thameslink core to the Great Northern Mainline outside of St Pancras. The tunnels had been used for moving of non-passenger services from September 2017 but were not authorised for passenger use until 25 February 2018.
- 5.90 In May 2017 GTR requested from Network rail early access to Canal Tunnels, when it became aware that availability was intended from April 2018. Network Rail made Canal Tunnels available from September 2017 for movement of non-passenger services and ensured access for driver training purposes was brought forward to 26 February 2018, albeit GTR had wanted

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<sup>367</sup> GTR submission to Inquiry, 16 July 2018.

<sup>368</sup> DfT interview, by ORR (transcribed). 10 August 2018.

<sup>369</sup> GTR interview, by ORR (transcribed). 1 August 2018.

access to Canal Tunnels by 19 February 2018. Given that the infrastructure was delivered for driver training use in September 2017 and full passenger use only seven days after the time requested by GTR, we do not consider this fundamentally contributed to the lack of drivers trained to operate through the tunnels in May 2018.

- 5.91 Had GTR received a fully viable timetable for 20tph under its original proposal at T-12 it would have still been working to the same period of time to ensure drivers were trained on both rolling stock and route through Canal Tunnels. GTR has indicated that it had anticipated the possibility of non-availability of drivers and had considered how 'pilot drivers' could be effectively deployed to mitigate the consequences.
- 5.92 As noted in Chapter 2 the Inquiry does not find that the availability of Thameslink infrastructure was a significant factor in the failure of the May 2018 timetable.

## Staffing and Industrial Relations

- 5.93 The requirement for a two-week review of driver rosters by trade union representatives in advance of timetable changes is well established and a process widely followed in the industry. The requirement was known to GTR management and was factored in to its plans.<sup>370</sup>
- 5.94 The Inquiry has heard that trade union representatives acted reasonably in reviewing rosters and responding to plans for the May 2018 timetable change. Trade union representatives reviewed rosters within the agreed timescales.<sup>371</sup>
- 5.95 The Inquiry has also heard the rail staff performed well and with great resilience in the face of extremely difficult circumstances. The widespread changes in May 2018 affected the working lives of many rail staff, including altering working patterns and workplaces for hundreds of staff. The impact of the planned changes was exacerbated by un-optimised timetables leading to sub-optimal rostering for drivers. Further, many last minute changes to rosters created uncertainty and increased stress for drivers and planners.<sup>372</sup>
- 5.96 The Inquiry has found no evidence that 'Industrial Relations' was a causal factor in the failure of the May timetable.

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<sup>370</sup> GTR interview, by ORR (transcribed). 1 August 2018.

<sup>371</sup> GTR interview, by ORR (transcribed). 1 August 2018; and Chris Gibb interview, by ORR (transcribed). 22 August 2018.

<sup>372</sup> GTR interview, by ORR (transcribed). 1 August 2018.

## Introduction of the revised 15 July 2018 timetable

5.97 Following the disruption on 20 May 2018, a counterfactual example has been observed with the introduction on 15 July 2018 (the July timetable) of a revised GTR timetable with the intention of stabilising the reliability of its services. This followed a period of several weeks of intensive work by GTR to optimise rolling stock and driver plans, including by removing additional services to reduce pressure on available resources and create greater resilience. The July timetable has resulted in a partial recovery in performance, while delivering a significantly higher number of services than previous timetables. While this has not been a focus of detailed investigation by the Inquiry, it is noted as an illustration of the value to operators of having time to optimise their plans and the importance therefore of Network Rail's observance of the T-12 period to allow operators to do this.

## Role of GTR's owner group

5.98 The TSGN franchise is operated by GTR, a subsidiary of Govia Limited, which in turn is a joint venture between Go-Ahead Group PLC (65%) and Keolis (UK) Limited (35%). Three interviewees reflected on the role of GTR's owner group in providing challenge or assurance about GTR's preparedness and the extent to which the owning group should have been involved in the approach to the May 2018 timetable change.<sup>373</sup>

5.99 DfT advised the Inquiry that different franchises have different models of working with their owner groups, along a spectrum from operating as quasi-independent entities with devolved management responsibility, towards groups that operate a more integrated and common approach to the management of their constituted operating units. The Inquiry does not take a view on which model of management between owner groups and operators is optimal, and judges that this may vary depending on the circumstances and capabilities in each case. In questioning, GTR expressed to the Inquiry its belief that it had enjoyed all necessary support from its owner group.<sup>374</sup> The Inquiry makes no judgement about this matter.

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<sup>373</sup> Chris Gibb interview, by ORR (transcribed). 22 August 2018; DfT interview, by ORR (transcribed). 27 July 2018; DfT interview, by ORR (transcribed). 10 August 2018.

<sup>374</sup> GTR interview, by ORR (transcribed). 1 August 2018.

## 5b GTR Passenger Response

### Context

- 5.100 In this chapter we examine the steps taken by GTR to ensure that passengers were provided with appropriate, accurate and timely information to enable them to plan and make their journeys with a reasonable degree of assurance. This includes information supplied in advance of the timetable change which set passenger expectations of the possibility of disruption as well as during the period of disruption itself. This Inquiry did not consider changes to services made as part of the 20 May timetable.
- 5.101 We also examine what steps GTR took to mitigate the impact upon those passengers experiencing severe disruption in the days that followed the timetable change and whether those steps were sufficient.

### Chronology

- 5.102 We have set out below a high-level summary timeline of key communications and action taken by GTR based upon their response to our request for information and interview with the company.<sup>375</sup>

#### 2016

- Between September and December 2016, three phases of public consultation on the May 2018 timetable changes commenced, completing in December 2017.

#### 2018

- From January 2018 onwards, GTR engaged with rail staff through internal communications and briefings.
- Also during this period, a dedicated public-facing website for the timetable change, RailPlan20/20, and a comprehensive communications campaign that “every train will change” were developed and launched.

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<sup>375</sup> GTR submission to Inquiry, 24 July 2018 and 2 August 2018. Govia Thameslink Railway interview, by ORR (transcribed). 19 July 2018

- During March 2018 GTR sent emails to 10,000 vulnerable passengers on the database to attend April familiarisation days at St Pancras and King's Cross.
- On 20 May 2018 the staff station thread came into use.
- In the week commencing 20 May 2018 there was a high management presence at stations in order to monitor the impact of the timetable.
- From 23 May 2018 problems started to emerge following roster changes on Thameslink.
- In the week commencing 27 May 2018 service was poor but the impact of this lessened due to school holidays.
- In the week commencing 3 June 2018 the impact on customers was identified due to people being back at work and school. There were gaps of 2 – 3 hours each day in some services.
- In the same week (w/c 3 June) emails were sent to schools affected by the gaps in service. GTR started to run 'golden' trains to reduce the gaps, with replacement buses and taxis as back-up for schools and in other areas.
- On 4 June 2018 GTR issued support packs to station staff to assist in dealing with unhappy passengers.
- In the week commencing 10 June 2018 scheduled bus services at 30 minute intervals went into Customer Information Screens and industry systems.
- In Early June 2018 'hotspot' map of stations most impacted by the changes was developed in order to assist with the introduction of mitigation measures to resolve local issues.

## Findings

### Information provided to passengers ahead of 20 May

- 5.103 The Inquiry has considered whether the information provided to passengers in advance of the timetable change was appropriate, accurate and timely to enable them to plan and make their journeys with a reasonable degree of assurance.
- 5.104 GTR provided considerable evidence of its very detailed awareness campaign including the message that "every train will change" in the weeks up to 20 May; and a combination of posters at stations, website and social media messages, leaflets, emails, announcements by station

staff, and testing awareness with their passenger panel. The materials provided demonstrated the extent of their engagement and awareness raising activities, and they provided details of other activities in discussion.

- 5.105 Similarly information was provided regarding engagement with rail staff through internal communications and briefings explaining what was happening and why, how the new timetable would be introduced, and monitoring of the number of staff briefed according to their job role and area location.
- 5.106 **GTR's communications plan appears to have been successful.** Given the scale of GTR's timetable change it was reassuring to see evidence that their communications plan was detailed and extensive. The company provided data which demonstrated that there had been more than 800,000 page views of '/timetables' to 5 June. Our research demonstrates that the levels of awareness amongst their passengers in advance of the change was high though the scale of the change was not as well understood.
- 5.107 **Passengers were denied the opportunity to plan and make informed decisions about their journey.** In Chapter 5a the Inquiry has found that GTR did not adequately understand the magnitude of the driver resource risk issue. GTR gave assurance to the industry and government based on inadequate understanding of the risks. The assurance that it gave were in good faith but wrong. GTR stated on 2 May that there would be cancellations of 80-100 trains a day, and 14-18 May as roster uploading commences that the scale of risk and cancellations had increased over and above this. As a result, information was largely limited to generic messages advising to check train times as everything was changing and that there may be some disruption.
- 5.108 **The messages to stakeholders downplayed the scale of the problems.** We note that GTR's stakeholder update four days before the new timetable was introduced stated that "on the Thameslink and Great Northern routes there will be a gradual deployment of a small number of services to provide a smooth transition to the new pattern". The message downplayed the scale of the problems which were likely to emerge and the opportunity to warn passengers of likely problems, even at this late stage, was not taken. The levels of awareness highlighted above indicate that passengers would have taken notice of this message.

## Information to passengers during the disruption

- 5.109 The Inquiry has considered whether the information provided to passengers during the period of disruption following the timetable change was appropriate, accurate and timely to enable them to plan and make their journeys with a reasonable degree of assurance.<sup>376</sup>

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<sup>376</sup> Part A Passenger experience and impact, evidence base and Chapter 5a

- 5.110 None of the lists of trains were communicated to passengers who were told to check journey planners frequently; by 10pm in the evening and then again in the morning.<sup>377</sup>
- 5.111 Trains were deleted so that they did not appear on screens as cancelled; at busy stations there was a risk that the list of cancelled trains would hide those that were running. Train companies can use “disruption mode” on the station screens to only show trains confirmed as running. However, feedback from staff at stations was that this was resulting in odd messages being shown on screens. GTR therefore decided that removing the cancelled trains in advance was a better option than turning off the screens completely.
- 5.112 GTR used the term “operational incident” to describe the issues with services to passengers in preference to “a shortage of train crew” as it felt that the issue was crews in the wrong place rather than there not being enough of them.
- 5.113 Knowing that it was exam time for some students, GTR contacted schools in the area to ensure that students could get to their exams. The solution was a combination of golden trains, buses and taxis.
- 5.114 Further resource was added to the Customer Relations Team to support telephone calls and email traffic, as well as to the social media team to respond to tweets and provide on-the-go travel support as passengers could not always rely on the information they were seeing and there was an escalation in tweets from them.
- 5.115 During the morning and evening peak there was a management presence at the stations with the objective of trying to provide explanations to customers. Ticket inspectors or passenger hosts were also positioned on stations, supplemented by the rail enforcement officers if there were security problems.
- 5.116 In response to passenger feedback at key stations such as Harpenden where the comments had been particularly negative, additional staff were deployed. Extra staff were also added at St Pancras to address issues of overcrowding and to resolve any safety issues by opening the gates where there was a potential risk.
- 5.117 GTR encouraged passengers to claim compensation if they had been delayed. Claims could be made against the original May timetable so that passengers with deleted trains could claim for the inconvenience caused. GTR also emailed season ticket holders to advise that they might qualify for enhanced compensation, and the website messaging about compensation was also enhanced from 31 May.
- 5.118 **The information provided to passengers was inadequate.** The methods used to relay information, and the content of the messages provided, during the period of disruption were largely unsuccessful. As described in Part A, many passengers did not find the information

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<sup>377</sup> GTR submission 24 July 2018 and 2 August 2018. Govia Thameslink Railway interview, by ORR (transcribed). 19 July 2018. References apply to paragraphs 5.109 and 5.117 inclusive.

given to them to be accurate or helpful. This meant that many passengers were unable to plan and make their journeys with any certainty.

- 5.119 **The realisation that the timetable was not working as planned was not communicated effectively to passengers.** GTR acknowledged that problems with the timetable emerged in the first week and started to impact on passengers in week two. There was no acknowledgement at that time that this was a serious issue with the result that passengers could assume that it was nothing more than teething issues. This lack of communication of the efforts to address the issues did little to persuade passengers that GTR had a grip on the situation.
- 5.120 **There was a failure to ensure information was consistent across industry systems.** We recognise that it is a challenge to ensure that information is correct across industry systems when it is busy and information is changing at short notice. However, it is not reasonable for information to not be consistent across those systems which would provide reliability for passengers as well as providing greater detail to frontline staff to enable them to give better advice to passengers.
- 5.121 **Passengers were given no assurance that GTR had the situation under control.** The approach which advised passengers to check their service by 10pm in the evening, and to then check again in the morning in case the situation had changed, led to passenger confusion and contributed to a sense of a lack of control over the timetable.
- 5.122 **The practice of deleting trains on the day of travel was unreasonable and created confusion.** Passengers followed advice to check trains before leaving for the station, only to find there was no information about them when they arrived. Sometimes the train that they had caught on the previous day then did not exist on the next day which added to the confusion.
- 5.123 **The incorrect use of terminology was unhelpful and added further to the sense of a lack of control.** Using term “operational incident” instead of “a shortage of train crew” caused confusion; when passengers enquired what incident had occurred were told by the Twitter team that they did not know, and had an impact on trust.
- 5.124 **The email thread for staff appeared to work well in terms of providing on the ground information and feedback up the chain.** As with any communications system there will be a challenge in ensuring it is up to date and accessible but it appears that it was a more successful tool than using the phone. Nonetheless, as noted in Part A, passengers were frustrated that staff did not have enough information to help them, and staff commented that they had no more information than passengers could themselves access. This indicates that the mechanisms in place for disseminating information to rail staff were insufficient.
- 5.125 **Promotion of Thameslink services was limited at King’s Cross, causing confusion for passengers who previously used Great Northern services to their destination.** There was no information at King’s Cross about the services which used to run from there but after 20 May did so from St Pancras. In addition, the “Next fastest Great Northern service” summary board on the main concourse only showed Great Northern services, not those that are now

operated by Thameslink – even though those trains still run from King’s Cross. The change of station and operating brand has been a core part of the project and should have been anticipated. Information about departures from St Pancras is particularly important when services are disrupted.

## Action taken to mitigate impact of delays and cancellations

- 5.126 The Inquiry has considered the steps taken by GTR to mitigate the impact of the disruption on passengers and whether those steps were sufficient.<sup>378</sup>
- 5.127 Close to the timetable change GTR stated that it became clear that it would not be possible to run the full service immediately and PDF timetables showing the later introduction of some services were produced. This affected some services between Peterborough and Horsham, Luton and Rainham and Luton and Orpington.<sup>379</sup>
- 5.128 Once the timetable was introduced it became clear that the short notice planning of the crew diagrams meant that it was not possible to operate the full service. In particular, a lack of route knowledge through the Thameslink central core meant that some trains had to be piloted through and others required a crew change at Finsbury Park.
- 5.129 GTR stated that it started to have problems from 23 May. Service was poor in week two of the timetable but the impact on passengers was lessened due to the school half-term. On the third week GTR started to identify real impacts with significant gaps in the service.
- 5.130 In some areas, a single Thameslink service replaced local stopping services previously operated by Southern and Great Northern. The reduced timetable led to large gaps in services, sometimes of up to three hours, particularly at stations where Thameslink now provides the only trains for example between Hitchin and Peterborough.
- 5.131 In response, three lists of trains were developed although not shared with passengers:
- Alpha trains – those which were unlikely to run. For the first few weeks these were taken out of the system manually in the Control but were done the night before so that the trains did not appear in the systems as cancelled. Later the alpha trains were removed from the timetable that was bid to Network Rail which eased the workload in control.
  - Beta trains - planners developed the beta list of trains which was more variable but was also removed from the system, sometimes during the day. These changed each day depending on availability of crew, gap analysis, etc.

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<sup>378</sup> Part A Passenger experience and impact, evidence base and Chapter 5a

<sup>379</sup> GTR submission 24 July 2018 and 2 August 2018. Govia Thameslink Railway interview, by ORR (transcribed). 19 July 2018. References apply to paragraphs 5.130 and 5.141 inclusive.

- Golden trains - there were some trains that every effort was made to run each day and these were designated as golden trains. These trains were those required for school children or to prevent large gaps in the service.

- 5.132 Despite this, further cancellations and deletions were required on the day.
- 5.133 GTR reported that every effort was taken to run additional trains where crew and stock permitted. Sometimes this involved running services at short notice meaning that trains which had been showing as cancelled or that had been deleted from passenger information systems did actually run.
- 5.134 As there were large gaps in some train services, standby buses were introduced at some locations, particularly on the Peterborough route. At first these buses ran on demand and were not appearing in journey planners or on station screens. However, this was changed so that a regular bus service operated on some lines, supplementing the train service. These buses were then shown in journey planners and on station screens. Buses continued to run even when a train was reinstated at short notice. Additional buses were held on standby at some key stations such as Peterborough.
- 5.135 Restrictions on the use of taxis were relaxed so that station staff could arrange them where passengers were facing extended waits.
- 5.136 Special stop orders were introduced on both GTR services and those of other operators. Making additional stops had a negative effect on the performance data but avoided passengers being left on stations while trains ran past without stopping.
- 5.137 Feedback from staff at stations was encouraged and a station feed e-mail thread was set up across GTR. This allowed staff to contact control to advise of crowding at their station or to request stop orders. It also allowed feedback on the provision of information on station screens without having to make a phone call to control.
- 5.138 Passengers requiring assistance were encouraged to book in advance through the normal assistance process. Bookings were reviewed each morning for passengers requiring assistance and passengers contacted to provide reassurance and alternative travel support should a booked train not be running.
- 5.139 Ticket acceptance was introduced where possible to allow passengers to complete their journeys on other operators at no extra charge. While mutual acceptance between Southern, Thameslink and Great Northern was quickly introduced, and arrangements made with TfL and other operators, getting ticket acceptance on Gatwick Express (GX) proved more difficult. This particularly impacted on passengers from Brighton where GX provides their regular service to London Victoria.
- 5.140 **Trains were run without prior notice, information about intermediate stations or platform they would be going from.** The decision to run additional trains where crew and stock permitted was a flexible response to passenger needs. However, doing so without providing any prior information about their existence, intermediate stations or platform they

would be going from was unhelpful. Had information been put into passenger-facing systems to show these trains both passengers and staff would have been better informed about services. Aside from confusion, there was a potential safety issue as passengers rushed to join the service.

- 5.141 **The use of special stop orders was a reasonable and proactive short-term response to addressing passenger needs.** The evidence we have seen suggests that these were generally in the system and this worked well. However, this is not a long-term solution and did cause passenger confusion when on-board information did not match the revised calling pattern.
- 5.142 **The appearance of a regular bus service in the journey planner and on station screens should have happened sooner.** The use of standby buses on demand for example on the Peterborough route was an inefficient way of operating and were unlikely to be of use at intermediate stations without their own buses.
- 5.143 **There was an unhelpful delay in getting acceptance agreements on GTR's Gatwick Express services between Brighton and Victoria.** Ticket acceptance appears to have been agreed swiftly across other operators but not for its own routes and appeared to only happen as a result of a passenger campaign.
- 5.144 **The company took reasonable steps to recruit additional staff in advance of the timetable change.** Using agency staff in Control to undertake repetitive tasks and data entry to free up CIS operators was good practice. Positioning extra staff at hot spot locations where there were large volumes of passengers to provide feedback was a sensible approach, as was using volunteers and customer-trained staff.
- 5.145 **Empowering staff to make on the spot decisions according to the needs of the passenger(s) was a reasonable approach.** Providing staff with the flexibility to declassify first class and provide vouchers when appropriate was helpful. It is unclear how these arrangements worked on all services.
- 5.146 **The specific arrangements put in place for passengers who are disabled who had booked assistance was positive and welcome.** The introduction of four checkpoints during the day to check services and proactively approach passengers who had booked assistance was a good model for future incidents. Nonetheless, the impact on passengers who are disabled arising from inadequate information would have been more severe and magnified. For example for passengers with mobility issues who have to change platforms at short notice, and those with hidden disabilities reliant on rail staff proactively identifying that they need assistance. As noted in Part A, passengers may have been deterred from travelling due to the disruption.
- 5.147 **The company appear to have taken reasonable steps to communicate passengers' rights about compensation.** The increase in the number of claims submitted for compensation, and the high awareness in the research, suggests that GTR's efforts to communicate passengers' rights in this regard to them is being successful. We also recognise that allowing claims against the originally planned May timetable was in excess of normal industry arrangements.

5.148 **GTR's interim timetable to provide greater certainty to passengers was introduced on 15 July.** However, we note at weekends the timetable is still not showing correctly in passenger systems until very late.

# **PART C: BROADER FINDINGS INTO INDUSTRY PROCESSES AND SYSTEMIC RISKS**

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# PART C: BROADER FINDINGS INTO INDUSTRY PROCESSES AND SYSTEMIC RISKS

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## Context

1. Earlier chapters identified the factors that led to disruption of the May 2018 timetable which are directly attributable to specific organisations and their preparations for the timetable changes. These directly attributable factors must be considered within the context of the rail industry's structure and the processes within which industry participants execute their individual responsibilities.
2. As the Inquiry has sought to understand the actions of industry participants in their preparation for the May timetable change, it has gathered evidence which suggests that elements of the industry's organisation and processes may have contributed to an environment in which risks to successful change were greater than they could have been. Evidence suggests that risks were often underestimated or not understood at all because they were interdependent and systemic in nature, rather than being owned by individual parties.
3. This chapter draws on the evidence gathered by the Inquiry to describe these systemic risks and why they may have been material to the causes of the disruption. These are complex factors which are not easily attributable to individual parties, but which form an environment in which sub-optimal decisions may have been made individually or collectively, or decisions may not have been made at all.
4. It is critically important that the industry and government work together to identify and address the systemic weaknesses that the May 2018 timetable disruption has exposed. The impact on passengers must be prioritised when decisions are made. Existing industry organisation and processes have generally worked in the past, and developments such as the reorganisation of Network Rail and the introduction of more robust infrastructure programme management for enhancement projects by DfT have been beneficial. However, the types of systemic risks exposed by the May timetable change are likely to arise again in the future because of the large investments currently being made to grow railway capacity. These systemic issues will form the focus for Phase 2 of the Inquiry as it consults the industry, government and other stakeholders about the measures that could be taken to avoid or mitigate risks to future timetable changes.

## Factors causing increased systemic risks

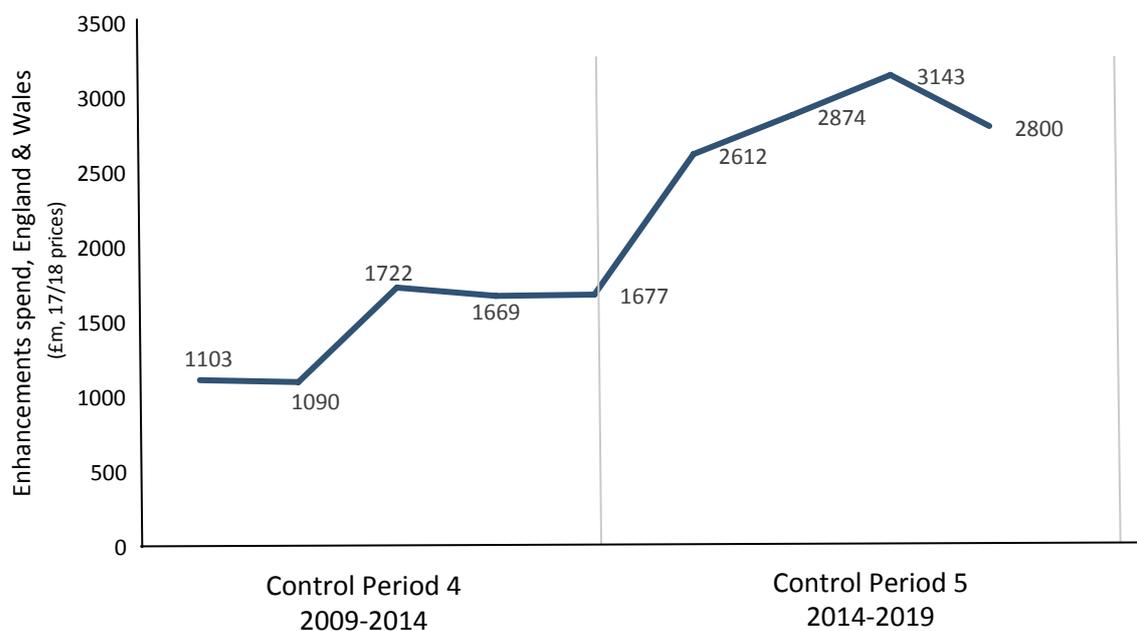
5. Participants in the Inquiry have offered a number of explanations for why industry systems and processes, which have generally been successful for the past twenty years, have revealed weaknesses in the preparation and implementation of the May 2018 timetable. The Inquiry found a broad consensus among participants that these factors acted individually and in

combination to remove resilience from industry processes, which could otherwise have avoided or significantly mitigated the effects of the attributable failures identified in Part B.

### Increased scale and interdependence of infrastructure changes

- 6. The May 2018 timetable changes were contingent on the delivery of multiple large infrastructure enhancements, of a scale and complexity that has not been typical of timetable changes.
- 7. The success of the railway, with passenger numbers roughly doubling since the mid-1990s, is driving a volume of investment in rail capacity that is unprecedented. Furthermore, the electrification of existing infrastructure across the country, the introduction of new rolling stock, the completion of the Thameslink programme, the introduction of Crossrail and the development of East-West Rail and HS2 will all create challenges that industry systems and processes will need to manage in future timetable changes.
- 8. These challenges will increasingly be for the system as a whole, rather than individual participants, because of the integration of these investments into a congested existing network, often including the introduction of new technology and integrating new areas of the network. ‘System risks’ involving the integration of infrastructure, technology, rolling stock, the timetable and operational planning will increasingly need to be considered due to the interdependency of the system.

Figure C1: Network Rail enhancement spending –CP4 and CP5. (NR annual reports)

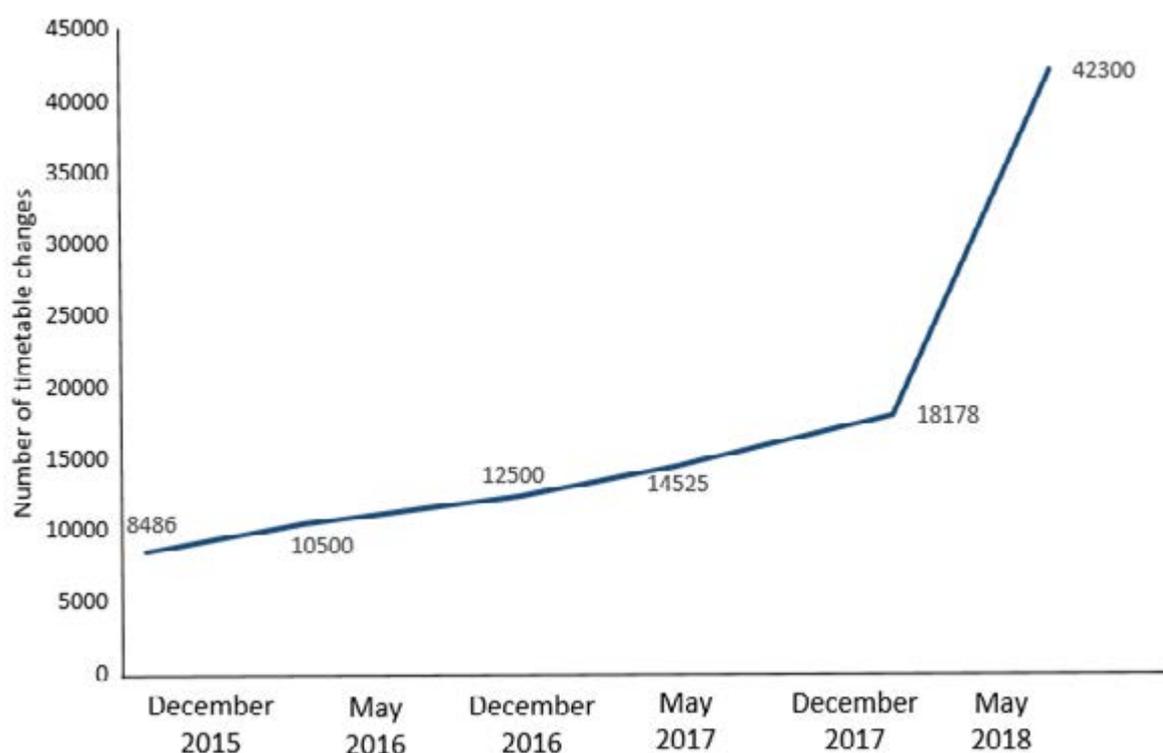


9. The scale and interdependence of future planned infrastructure changes is therefore likely to create greater systemic challenges in the future, because projects need to be managed using a more integrated system-wide approach that crosses existing institutional boundaries. This is critical if benefits for passengers are to be delivered without disruption.

## Increased volume of timetable changes

10. Changes to infrastructure and rolling stock intended to support increased network capacity create increased pressure on the timetabling process. Part B described how the planned volume of timetable changes in May 2018 was far greater than usual and made more difficult by the interdependence of the infrastructure, rolling stock and franchise-led service changes. These increased the volume of required timetable changes in light of unplanned programme changes.

Figure C2: chart showing volume of 6-monthly TT changes 2012-2018.<sup>1</sup>



11. The scale and complexity of the May 2018 timetable changes exceeded the resources of the System Operator (SO) available to prepare the timetable. As set out in Part B, the Inquiry has found that the SO was in a position to identify and mitigate this risk by taking better account of the problems with the development of the Northern infrastructure schemes. The scale of the May 2018 timetable change also put wider industry processes under pressure, removing resilience when the schedule for developing the timetable became compressed at the latter end of the process.

<sup>1</sup> Appendix 4, *PAPER TO THE NATIONAL TASK FORCE-OPERATORS GROUP: Train Planning Resource*, 9 May 2018.

## Growing interdependence of programmes and risks

12. Network Rail plans and funds the individual infrastructure programmes underlying the May timetable changes around a probability factor of an 80% (P-80) likelihood that they will deliver their commissioned outputs to time and on budget, because a higher probability factor would require a substantially greater costs.<sup>2</sup>
13. While this may be reasonable for isolatable projects, it means that where the delivery of individual projects and programmes are interdependent (such as in the approach to the May 2018 timetable changes) the compounded risk of non-delivery of benefits to time and to budget is actually much higher. For instance, a combination of two interdependent projects planned at P-80 would suggest an aggregated likelihood of success of 64% (P-64).<sup>3</sup> For three P-80 projects the chance of success could be as low as P-51. Although this assumes totally interdependent projects, it is possible to see that any interdependency between projects could lower the chances of success below the notional probability-value for the single project.
14. In practice, Network Rail is able to redirect resources between its portfolio of infrastructure projects in response to need, which would improve the aggregated probability of success across its portfolio. This happened to a degree with the NWEF projects as they suffered delays, to which they directed an additional £30 million of expenditure in autumn 2017.<sup>4</sup> However it is required to do this within its portfolio funding limits, and it cannot manage the dependent risks owned by other parties. These may include the reliance on infrastructure to introduce new rolling stock or deliver commitments for new services in operators' franchise contracts.

## Change control for major programmes

15. One of the consequences of the increasing interdependency of major programmes of work is that substantial pressure will be placed on total portfolio costs if an overall P-80 probability of delivering specified programmes on time and to budget is to be maintained, and benefits to passengers delivered. The alternative options are to vary either the time over which schemes are delivered, or to vary their specified scope, while remaining inside portfolio cost limits.
16. These decisions must unavoidably be referred by the industry to DfT if they have effects that would:
  - exceed total portfolio cost limits specified in the government's 5-yearly funding settlement for Network Rail, which are now capped and controlled by the government following the company's reclassification to the public sector in 2014;

<sup>2</sup> Network Rail interview, by ORR (transcribed). 1 August 2018.

<sup>3</sup> Network Rail interview, by ORR (transcribed). 23 August 2018.

<sup>4</sup> Network Rail interview, by ORR (transcribed). 22 August 2018.

- vary the outputs of schemes that have been specified by the government, especially where these specifications are required for new rolling stock and services where public commitments are likely to have been made and other preparatory costs incurred; or
  - delay the date of completion of the scheme, the delivery of which may be required to meet commitments made in operators' franchise contracts, with consequential financial costs for the government.
17. Changes that fall within these criteria are becoming more commonplace. There have been several occasions during the period 2013-2018 where the government has commissioned advice to assist the change process:
- The 2015 Hendy Review recommended substantial variations to Network Rail's portfolio of projects for the planning period 2014-2019, to vary both their scope and delivery dates from those specified by the government, including the cancellation of some projects, in consequence of cost over-runs elsewhere in the portfolio.<sup>5</sup>
  - The 2016 Gibb Review advised on the systemic risks to operational performance on the Southern network and the introduction of new Thameslink services, resulting in funding being redirected within Network Rail's portfolio to support greater resilience of some mainline infrastructure that feeds into the Thameslink infrastructure.<sup>6</sup>
  - Andrew Haines was commissioned in 2018, prior to his appointment commencing as chief executive of Network Rail, to provide advice on preparations for the December 2018 timetable changes and recommended delaying some changes in order to manage risks arising from the experience of May 2018.<sup>7</sup>
18. These examples illustrate that recent change control decisions have been triggered by events that were unpredictable or that became unmanageable by government, despite their ownership of the consequences in terms of programme costs and benefits. This recent experience also illustrates that these decisions were each made in an exceptional way, rather than being the product of industry advice received through a defined structure of portfolio management.
19. The increased probability of project and programme changes being required in the future suggests that the government and industry should work together to consider a system of

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<sup>5</sup> *Report from Sir Peter Hendy to the Secretary of State for Transport on the replanning of Network Rail's Investment Programme*. Network Rail, November 2015 and *The Hendy Review*, Network Rail website – [link here](#).

<sup>6</sup> *Report from Chris Gibb to the Secretary of State for Transport on the Govia Thameslink Railway Franchise*. 30 December 2016 – [link here](#).

<sup>7</sup> Rail industry focuses on reliability for December's new timetable. Network Rail website – [link here](#).

programme management that focuses on systemic risks, their consequences, and generates expert advice to government where change control decisions need to be made.

## Industry responsibilities for systemic risks

20. As railway enhancement programmes become more reliant for their success on the synchronised delivery of dependent programmes by different bodies, the risks to successful timetable changes grow. Whole-system risks may be underappreciated or unknown because they are owned by different parties.
21. Major train service change such as for May 2018, and planned future timetables, are dependent on the parallel delivery of at least four major programmes, which are currently each subject to separate governance and assurance processes. These are:
  - the commissioning of new infrastructure (usually developed by Network Rail under Programme Management Boards chaired by the DfT, but this can also be led other authorities like Crossrail, TfL or independent developers outside the DfT's programme structure);
  - specification and tendering of franchises, with service specifications embedded in contracts (let by DfT and devolved authorities in Scotland, Wales or Northern England);
  - the procurement and introduction of new rolling stock (which can be commissioned by DfT, other devolved commissioning authorities, or train operators); and
  - timetable development (led by Network Rail's System Operator).
22. These elements cannot afford to be considered separately because they are interdependent. Delay or changes to one element forces change in the others, but industry processes are not built to accommodate this. Nor do they adequately prioritise the impact on passengers. As noted earlier in this report, the System Operator is in the best position to manage dependent risks between infrastructure programmes and timetable development, and this was material to the failure of the May 2018 timetable.
23. The Inquiry has found that in the current governance system, the body that has the sufficient breadth and authority to oversee the dependent risks between all four of these individual elements is DfT. However, while DfT is responsible for making big decisions about projects and changes to them, and is accountable for most of the costs, it is the industry that best possesses the information and capability needed to manage these and advise DfT about them. This did not happen at the right points in advance of May 2018.
24. DfT ultimately owns major risks associated with network outputs change as the funder of the network and as the franchising authority. In undertaking projects, it looks to pass responsibility

for the successful completion of projects to both Network Rail and train operators, as the parties best able to manage the project risks, whilst retaining overall oversight of the programmes at a portfolio level.

25. In general, this approach has proved reasonably successful, allowing Network Rail or TOCs to manage risk within their project or franchise portfolio. However, the experience of the May 2018 timetable change shows that this model is under strain in the presence of growing interdependence of programmes.
26. The Inquiry has sought to understand why there is no clear accountability for the management of systemic risks for major programmes, by looking at the individual roles and responsibilities of industry participants.
  - **Network Rail Infrastructure Projects (IP):** IP is the delivery body for the majority of Network Rail's major infrastructure schemes, which plans and delivers the construction of schemes, including by contracting with and managing third-party contractors. ORR has, in the past, found significant weaknesses in the approach that IP has taken to the delivery of schemes. The focus of IP is the delivery of the construction projects and it does not have an overview of other elements of the delivery of schemes, such as rolling stock, timetables or franchise service requirements. IP projects are sponsored by Network Rail Routes, or in special purpose teams, such as the Thameslink team, and are funded by DfT, who exercises its responsibilities through the regional Programme Boards, discussed further below.
  - **Network Rail SO:** The SO is responsible for managing the long term planning of the railway, capacity management, and the development of timetables. It works closely with IP, Routes, operators, and Government in delivering these responsibilities. The SO is the industry body that has the greatest visibility of all parts of the railway, and therefore the systemic risks including those created by the inter-dependence of projects and timetabling. As found in Part B, it does not see itself as responsible for managing system risk, or advising others on it, even where it is or should be aware of such risks. This is an approach that the Inquiry found in Part B to have been material to the causes of the disruption in May 2018. Network Rail has since recognised the need to fill this gap through the creation of a new Programme Management Office (PMO) tasked with looking at system risks to the delivery of the timetables in December 2018 and May 2019, discussed at the end of this chapter.
  - **Network Rail Routes:** The routes are the formal sponsors for most infrastructure change projects in Network Rail's renewal and enhancement portfolios (although some major schemes such as Thameslink have a different structure). They usually act as the agent for the funder, including DfT and Transport Scotland. In these cases, they should synthesise information internal to Network Rail and provide a clear steer to funders. However, as noted by DfT to the Inquiry, at the Network Services programme boards there is sometimes a lack of clarity over the roles of different parts of Network Rail and the role of Network Rail's corporate centre. Different parts of Network Rail can offer alternative views on the

development of projects and their risks, and the Inquiry has heard that funders do not currently feel that they can rely solely on the advice that they receive from route sponsors.<sup>8</sup>

- **Train operators:** Train operators are required to deliver their contracted commitments as specified by the franchising authorities (DfT, Transport Scotland or Transport for Wales), which can include service enhancements driven by new infrastructure programmes. Changes to these requirements have to be negotiated with these authorities, and in most cases this will create costs for the franchise authority if projects are delayed or re-specified. Operators may therefore be in a position to identify system risks, but the franchising authority is often responsible for agreeing changes that manage system risks and funding associated costs.
  - Operators are part of the scheme development through normal industry processes, and usually attend the relevant Programme Boards. The experience of May 2018, showed that operators can often be the parties that are squeezed the most when resilience is taken out of any timetable change programme, compromising, and compressing, the time available to be to prepare to implement new services.<sup>9</sup>
  - **The National Task Force (NTF):** This forum is administered by the Rail Delivery Group, and brings together passenger and freight operators, Network Rail, ORR and DfT and is the body through which the industry cooperates to improve performance. It has set three overarching national themes for attention: “*better timetables; better operations; and better assets*”.<sup>10</sup> During the Inquiry it was suggested by Network Rail that NTF is its most proximate ‘client’ for timetable changes, however while NTF is a consultative and coordinating body, it does not have executive functions or powers beyond the individual responsibilities of its members.
27. The rail industry is overseen by ORR and DfT, who have a range of functions and powers related to the oversight and delivery of major programmes:
- **Office of Rail & Road:** ORR is the independent economic and safety regulator for Britain’s railways. It is accountable to Parliament and the public to protect those who use, interact or work on the railway. It regulates Network Rail, including the setting of targets it has to achieve and reports regularly on its performance. ORR does not have the powers or visibility to consider systemic risk across the whole industry because it does not have regulatory powers to oversee franchise terms or rolling stock contracts. ORR provides only process assurance over DfT decisions with regard to the oversight or change control of Network Rail’s enhancement projects. However it does oversee the whole of Network Rail to

<sup>8</sup> DfT interview, by ORR (transcribed) 8 August 2018.

<sup>9</sup> DfT interview, by ORR (transcribed) 16 August 2018.

<sup>10</sup> National Task Force, Rail Delivery Group website – [link here](#).

some degree. The later section of this chapter describes how ORR's oversight role for the delivery of Network Rail enhancement projects reduced during the 2013-2018 planning period following the conclusions of DfT's Bowe Review, which led to the creation of the enhanced Programme Board structure chaired by DfT. This was agreed in an exchange of letters between ORR and DfT in 2016.<sup>11</sup>

- In the approach to May 2018, ORR identified some but not all of the systemic risks that contributed to the timetable disruption. ORR executed its statutory responsibility to investigate the impact of Network Rail's delay to the preparation of the timetables (the investigation was initiated in February 2018) and later found Network Rail to be in breach of its licence on this basis. ORR focused on the SO's failure to deliver the timetable on time and the consequential selling of tickets for services not yet timetabled by operators. However, it did not identify or focus on the risks or other aspects of operators' preparedness related to the availability of drivers. The later section of this chapter expands on the issue of ORR's regulation of systemic risks, and a separate Prior Role Review is published alongside this report.
- **Department for Transport:** DfT has a number of functions related to oversight of the industry, which significantly exceed those of the other devolved franchising authorities (Transport Scotland, Transport for Wales and the Rail North Partnership), including:
  - **The funder of major enhancement schemes** and chairing of the Portfolio and Programme Boards that oversee these, following the governance model introduced after the Bowe Review.
  - **The specifier and manager of franchises**, which often include conditions related to anticipated services dependent on Network Rail's delivery of new infrastructure.
  - **Commissioning and planning of rolling stock**, including that required for the delivery of new services by operators through their franchises.
  - **Overall responsibility for the structure and strategy of the rail industry**, including through the ownership and funding of Network Rail and planning and delivery of the majority of the franchise programme where not devolved to other authorities.

28. As such, DfT is the only body with executive responsibilities that cover, to some degree, all aspects of the delivery of interdependent major programmes that contribute to timetable changes. It devolves many of these responsibilities to industry parties best placed to manage

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<sup>11</sup> Letter from ORR to DfT, 12 December 2016 and letter from DfT to ORR, 14 December 2016.

them through the means described above and coordinates its rail responsibilities through its Rail Board chaired by a Director General.

29. The Inquiry heard from DfT that the Rail Board considers all aspects of the programmes for which DfT has responsibility and advises ministers on such change control processes that are required, as described earlier. In doing so it largely relies on advice and information received from industry participants and ORR.<sup>12</sup> The absence from within the industry of clear responsibility for the provision of advice to DfT on systemic risks has resulted in the exceptional change control processes noted earlier.
30. **The Inquiry has found that the diffuse nature of accountability for different programmes across the industry and government results in a lack of clarity about roles and responsibilities for the oversight and control of complex system risks. There is an apparent gap in industry responsibility and accountability for the management of systemic risks. Industry process needs to change to accommodate these responsibilities.**

## The effect of industry culture in major projects

31. One of the most positive characteristics of the rail industry is the confident 'can do' approach that its participants take to completing projects, managing disruption, and keeping the railway running. This was highlighted to the public in 2014 by the rebuilding of the railway at Dawlish following winter storms, but it is an admirable characteristic of the industry at every level and is demonstrated on a daily basis.
32. The Inquiry heard from several participants that the industry may, however, suffer from an inherent optimism bias about the delivery of major projects, characterised by a belief that time can be made up after unplanned delays and delivery milestones met even as the remaining time available becomes compressed. The impact on passengers is often under-prioritised or not considered. It has been suggested to the Inquiry that this optimism may result in, or exacerbate, a cultural disinclination to communicate bad news to a senior level or across institutional boundaries as projects fall behind, leading to late decision-making in response to problems and unrealistic optimism for the probability of project delivery, up until the point that failure becomes certain.
34. The Inquiry has not been able to either establish or dismiss these anecdotal accounts, although they align with some of the earlier substantiated findings. In the time available it has not been possible to interview project managers below the most senior level. It does consider that strong project and programme management processes should be able to manage optimism biases where they occur.

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<sup>12</sup> DfT Interview, by ORR (transcribed) 8 August 2018.

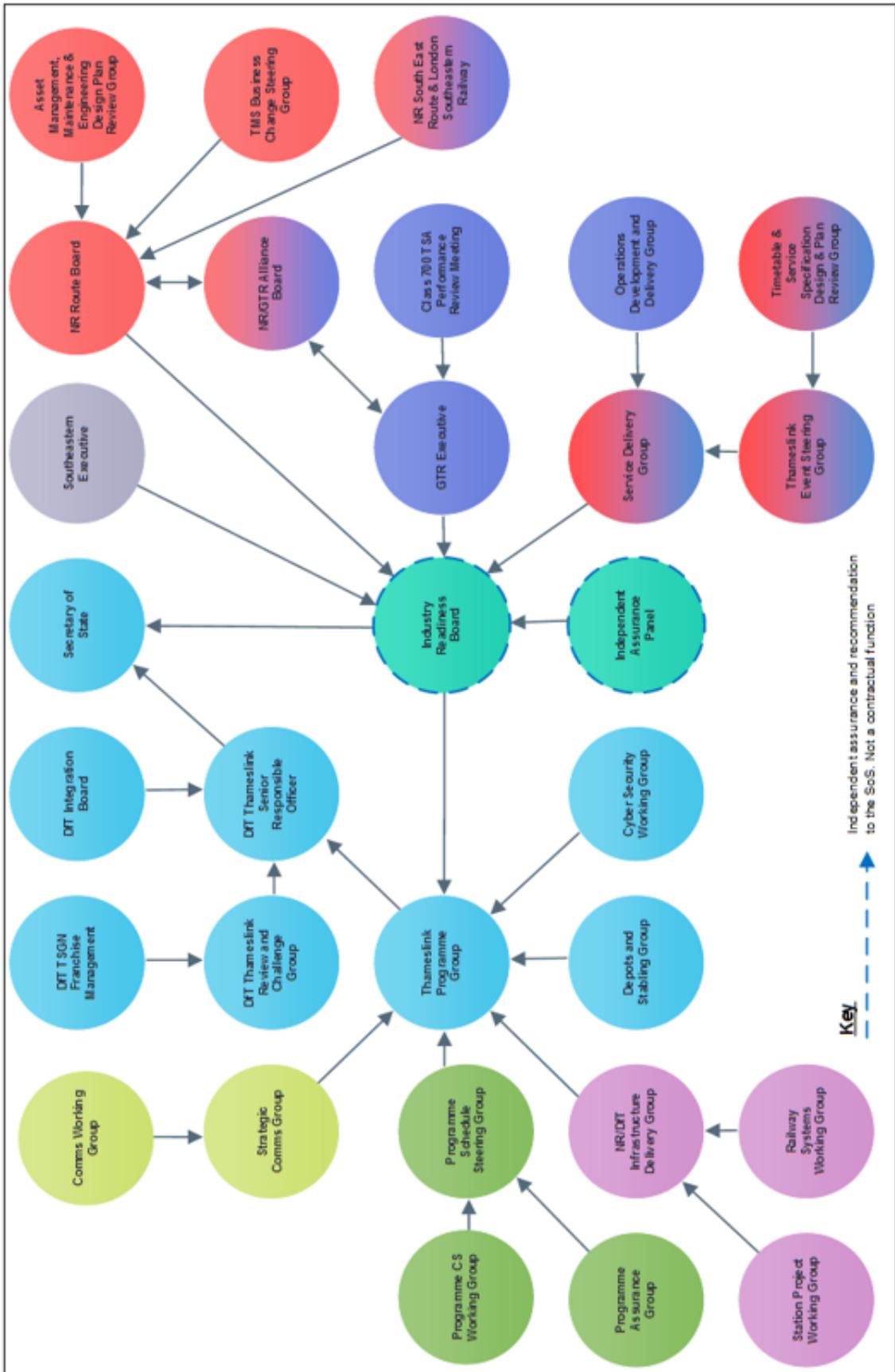
## Programme management of systemic risk

35. The commissioning of multiple interdependent projects from different parties to deliver an overall programme is not unique to the rail sector and would typically be managed using integrated programme management processes. The Inquiry heard that the infrastructure projects on which the May 2018 timetable changes relied were managed through programme management structures chaired by DfT. ORR also attended programme boards occasionally, including to coordinate the regulatory authorisations required to bring new assets into service.
- The Thameslink Programme had its own focused programme board, rather than being overseen by the regional boards, because of the scale and complexity of the projects within the programme. This was chaired by a DfT director. Sub-boards responsible for different aspects of the programme reported into the programme board, as well as a dedicated Programme System Integrator (PSI) to look at system technical interfaces between new assets across the Thameslink infrastructure.
  - The NWEF scheme was overseen by the Northern Programme Board chaired by a different DfT director (similar boards exist in other regions), which in turn reported to the national Portfolio Board, which was co-chaired by the same director alongside the Managing Director of the Network Rail SO. This governance structure was introduced by DfT following the 2015 Bowe Review with the intention of strengthening DfT's oversight and assurance for infrastructure enhancement project delivery and costs. It oversees a portfolio of around 110 Network Rail projects within its Enhancements Delivery Plan (EDP).<sup>13</sup>

Figure C3 (overleaf): Thameslink Programme Governance structure (as submitted to Transport Select Committee by DfT).<sup>14</sup>

<sup>13</sup> *Enhancements Delivery Plan*. Network Rail website – [link here](#).

<sup>14</sup> DfT submission to ORR, 17 September 2018.



36. The Inquiry has considered to what degree these programme management structures were responsible or able to identify and manage the systemic risks to the development of the timetable and introduction of services in May 2018 that went beyond the delivery of the infrastructure to time and budget.

## Thameslink programme management

37. Part B described the recommendations of Chris Gibb's report to the Secretary of State on the challenges on the Southern network in 2016. This identified among other things the need to involve, within the Thameslink programme management structure, important industry partners not previously represented, and recommended that the Industry Readiness Board (IRB) be established to coordinate all participants in preparation for the introduction of the new services in May 2018.
38. The IRB had no executive authority over any element of the programme; executive responsibility remained with its senior-level participants, which its chair expressed clearly during its meetings.<sup>15</sup> It reported to the Thameslink Programme Board and had the ability to report concerns directly to the Secretary of State if they could not be resolved among its participants. The Inquiry heard that there was no occasion on which the chair felt that this was required, as the IRB worked effectively to resolve issues as they arose, and that the prospect of potential escalation motivated participants to work together between meetings to solve problems collectively.<sup>16</sup>
39. The IRB was supported by an Independent Assurance Panel (IAP) chaired by Chris Green and supported by experts in traincrew, fleet, and operations. This followed the example that had been used on Crossrail. The IAP focussed on seven areas which were considered important for operational readiness, including fleet, train crew, traffic management, stations, infrastructure, and operational issues. The IAP met monthly to review these areas using approximately half a day to prepare and half a day to gather information. Each of the seven areas was assigned a Red, Amber, or Green rating which was reported to the IRB for discussion. (Red = Critical issue: Amber = Planned but not implemented: Green = Will be delivered.) An example of this was traincrew readiness for the May timetable, which was given an Amber rating following a 'Super Review' – an all-day meeting in February 2018 – to assess readiness for 20 May.<sup>17</sup>
40. The Inquiry has heard that the IAP did not have powers to commission third parties to gather information independently from the organisations it was examining as part of its assurance role. It relied on information provided, for example, by GTR or Network Rail into their

<sup>15</sup> Minutes of IRB meeting, 13 January 2017.

<sup>16</sup> Chris Gibb interview, by ORR (transcribed), 22 August 2018.

<sup>17</sup> IRB papers, February 2018.

readiness. It did not have an audit remit or resources to commission extensive advice from third-party experts.<sup>18</sup>

41. The Inquiry has found broad and strong consensus between operators, Network Rail business units, DfT and others regarding the value added to the effective delivery of the programme by IRB. Participants said that IRB effectively identified gaps and risks created by the diffuse responsibilities and accountabilities of individual participants, as described above, to seek collective solutions.

"I think if the meeting hadn't have existed, some of the issues would have just rumbled on and on and on indefinitely. There was no really effective way of escalating them. And we had everybody in the room, so there was nobody who was executive to the project who was not in the room."<sup>19</sup>

42. The creation of IRB followed a recognition within the Thameslink Programme that the implementation of the project into a working railway was something that the existing structure was unlikely to achieve because of the interaction with a large number of train operators and Network Rail Routes.
43. However, IRB did not identify the risks to the implementation of the May 2018 timetable by GTR, it relied on others to identify them (although it did scrutinise GTR's preparedness as described in Part B).
44. DfT explained that it looked to IRB for assurance. The view of the Inquiry, based on the information received, is that the creation of the IRB was a necessary, but not a sufficient, mechanism for the identification, scrutiny and management of the systemic risks related to the Thameslink programme. It did not have the resources or ability to commission third-party assurance, and had no executive functions within the programme.

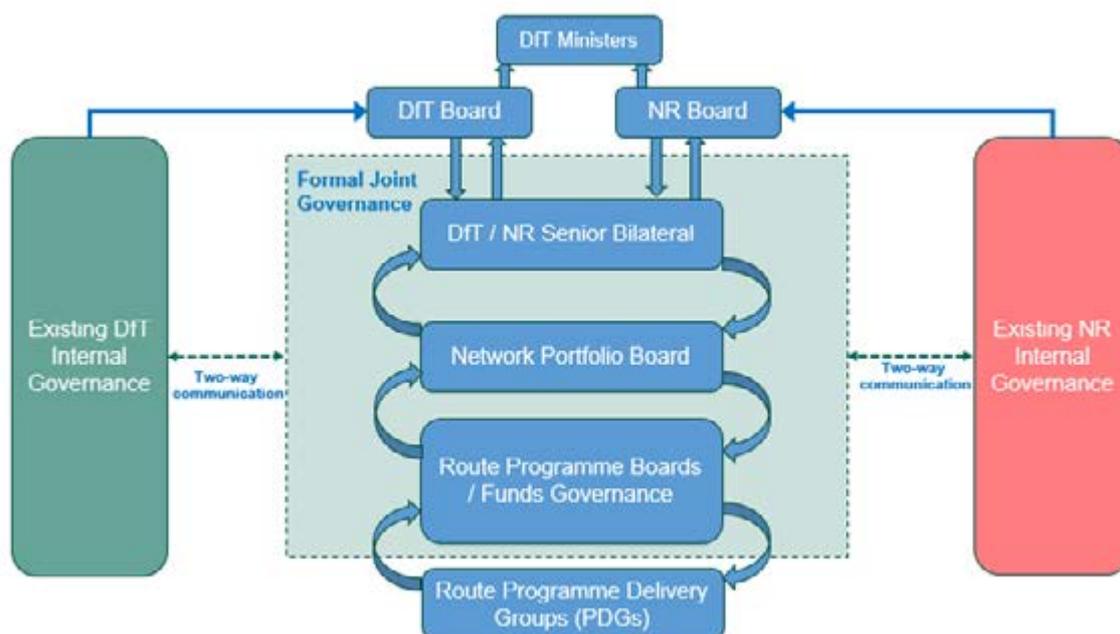
## NWEP programme management

45. There is no equivalent body to IRB involved in the delivery of other Network Rail infrastructure programmes. The Inquiry has therefore looked at whether the Portfolio and Programme Management Board structure which oversees these programmes accommodates the focus on system integration and operational risks in the way that IRB did for Thameslink.

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<sup>18</sup> Chris Green interview, by ORR (transcribed), 14 September 2018.

<sup>19</sup> Chris Gibb interview, by ORR (transcribed), 22 August 2018.

Figure C4: Northern Programme governance structure.<sup>20</sup>

46. Following the Bove Review,<sup>21</sup> nine regional Programme Boards were established to oversee the delivery of Network Rail infrastructure enhancement projects. The programme boards consist of representatives from DfT (both the directorate responsible for clienting Network Rail's projects, Network Services, and Passenger Services, which acts as the client for franchised TOCs), senior representatives from franchised TOCs, and Network Rail (representing the Route(s), Infrastructure Projects and the System Operator). ORR attends some Boards as an observer, both to monitor Network rail and also to help coordinate its statutory responsibilities for authorising new infrastructure into service.
47. We heard that at these meetings risks for the delivery of the infrastructure are the focus. The Board works together to resolve issues and manage risk. If a decision needs to be taken the DfT chair has the pivotal decision-making role as the client. That decision is informed by the other Board members.<sup>22</sup> Should a change be required to time, cost, or quality a Change Request is made to the national Portfolio Board to be considered alongside other schemes.<sup>23</sup> Ultimately these may be submitted by the DfT's Rail Board to the Secretary of State for a decision.

<sup>20</sup> DfT submission to ORR, 17 September 2018.

<sup>21</sup> *Bowe review into the planning of Network Rail's enhancements programme, 2014 to 2019*. Dame Collette Bove, DfT, 25 November 2015 - [link here](#).

<sup>22</sup> Network Rail interview, by ORR (transcribed) 1 August 2018.

<sup>23</sup> Network Rail interview, by ORR (transcribed) 1 August 2018.

48. The Inquiry heard from both Network Rail<sup>24</sup> and DfT<sup>25</sup> that the focus of the Programme Boards are on the delivery of the infrastructure projects, their cost and milestones. This remit follows the conclusions of the Bowe Review that DfT needed to strengthen its oversight of the cost and delivery risk of Network Rail's enhancement programme following the programmes with the Great Western electrification. The Programme Boards do not have a remit to monitor or manage wider system risks in a structured way, although the parties attending the Boards may become aware of them and manage them through other processes.
49. The Inquiry has considered whether the programme management structures created following the Bowe Review are a necessary and beneficial strengthening of infrastructure programme governance, and believes that they are.
50. **The Inquiry considers that the creation of the DfT-chaired Programme Boards was a necessary strengthening of infrastructure programme governance, and control of costs. However, the Boards are focused on the development of infrastructure and are not remitted to consider systemic risks arising from the programmes. The creation by DfT of the Thameslink Industry Readiness Board was a recognition of the importance of focusing on system integration issues and demonstrated that a more integrated approach can help avoid risks. However, the IRB model is not a sufficiently integrated or resourced approach to be an alternative to integration of systemic risks into formal programme management architecture. Among other things, a stronger focus on systemic risks may drive better alignment between the timing of programme decisions and the schedule for timetable development.**

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<sup>24</sup> Network Rail interview, by ORR (transcribed) 1 August 2018.

<sup>25</sup> DfT interview, by ORR (transcribed) 08 August 2018.

## Regulation of systemic risk and ORR

51. Alongside this Inquiry, ORR established a 'Prior Role Review' to investigate actions that it took which may be material to the disruption in May 2018. That is published alongside this report.
52. ORR is the independent economic and safety regulator for Britain's railways. It is accountable to Parliament and the public to protect the people who use, interact with or work on the railway. It regulates Network Rail including the setting of targets it has to achieve and reports regularly on its performance. It also enforces consumer law and certain consumer requirements in train operator licences.
53. ORR does not have the powers or visibility to consider systemic risk across the whole industry because it does not have regulatory powers to oversee franchise terms or rolling stock contracts. ORR provides only process assurance over DfT decisions with regard to the oversight or change control of Network Rail's enhancement projects. However it does oversee Network Rail's compliance with the terms of its network licence and so it has visibility of both the infrastructure programmes and the timetable process which depended on them for May 2018.
54. ORR exercises these responsibilities through a process that escalates from regular monitoring and reporting on Network Rail's delivery of its regulated outputs (set in 5-yearly Periodic Reviews), targeted investigations of potential failings to deliver these, followed by enforcement action if failings are found. It also monitors train operators' compliance with consumer law and their consumer requirements.
55. Following DfT's Bowe Review, ORR agreed with DfT in 2016,<sup>26</sup> that a different approach would be introduced to oversee Network Rail enhancement schemes, partly in recognition of DfT's increased financial accountability for the cost of schemes following the reclassification of Network Rail to the public sector in 2014. This did not affect any other aspect of ORR's regulation of Network Rail beyond the enhancement portfolio.
56. This new arrangement was established through an exchange of letters between ORR and DfT, and a Memorandum of Understanding between DfT and Network Rail. This established that ORR would withdraw from detailed monitoring of projects in England & Wales for which DfT was the client, and the programme management structure chaired by the DfT would be introduced, as described earlier. ORR withdrew from detailed monitoring of individual programme costs but it maintained oversight of Network Rail's overall management capability and processes for the enhancements portfolio at a national level, because of the impact that this had on the company's outputs as a whole. ORR staff continued to attend programme meetings at different levels depending on the projects' requirements.

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<sup>26</sup> Letter from ORR to DfT, 12 December 2016 and letter from DfT to ORR 14 December 2016.

57. In light of the emerging delays to the process for developing the May 2018 timetable following the failure to deliver the NWEF programme on time in December 2017, ORR initiated an investigation into Network Rail's compliance with its network licence with regard to the timetabling process. ORR did not consider broadening the scope for the investigation to include either the failure to deliver NWEF or the risks of operational disruption. Instead it focused on the risks to passengers from the SO's inability to provide a timetable in time for the T-12 date, from which services are planned and tickets sold.
58. ORR's approach in monitoring Network Rail's preparation for the timetable was to assure itself that Network Rail was properly consulting with industry partners through its decision-making. It saw the options that Network Rail was considering in February 2018 for the May timetable, but had no additional information or any basis to challenge them or suggest alternatives. ORR was satisfied that Network Rail had consulted train operators in considering the options and had been through a process to consider criteria including passenger impact. ORR did not conduct further analysis beyond this.
59. ORR did not predict the disruption that occurred in May 2018, because it derived its information from the industry, which itself did not anticipate the disruption. ORR also considered that Network Rail was working cooperatively with the industry in early 2018, when it was deciding whether to proceed with the May 2018 timetable change.
60. **The Inquiry has found that ORR has sufficiently broad powers to consider the risks that Network Rail's infrastructure programmes create for timetable changes if it chose to do so. It has not previously identified this as a critical risk or priority based on previous largely successful timetable changes. ORR failed to identify this risk in the approach to the May timetable change, including through the subsequent investigation it initiated into Network Rail, which focused correctly on the potential impact on passengers but did not focus on risks to operational preparedness.**
61. Through Phase 2 of the Inquiry, ORR will consider whether, alongside changes to the management of systemic risks across Network Rail, the wider rail industry and government, the role of the regulator also needs to change, in particular whether stronger independent risk assurance is thought to be required for timetable changes.
62. It is reasonable to consider whether ORR should have acted sooner to investigate risks to the timetable process as delays to the infrastructure projects emerged in 2017. It is also reasonable to consider whether the scope of ORR's subsequent investigation was sufficiently broad, given that it did not focus on the risk of disruption to operators and consequential impact on passengers from the late timetable.

## Future management of systemic risks

63. In light of the experience of 20 May, Network Rail has created a new business unit to oversee the interdependent risks within its own organisation (between IP and the SO) for timetable

development. This new Programme Management Office (PMO) is providing advice on the development of future timetables, including for December 2018 and May 2019. Where necessary it is providing advice to DfT on change control where its advice has consequences for DfT franchise and rolling stock programmes.<sup>27</sup>

64. This is a counterfactual example of the sort of risk management and predictive advice that the Inquiry judges was in the ability of the SO to provide in advance of the May 2018 timetable, and it is welcome that Network Rail has acted to fill this gap. The Inquiry heard that Network Rail is yet to make a decision about the future organisation of this PMO, whether it is a temporary or permanent measure, and whether it should be part of or separate to the SO in the future. There is also a related question for Network Rail about the role and capability of the Routes to act as programme sponsors for future changes, and how they should relate to a company-wide solution.
65. Although the co-dependence of infrastructure projects and timetable development was a critical factor in the failure of the May 2018 timetable, the Inquiry considers that the systemic risks arising from future network changes could involve parties other than Network Rail, and so the PMO solution may not be entirely sufficient.
66. Phase 2 of the Inquiry will consider, in consultation with all industry parties, whether further measures should be taken to oversee and manage systemic risks arising from interdependent rail programmes, including franchising, rolling stock and non-Network Rail led schemes.

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<sup>27</sup> Response to ORR's licence investigation case to answer letter, Network Rail, 6 July 2018.

# ANNEX A: TIMETABLE INQUIRY GLOSSARY

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## Organisations

<b>DfT</b>	Department for Transport
<b>EMT</b>	East Midlands Trains
<b>GTR</b>	Govia Thameslink Railway
<b>LNER</b>	London North Eastern Railway
<b>LNW</b>	London North Western route (part of Network Rail)
<b>LNE</b>	London North Eastern and East Midlands route (part of Network Rail)
<b>Northern</b>	Arriva Rail North
<b>NR</b>	Network Rail
<b>(NR) IP</b>	Network Rail Infrastructure Projects
<b>(NR) Routes</b>	Network Rail is split into nine devolved route businesses
<b>(NR) SO</b>	Network Rail System Operator
<b>ORR</b>	Office of Rail and Road
<b>RDG</b>	Rail Delivery Group
<b>TPE</b>	TransPennine Express

## Boards & Panels

<b>ESG</b>	Event Steering Group
<b>IAP</b>	Independent Assurance Panel
<b>IRB</b>	Industry Readiness Board
<b>NoEP</b>	North of England Programme
<b>NTF</b>	National Task Force
<b>OPSG</b>	Operational Planning Sub Group (of the NTF)
<b>PDG</b>	Programme Delivery Group
<b>SRG</b>	System Review Group
<b>TPB</b>	Thameslink Programme Board

## Infrastructure Projects

<b>NWEP</b>	North West Electrification Project
- Phase 1	Electrification between Newton-le-Willows and Castleford Junction
- Phase 2	Electrification between Liverpool and Wigan and Liverpool and Earlstown
- Phase 3	Electrification between Blackpool and Preston
- Phase 4	Electrification between Wigan, Bolton and Manchester, also known as the 'Bolton Corridor'
- Phase 5	Electrification between Manchester and Stalybridge
<b>Thameslink Core</b>	a section of track running between London Blackfriars station and London St Pancras station

## Terms

<b>APIS</b>	Authorisation for Placing Into Service
<b>ATO</b>	Automatic Train Operation
<b>CIS</b>	Customer Information Screens
<b>Class 185s</b>	Diesel multiple unit trains operated by TPE and Northern
<b>Class 385s</b>	New electric trains planned for use by Abellio ScotRail
<b>Class 700s</b>	Electric passenger trains operated on the Thameslink route
<b>CP5</b>	Control Period 5 (2014 – 2019)
<b>CP6</b>	Control Period 6 (2019 – 2024)
<b>EIS</b>	Entry into Service
<b>EMU</b>	Electrical Multiple Unit train
<b>ETCS</b>	European Train Control System – A signalling and train control component of ERTMS
<b>ERTMS</b>	European Rail Traffic Management System – A system of standards for management and operation of signalling
<b>FOC</b>	Freight Operating Company
<b>Informed Traveller</b>	(See T-12)
<b>LTP</b>	Long Term Planning – The process of developing and producing the base timetable
<b>Part D of the Network Code</b>	Part D of the Network Code – The section of the Network Code setting out the processes and deadlines for timetable production
<b>Pilot Drivers (aka Pilots)</b>	A driver with route knowledge that can guide another driver through a section of track that they are not trained on
<b>PR18</b>	Periodic Review 2018 – The review run by the ORR that will determine what Network Rail must deliver in Control Period 6
<b>RAG ratings</b>	Red/Amber/Green risk ratings
<b>Report DTT2014</b>	Development Timetable 2014 - A report that explored the development of a timetable for the implementation of operational running over newly commissioned Thameslink infrastructure
<b>Rolling stock cascade</b>	A series of interdependent transfers of rolling stock between different operators
<b>Rolling stock diagram</b>	The planned movements of a particular rolling stock unit around the network
<b>SoAR Panel</b>	Sale of Access Rights panel – A panel which decides whether Network Rail will agree to sell train access rights to the network
<b>STP</b>	Short Term Planning – The planning of short-term changes to the base timetable to cover engineering work, Bank Holidays, specific events and other temporary alterations
<b>TMS</b>	Traffic Management System – An automatic train path setting system
<b>TOC</b>	Train Operating Company
<b>Tph</b>	Trains per hour
<b>Train crew diagram</b>	The planned movements of train crew around the network

<b>TSGN</b>	Thameslink, Southern, Great Northern franchise, run by Govia Thameslink Railway
<b>TSR</b>	Train Service Requirement – The contracted number and pattern of trains required to satisfy the terms of a franchise agreement
<b>TSS</b>	Train Service Specification – A description of the number and pattern of trains running on a defined area of the network
<b>T-12 (aka Informed Traveller)</b>	Once the 'base' timetable is finalised, work starts on a rolling programme to refine each week of the timetable to take account of engineering works. The intention is that the timetable for each Timetable Week is finalised twelve weeks in advance ('T-12'), in order that it can be published to passengers and enable advance tickets to go on sale to passengers
<b>Turnback</b>	A rail facility on the network that enables rolling stock to be turned around

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