Passengers queuing on the Network Rail concourse to access the London Underground station, Victoria Station, 30th November, 2016, 0905 Photo: C Gibb

Changes to improve the performance of the Southern network and train services, and restore passenger confidence

An independent report by Chris Gibb
30th December, 2016

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New Siemens Class 700 at Three Bridges Photo: C Gibb

STRICTLY CONFIDENTIAL

PAPER TO: **SECRETARY OF STATE FOR TRANSPORT**
DATE: **30th DECEMBER, 2016**
FROM: **CHRIS GIBB**
SUBJECT: **REVIEW OF SOUTHERN RAIL NETWORK AND OTHER RELATED ISSUES**

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1. Purpose of Paper

This paper outlines the issues currently affecting performance on the Southern rail network, and looks forward on how to resolve these, and directly related other issues, including the Thameslink 2018 operation.

2. Background

The terms of reference have been as follows:

"*To ensure all possible steps are being taken to improve performance of Southern rail services and to introduce a new and fully aligned approach to the management of GTR rail services in order to improve performance and passenger experience.*

Identify what actions are needed immediately to improve Southern rail performance and passenger experience including actions to ensure closer working and more effective alignment between GTR and NR;

Work with the management teams of GTR and NR, and DfT, to ensure those actions are implemented with immediate effect;

Report weekly including to the Rail Minister and SoS on progress and any barriers to progress in implementation;

Identify and make recommendations as soon as possible on what further steps are needed to create a more effectively integrated approach to the management and performance of the Southern rail network from across all of the industry partners involved, including in relation to:

- *Objectives, incentives and performance metrics*
- *Improving the overall passenger experience*
- *Leadership, management structures and accountabilities*
- *Work processes and team design and culture*
- *Contract specification and design*
- *Future franchise specification and design*

Produce a plan for the implementation of agreed recommendations and work with the management teams of Govia Thameslink Railway (GTR), Network Rail (NR), and Department for Transport (DfT), to ensure this is delivered by the end of the year.

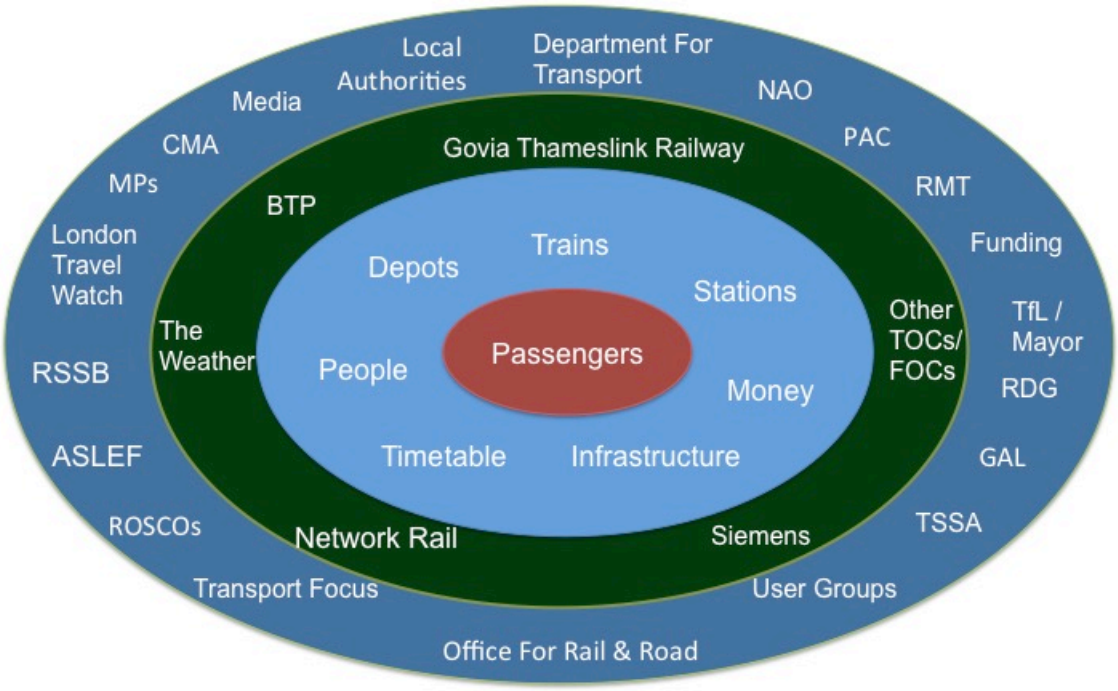
Chair a Project Board which will include a Passenger Representative (to be nominated by Southern MPs).

The management of industrial relations remain a matter to be managed by Govia Thameslink Railway Limited."

I have worked on this project from 1st September to 31st December, 2016, and have been supported by the Project Board which has met four times. Further details of the background, the process and those involved are contained in Appendix 1.

This report concludes the Project, and identifies a plan of actions that have been agreed and commenced and further recommendations to bring about an improvement in passengers' experience when using Southern rail services.

3. Introduction



3.1 The System

Every railway is a system, and Southern is no different to any other in that respect. However the Southern system is simultaneously running at absolute capacity at peak times, and undergoing a period of dramatic and traumatic change:

- Introduction of revised working practices, in particular the extension of Driver Only Operation on Southern and the introduction of On Board Supervisors on Southern and Thameslink
- Merger of three previously competing TOCs: Gatwick Express, Southern and Thameslink / Great Northern, creating the largest TOC in the UK
- Introduction of new Class 700 and Class 717 trains, with many elements of new technology, such as Automatic Train Operation, and new depots at Three Bridges and Hornsey
- Regular transfer of trains between GTR and other operators
- Introduction between now and 2018 of the new Thameslink infrastructure and service, increasing services from 12 up to 24 trains per peak hour through Central London, including transfer of routes between Southern, South Eastern Trains and Thameslink
- Major infrastructure enhancements at London Bridge / Blackfriars

All of these changes have been planned to happen between 2015 and 2018. The parties directly involved, Network Rail, Govia Thameslink, Network Rail and Siemens all entered into various contractual undertakings to deliver their parts of the overall project.

I have summarised the system in the above diagram. At its heart are the passengers, who

depend on all the other elements in the diagram for their train service. The light blue elements are the key ingredients that make the system work. The relationship between them is critical: for example it is possible to have unreliable infrastructure, and still deliver a reliable service if the timetable and people are planned in such a way to allow for this. Alternatively a highly reliable infrastructure can support a flawed timetable or insufficient numbers of people. These relationships change by the hour, day of the week and month of the year, and are very variable. None of the parties in the system share the same incentives or objectives: I have explored this further in an appendix to this report, and proposed an alternative with aligned incentives and objectives.

3.2 The Southern System

On Southern all the elements of the system have been under strain: unreliable infrastructure, a timetable that is very tight and with overcrowded peak services, some key stations that are overcrowded, depots that are full and for historic reasons are in the wrong place, and people that are involved in informal and formal industrial action. The system cannot possibly work to passengers' satisfaction with these components in this state.

3.2.1 How did the system get to this point ?

I will not dwell on this because it is of limited use in improving performance. However I do not believe any single party have been the cause. Many parties have, with the best of intentions, driven elements of change, all of which have come together at this time to cause the overall system to fail. Some examples of this have been:

- The Thameslink Programme infrastructure enhancements, specified by DfT and led by Network Rail, which are rebuilding the London Bridge / Blackfriars infrastructure.
- The GTR franchise agreement, specified by DfT, bid for in an open competition and won by Govia, a joint venture between GoAhead and Keolis, with the most efficient money proposition and an exceptionally high number of "committed obligations", including one to extend Driver Only Operation and introduce On Board Supervisors.
- The procurement of new Class 700 trains and associated maintenance agreement, specified by DfT, bid for in open competition and won by Siemens, with the most efficient money proposition.
- A policy of opposition to Driver Only Operation, led by RMT and ASLEF, and supported through votes cast by many of the people; their members.
- Insufficient numbers of people, particularly drivers at the start of the franchise, and significant changes to the GTR people leadership team after the amalgamation of the three constituent franchises.
- Submission of a demanding CP5 national infrastructure maintenance plan by Network Rail, and determination of a demanding CP5 money settlement by the Office for Rail & Road, with which to maintain an infrastructure in a poor or unknown condition, with limited access.
- Changes to the Network Rail organisation, and a high turnover in people leadership roles on the route in the last five years.
- Expansion of its timetable on Network Rail infrastructure by London Overground, in a concession now operated by Arriva and specified by TfL.
- Rapid growth in passenger demand, resulting in overcrowded stations.
- A complicated timetable which is at the maximum capability of the system, using full stabling depots often remote from the employment locations of the people.

No single party has had responsibility for the overall system integrity, although all of the above parties have all been aware of how much strain the system has been under. Some elements of the system have been considered largely as an afterthought, such as train maintenance depots and stations such as Victoria. Sometimes funding availability has prioritised elements of the

system, without considering the welfare of the overall system. A typical industry business case for increased capacity can only proceed if it promises more train paths, without adequate assurance that the train paths can be accommodated in the overall system.

I have noted that the 2018 timetable incorporated in GTR's franchise agreement by DfT was not fully supported by Network Rail during the franchising process, as too many trains were to be scheduled across Windmill Bridge Junction, Croydon. The timetable for 2018 is currently being rewritten to resolve this, but all the other key elements of the system will need to respond to this: trains, depots, people and infrastructure, even though most were agreed contractually on franchise award. However the franchise agreement envisages this, and gives the Secretary of State authority to change most elements of the franchise agreement. Time is running out to do this by 2018, and urgent decisions and actions are needed if the 2018 system is to work and deliver against expectations, as outlined in this paper and recommended in Appendix 9.

3.2.2 The Role of a System Operator

From my experience of having worked half my lifelong career in each of the public and private sector railways, I do not believe that the entire system has to be owned or controlled by a single party to make it work properly: there are many examples of multi party systems and teams that are highly efficient and work well. British Rail had its borders too: between regions, sectors and divisions. However teamwork across the system is absolutely critical, and I recommend that the custodian of the overall system integrity be better identified, empowered and trusted: a System Operator. The rushed 1990s privatisation process failed to understand the critical needs of the system, and in a relatively lightly used and declining network, it was not so critical. Twenty years later, with the network carrying more passengers and trains than at any time in 90 years, the need for a System Operator is absolutely essential. This role is being implemented by Network Rail, on a Route led basis, supported by a national team able to maintain system integrity across route boundaries and the national network. In the Southern / GTR area this role is being led by the Alliance Board and, from January, 2017, supported by the Thameslink 2018 Industry Readiness Board, that you have asked me to independently chair. Through the Alliance Board, I have observed and encouraged a more collaborative relationship between the NR and GTR management teams. Each organisation has new key leaders – Nick Brown, Chief Operating Officer, GTR and John Halsall, Route Managing Director, NR – and they set a good example to their teams in respect of how the relationship should be developed. The crisis management of strikes has driven a closer working relationship, day-by-day and minute-by-minute.

The dark blue outer circle are organisations that specify, influence, contract, represent users and taxpayers, fund, own and regulate all or parts of the railway. They all have a view on how the system should operate, and their own objectives, but despite frustration in some cases, they are not responsible for or accountable for the overall system integrity. Success for all of them can only be achieved if the overall system integrity is maintained and enhanced. It is sometimes politically easy for any of them to blame any other part of the system for shortcomings, in particular the parties in the green ring, but responsibility is seldom as simple as it seems, and blame in this way does nothing to make the system work better. Delays are often caused by a combination of factors, and in a broken system it is also clear that delay attribution has been failing too, causing increased frustration as it is not clear what is wrong and how to fix it. Every party can bring something to the system to make it work better.

A successful system is not simply about "Command and Control", which is, in my view, a rather overused expression in today's railway. To me a successful system is one that has active people engagement at all levels, and good leadership. Command and Control has its place, but to be effective the people need to understand their part in the system, have a say in how it develops and see authentic leadership from the managers. This is difficult in a long running industrial dispute, with relationships under strain and leaders focused on the day and the next day's operation alone. Media coverage of individual leaders on all sides and their perceived failings just adds to the difficulty.

3.2.3 The Primary Cause of the System Breakdown in 2016

At the time of writing this the RMT and ASLEF leadership, supported currently by their members, the railway people in conductor and driver grades, are the primary cause for the system integrity to fail, by taking strike action in their dispute over Driver Only Operation, declining to work overtime and generally not supporting and undermining the system integrity. Before this formal action, there were clearly unusually high levels of short-term sickness. The action is obviously reducing the service to passengers, but also the needs of every other party in the system. If any other part of the system has a fault, the strike and overtime ban magnifies this many times. No element of the system is perfect, and it can all improve. But I am convinced by what I have seen that if the traincrew were to work in the normal manner that they have in previous years, the output of the system, a safe and reliable rail service for passengers, would be delivered in an acceptable manner, which would be similar to other commuter rail services in the South East.

Their action is undermining the system, and its value to the country that funds it through fares and taxes. Whatever their motives, which are debatable, I do not support their action. They should influence changes to the system through engagement, such as improving customer service, the safe despatch and operation of trains, and Driver Only Operation. They can therefore play their part in growing the system, continuing to provide long-term job security and safe and improved employment conditions for their members. I believe they can achieve more for their current and future members in this way, than opposing the change to working practices that the extension of Driver Only Operation represents. The role of overseeing the safety of the passengers and employees rests legally with the duty holder and employer, GTR, and regulation and oversight is the responsibility of the Office for Road & Rail. Both bodies are legally obliged to consult with the trades unions on changes to working practices, and the unions should fully participate in the consultation. The fact that nobody is being made redundant or losing pay against their wishes, that there will be more GTR trains operating with two people on board, and that safe Driver Only Operation is already extensive in GTR, the UK and Europe, just serve to make this dispute more difficult to comprehend, especially for the passengers.

4. Fixing the broken system and preparing for 2018

Considering Southern in isolation from Gatwick Express and Thameslink is not appropriate, as the independencies and programme of change between these GTR brands in the short term is very significant. So we have looked at all three operations, including the 2018 Thameslink upgrade.

Without doubt the priority is to resolve the current Southern industrial relations issues. This is outside my remit. Recovering from such a bitter dispute will take time for all involved, but I do believe that if the actions in this report are followed, or are already being implemented, then the system can recover fully in stages and deliver a good service by the end of 2018.

4.1 The Plan

Attached as Appendix 2 is a timeline entitled simply “The Plan”. In this I have drawn together the plans of all the participants in the system, challenged them and the timing, and added a few of my own. Most of the contents of The Plan are supported by Department of Transport, Network Rail and Govia Thameslink Railway. Many of these initiatives are already underway, and some are contained in the plan authorised in September, 2016 for NR to spend £20m (Appendix 10). Here I will highlight elements of The Plan that need particular attention, broadly in priority order.

4.1.2 The Big Plan to Maintain the Infrastructure (Dec, 2018) and Revised BML Overnight Timetable (Jan, 2017)

The infrastructure on the Southern network is in a poor and unreliable condition. Along with the

rest of the 2018 Thameslink network the condition of the infrastructure needs to be urgently raised. This is not complicated stuff – it is about rail renewal, switch & crossing renewal, sleeper renewal, ballast renewal / removal of wet beds, drainage improvements, telecoms / signalling cable renewal, axle counter introduction, vegetation, removal of temporary speed restrictions, attention to fencing, structures and earthworks. In recent weeks Network Rail has prioritised the work according to the potential impact on performance of the failure of each asset, by creating the "Galaxy Plan". This enables extra funding to be targeted at improving critical assets and getting the maximum value for the funding. An overall plan of asset management on the full Thameslink 2018 network has been prepared, costing more than £500m over several years. From a review of the emerging work, which has concentrated on the key Thameslink 2018 routes only, I recommend that at least £300m must be spent before the end of 2018 to improve current performance and deliver the new 2018 Thameslink timetable with an acceptable level of performance. This level of maintenance must then be maintained into CP6 from 2019 to continue to improve the asset condition, and reach a steady state where maintenance can settle at a level needed to sustainably support a good level of performance.

If these funds cannot be identified, then I recommend that a decision must be taken by the DfT to reduce the Thameslink 2018 specification to a level that the existing system reliability can support. Such a decision should be taken in January, 2017. If it was decided to do this, there are significant implications for paragraphs 4.1.3, 4.1.4 and 4.1.5 below: less rolling stock, drivers and depot facilities will be needed for Thameslink, and older rolling stock can be withdrawn quicker. But Thameslink will remain at 12 tph – half of what has been envisaged under the Thameslink programme.

Most maintenance can only be undertaken when trains are not running. If no action is taken I doubt it would be possible to do the work proposed above in the next two years. In Appendix 3 entitled "The Overnight Railway", I recommend a revision to the overnight timetable to take immediate effect. This will enable a production line approach to overnight maintenance to begin immediately on the Brighton Main Line. Most overnight passengers remain well served, and the timetable will work in a way that published timings will not regularly be altered, or trains replaced by buses.

In September I found that Network Rail had a vacancy gap of 9.65% - 295 vacancies. This has since reduced to 7%, and will now reduce further to 3%. There has been no plan currently to recruit any additional people to maintain the 2018 railway, with many more train services. There is no funding for the route in CP5 to increase maintenance levels. Subject to funding Network Rail needs to urgently design its package of work for the next two years, assign it to their own teams or contractors, plan the possessions, identify the necessary equipment and materials and start the work. A clearer plan will then emerge of what will be done when, and the expected performance benefits, which in turn will enable a prediction of performance for the May, 2018 timetable (which is still being planned), and what more needs to be done to get to an acceptable performance level. This will be reviewed and led by the Thameslink 2018 Industry Readiness Board, that you have asked me to independently chair.

In addition to the overnight infrastructure maintenance works, I have considered daytime closures. These are very disruptive to passengers. Even when there are less commuters, in the summer holidays, there are still large numbers of travellers to the coast on the Brighton Main Line. Nevertheless I have identified one example where I think a compromise can be made. During Summer, 2017 I recommend a closure for two weeks of the route between Horsham and Three Bridges, with passengers and trains diverted via Dorking, Epsom and Balham. At the same time, with no trains coming from the Horsham direction, I propose closure of two tracks between Three Bridges and Earlswood, closure of Horley, Salfords and Earlswood stations, and a reduction in service. GTR's local service between Horsham and Epsom will need to be reduced to provide paths and crews for diverted Arun Valley trains. These two weeks would allow for an intensive and productive period of infrastructure maintenance, on these sections, that are notable for their poor condition. With the support of DfT, Network Rail and GTR should start planning this

closure at the start of 2017. The dates will need to be chosen to avoid 5th to 28th August, when Waterloo is being rebuilt, as a lot of scarce resources will be committed to that project. However I would caution that two weeks of intensive work like this will not result in the whole system performing better the following week. A sustained improvement in performance will take a continuous programme of initiatives in 2017/8; not just two weeks of intensive infrastructure maintenance on one section of the network.

Network Rail and GTR have recently been developing a programme of "cyclical maintenance", where on a rotating basis a route will close for a weekend or weeknight period of engineering work. This is necessary long term, and allows all infrastructure work to be planned into these periods. An example of this is the Thameslink Core, between Blackfriars and St Pancras, which is likely to close between 0100 and 0800 every Sunday once the major enhancement programme is complete.

4.1.3 Train Fleet Strategy (May, 2017 and July, 2017)

The general fleet cascade plan has changed a lot with the 2018 timetable changes referred to above in 3.2.1, and is currently the subject of discussion between DfT, GTR and LSER. As new Class 700 trains enter service, there is an opportunity to displace other train fleets and this is already well underway, bringing passenger benefits to many passengers in GTR and elsewhere across the UK. The DfT has to decide what the priorities are: there are choices between providing extra passenger capacity and removing older less reliable trains, which add delay to the system and do not meet passengers' expectations. All the necessary facts are available to DfT now, and decisions should be made in January, 2017.

I recommend the priority is to withdraw the few remaining Class 442 units as soon as possible. These have operated on the BML in the peaks and date from the 1980s. Compared to modern rolling stock they are slow to accelerate, slow for passengers to board/alight, and do not have as much passenger capacity as modern rolling stock. These trains are currently not in use with the drivers' strikes / overtime ban, and should not return to the network.

The next choice is whether to remove the 19 Coastway Class 313 3 car units in July, 2017, as proposed by GTR, and replace them with Class 377s. These Class 313s have no toilets, and are third rail only. This would enable an improvement in the passenger experience and further extension of DOO to all these services; Class 313s require conductors on GTR. The alternative is to transfer up to 20 Class 377s to South Eastern (as per their proposal to DfT of 21st December, 2016) to provide additional passenger capacity. Whilst depot capacity exists on South Eastern to accommodate this rolling stock, principally at Grove Park and Victoria Grosvenor sidings, £2m is required to improve facilities at the latter to accommodate more overnight activity, so the decision must take that into account. I recommend the transfer third rail only Class 377/1s to South Eastern, as the dual voltage units are most usefully retained on the GTR network. The Class 377/1s may remain on South Eastern for the rest of their life – they will be thirty years old in 2032. My preference is informed by the following table of passenger satisfaction:

Train operator route	% satisfied or good with "sufficient room for all passengers to sit/stand"
GTR Gatwick Express	75
GTR Thameslink: South	65
SWT Longer distance	65
GTR Thameslink: North	58
South Eastern: Mainline	54
GTR Great Northern	52
GTR Southern: Sussex Coast	52

Source: National Passenger Survey, Spring, 2016

As can be seen "South Eastern: Mainline" is near the bottom of the table, and very much in need

of extra capacity before the award of a new franchise starting in December, 2018. The Class 377s would go into service on the Kent Main Line, where their 100mph capability will improve performance over the 75mph Class 465s, which will be cascaded to Metro routes. Class 377s have a few more seats than Class 465, depending on sub class, and South Eastern has the ability to run many more peak 12 car services.

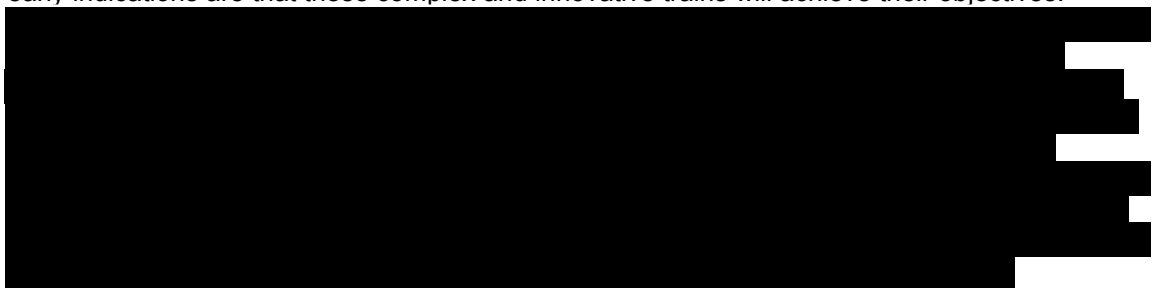
In Appendix 4 I have recommended the transfer of the East Croydon – Milton Keynes service to London Overground / TfL. This service is currently suspended as a result of the drivers' strikes / overtime ban. This service requires approximately 36 Class 377 vehicles. London Overground / TfL should be offered surplus dual voltage Class 319s or 313s for this service, which they will probably re-plan around their West London services, and progressively resume the operation as staffing permits. As far as GTR is concerned these services should be seen as permanently withdrawn, and the Class 377 vehicles redeployed into the above options.

The strategy for GTR should be to reduce the number of fleets. South of London it should be possible to get to an all Class 171, 377, 387, 455 and 700 fleet, by late 2018, providing a consistently high standard of passenger accommodation, good performance characteristics and flexible deployment.

In Appendix 5 I have recommended the electrification of the Uckfield route and the transfer of the Ashford – Hastings route to the next South Eastern franchise. This removes the Class 171 diesel fleet from Selhurst by 2021, and redeployment elsewhere in the UK as Class 170s to provide additional capacity and achieve PRM compliance. I anticipate that it can be replaced by a number of options otherwise surplus electric rolling stock, such as returning Class 377s from South Eastern after the next franchise competition or converted Class 379s from Anglia.

Further on in The Plan (Appendix 2) I have recommended replacement of the Southern Metro Class 455 fleet by the next franchisee in 2023, when they will be 40 years old, and refurbishment of their depots.

Finally I have observed the introduction into service of the Class 700 fleet, and met with representatives of Siemens and GTR to discuss this. After a late start, and a number of technical and driver training issues the trains are now being accepted into service at the expected rate, and early indications are that these complex and innovative trains will achieve their objectives.



4.1.4 Train Fleet Depot Strategy (May, 2018)

The way in which the train fleet has expanded in recent years has resulted in a shortage of stabling facilities. New facilities have been located away from train crew depots (e.g. Hove from Brighton) and are less efficient, involving driver time in taxis. Siemens new depot at Three Bridges is now the main centre for the Thameslink fleet, and overall the depot capacity on Southern is just about sufficient from what I have seen, although it is inflexible and inefficient.

However there are some critical depot issues relating to the new Thameslink 2018 service, which are as follows:

Cambridge – the facility is currently unsuitable for 12 car fixed formation trains. The current trains uncouple on arrival to be accommodated. The facility owner, Greater Anglia, has recently been awarded a new franchise which requires new trains to also be stabled at this location. I recommend that facilities for the Thameslink Class 700s in Cambridge are urgently identified. This responsibility rests with the DfT's Thameslink Programme Board. If a new facility is to be created, GTR should lead this project on behalf of the Board.

Bedford – the facility is currently unsuitable for 12 car fixed formation trains, which block the depot entrance. GTR is obtaining costs for modifying the layout. I recommend that progress on this is made urgently. This responsibility rests with the DfT's Thameslink Programme Board. GTR should continue to lead this project on behalf of the Board.

North Kent – the original plan was to increase stabling facilities at Slade Green, but this has now been established to cost £72m and too expensive. An alternative is urgently needed. South Eastern have suggested several complicated options involving Gillingham, with trains being serviced at the depot and later moved to a remote stabling siding. I recommend a different approach: I think a dedicated GTR Thameslink stabling facility should be built at Hoo Junction, near Gravesend. There is a large former freight yard there, on both sides of the railway, which now stables engineering trains for Network Rail. This should be rationalised and space created for stabling all the North Kent Thameslink Class 700s, in sidings with newly created servicing facilities. Progress on this is urgently needed. This responsibility rests with the DfT's Thameslink Programme Board. GTR should lead this project on behalf of the Board.

Ashford – the original plan was to stable Thameslink Class 700s in the Hitachi maintenance depot. This is full, and an alternative option is needed. South Eastern have engaged with DB Cargo, the owners of Dollands Moor, who would be willing to accommodate up to 70 vehicles in the short term, with a capital expenditure of £2m. An alternative option is to acquire part of the Ashford Chart Leacon site, which is still rail connected but about to be redeveloped. I recommend that the Ashford option would be a better long term option, and have lower empty movement costs. The developer has agreed with South Eastern to hold discussions in January 2017, but if nothing can be agreed they will start work on redevelopment. Progress on this is urgently needed. This responsibility rests with the DfT's Thameslink Programme Board. GTR should lead this project on behalf of the Board.

All of the above issues need to be finalised before the driver recruitment plans can be commenced, as the driver recruitment strategy must be decided around the stabling locations of the trains, and driver depot facilities, including parking, must be included in the scheme implementation.

Finally if all the BML upgrades currently in the planning stages are implemented, and it can be proven that the overall system can accommodate more services, then more rolling stock will be required from 2028. I don't believe such rolling stock can be accommodated at any existing depot, and a new facility will be required. I recommend that a suitable location be identified by Network Rail, in discussion with GTR, at the same time as the BML upgrades are developed, and it must be evidenced that the location is suitable to support the overall system in future years. Locations that should be considered for this purpose are West Worthing, Newhaven Marine (see below), and Norwood Yard, and these and other possible locations should be safeguarded for future use.

4.1.5 Driver Depot & Headcount Strategy (April, 2018)

I have reviewed the emerging GTR plans to recruit drivers, and noted that 260 drivers are now in various stages of training. The strategy for Thameslink 2018 is to close the drivers' depot at Blackfriars and relocate the drivers, creating a network of medium sized depots at the train

stabling locations at the ends of each route. For example a typical drivers shift will be from Cambridge to Brighton, break, and return from Brighton to Cambridge. I think this is the right approach from a performance, service recovery and efficiency point of view, and more robust than changing drivers several times on each journey, especially at Blackfriars. It is also better from an industrial relations point of view to avoid concentrating most drivers in huge depots. With hindsight I do not support BR's "large depot" policy, which saw many small depots concentrated into unpopular single locations in the 1980s in the name of efficiency (e.g. Barnham). Any nominal gain in efficiency, such as a small overall headcount reduction from less spares, has been lost in difficult negotiations about how these large depots are run, dominated by the priorities of a small number of representatives.

I recommend that the strategy can be further developed: for example four Class 700s are planned to be stabled at Littlehampton overnight, with drivers from Three Bridges by taxi. I believe the drivers for these services should be based at Littlehampton, and about 13 recruited there instead of Three Bridges.

A strategic decision is required on whether to recruit on the basis of no overtime being worked, with sufficient headcount to support diversionary route knowledge, rapid service recovery after incidents, and how to treat Sundays. I understand that at least one losing bidder for the TSGN franchise was told in feedback that they had too many drivers in their bid. I have not seen the evidence, but it may have been the case that the bidder with the fewest drivers won, and the process failed to accurately evaluate the risks of this. I am aware that RDG and DfT are working together to increase the industry's resilience in areas such as driver requirement forecasting, calculation of establishments, recruitment, training and franchise bid evaluation. Whilst hundreds of drivers have been recruited and are in training, this is an area where supply is not consistently matching demand.

The Thameslink driver recruitment strategy depends on the finalised timetable, which depends on the Fleet Depot Strategy outlined in 4.1.4.. Recruitment and training must accelerate in January, 2017 as the timetable is finalised. Negotiation with the Thameslink / GN drivers' council (ASLE&F) is underway and necessary to facilitate the new depots, working practices, recruitment and training. I recommend that agreement between DfT and GTR concerning the proposed manpower plan is urgently reached.

On Southern the strategy is currently to recruit drivers at the existing depots. I recommend that other options are explored, to introduce a number of smaller depots, and recruit there instead. For example there is space to stable and service up to about 20 vehicles in the mothballed Newhaven Marine station, as an alternative to squeezing everything into Brighton, and recruiting drivers there. Using other examples as a guide, I would expect about £2m to be needed to build the stabling facilities and a small traincrew depot. It would make sense from a timetabling point of view, providing trains for the start of service and morning peak from Newhaven, Seaford and Lewes, rather than running them empty from Brighton.

In Appendix 5 I have recommended the electrification of the Uckfield line, with stabling facilities for up to 48 vehicles at Crowborough, with a traincrew depot there, rather than recruiting at Selhurst / Norwood. This also makes sense from a timetabling point of view, providing four twelve car sets for the morning peak from Uckfield to London Bridge, rather than running them empty from Selhurst.

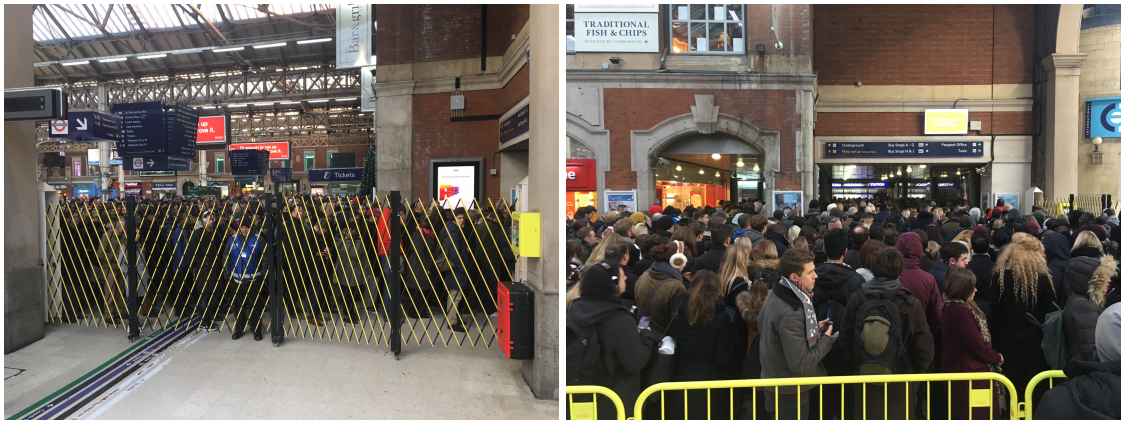
I have heard at the DfT that there is inadequate visibility of driver recruitment going on. I recommend that GTR provide this information regularly, and that this is circulated amongst all those in DfT with an interest. The information should be seen in the context of the wider industry driver recruitment and training programme.

4.2 The Plan: Conclusion

If the five subjects above, paragraphs 4.1.2-4.1.5, are immediately addressed they have the capacity to rapidly improve Southern performance, and make or break the Thameslink 2018 project. The other subjects highlighted are either funded and in development, or will be part of CP6 plans. In future they will be monitored and reviewed by the Thameslink 2018 Industry Readiness Board (see paragraph 8 and Appendix 8).

5. Stations – Providing for the growing passenger numbers

The Plan outlines what is in hand and being developed for stations, over the next 15 years. The growth in train services and passenger volume has exceeded the capacity at certain stations. The most extreme cases of this in the Plan are Victoria (2020), Gatwick Airport (2021), East Croydon (2024-2028) and Clapham Junction (2031). These schemes have long lead and development times, and decisions are needed soon in each case, as outlined. Each scheme is dependent on other factors: Victoria is dependent on a major third party property development, East Croydon on the creation of alternative capacity while the work is undertaken and Gatwick Airport is dependent on the relationship with the airport. Victoria's scheme has been repeatedly deferred since CP3, and is now very urgent. This is reflected in the lowest National Passenger Satisfaction survey result, alongside Euston, of all the London termini.



Queuing on the Network Rail concourse to access the London Underground station, in the morning peak.

I have reviewed each scheme in The Plan with the aim of having no new disruption for the "current generation of commuters". This has led to some redesign and new approaches, and I am now satisfied with most of the proposals and recommend them. However the outstanding issues related to stations are as follows:

5.1 Gatwick Airport

The scheme to provide additional concourse and platform capacity at Gatwick Airport has £120.5m assigned to it in CP5, with a £30m contribution from Gatwick Airport Limited ("GAL"). Since the original concept was developed, the specification and costs have risen significantly, but not been matched by the budget, which has remained fixed. The outputs now fall far short of GAL's expectations and ambitions, and do not meet Network Rail's own Station Capacity Planning Guidance (2015).

There are costs associated with this scheme that I think can be avoided. The main one is the concern that the platforms are too narrow to accommodate current passenger numbers. I believe this is partly a function of the ticket strategy, which causes overcrowding on the cheapest trains, and have made recommendations for this in Appendix 6, "Commercial Strategy". By providing a

larger concourse with more platform access, and sheltered 12 coach platforms, I believe platform overcrowding can be manageable for the foreseeable future. This has been the successful approach with Birmingham New Street. As with Birmingham New Street widening the platforms would be extremely disruptive to all BML passengers, and I have not seen acceptable plans to mitigate this disruption.

However I think it likely that the rail industry and government, and multiple demands on its funding, will never be able to meet the expectations of GAL. Their objectives are focused on the airport's success, and to remain competitive they will regularly invest in the airport and its facilities where they have a business case and the funds to do so. The railway industry and government will face regular demands for similar investment in years to come.

I have an alternative recommendation to resolve both the short term and long term funding issues. I think Network Rail should sell Gatwick Airport station's freehold to GAL, and its owners. There are precedents of third parties owning UK railway stations – Milton Keynes Central, Warwick Parkway, St Pancras International and Heathrow Central. I see no reason why GAL should not successfully own and manage the station, as their objectives would be largely aligned with those of the railway industry – safety, security, passenger growth, good performance and passenger satisfaction. I see them owning and operating everything; they can choose to contract out train dispatch and ticket sales if they want to, but it should be up to them. The current GTR staff at the station would transfer under TUPE to GAL unless GAL wanted GTR to provide these activities under contract for them. As the new owner GAL would receive all the income and costs that GTR currently receive, such as regulated station access income, retail commission and station maintenance. Rail passengers already use GAL's car parks, and GAL receives the revenue.

I believe it should be possible for Network Rail to establish a "fair value" for the station under their current asset sales programme, including the air rights over the platforms. Consideration should also be given to the £120.5m contribution to do an upgrade. Once sold GAL would be responsible for all future development, in the same way as any third party developer above and around a railway station. They would be free to integrate the station and the station staff fully into the airport, in effect expanding the airport over the entire platform area, and using the area in whatever way gives them the best rate of return on their investment, in conjunction with other investments in the airport. GAL are used to doing property development in close proximity to a busy operational airport, so why should doing this above an operational railway be different?

I recommend this course of action, in place of the current discussions, which have become deadlocked over funding. I believe the Network Rail Property team, who are undertaking the asset sales programme, could take on this task. Gatwick Airport is not currently a managed station, so has not to date been considered in the asset sales programme.

5.2 Station shelters

When the decisions were taken to lengthen most services to 12 cars, and the trains were ordered, one element of the overall system was missed: the provision of shelters at stations. It is noticeable how, on wet days, peak passengers board together from places of shelter, causing overcrowding at that point and sub threshold delays at numerous stations. Most stations, whether large or small, do not have shelter along the full length of the platform, or a canopy. Even Gatwick Airport, as can be seen in the picture above, is an example of this: fine on the sunny day in the picture, but inadequate in the rain.

Working with the GTR team I have reviewed the stations on the Brighton Main Line, where 12 car trains are increasingly the normal train, and where sub threshold delay is an issue. Additional shelters are needed at seven stations; Hassocks, Burgess Hill, Balcombe, Three Bridges, Merstham, Coulsdon South and Wivelsfield. Approximately 12 shelters will cost £150,000 for GTR to design, buy and install. Further studies are required to examine stations on other 12 car routes to take similar steps. I recommend that a budget of about £400,000 is made available in 2017/8. Installation of shelters is subject to the platform being sufficiently wide. At Gatwick Airport some of the platforms are too narrow and the only solution is to roof over the whole station, which can create other opportunities as described above.

5.3 London Major Station Leadership

I have visited Victoria and London Bridge and met the managers. Each station is run by three teams; one from each of GTR, South Eastern and Network Rail, and each has a station manager. Whilst the teams carry out their responsibilities effectively, I think they could achieve more under a single leader. Following discussions with the three companies, it has been decided to recruit a manager to lead the three London Bridge teams, and probably extend this philosophy to the other terminals, including Victoria, later. I recommend this and believe that passengers will notice the difference of more effective rail industry leadership when they use these stations in future. The new post will be accountable to the GTR and South Eastern Alliance Boards for the delivery of their objectives, set jointly by the three companies.

It should be noted that at London Bridge the three teams are co-located in new accommodation, but at Victoria they are dispersed around the station close to their staff and responsibilities. It is hoped that the Victoria station projects in 2018 and 2020 will allow them to be located together in a mutually optimal location in the centre of the station. In the meantime I note that at Victoria the Duty Managers of NR, GTR, South Eastern and London Underground now meet up every day at before the evening peak to discuss shared issues and objectives, and I welcome this.

5.4 Departing Trains on Time

In my visits to stations I have observed the dispatch of trains, particularly from Victoria and London Bridge. The process works reasonably well, but even with green signals I have observed that trains often leave 20-30 seconds late. Cumulatively across hundreds of trains this builds up to many more significant delays. There is more to do to achieve real “Right Time Railway” departures. The first step is further research, and a manager is now doing a “lean review” of the process, which engages with the staff doing the dispatch, signallers and drivers at Victoria, London Bridge and Brighton. A more thorough dispatch process will be safer for all involved. The sort of thing I expect this to resolve is the fact that the clocks on trains and stations often tell the time slightly differently, and the process of pressing “train ready to start”, “close doors” and “right away” button can be better with new equipment. New equipment will also enable staff to be more flexible and responsive to passengers on platforms. Dispatch team involvement in the platform planning process will result in better platform utilisation, e.g. for narrow platforms.

I recommend this and am confident this will improve the punctual departure of trains from these stations. If every train left these three stations 20 seconds earlier, as soon as they have a signal

to proceed, there will be a material improvement in performance and a reduction in "sub threshold" delay.

5.5 Suicide Prevention

The industry's efforts to prevent suicide on the railway are well documented elsewhere, and do not need to be repeated here. Southern has in previous years led the way for the industry, for example by the installation of mid-platform gates to limit access to little used fast line platforms. Suicide on the railway is traumatic for all involved, including the family of the deceased. But it also causes drivers to be traumatised and off sick, huge delay and trains to be taken out of traffic for investigation, cleaning and repairs.

Whilst this work has continued in the GTR franchise, it has not been effective recently in reducing the number, which stands at about 40 per annum across the GTR network. There are dedicated resources for this challenge in GTR, NR, the Samaritans and BTP, but more determined local joint leadership, is needed, along with some funding under the "Big Plan".

I am pleased to report that GTR now has an executive sponsor providing the necessary leadership and a fresh suicide reduction strategy will be developed over the next three months.

New technology such as "intelligent cameras" is on trial at locations with a history of suicide, and I want to see implementation of both tried and tested prevention measures, and innovative actions.

I recommend that GTR and NR to jointly implement their strategy as quickly as possible, working closely with BTP and the Samaritans.

6. Delivering the Timetable

We have reviewed the current timetable, and we have observed it in operation at stations, from train cabs and in signalling centres and control rooms over four months.

6.1 Does the current timetable work ?

It is theoretically possible to operate this timetable reliably, but only if every other component in the system is operating at the top of its game. For most of the day services I have observed can achieve their "sectional running times" and "dwell times". Newer rolling stock, such as the Class 700, is capable of beating both the typical off peak sectional running times and dwell times. Only in the peak hours does overcrowding cause planned dwell times to be exceeded, and only at a small proportion of stations. At those stations I have prompted "lean train dispatch reviews" to look at the dispatch equipment, processes and staffing levels, in discussion with the staff. This work is referred to in para 5.4 and The Plan (Appendix 2), and will conclude early in 2017.

The 2018 timetable is being designed to increase dwell times where these are regularly exceeded, wherever possible unless this would result in a reduction in capacity – i.e. a service must be withdrawn in the peak to enable other services to have longer dwell times. In the peak hours passenger capacity must be the most important element in the system, even if it causes the timetable to regularly fail. However then the timetable must be designed so that within an hour the delayed service can recover to run on time, rather than remaining late for hours to come.

For most of the time I have observed there has been unusual sickness levels, official and unofficial industrial action by train crew, which has been enough to consistently cause the timetable to fail, delivering PPM of 60-70%. At other times I can see that infrastructure failures have had a similar effect.

The method of train crew diagramming, which is highly efficient, and was probably a factor in Govia winning the franchise, is typical of that developed using the TRACSIS diagramming

software by many franchise bidders. On a typical journey from the Sussex Coast to London, a train might change drivers three times. On arrival in London the driver will split the train, and then take another set on another service, while the conductor will remain with the first train, and go elsewhere. Trains split and join, sometimes into three portions, and almost every station on GTR has a through service to London as a result. It is all theoretically possible, and reduces the necessary driver hours. But when anything goes wrong, delivering service recovery is very slow: the overall system takes too long to work properly again, as train crew and trains are all in the wrong place. TRACSIS can be programmed to plan longer crew turn rounds, less intermediate driver changes and other more robust factors, but all of this increases drivers hours and costs. In a franchise competition, with only costs to consider (the TSGN franchise proposition was to take no revenue risk / opportunity), the approach to crew diagramming could win or lose a franchise bid. There is no doubt, in my opinion, that use of diagramming software in this way has reduced the robustness of the overall system, increasing "delay per incident". So if there is a static level of infrastructure incidents, the delay minutes arising will increase, and all be attributed to Network Rail as the cause. This illustrates the fragility of the Southern system, and the way in which blame is inappropriately determined. Most delayed trains are delayed by several causes, but only the one with the largest share of delay minutes is used as the explanation to passengers.

At the same time 45 face-to-face train crew supervisors have been taken away, and replaced with a team of 21 controllers in Three Bridges ROC, managing train crew by phone, which was part of Govia's bid plan. Many experienced train crew supervisors left taking their knowledge with them. The new team at Three Bridges do their best, but it is a difficult task without industrial action, and nearly impossible with industrial action. GTR will now recruit an additional 21 additional posts, and NR an additional 10, and these people will be appointed and trained by March, 2017. The Control Teams will be led by a single shift manager, drawn from applicants from both GTR and NR. These changes will learn from recent experience, but also best practice from London Underground and RER. These are welcome decisions, but I recommend that lessons are learnt by GTR when considering transferring the responsibilities of Kings Cross (GN) Control to Three Bridges ROC, which I consider to be of higher risk than the changes made to date.

The signallers on the Southern area are based in some large centres, such as Victoria and Three Bridges, the new Three Bridges ROC, and smaller centres such as Lancing and Oxted. Of these signalling centres only the new Three Bridges ROC (controlling London Bridge – Norwood Jn) has any kind of automation, such as Automatic Route Setting, to assist the signallers with their workload. During any kind of disruption this people element of the system is only able to look a few minutes and a few miles into the future when making signalling decisions. They have no decision support tool, apart from a paper simplifier of the timetable plan, and perhaps a "control centre for the future" ("CCF") screen showing a large area, if they have a chance to study it. Many delays are attributed to "wrong regulation" by signallers, but in many cases this is just hindsight judging the signaller's decision as wrong: at the time they thought they were making the best on the spot decision, given the circumstances they could see all around them, and a choice of decisions, all of which were "wrong". In recent weeks Network Rail have appointed additional supervisors into Three Bridges signalling centre to support signallers with these decisions, and are exploring the possibility of short term system enhancements, such as Automatic Route Setting ("ARS"). The medium term strategy, shown on The Plan, is Traffic Management ("TM"), which will be an advisory system for most of the network, predicting the consequences of a range of signaller's choices and recommending the best option. This system will be only as good as the objectives programmed into the system, and the industry is yet to be convinced that the objectives will appropriately represent the diverse priorities of different operators. For example TM will not be programmed with the rolling stock and crew workings, so it will not know that one train approaching Victoria five minutes late, with a five minute turn round, should have priority over a train running on time with a twenty minute turn round. TM is to operate in shadow running first, in order to build up experience of the objectives and logic. As shown in The Plan (Appendix 2) in 2018 TM will directly instruct ATO in the Thameslink core, effectively driving the train. I recommend that Network Rail and Hitachi, the TM supplier, engage with the operators as soon as possible to develop the logic that TM uses to satisfy everyone as far as possible. On today's busy

railway we desperately need TM to work well for the overall success of the system: there is no alternative option.

In our observations in signalling centres we have observed hundreds of decisions by signallers, which they have made with a high degree of professionalism and care. In every case they have made the “least worst decision”, and been willing to explain it. In high pressure signalling centres such as these, where the signallers do the best they can with the tools they are given, I recommend that Network Rail has to find a less negative description of “wrong regulation”.

6.2 The impact of strikes, overtime bans and high levels of short notice sickness

The industrial action in late December has resulted in a different timetable and crew plan every day, and every available manager with the appropriate skills has been deployed to plan each day’s service. The much-reduced timetable is being crewed in a simpler fashion – mostly end to end – and planned with fewer trains splitting and joining. Despite everyone’s best efforts the end result to date is poor, with late running and short notice cancellations across the network. The unpredictability of driver and conductor availability is the primary cause of this. The service has been reduced by more than the reduction in crew availability, because if this is not done locations like Victoria, Brighton and London Bridge simply fill up with parked trains, and the system grinds to a halt. The plan has had to be one where each train set has a driver diagrammed to it, and a conductor where necessary, and their availability to work is considered highly likely. Nevertheless “short notice sickness” has made this task difficult across many traincrew groups for most of 2016.

The work on the 2018 timetable, led by GTR, is thorough, and is aimed at resolving many performance issues. A simpler timetable and crew working is at the heart of it; albeit somewhat less “efficient” and requiring more crew. As this moves forward GTR are looking at what elements of this future timetable can be introduced earlier to improve performance, and I support this approach. Whilst train crew may be less “efficient”, the overall system will benefit and be more “efficient”.

6.3 Some little used stations have too many services

The franchise obligations for the GTR franchise are those inherited from the three previous competing franchises. Some elements of these obligations have not been reviewed properly since privatisation, and service levels are far above current demand. On a system that is so dependent on every aspect working perfectly, calling at stations with very few passengers is one more thing that causes the system to fail. I have studied the ORR’s station usage, and identified seven stations that appear to have an excessively frequent off peak service. These are Newhaven Harbour, Normans Bay, Warnham, Southease, Ashurst, Bishopstone and Amberley. I am not recommending these stations are closed, or that the peak services are reduced, but I do think that in each case the off peak service should be reduced. Each train that doesn’t stop can potentially recover 2-3 minutes of late running, and across many services this will collectively improve the chances of punctual running in the evening peak.

Newhaven Harbour is an example of this. Most trains stop there so it has 2 trains per hour each direction all day. But hardly anyone appears to use it, from my observation, and the platform is full of weeds. The ferry connection is now advertised as a 3 minute walk from Newhaven Town station. According to ORR statistics there were 50,878 journeys to/from Newhaven Harbour in 2014/2015, of which 11,507 were season ticket journeys. The ORR statistics have a note that says "strong growth on Newhaven branch - potentially tourism related", but I think the numbers are caused by the Annual Season between Town and Harbour costing just £164, the equal cheapest I could find (equal with Pevensey Bay - Pevensey & Westham and Lichfield Trent Valley – Lichfield City), which entitles the holder to a Network Gold Card with lots of useful benefits. I don’t think these ticket holders actually ever use Newhaven Harbour station. Newhaven Harbour is on the Brighton - Seaford branch, which is part single track, waits for connections at Lewes and

has seen significant passenger volume growth from other stations. To provide the current half hourly frequency tight turn rounds are needed at both ends of the line. To improve performance, and the ability to recover from late running, the stopping pattern needs to be reviewed. I recommend reducing the service between 1000 and 1530, Monday to Friday, and all day Saturday and Sunday, to one train per hour in each direction.

The other six stations all have too many off peak stops in my view, and should all be reduced in a similar manner; in most cases from hourly to once every two hours.

This requires the DfT to review the demand at these stations jointly with GTR and change GTR's contractual obligations. I recommend that this should be progressed immediately as a derogation from these obligations, and detailed proposals included in the next round of 2018 timetable consultation.

6.4 Too many off peak services

Generally I do believe there are too many lightly loaded off peak services on the GTR network, and this means the system is unable to recover quickly from any incident. The system should be robust enough to mean that the service can recover fully from any concluded incident before 1400, to run a full and punctual service from 1600 onwards. This is impossible with the current timetable. It is clear to me that the three previously competing operators deliberately filled up every off peak path, to stop the other operators running additional services and receiving a larger income allocation through ORCATS. I can see no sign of any rationalisation of the contractual obligations occurring prior to the letting of the current franchise, so all the competing services were amalgamated into the new franchise obligations.

I have reviewed in detail the overnight service with the GTR and NR teams, and proposed a new service in the appendix entitled "The Overnight Railway" (Appendix 3).

I have not been able to review in a similar level of detail the daytime off peak service in the time available to me. Whilst most managers and staff directly involved accept there are too many trains, there is no consensus about what to do about it.

The timetable is based on the assumption that almost every station on the GTR network must have regular direct trains to London, at all times of the day. In addition to provide 12 car trains on the busiest sections, principally Horsham / Haywards Heath – London Bridge / Victoria, trains from the "country" couple up at places like Horsham, Haywards Heath and Redhill. This is fine in theory, but results in a complex timetable and plan, with multiple potential failure points. I have noted that stakeholders on each route are unwilling to lose any through services to London, irrespective of the benefits to the overall system. There is no easy short term solution.

For the immediate future I recommend that there needs to be a "firebreak" in the current timetable between 1200 and 1400 that enables the system to recover fully for the evening peak. This should mean that every train has at least a 30 minute break in its operation, and is parked, even if this means every route having at least one service missing from its hourly clockface pattern. For example the local service between Selhurst and Victoria is six trains per hour, throughout the off peak. From what I've seen this not necessary to meet demand, and between 1200 and 1400 this should be reduced to four trains an hour, and the trains parked. During this period there should also be a reduction in attachments and detachments, with some passengers having to change trains as a result. This should be the period when early shift traincrew generally hand over to late shift, so some trains may return empty to depots for this to take place. More work is required by GTR on this by if it is planned to reintroduce the full timetable following the current industrial action.

A different approach should be taken to weekend services, when there are no peak hours to prioritise. The service should be revised as soon as possible around the following principles, so that the all day delivery of the service improves:

- Maximum length trains on all routes
- Reduce splitting and joining by running through services calling at more stations, but less frequently, e.g. Arun Valley and Redhill
- Reduce the frequency of Southern Metro services from six trains an hour to four trains an hour early in the morning and late in the evening

The objective of the firebreak, other changes and improved infrastructure is to get live PPM to 90% at 0630 and 1530, just before the morning and evening peaks on weekdays, when industrial action finishes. Given the compromise between capacity and right time punctuality in the peaks, it will not be possible to achieve 90% PPM on GTR in 2017 or 2018, but if performance was much better at 0630 and 1530 then peak performance would be materially better than it is today.

The work on the 2018 timetable aims to build a more robust timetable, with greater recovery ability across the whole system. This work is essential to its success. It may be possible to introduce elements of the new timetable earlier. It may still be necessary to have a "firebreak" in 2018, and the Thameslink 2018 Industry Readiness Board will need to review this subject during 2017. There is already, in effect, a "firebreak" in the 2018 plan, because the capacity in the St Pancras – Blackfriars core will provide is 30 trains per hour with ATO, where the maximum number of timetabled services will be 24 trains per hour, and that only for two hours in each of the morning and evening peaks.

There is a risk that if a "firebreak" is created that an Open Access Operator will apply to run in the vacated paths, which would defeat the whole purpose of having a gap in the service. As System Operator I recommend that Network Rail should have greater and more effective powers to protect "firebreaks" and other robust timetable features, such as platform capacity, in the interests of protecting the overall existing system integrity.

7. Objectives, incentives and performance metrics

When I started this project, I quickly realised that all the NR and GTR objectives and performance metrics are concentrated on "all day" performance, with no priority given to the peaks. The only exceptions are that GTR's Short Form obligations are more demanding in the peak, and Schedule 8 penalties are weighted to reflect busy trains, but largely invisible to managers and staff.

To me the primary purpose of most of the GTR network is to carry commuters to work / school / college, mostly in London, but also in Brighton and other towns and cities. I understand that 10% of trains carry 35% of all passengers.

GTR and NR have now introduced a procedure to prioritise the peaks, as referred to in The Plan (appendix 2). There are phone conferences between key people, led by the Three Bridges ROC, before each peak. The risks are discussed, and mitigations are agreed to minimise the impact to peak services. This is a good start, and I believe it has had a positive effect up to the start of the drivers' industrial action.

But this is not enough. GTR and NR should have the same objectives in respect of performance, and they should be working with the same metrics and consistent incentives. This sounds obvious, but it is not the case. At a high level the ORR sets NR's targets for each control period and DfT sets GTR's targets for the franchise term, and they are different. Neither adequately reflects the importance of the London and Brighton commuter peaks, either to the passenger or wider society and the economy. The rail industry is focussed too much on "train punctuality at destination", and not on "passenger punctuality on their journey".

To explore this further and propose alternatives I engaged LEK Consulting. Their team have worked with me throughout the project, and have spoken to a large number of industry managers from all the key organisations, front line staff, signallers, control centre managers and passengers. They have reviewed the emerging plans for “Delay Repay”, and considered how the industry’s objectives, incentives and metrics should connect directly with passengers. They have reviewed a large amount of data and presented their emerging ideas to our Project Board.

They have established that the existing objectives do not influence the way the front line staff run the railway on a day-to-day basis. The staff run the railway as they think best, which normally concentrates on providing the best possible service to as many passengers as possible. Whilst on one level I think this is good news, one does wonder what more could be achieved with more effective, shared and widely understood objectives.

Finally they have worked on the most difficult question – “how do we get from where we are now to where we want to be?” Apart from the contractual challenges of change, changes to financial flows and risks must be considered. A new approach should not cost the taxpayer or passenger any more – any available new funds should go directly to improving the passenger experience. Only if performance improves, more passenger revenue is earned, and satisfaction rises, should a small proportion of the resulting new revenue be used as an incentive for the companies involved and their staff.

Their final report is attached as Appendix 7, and I recommend it to government and the industry. Implementation will not be easy, but change must happen.

8. Thameslink 2018 Industry Governance

The current governance of the 2018 Thameslink Programme is described by the following diagram:

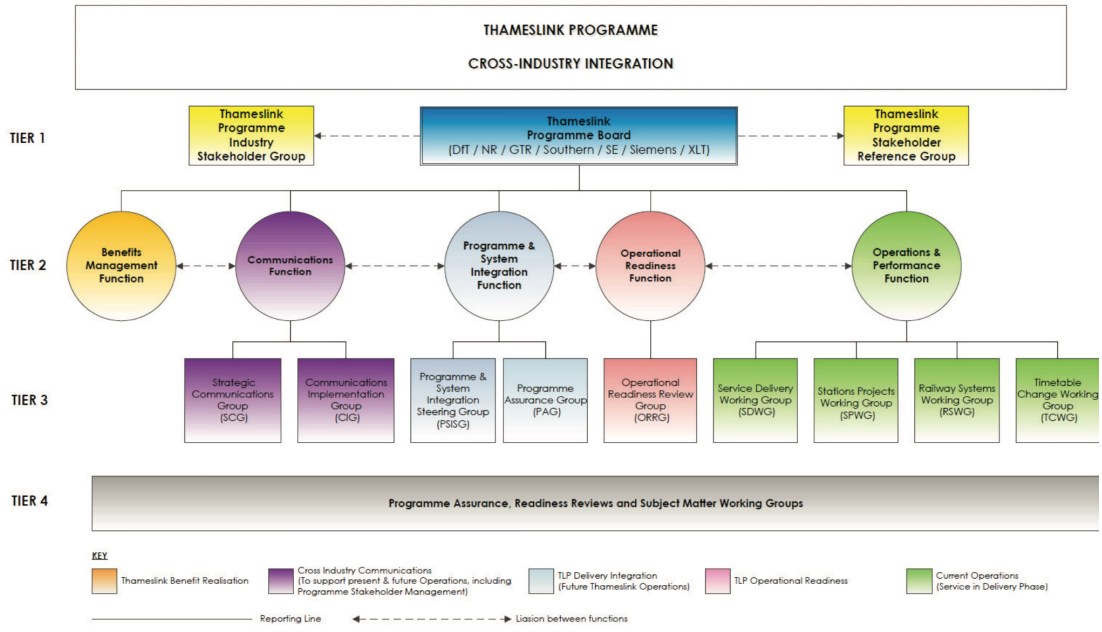


Figure 3: Cross-Industry Delivery & Integration Governance Structure

I have attended most of the regular meetings referred to above, observed the discussions and reviewed the process with the key people. The DfT team who chair the meetings do a thorough job, ensuring that there is good attendance, everything necessary is discussed and where possible decisions are made. There is a tendency for the industry partners to pass many of the problems to DfT at these meetings, often without any recommendations, and then complain about decisions that the DfT does make. From the partners' viewpoint, DfT is seen as taking a long time to make decisions.

The solution to this is for the industry to make more recommendations, and for the DfT to welcome and trust these recommendations more actively; accelerating the decision-making processes in both the franchise management and major projects teams.

As Thameslink moves from a procurement and construction project to an operating proposition, this governance structure is being reviewed. I have recommended to DfT the combining of the red and green boxes under a "Thameslink 2018 Industry Readiness Board", and involving several other industry partners currently outside this process, but very involved, such as Virgin Trains East Coast. This recommendation has been accepted, and you have asked me to independently chair this Board. Nick Brown of GTR and John Halsall of NR have written a joint letter to all expected participants, which is attached as Appendix 8. The Board will start meeting in January, and will allow the Alliance Board to concentrate on the short-term challenges that GTR faces.

The Thameslink 2018 Industry Readiness Board will be supported by an Independent Assessment Panel. I have met with MTR / Crossrail, and the chair of the Crossrail Independent Assessment Panel, Chris Green, and we have agreed that this is best practice that Thameslink should adopt, in part to share best practice between Thameslink and Crossrail, as both prepare for 2018 with many similar and shared challenges, and an interchange at Farringdon. Chris Green has agreed to establish and chair a small part time expert team as a Thameslink Independent Assurance Panel, as described in the letter in the appendix, and it will begin work in January. This team will complement and work closely with DfT's Thameslink Systems Integration team, which is tasked by DfT to provide assurance on the interface between the NR infrastructure works contract outputs, Siemens trains delivery contract outputs and the GTR franchise obligation delivery.

9. The Future of the GTR Franchise

I have considered what further steps are needed to create a more effectively integrated approach to the management and performance of the Southern rail network from across all of the industry partners involved. In a separate paper, Appendix 9, I recommended the changes I thought needed to be made to GTR's current franchise agreement, within what I believe to be your authority under the terms of that agreement. The following comments are made from my experience of 20 years of working with franchise agreements as an operator, and I have neither sought nor obtained legal advice to support my views.

Any alternative approach, including a "do nothing" option or change of franchise operator, should be assessed against whether it is likely to resolve the current industrial relations issues, will increase the risk to improving current performance and will continue to deliver the currently critical path to the 2018 Thameslink Upgrade.

In the event that there is a default of the franchise agreement, you may have an option to terminate the franchise agreement. If this option is exercised your duties are to ensure continuity of rail services under Section 30 of the 1993 Railways Act. The DfT has appointed a partnership comprising Arup, SNC-Lavalin Transport Advisory (previously known as Interfleet) and EY to provide services to support you in connection with these duties.

Section 30 has been used twice before, in respect of Connex South Eastern and National Express East Coast. In both cases the operator of last resort stepped in to take control of a

franchise that was in a "steady state", and ran the service in a "steady state" until a new private sector operator could be appointed. I believe both operations are seen in hindsight to have cost Substantially more under these arrangements than the equivalent private sector operations, but they did keep the trains running and achieved some improvements in uncertain circumstances.

The Govia Thameslink Railway franchise is not in a steady state. Several major change programmes are simultaneously underway: introduction of DOO, introduction of three new train fleets cascade of older fleet types, the amalgamation of three former competing entities into a single operator and the enhancement of Thameslink services in 2018. These major changes are interdependent, complex and dependent on on-going negotiations with many parties, including employees.

In the event that you exercise your option to terminate the franchise contract I believe there will be a hiatus on all of these change programs. The current operator would immediately stop making commitments, spending money on future projects (including driver training and recruitment) and would lose any authority it has to negotiate. Even optimistically this would involve a short hiatus to a range of initiatives that are on their critical path, particularly those associated with the 2018 Thameslink upgrade. The 2018 Thameslink upgrade is dependent on agreement being met with drivers' representatives to new working practices and a new manpower plan. Pessimistically the current operator could resist termination and contest a default for financial and reputational reasons, leading to a longer hiatus. With new franchises and concessions being let and mobilised in the South East and elsewhere at present, the best people may leave to take up new roles. These are all foreseeable risks to a successful transition to an operator of last resort.

It may be the case that you decide that the government can no longer afford the Thameslink upgrade, given that previously unforeseen costs associated with a reliable service are being identified, such as a need for more drivers and higher levels of infrastructure performance. If this is the case a decision should be taken soon so that a different timetable for Thameslink 2018 can be developed around existing manpower levels, working practices and infrastructure reliability. The current peak service through the Thameslink core is 11-12 trains per hour in each direction; well short of the 20-24 trains envisaged from 2018. Nevertheless full deployment of the Class 700 fleet on all Thameslink and some Southern services would provide significant passenger benefits, and allow the removal from the franchise of older rolling stock, including Class 313 and 442, paving the way to an all DOO operation. Performance will improve significantly when industrial action ends, and in particular from January, 2018 when Thameslink trains resume running via London Bridge.

Of course any decision relating to franchise termination should also take into account the current DOO related dispute with RMT and ASLE&F. Whilst you are already determining the strategic direction of this dispute, the introduction of a state owned and governed operator would mean that every aspect of the dispute would fall under the direction of the Secretary of State. Current state owned and governed rail companies do not have a track record of rapid decision making and devolved negotiating powers. Given the implications of any decision for other TOCs such as Northern, Anglia and London Midland, the industry would be within a whisker of national bargaining on DOO and other matters. In my view this would inevitably lead to national pay bargaining, and significantly strengthen the negotiating influence of RMT and ASLE&F. This is why they constantly seek national discussions on numerous subjects. There is a risk of "roll back" on DOO; for example the introduction of OBS style employees on large operations that have historically only had drivers, such as Thameslink, Great Northern, Chiltern etc., and there may also be implications for London Underground, which is all DOO. In a steady state TOC this is less of an issue, as "do nothing" keeps the trains running. In GTR "do nothing" is not an option, so negotiations must be entered into.

10. Risks to performance getting worse

I have outlined many risks in my report; the greatest obviously being industrial action by any industry party. The next most significant risk is severe weather – in particular that of severe icing and/or heavy snow. The third rail system remains very vulnerable to this, despite a number of initiatives in recent years.

On a smaller but significant scale, there is an increasing and ever present risk of speed restrictions at level crossings of any type, prompted by changes in use, risk reviews and accident recommendations. In addition to the possibility of a speed restriction, some of these crossings simply have no place in today's safe and modern railway. They are the rail equivalent of crossing the M25 as a pedestrian.

To mitigate this risk I recommend an acceleration of Network Rail's level crossing closure plans on the future Thameslink network, which are supported by the Office of Rail & Road. To facilitate acceleration, the process and accountability for level crossing closures needs to be modernised, by adopting the recommendations of the Law Commission on this subject into law, which give local authorities an obligation to work with Network Rail to minimise level crossing risk by appropriate means, including closure.

There are very low use pedestrian crossings on the Brighton Main Line, such as the one pictured below, where a change of use by pedestrians may prompt a temporary speed restriction that impacts directly on the Thameslink 2018 performance.

11. Conclusion

Southern performance can and will improve as my recommendations are implemented, and passengers will begin to notice improvement as soon as the current industrial relations issues are resolved.

The 2018 Thameslink timetable can be successfully implemented, but there remains plenty for the industry to do over the next eighteen months. The result will be an unprecedented improvement in rail services across South East England, to and from Central London, across London and connecting the airports at Gatwick and Luton.

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PAPER: **APPENDIX 1**
PAPER TO: **SECRETARY OF STATE FOR TRANSPORT**
DATE: **30th DECEMBER, 2016**
FROM: **CHRIS GIBB**
SUBJECT: **REVIEW OF SOUTHERN RAIL NETWORK AND OTHER RELATED ISSUES : ADMINISTRATIVE BACKGROUND**

The terms of reference have been as follows:

"*To ensure all possible steps are being taken to improve performance of Southern rail services and to introduce a new and fully aligned approach to the management of GTR rail services in order to improve performance and passenger experience.*

Identify what actions are needed immediately to improve Southern rail performance and passenger experience including actions to ensure closer working and more effective alignment between GTR and NR;

Work with the management teams of GTR and NR, and DfT, to ensure those actions are implemented with immediate effect;

Report weekly including to the Rail Minister and SoS on progress and any barriers to progress in implementation;

Identify and make recommendations as soon as possible on what further steps are needed to create a more effectively integrated approach to the management and performance of the Southern rail network from across all of the industry partners involved, including in relation to:

- *Objectives, incentives and performance metrics*
- *Improving the overall passenger experience*
- *Leadership, management structures and accountabilities*
- *Work processes and team design and culture*
- *Contract specification and design*
- *Future franchise specification and design*

Produce a plan for the implementation of agreed recommendations and work with the management teams of Govia Thameslink Railway (GTR), Network Rail (NR), and Department for Transport (DfT), to ensure this is delivered by the end of the year.

Chair a Project Board which will include a Passenger Representative (to be nominated by Southern MPs).

The management of industrial relations remain a matter to be managed by Govia Thameslink Railway Limited."

I have worked on this project from 1st September to 31st December, 2016, averaging 3-4 days per week.

I have been supported in this work by a sub contractor, Paul Robinson; a recently retired and experienced railwayman working for his company, Robinson Advisory Services Ltd..

We have undertaken this project for CLGR Limited, a consultancy company owned and operated

by my family and I, and CLGR Limited has been contracted to Govia Thameslink Railway, as facilitated by the DfT. Discussions have been held under the terms of a confidentiality agreement between CLGR Limited and GTR.

CLGR Limited also employed an administrative assistant, Alice Woodhouse, to assist with organising the project and making good use of our time.

I have undertaken this project separately from my role as an independent Non Executive Director of Network Rail. I have held this role since 12th November, 2013, and now chair NR Board's Safety, Health & Environment Committee and Property Supervisory Board. My CV giving details of my other responsibilities and past experience is at the end of this paper.

LEK Consulting (International) Ltd. have been engaged by Network Rail Infrastructure Ltd. to work on the subject of objectives, incentives and performance metrics, but have worked independently of Network Rail under my direction. LEK Consulting (International) Ltd. entered into confidentiality agreements with GTR and Network Rail in order to review commercially sensitive information held by both organisations.

During the course of this work we have had full access to anybody and anything we have wanted to see or discuss, in particular within GTR and NR. We have spent time with people at all levels of the organisations, from CEOs to people at stations, depots, train cabs, and signalling centres. Everywhere we have been we have found dedicated railway people determined to improve the service offered to passengers, both in the short term and long term, and often working in difficult circumstances. Elsewhere we have met with representatives of South Eastern Trains, London Overground, Crossrail, MTR, East Midlands Trains, Virgin Trains East Coast, the ORR, Gatwick Airport Limited, Rail Delivery Group, Siemens, London Travel Watch, Transport Focus and Members of Parliament.

In total we attended approximately 280 meetings and met approximately 340 people.

Our work has been supported by a Project Board, which has met four times. The members of the project board have been myself, John Halsall, NR RMD, Dyan Crowther / Nick Brown, GTR COO, Graham Richards, ORR and Jane Cornthwaite, DfT. Charles Horton, CEO, GTR has also attended the first and last meetings. MPs on the route were asked to nominate a Southern commuter, and the Project Board drew up a short list of candidates. Charles and I interviewed them and selected two: Alex Prosser-Snelling and Peter Izard are commuters from Horsham and Haywards Heath to London respectively, and attended the final three meetings. The Project Board was grateful for the insight and contributions made by Alex and Peter, which ensured that we remained focussed on passengers' experience at all times.

The Project Board has reviewed progress of the plan authorised in September, 2016, for Network Rail to spent £20m on urgent remedial initiatives. Progress in some areas, such as vegetation management, has been rapid, whilst other elements are still in the design stage. £3.7m had been spent by 2nd December, 2016 with £13.2m committed. Full details of current progress are contained in Appendix 10.

Whilst we have spoken to many people and organisations, and learnt a great deal about the Southern / GTR network, there have probably been plans and intentions that we have missed, or not fully understood. These will no doubt offer further opportunities to improve service to passengers, and quicker, allowing my recommendations to be quickly acted on.

I wish to record my gratitude to Paul Robinson and Alice Woodhouse for their hard work for me over the last four months. I am also grateful to the teams at the Department for Transport, Govia Thameslink Railway and Network Rail for their time and contributions to my work, especially whilst dealing with numerous urgent challenges at the same time.

CHRIS GIBB – CV

Date & Place of birth: 24/9/63, Redruth, Cornwall, UK (age 53)
Home: [redacted]
Email: [redacted]
Mobile: [redacted]

Current responsibilities

Independent Non Executive Director, Network Rail Infrastructure Ltd., and Network Rail Ltd.. – from 12th November, 2013 to 11th November, 2019. Chairman, Safety, Health & Environment Committee. Chairman, Network Rail Property Limited.

Director and shareholder, CLGR Limited – from 19th November, 2013. On behalf of CLGR Limited I currently undertake the following activities:

a) Senior Advisor to Texas Central Railway, a company building a new private sector high speed railway between Dallas and Houston
b) Member of Wales Transport Strategic Advisory Board, advising Welsh Government
c) Lecturing and advisory services for Birmingham University Centre for Railway Research & Education
d) Chairman, Southern Network Project Board, for Secretary of State for Transport

In 2015 I conducted an independent investigation into the management of disruption in the Channel Tunnel for the Intergovernmental Commission ("IGC").

Experience

For ten years I was part of the **Virgin Rail Group executive team** that consistently met and exceeded our shareholders' objectives on safety and shareholder margin.

In **Virgin West Coast** I was responsible for all aspects of the delivery of our operation. Between 2009 and 2013 this included a 30% increase in train services, whilst delivering a reduction in staff numbers. We delivered on all our promises in connection with the £9bn West Coast Upgrade project and successfully managed the operation through a period of significant high profile and controversial reconstruction. We delivered highly successful relationships with train providers Alstom and Bombardier. In 2010/11 Virgin West Coast passenger revenue was at £753m per annum, and growing, with annual profit after tax of £39.9m. We had the highest NPS passenger satisfaction level of any long distance operator at 92%, with 31m passenger journeys per annum, up from 13m in 1997. We gained 5 star status for EFQM, and held Gold status for Investors in People. ORR's 2012/13 Railway Management Maturity Model Assessment gave us the maximum possible level 5 for excellence in safety leadership.

In **Virgin Cross Country** I led a team that recovered and stabilised the operation after the troubled Operation Princess upgrade and drove punctuality from 61% to 84% MAA PPM. We sustained 12% year on year revenue and volume passenger growth: £260m / 22m journeys per annum at franchise end. At the same time we controlled our £515m per annum costs, successfully closing a drivers' depot and winning a four-month long series of strikes by RMT Train Managers concerning Sunday pay demands. We managed the complex new Voyager train fleet through an innovative Train Service Agreement with Bombardier worth £120m per annum. Finally we managed the re-mapping and transfer of part of the franchise to Arriva when they won the franchise in 2007.

I have experience of all aspects of train operating company management, at local and industry levels, in three different owning groups, and with all possibilities of rolling stock provision. I was a Safety Certificate / Safety Case Duty Holder from 2000 until my retirement in 2013, and a company board member since 1997. I have extensive personal experience of directly dealing with all levels of UK, Scottish and Welsh government, Department for Transport, Office for Rail Regulation, local authorities, the media, industry players, trades unions and passengers' representatives. I have adopted both a higher and lower media profile, depending on our objectives at the time.

In previous roles I successfully led the first of the TOC "re-mapping" activities, being responsible for the creation of Wessex and **Wales & Borders**, working closely with the SRA and Welsh Government on their preparation for sale. I was part of the team that successfully negotiated an early end to the loss making **Wales & West** franchise, which paved the way for the successful sale of **Prism** to **National Express** in July, 2000. We sustained reliable and safe operations through a period of great change, whilst subsequently delivering a strong margin to the shareholder.

Career History

Retired 11th November, 2013

Chief Operating Officer, West Coast Trains Ltd. – August, 2007 to November, 2013. Responsible for the West Coast operation, reporting to the Chief Executive of Virgin Rail Group. Leading teams for operations, train fleet, on board service, safety and stations management, with 3000 staff. Responsible for reliable, profitable and efficient operations, and for safety as Safety Certificate Duty Holder. Member of the Virgin Rail Group Executive that was responsible for Group Finance, Commercial, HR and Communications activities.

Director and **Board Member** of **Virgin Rail Group** (joint venture between **Virgin** and **Stagecoach**), Cross Country Trains Ltd. and West Coast Trains Ltd. - June, 2003 to November, 2013. Chairman of Virgin Trains Board Safety Sub Committee. Non executive member of Board Safety Sub Committee of **East Midlands Trains** (Stagecoach) 2010 - 2013. Long standing member of rail industry National Task Force and other rail industry groups.

Part time simultaneous secondment to **Network Rail** to lead performance improvement initiative in respect of Rugby to London, June to November, 2012, responsible to a board of operators chaired by David Higgins, Network Rail Chief Executive. Secondment concluded with the submission of a report that was implemented in full, and was published by ORR.

Managing Director, Cross Country Trains Ltd, (trading as Virgin Trains) June, 2003 to November, 2007 - responsible for all aspects of the train operating company operations, including fleet, operations and safety, 1800 staff and a network stretching from Penzance to Aberdeen, and Brighton to Glasgow.

Managing Director, Wales & West Passenger Trains Ltd. – November, 2000 to May, 2003 – which we reorganised in November, 2001, into Cardiff Railway Company Ltd. (trading as **Wales & Borders).** Responsible for all aspects of the train operating company operations across Wales and the West of England, including fleet, operations, safety, commercial, finance and HR, and 1600 staff. Subsidiary of National Express.

Re-franchising Director, Wales & West Passenger Trains Ltd. – July, 2000 to November, 2000 – secondment to lobby for creation of Welsh franchise, then prepare bids for Wales & Borders and Wessex franchises, and finally to mobilise the two new TOCs, with activities of other TOCs added in. Deputy Managing Director.

Managing Director (Acting), Wales & West Passenger Trains Ltd. – June, 1999 to October, 1999 – Acting capacity during an interregnum, running a complex network of services and stations across Wales and the West of England.

Managing Director, At Seat Catering Ltd. – April, 1998 to May, 2003 – responsible for wholly owned subsidiary providing "outsourced" train catering on Wales & West services; non union, low overheads and high productivity. Part time concurrent role.

Operations Director, Wales & West Passenger Trains Ltd. – January, 1997 to November, 2000 - responsible for operational and commercial matters in Wales and the West of England. Board member in this and future posts; subsidiary of Prism Rail to July, 2000, then acquired by National Express. Qualified as a guard and worked as such during strikes.

Service Group Manager, South Wales & West Railway Ltd. – May, 1991 to January, 1997: responsible for all aspects of service and product management for Cardiff – Manchester and Cardiff – Portsmouth routes, through Regional Railways sector, reorganisation, privatisation and into Prism ownership.

Freight Operations Manager, Ayr, – January, 1991 to May, 1991: responsible for freight operations and train crew in South West Scotland.

Train Crew Manager, Ayr, – May, 1988 to January, 1991: responsible for train crew management in South West Scotland, for passenger and freight activities, with general operations on call and deputy responsibilities, involving working signalboxes, incident response and all aspects of people management. Included a three-month secondment to SNCF.

Train Crew Supervisor, Polmadie / Glasgow – September, 1986 to May, 1988: train crew and operations supervision for diverse passenger and freight activities; on shifts at Polmadie and Glasgow Central.

Management Trainee, Glasgow – September, 1985 to September, 1986: British Rail General Management training scheme. Training in all aspects of management, commercial and operations on national graduate / employee training programme, including becoming a fully qualified signaller.

Clerical Officer – 30th March, 1981 to September, 1985: train planning and train crew rostering, East Croydon, Woking and Glasgow, for British Rail.

Qualifications

I left school at 17, with 8 "O" levels, to start my career in the railway industry.

I am a Fellow of the Institute of Railway Operators, and a Technician Member of the Institution of Occupational Safety and Health.

I can speak French: my wife is French (with dual British / French nationality) and our children (aged 14 and 17) are bilingual and have dual nationality.

I attended the Cranfield University Business Leaders Programme in 2011/12, and a Cranfield University Course for Non Executive Directors in May, 2014.

Other

I am an elected Parish Councillor for Harbury, and a Governor of Harbury Primary School.

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Appendix 2: The Plan

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The following plan provides a detailed review of plans for 2016, 2017 and 2018, with milestones and progress to date, for changes that will improve performance and passenger experience on the Thameslink / Southern route. This is followed by an outline plan for the subsequent period from 2019 to 2033, encompassing current industry thinking and my own ideas that integrate the whole system together, maximising the benefits and minimising the risks, and covering the existing and next franchise terms.

There are two factors that would cause performance to worsen:

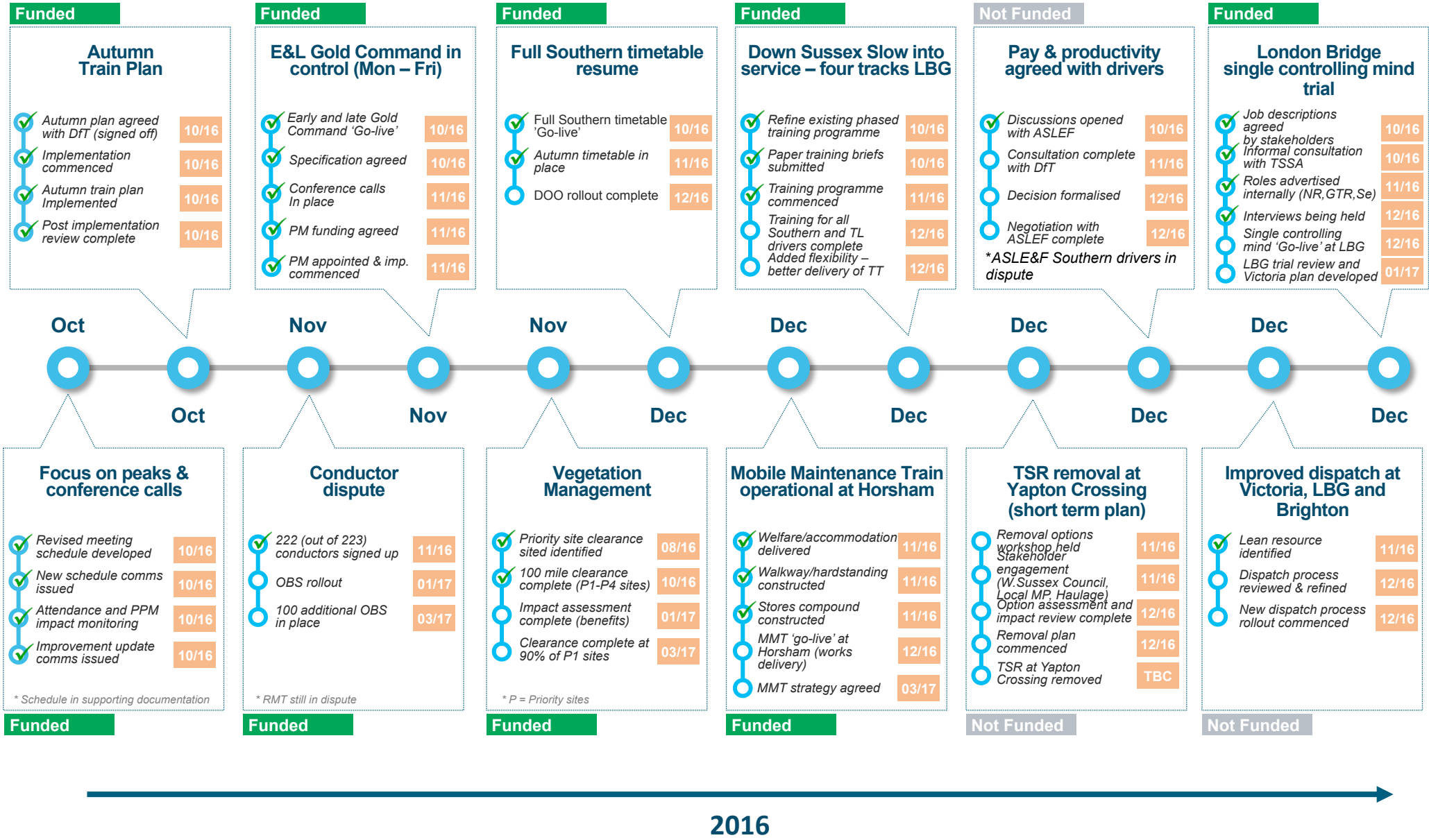
1. Industrial action by employees of any industry party
2. Severe weather, including a winter with heavy snow and freezing. This plan is not intended to winterise the third rail network above today's level of resilience.

Chris Gibb

30th December, 2016

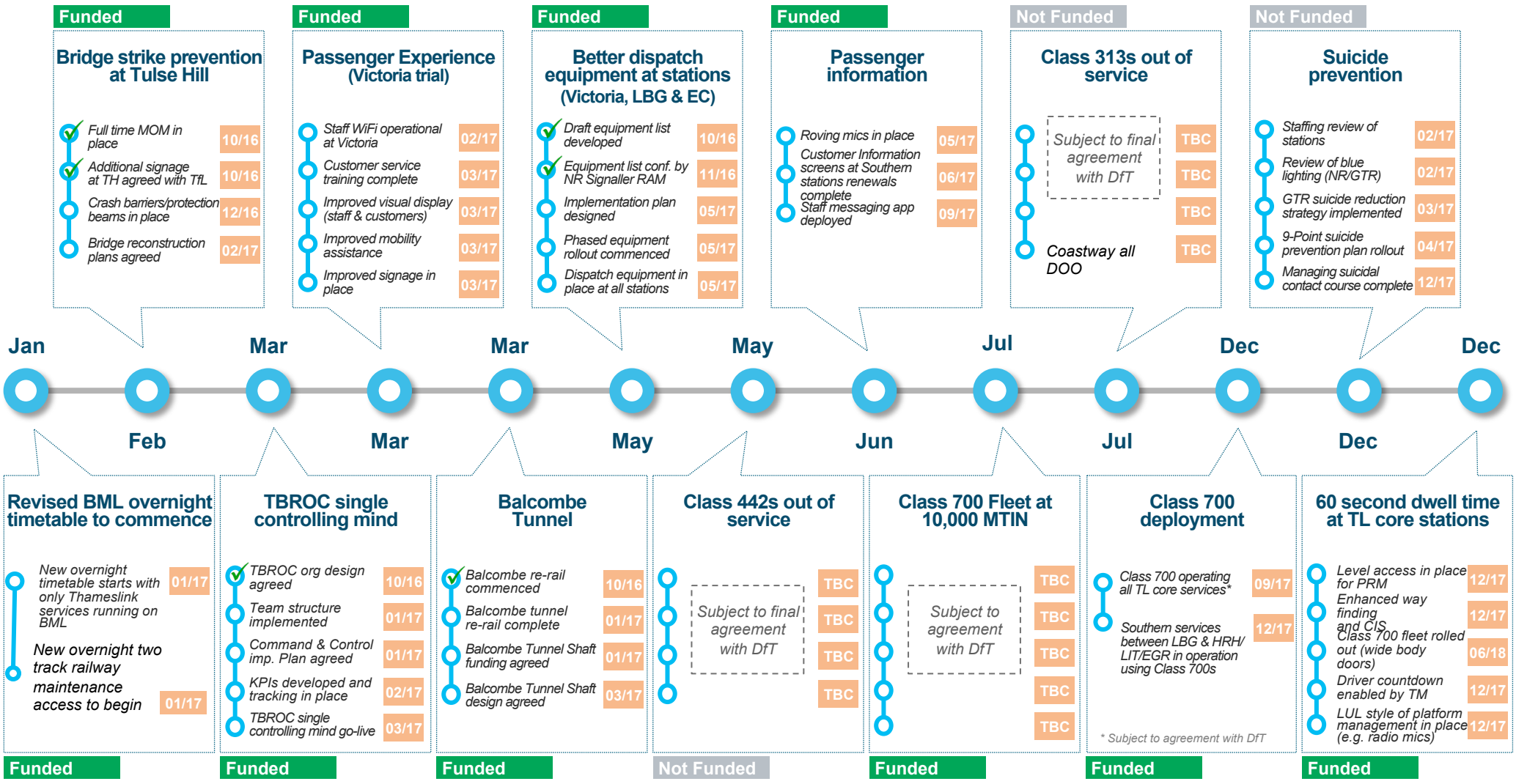
2016 – Performance improvement

PLAN PROGRESS AS AT – 20/12/16



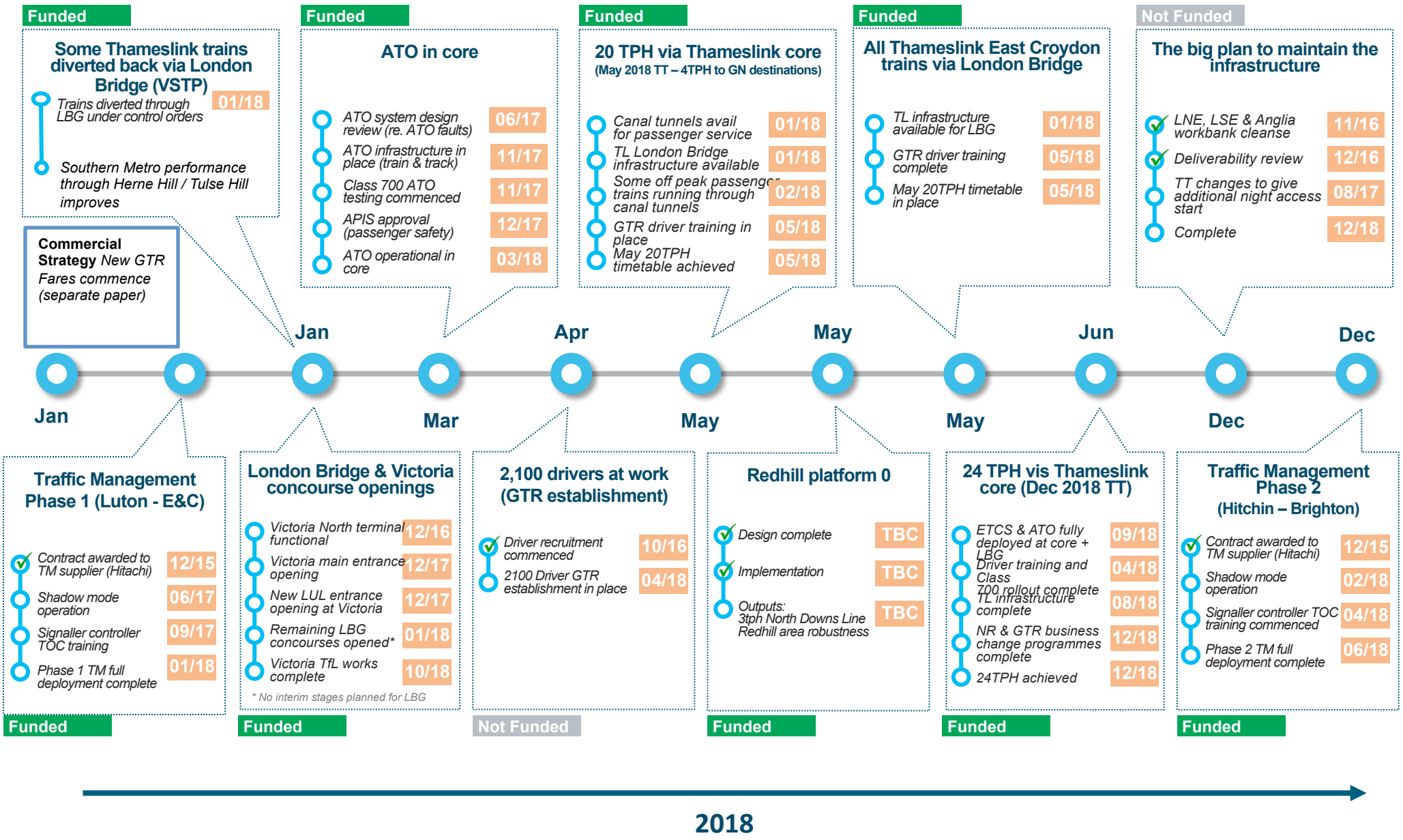
2017 – Performance improvement

PLAN PROGRESS AS AT – 20/12/16



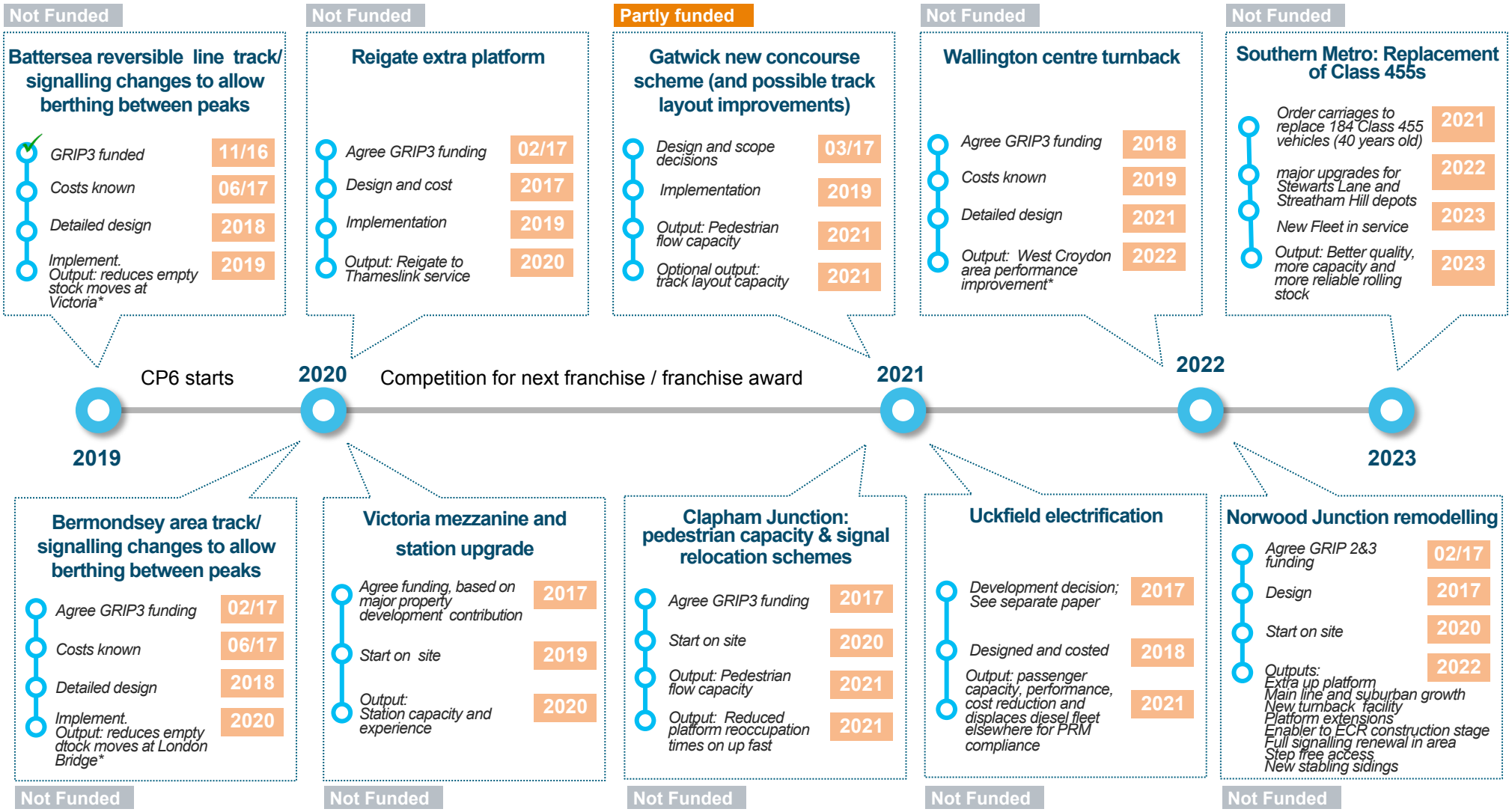
2018 – Performance improvement

PLAN PROGRESS AS AT – 20/12/16



DEVELOPMENT PROGRESS AS AT – 20/12/16

2019 to 2023 – Capacity and performance improvements



Medium term

Unfunded schemes are generally at GRIP2 level of development at present (Norwood Junction is GRIP1)

* Increases capacity for passenger trains

DEVELOPMENT PROGRESS AS AT – 20/12/16

2024 to 2028 - East Croydon area (benefits are in phases)

Croydon Key Output 0

Start main ECR station works

3 plats on fast lines (as today)
2 plats on slow lines (3 today).

This is mitigated by:
- existing slow line limitations
- turnbacks relocated (Wallington, S Croydon, Selhurst, Norwood Jn)
- Schemes on previous page being complete in advance

ECR six platforms again

- 4 new fast line platforms open
- Work remains ongoing on slow lines side and above railway

Croydon Key Output 3

Selhurst Junction up slow to up fast grade separation complete

- Mostly constructed offline
- Facilitates performance improvement for Up East Grinstead (and Purley area) to Victoria trains

Croydon Key Output 4

ECR complete with eight platforms

- 8 platforms
- Greatly expanded station
- Oversite and adjacent development. (high rise housing, commercial, retail)

Train service increases

- Business case planning assumption is that this is increased in stages once the key outputs shown are delivered.
- This will be dependant on evaluation of overall system performance and capacity.

2019 — **2022** — **2024** — **2025** — **2026** — **2027** — **2028**

Croydon TWA award (facilitates land acquisition and major but generally non-disruptive enabling works)

Agree GRIP3 funding	02/17
Outline Business Case	03/18
TWA Deposit	03/18
TWA Award	12/19

Gloucester Road Jn grade separation complete

- Mostly constructed offline
- Facilitates service increase on East London Line and performance
- Output linkage with scheme for 24tph on ELL core with digital signalling.

Croydon Key Output 1

Windmill Bridge Jn grade separation complete

- Mostly constructed offline
- De-conflicts Down Victoria fast from Up London Bridge fast
- Facilitates fast line service increase and performance improvement

Croydon Key Output 2

Selhurst Jn slow lines grade separation complete

- Mostly constructed offline
- De-conflicts Down East Croydon from Up West Croydon
- Facilitates slow line service increase, suburban growth and performance improvement

Croydon Key Output 5

Cottage Jn grade separation complete

- Mostly constructed offline, but harder to fully achieve than others and requires more development
- De-conflicts Down Victoria slow from Up London Bridge slow
- Service increase & performance

Croydon Key Output 6

Croydon "go decision" 2019
Requires: TWA deposit 2018
Requires: fund design 02/17

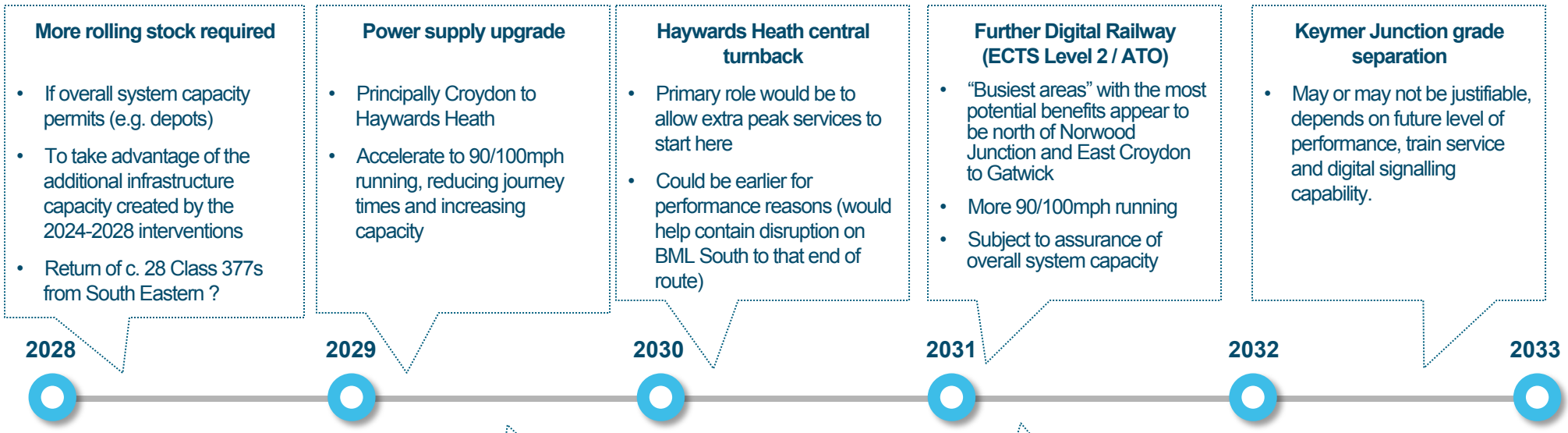
Implementation decision will need to demonstrate no net performance impact on weekday commuters during the works

Long term

Whole area is currently developed to GRIP2 with minimal further funding available

DEVELOPMENT PROGRESS AS AT – 20/12/16

2028 onwards



More rolling stock required

- If overall system capacity permits (e.g. depots)
- To take advantage of the additional infrastructure capacity created by the 2024-2028 interventions
- Return of c. 28 Class 377s from South Eastern ?

Power supply upgrade

- Principally Croydon to Haywards Heath
- Accelerate to 90/100mph running, reducing journey times and increasing capacity

Haywards Heath central turnback

- Primary role would be to allow extra peak services to start here
- Could be earlier for performance reasons (would help contain disruption on BML South to that end of route)

Further Digital Railway (ECTS Level 2 / ATO)

- "Busiest areas" with the most potential benefits appear to be north of Norwood Junction and East Croydon to Gatwick
- More 90/100mph running
- Subject to assurance of overall system capacity

Keymer Junction grade separation

- May or may not be justifiable, depends on future level of performance, train service and digital signalling capability.

Level crossing closures

- Requires Law Commission Recommendations in law
- Removes TSR risks
- To improve safety, increase frequency, accelerate services
- Pedestrians and roads

Potential layout simplifications

Layout simplification and remove redundant assets to improve infrastructure performance/ reduce costs

- East Croydon – Coulsdon
- Earlswood – Three Bridges
- Elsewhere?

Clapham Junction remodelling

Recent pre-GRIP work indicates some long term possibility of:

- Grade separation of Falcon Junction
- 3 platforms on BML fasts with tidal flow
- Major concourse expansion and oversite development

Replacement of Class 377/1

- Replacements for 256 vehicles
- Class 377/1s are 30 years old

Minimal design development to date of schemes on this page

Longer term

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PAPER: **APPENDIX 3**
PAPER TO: **SECRETARY OF STATE FOR TRANSPORT**
DATE: **30th DECEMBER, 2016**
FROM: **CHRIS GIBB**
SUBJECT: **THE OVERNIGHT RAILWAY**

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1. Purpose of Paper

This paper outlines potential benefits, options and risks related to changes to the way the railway is operated at night, in particular the Brighton Main Line.

2. Background

Up until 1988 the overnight railway out of London Bridge and Victoria was dominated by numerous newspaper trains that ran between 0100 and 0400, distributing newspapers to Kent, Sussex and Surrey. There was also some limited freight traffic, such as stone trains to Purley, that still runs today. When newspapers switched to road and regional print centres, all the trains ceased, the railway "shut down" at night, and BR said that a benefit would be improved overnight access for maintenance. The focus at the time was entirely on cost reduction, rather than improving infrastructure reliability, so funds to make the most of the new opportunity were limited.

From the time of privatisation in 1996 there was steady pressure for earlier and later rail services, to respond to an increasingly round the clock London society. Railtrack and later Network Rail responded to this by agreeing to additional paths and a reduced maintenance window. The Southern had always concentrated renewals work around weekends, with less commuters, so for a while less weeknight access was sustainable. Later challenges to run less bus replacement services and a "seven day railway" added to the pressure to run more trains in the early hours of the morning and at weekends.

However greater numbers of daytime services, with longer trains, have met more infrastructure maintenance has been necessary, and any remaining daytime opportunities ceased. Improved safety standards, which have resulted in a significant drop in track worker injuries and fatalities, have, in some cases, made overnight maintenance between trains more difficult. The shorter overnight maintenance window, and on some sections, no maintenance window at all, have, in my opinion and that of the experts I have spoken to, resulted in a steady deterioration of the infrastructure reliability over the last thirty years. In addition there has not been a steady flow of maintenance funds over this period, so the maintenance practices and outputs have not been planned on a basis that has matched the deterioration of the infrastructure.

One of the legacies of the previous three franchises is an overnight service by all three brands on the Brighton Main Line, particularly between London and Gatwick Airport. For example on a weekday from Gatwick Airport between 0045 and 0145 there are normally the following departures:

0050 Gatwick Express: to Victoria, non stop
0112 Southern: to Victoria, calling Horley, Purley, East Croydon, Clapham Junction
0121 Thameslink: to Blackfriars / St Pancras, calling at East Croydon
0135 Gatwick Express: to Victoria, non stop

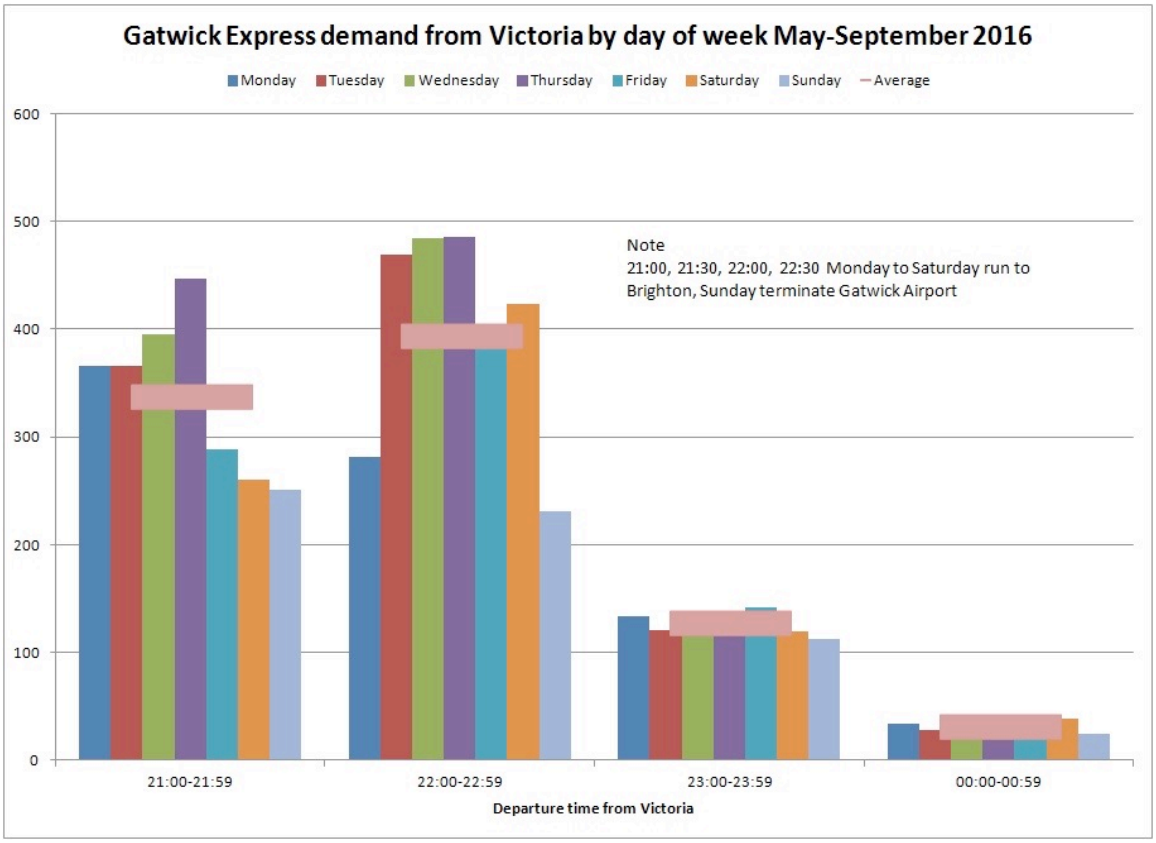
In the previous franchises the three companies competed for business, even at night. If one company ran a train, the other two felt obliged to match it. In time they have become enshrined in franchise agreements, and then merged into the GTR franchise without and rationalisation.

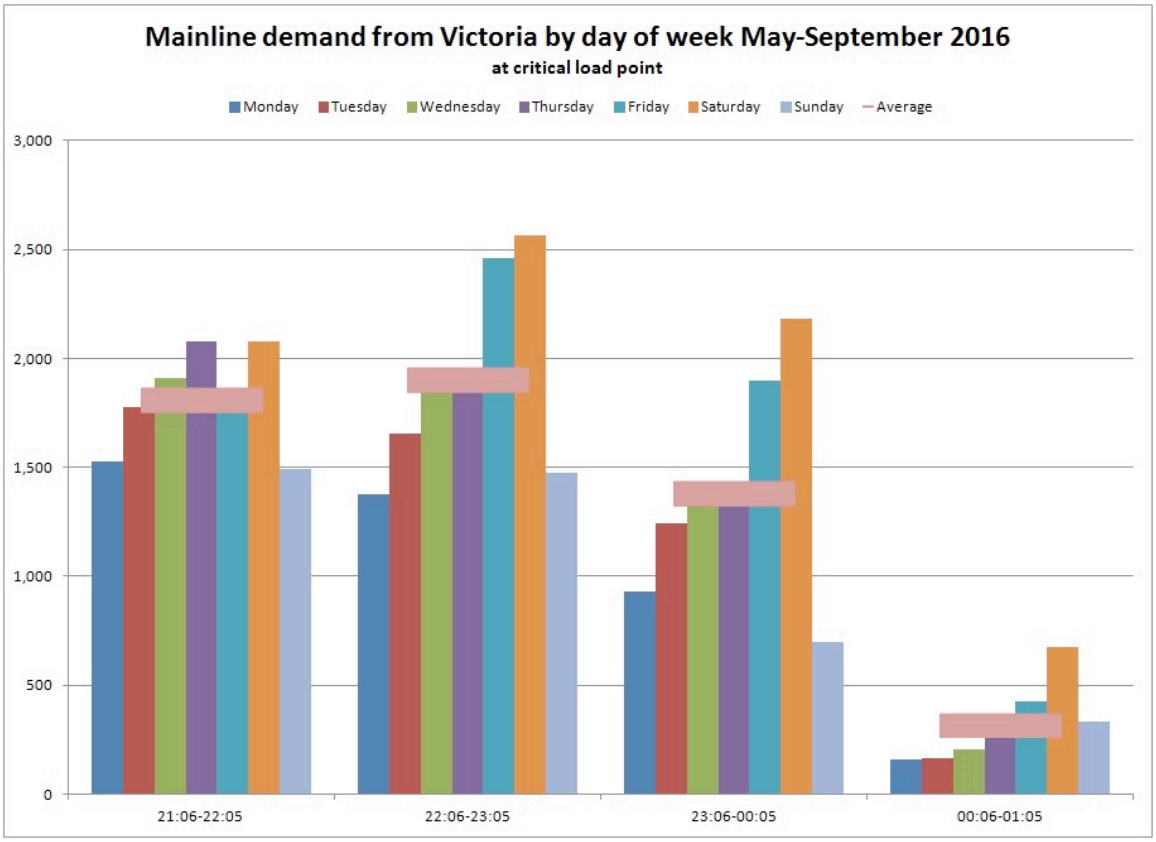
The trains are lightly loaded on most days, with demand to/from Gatwick Airport dropping significantly after 2230, and being very limited after midnight. One significant flow exists of a proportion of the 60,000 airport workers between East Croydon and Gatwick, which I have taken account of in this paper.

From London it is a similar picture. Departures after midnight are currently:

2354 Thameslink: St Pancras to Three Bridges, calling at Farringdon, Blackfriars (0005), East Croydon and Gatwick
0002 Gatwick Express: Victoria to Gatwick, non stop
0005 Southern: Victoria to Worthing, calling at Clapham Junction, East Croydon, Gatwick, Three Bridges, Haywards Heath, Brighton and stations to Worthing
0014 Southern: Victoria to Gatwick, calling at Clapham Junction, East Croydon, Purley, Coulsdon South, Merstham, Redhill, Horley, Gatwick
0024 Thameslink: St Pancras to Gatwick, calling at Farringdon, Blackfriars (0035) East Croydon, Gatwick
0032 Gatwick Express Victoria to Gatwick, non stop
0054 Thameslink: St Pancras to Gatwick, calling at Blackfriars (0124), East Croydon and Gatwick
0100 Southern: Victoria to Brighton, calling at Clapham Junction, East Croydon, Purley, Horley, Gatwick, Three Bridges and Haywards Heath

These trains are lightly loaded, except on Friday and Saturday nights, when trains after midnight from London are consistently quite busy. Different fares apply for many journeys on the three different brands, which also influences demand for the services provided (see separate paper "GTR Commercial Strategy").





There is quite simply a significant over provision of capacity on the overnight railway. This might be acceptable if it was part of a wider strategy to respond to a “twenty four hour society”, serve demand at Gatwick, respond to demand generally or provide competing services. Gatwick Airport Limited want as many trains and destinations as possible, round the clock, and part of this is to provide for late flights arriving around midnight. However I have found no overall industry strategy or specification for the “system” that recognises passenger and stakeholder demand, and balances this against cost efficiency and, crucially, the need to maintain the infrastructure. For most people and organisations the priority is an improved reliability of daytime commuter services, and this is evident from the responses to GTR’s 2018 Timetable Consultation on the subject of timetabling for infrastructure maintenance. Something has to give here if the reliability of daytime commuter services is to improve.

3. The need to maintain the infrastructure

Daily performance on the Brighton Main Line is constantly impacted by faults with the infrastructure. Whilst I believe the performance of the infrastructure is not materially worse than in other parts of the UK, the impact of these faults is much more significant on the Brighton Main Line due to the overall tension of the system. In my opinion, formed from the statements of experts I have met, the infrastructure is generally in a safe, but poor, condition, with constant maintenance interventions to sustain even the current level of reliability. Temporary Speed Restrictions are applied when necessary to keep the system safe, and these have a time penalty in most cases until such time as access can be obtained to do a short or long term repair or renewal.

Infrastructure faults that cause delay are from a range of categories, some of which are interrelated.

The picture on the left is a cracked crossing at Balham on 5th December, 2016 which caused significant delay. The cause is not known at the time of writing; it could have been related to drainage, sleepers, ballast or metallurgical causes.

Regular maintenance and renewal is needed for a wide range of elements of the infrastructure, such as drainage, ballast, sleepers, rail, crossings (left), pointwork, earthworks, structures, telecoms and power supplies / third rail. Track faults alone have caused 120,000 delay minutes to GTR service in the last year.

Network Rail have made progress in identifying where intervention should be prioritised to give the quickest and most significant benefits. A proportion of Network Rail's maintenance staff are rostered to daytime shifts. At this time their primary purposes are to prepare for overnight work, or to respond to faults.

When a serious fault occurs, trains are disrupted whilst emergency access to the railway is granted for repairs. Depending on the urgency it may be possible to prioritise this for the off peak period, but sometimes the urgency is too great, or the task too lengthy, to avoid a direct impact on the peaks.

I have found that obtaining access has been increasingly difficult in recent years. Daytime access is only granted in an emergency, as described above. Overnight access has also been very difficult, despite a number of initiatives to improve this in recent years. I have found there is a widespread culture of "there is no point in asking for access, as it won't be granted". There is no record of numerous access requests being declined. So the maintenance staff effectively wait for a fault to occur, and get granted disruptive emergency access to fix it. This "fix on failure" culture is not a safety risk, or an indication of any one individual or single corporate failing: it is a failure to manage the "system" as a team. It is not necessary for all members of the team to work for the same employer, but it is necessary for them to work as a team. This I see as a future priority of the GTR / NR Alliance Board, and the joint work on the "Galaxy Plan" is a good start in this direction.

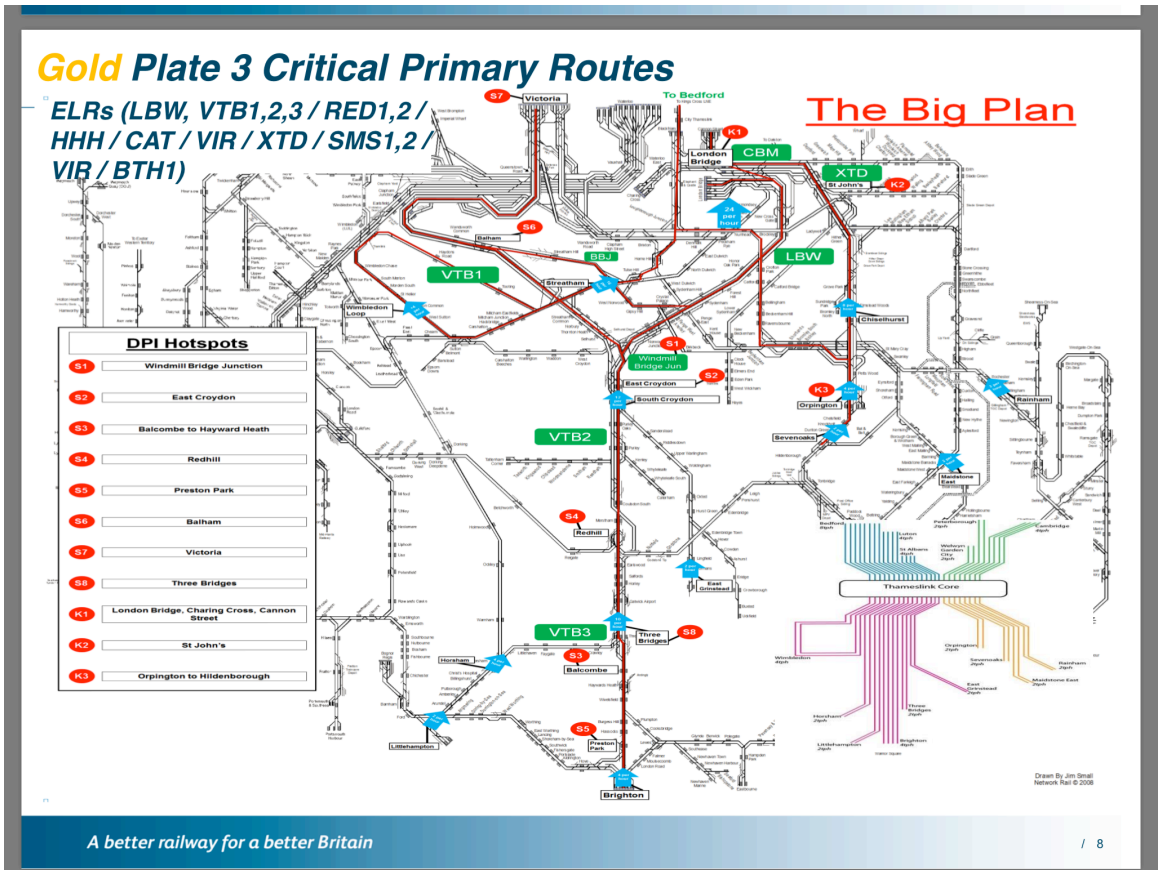
To materially improve the maintenance activity there must be more access. This should be at night, inconveniencing the smallest number of passengers. This must be regular – every night – and consistent enough for Network Rail to deploy large teams of people and plant on a planned and safe basis. An overnight production line approach is needed, with well-planned and executed maintenance reliably handing back the operational railway every morning. Network Rail need to develop this production line approach to be highly reliable and efficient. Modernisation of working practices and deployment of new technology are key to this. An example is the new Mobile Maintenance Train ("MMT"), based at Horsham. This should be capable of enabling a team to do re-railing, wet bed removal, padding renewal, sleeper renewal and other tasks, in safety with trains passing on adjacent lines. The changes in procedures are close to approval at the relevant RSSB Committees, and full implementation of this new way of working is expected early in 2017. Every minute of an overnight possession needs to be valued and productive in this way.

Inspection of many elements of the infrastructure is now done using modern technology, such as the "Plain Line Pattern Recognition" train, which uses cameras to look for changes in the infrastructure, and can detect changes the human inspection can miss. This is supported by extensive remote condition monitoring of assets, which needs to develop further. In the medium term a higher performing infrastructure will allow Network Rail to redeploy most daytime

maintenance people at night, but in the short term they will need both overnight teams doing maintenance and renewals, and daytime teams quickly fixing faults.

The immediate focus must be on creating the necessary access, to achieve a rapid improvement in performance. This approach will benefit the vast majority of passengers.

The diagram below shows where this is most necessary (the red circles S1 to S8), for both the short term improvement to Southern services, and the medium term delivery of the 2018 Thameslink service plan (K1 to K3).



4. The Proposed Changes to the Overnight Railway

I have discussed the needs of all parties, from the engineers, planners, operators, signalers, and management to the passenger representatives. Everyone wants a more reliable daytime railway, as soon as possible, and that must be the priority. It is no longer possible to reliably run the kind of daytime frequency needed to meet growing demand in the peaks, without other compromises in the overall system.

My proposal is as follows:

That overnight train services are altered to provide sufficient access for an ongoing programme of additional maintenance.

4.1 The full proposed timetable is shown at the end of this document. In summary the changes I propose are:

- Overnight service to be provided under the Thameslink brand only, running at least every hour between Bedford, St Albans, London St Pancras, Blackfriars, East Croydon, Gatwick Airport and Three Bridges, and increasing to half hourly in 2018.
- Overnight Thameslink services timetabled permanently to be able to run non stop via any of the three routes between Blackfriars and East Croydon, on a single reversible line between Blackfriars and Kentish Town / Copenhagen Jn, on one reversible line between Three Bridges and Preston Park, and on one pair of tracks on all four track sections, and any combination of these on the same night, with no alteration to published timings.
- Thameslink services calling at intermediate stations as necessary to broadly maintain current service levels, replacing most calls in withdrawn Southern services.
- Coulsdon South, Merstham and Redhill to be served between 0001 and 0500 only on Saturday and Sunday mornings, with Thameslink services running via the Quarry Line or Redhill, without stopping, on Monday to Friday mornings, depending on engineering requirements.
- Thameslink services extended to/from Brighton as per current service levels.
- No Gatwick Express services between 2330 and 0500, and a reduced service from 2200 to 2330. Other minor alterations will ensure a fast train will continue to depart Victoria for Gatwick every 15 minutes from 2200 to midnight.
- Reduced Southern services to/from London Victoria or Clapham Junction between 0001 and 0500, Monday to Friday, and a limited service between 0001 and 0200 on Saturday and Sunday mornings, using only two tracks on four track sections.
- Freight services, including those between Willesden and Dollands Moor for the Channel Tunnel, accommodated via Redhill or on alternative routes and within the two track railway timetable.

4.2 The benefits of this will be as follows:

- A two track railway timetable across key four track sections from 2300 to 0500, every night, enabling access on one pair of tracks. This follows best practice on the West Coast Main Line, which faced similar challenges in 2008, and now delivers unprecedented performance reliability, with 30% more services and a busy overnight two track mixed traffic railway.
- A single track reversible timetable on the Thameslink core and between Three Bridges and Preston Park, between 0001 and 0500, every night, for a small number of services enabling access on the adjacent line.
- Victoria station will be completely closed to passengers between 0100 and 0500, allowing increased station security, cleaning, maintenance and renewal of passenger areas.
- Clapham Junction station will be closed completely between 0120 and 0500, allowing increased station security, cleaning, maintenance and renewal of passenger areas.
- Thameslink will become the only round the clock element of the GTR operation, with appropriate and efficient overnight staffing levels focused on delivery of a simple and easy to understand product. The Southern and Gatwick Express brands will refocus on daytime operations only, and in particular on the commuter peaks. This approach will benefit by far the largest number of passengers.
- Increased access will be possible without disrupting passenger journeys at short notice and without NR paying Schedule 4 compensation to GTR.
- A stable and regular access base to support improved infrastructure in the short term and from the 2018 Thameslink timetable.

Of the “DPI Hotspots” on the map above, these will have access for inspection, maintenance and renewal as follows:

- S6 Balham and S7 Victoria (Central) – access all lines 0045-0500 Monday to Friday and 0115 – 0500 Saturday and Sunday, two out of four tracks 2300-0045 / 0115 every evening.

- S1 Windmill Bridge Junction – access to any pair of tracks 0001-0500 every day and most S&C with Thameslink trains either running via Selhurst or Norwood Junction.
- S2 East Croydon - access to at least two tracks 2300-0500 every day and most S&C with all trains either running via one up line and one down line.
- S4 Redhill – access 0001-0500 Monday to Friday mornings with all trains via the Quarry Line.
- Quarry Line – access 2300-0515 Friday and Saturday nights with all trains via Redhill, and other nights if trains diverted via Redhill.
- Earlswood – Three Bridges - access to any pair of tracks 2300-0500 every day
- S8 Three Bridges - access to any pair of tracks 0001-0500 and most S&C with Thameslink trains either running via fast lines or slow lines.
- S3 Balcombe and S5 Preston Park – access to one track 0001-0500, with the other line blocked as necessary between trains (several trains to pass on reversible line between 0001 and 0500).

Times are approximate and are dependent on further detailed work by NR and the operators.

At present most of these locations have 2-3 hours per night access, and then only with an amended train plan in place. Some sections have no regular access opportunities at all.

4.3 The implications for Passengers

Historically Victoria was the round the clock London departure point for Gatwick Airport, and rail services to the Channel Ports, with London hotel accommodation focused in this area as a result. This has changed, with accommodation now much more spread out across London. Following Eurostar's move to St Pancras in 2007, the London round the clock rail hub has become the St Pancras / Kings Cross area: "The best connected station in the UK" (Simon Calder, Radio 5, 26th December, 2016). The Night Tube, Elizabeth Line and Thameslink upgrade will further focus travellers and accommodation around the St Pancras / Kings Cross / Farringdon area.

Under this proposal London Victoria will cease to be a terminal for overnight rail services to/from East Croydon, Gatwick Airport and Sussex. The focus for overnight rail services to/from Gatwick Airport, and Luton Airport, will be St Pancras International and Blackfriars. From these stations there will be a round the clock service of new 12 coach trains to Gatwick Airport, East Croydon, St Albans, Luton Airport, Luton and Bedford, with some services to/from Brighton.

The early Sunday morning Thameslink 2018 maintenance strategy is still being finalised, but will allow an all night service on parts of the network, probably between St Pancras Mainline and Bedford, and between London Bridge, East Croydon and Gatwick Airport.

I expect most passengers travelling between Victoria, East Croydon, Gatwick Airport and Sussex will switch their London terminal to St Pancras or Blackfriars. The communication of overnight services will be much simpler and concentrated on these two stations. Gatwick Airport and Luton Airport will have a better overnight service than Heathrow Airport, and most other global airports. I would expect this to be supported by a marketing initiative promoting the all night Thameslink service.

There will be no services from Clapham Junction to Victoria, East Croydon or Gatwick Airport during the night.

For those passengers that still want to travel between Victoria, Clapham and Gatwick Airport at night, there will be the option of the National Express coach service. At night this costs from £8 single, takes 65 minutes, runs every hour and serves locations in South London, including Vauxhall, Streatham and Sutton.

I expect that by focusing overnight passenger services at the stations of St Pancras / Kings Cross and Blackfriars, which consistently achieve higher passenger satisfaction scores than Victoria, the rail industry can offer an improved passenger experience, including improved security.

There is a lot of work to do at both Victoria and Clapham Junction stations to bring the stations up to modern standards similar to Waterloo and London Bridge. A night time closure of both stations, albeit only for about four hours, will facilitate both minor and major work that needs to be done without the presence of passengers.

Coulsdon South, Merstham and Redhill will only be served between 0001 and 0500 on Saturday and Sunday mornings. On other nights the last train to call in each direction will be just before midnight.

5. Conclusions

Few of the overnight Southern services are currently running due to the drivers' overtime ban.

5.1 The alterations outlined in this paper should be introduced immediately as part of GTR's current contingency timetable, continued into the national rail timetable in May, 2017 and progressed to the next round of consultation for the December, 2018 Thameslink timetable (the first round excluded overnight services).

5.2 During 2017/8 the changes in maintenance practices and effective use of the overnight access will be monitored by the Thameslink 2018 Industry Readiness Board, and they will be subject to review by the Independent Assurance Panel.

5.3 I recommend that in 2019 the Office of Rail & Road plan to do an extensive review of the maintenance of the Brighton Main Line to satisfy themselves, the industry and government that Network Rail has intervened appropriately to improve the asset condition and reliability, is making full use of the access opportunities available and is doing so safely, efficiently, using appropriate modern procedures, technology and adequate manpower.

APPENDIX - OVERNIGHT TIMETABLE – BEDFORD / LONDON / BRIGHTON
MONDAY TO SATURDAY MORNINGS – ALL TRAINS FORMED OF 12 CARS

The following timetable amendments should be permanently introduced from Monday, 16th January, 2017, under GTR's current contingency planning arrangements.

The complete proposed Thameslink overnight timetable is as follows:

Train ID	9T73PL	9W17PL	9W19PL	9W21PL	9W01PL	9W03PL	9W05PL	9W07PL	9W09PL	9W11PL	9W13PL	9W15PL	9T01PL
Notes						[1]		[1]					
BEDFORD	22.19	22.45	23.05	23.45	00.05	00.45	01.05	01.45	02.05	02.45	03.05	03.45	04.15
Wixams $	22.24	22.50	23.10	23.50	00.10	00.50	01.10	01.50	02.10	02.50	03.10	03.50	04.20
Flitwick	22.30	22.56	23.16	23.56	00.16	00.56	01.16	01.56	02.16	02.56	03.16	03.56	04.26
Harlington	22.34	23.00	23.20	24.00	00.20	01.00	01.20	02.00	02.20	03.00	03.20	04.00	04.30
Leagrave	22.39	23.05	23.25	00.05	00.25	01.05	01.25	02.05	02.25	03.05	03.25	04.05	04.35
LUTON	22.43	23.10	23.30	00.10	00.30	01.10	01.30	02.10	02.30	03.10	03.30	04.10	04.40
Luton Airport Parkway	22.46	23.12	23.32	00.12	00.32	01.12	01.32	02.12	02.32	03.12	03.32	04.12	04.42
Harpenden	22.52	23.18	23.38	00.18	00.38	01.18	01.38	02.18	02.38	03.18	03.38	04.19	04.48
ST ALBANS	22.57	23.25	23.45	00.25	00.45	01.25	01.45	02.25	02.45	03.25	03.45	04.25	04.55
Radlett			23.50		00.50		01.50		02.50		03.50		
Elstree & Borehamwood			23.54		00.54		01.54		02.54		03.54		
Mill Hill Broadway			23.57		00.57		01.57		02.57		03.57		
Hendon			00.01		01.01		02.01		03.01		04.01		
Brent Cross $			00.03		01.03		02.03		03.03		04.03		
Cricklewood			00.06		01.06		02.06		03.06		04.06		
West Hampstead Thameslink	23.09	23.39	00.09	00.39	01.09	01.39	02.09	02.39	03.09	03.39	04.09	04.39	05.09
Kentish Town			00.13		01.13		02.13		03.13		04.13		
ST PANCRAS International	23.20	23.50	00.20	00.50	01.20	01.50	02.20	02.50	03.20	03.50	04.20	04.50	05.20
Farringdon		23.54	00.24									04.54	05.24
City Thameslink	23.24											04.56	05.26
London Blackfriars	23.29	00.01	00.31	01.01	01.31	02.01	02.31	03.01	03.31	04.01	04.31	05.01	05.29
London Bridge	23.35§												05.35§
EAST CROYDON	23.49	00.28	00.58	01.28	01.58	02.28	02.58	03.28	03.58	04.28	04.58	05.28	05.49
South Croydon													
Purley			01.04										
Coulsdon South			01.08*										
Merstham			01.12*										
Redhill			01.20*										
Earlswood													
Salfords													
Horley		00.52		01.52		02.52		03.52					
GATWICK AIRPORT	00.07	00.58	01.32	01.58	02.24	02.58	03.24	03.58	04.24	04.54	05.18	05.48	06.05
Three Bridges	00.12	01.04	01.38	02.04	02.30	03.04	03.30	04.04	04.30	05.04	05.24	05.54	06.10
Balcombe	00.18											06.00	06.16
Haywards Heath	00.24			02.14						05.14	05.34	06.06	06.22
Wivelsfield	00.28										05.38	06.10	06.26
Burgess Hill	00.30										05.40	06.12	06.28
Hassocks	00.34										05.44	06.16	06.32
Preston Park	00.40										05.50	06.22	06.38
BRIGHTON	00.44			02.32						05.32	05.54	06.26	06.42

[1] Runs from December, 2018

* Calls on Saturday and Sunday mornings only

§ Call from May, 2018

$ Calls when station opens

Train ID	9T68PL	9W16PL	9W18PL	9W20PL	9W00PL	9W02PL	9W04PL	9W06PL	9W08PL	9W10PL	9W12PL	9W14PL	9S00PL
Notes						[1]		[1]					
BRIGHTON	22.28	22.54	23.24	23.42	00.12								04.00
Preston Park		22.58	23.28	23.46	00.16								
Hassocks		23.04	23.34	23.52	00.22								
Burgess Hill	22.38	23.08	23.38	23.56	00.26								
Wivelsfield	22.40	23.10	23.40	23.58	00.28								
Haywards Heath	22.46	23.16	23.46	00.03	00.33								04.24
Balcombe	22.52	23.22	23.52	00.08	00.38								
Three Bridges	22.59	23.28	23.58	00.15	00.45	01.05	01.35	02.05	02.35	03.05	03.35	04.05	04.35
GATWICK AIRPORT	23.06	23.34	00.04	00.21	00.51	01.11	01.41	02.11	02.41	03.11	03.41	04.11	04.44
Horley						01.13		02.13					04.43
Salfords													
Earlswood													
Redhill													05.00
Merstham													
Coulsdon South													
Purley													05.09
South Croydon													
EAST CROYDON	23.21	23.53	00.23	00.40	01.10	01.40	02.10	02.40	03.10	03.40	04.10	04.40	05.18
London Bridge	23.35§												05.34§
London Blackfriars	23.42	00.22	00.50	01.06	01.36	02.06	02.36	03.06	03.36	04.06	04.36	05.06	05.40
City Thameslink												05.08	05.42
Farringdon	23.46	00.26										05.11	05.44
ST PANCRAS International	23.51	00.31	01.01	01.16	01.46	02.16	02.46	03.16	03.46	04.16	04.46	05.16	05.49
Kentish Town	23.54		01.05		01.50		02.50		03.50		04.50		
West Hampstead Thameslink	23.59	00.39	01.09	01.24	01.54	02.24	02.54	03.24	03.54	04.24	04.54	05.24	05.57
Cricklewood	00.02		01.12		01.57		02.57		03.57		04.57		
Brent Cross $	00.05		01.15		02.00		03.00		04.00		05.00		
Hendon	00.07		01.17		02.02		03.02		04.02		05.02		
Mill Hill Broadway	00.10		01.20		02.05		03.05		04.05		05.05		
Elstree & Borehamwood	00.14		01.24		02.09		03.09		04.09		05.09		
Radlett	00.18		01.28		02.13		03.13		04.13		05.13		
ST ALBANS	00.25	00.57	01.35	01.41	02.21	02.41	03.21	03.41	04.21	04.41	05.21	05.41	06.09
Harpenden	00.31	01.03	01.41	01.47	02.27	02.47	03.27	03.47	04.27	04.47	05.27	05.47	06.15
Luton Airport Parkway	00.36	01.09	01.46	01.52	02.32	02.52	03.32	03.52	04.32	04.52	05.32	05.52	06.20
LUTON	00.40	01.13	01.50	01.56	02.36	02.56	03.36	03.56	04.36	04.56	05.36	05.56	06.24
Leagrave	00.44	01.17	01.54	02.00	02.40	03.00	03.40	04.00	04.40	05.00	05.40	06.00	06.29
Harlington	00.49	01.21	01.59	02.05	02.45	03.05	03.45	04.05	04.45	05.05	05.45	06.05	06.33
Flitwick	00.52	01.25	02.02	02.08	02.48	03.08	03.48	04.08	04.48	05.08	05.48	06.08	06.37
Wixams $	00.58	01.31	02.08	02.14	02.54	03.14	03.54	04.14	04.54	05.14	05.54	06.14	06.43
BEDFORD	01.04	01.37	02.14	02.20	03.00	03.20	04.00	04.20	05.00	05.20	06.00	06.20	06.49

[1] Runs from December, 2018 $ Calls when station opens
§ Calls from May, 2018

The following alterations are to be implemented in conjunction with these tables:

Southern services will be revised as follows, Monday to Saturday

- 2301 Horsham to London Victoria arrives at 0019 will run
- 2310 Brighton to London Victoria arrive 0042 will run, but will call at Redhill only on Friday and Saturday nights. This train will be the last train from Gatwick Airport to London Victoria, departing Gatwick at 2353
- 2217 London Victoria – Littlehampton to depart at 2215
- 2250 London Victoria – Brighton to depart at 2245
- 2317 London Victoria – Worthing to depart at 2315
- 2332 London Victoria – Brighton to depart at 2330
- 2340 London Victoria – Horsham to depart at 2345 and not call at Coulsdon South, Merstham and Redhill on Monday to Thursday nights, call as now on Friday and Saturday nights.
- 2351 London Bridge to London Victoria will terminate at Streatham Hill
- The current 0005 London Victoria to Eastbourne / Worthing will continue to run Tuesday to Sunday mornings and to depart at 0001, calling at Clapham Jn 0010, East Croydon 0027, Gatwick Airport 0045, Three Bridges 0050, Haywards Heath 0103, Brighton 0059 and stations to Worthing arriving 0147. A portion detaches at Haywards Heath for stations to Eastbourne, arriving 0235
- The 0014 London Victoria to Gatwick Airport will no longer run. A Thameslink service departing Blackfriars at 0031 will call additionally at Purley every morning, and at Coulsdon South, Merstham and Redhill on Saturday and Sunday mornings
- The 0016 London Victoria to East Croydon (Mondays to Thursdays) will no longer run with no replacement
- The 0042 London Victoria to East Croydon (Monday to Thursdays) will no longer run with no replacement

- The 0100 London Victoria to Brighton will run only on Saturday and Sunday mornings, calling at Clapham Jn 0109, East Croydon 0124, Purley 0129, Redhill 0141 (additionally), Horley 0147, Gatwick Airport 0150, Three Bridges 0155, Haywards Heath 0208, arriving in Brighton at 0225
- The 0200, 0300 London Victoria to Three Bridges and 0400 London Victoria to Brighton will no longer run
- 0112 Gatwick Airport to London Victoria will not run
- 0159, 0259, 0359 Three Bridges to London Victoria will not run
- 0350 Brighton – London Victoria will not run
- 0200, 0300, 0330, 0400 and 0430 from Victoria to Gatwick Airport / Three Bridges will not run
- All the late night South London Metro trains on Friday and Saturday night will continue

Gatwick Express will be revised as follows, Monday to Saturday and Sunday :

- After 2200 from London Victoria, a departure at 2230 and the last Gatwick Express will depart at 2300
- The 2215, 2245, 2315, 2330, 2345, 0002, 0032, 0330, 0430 London Victoria to Gatwick Airport will no longer run
- After 2250 from Gatwick Airport, a departure at 2320 and the last Gatwick Express will depart at 2350
- 2305, 2335, 0006, 0020, 0036, 0050, 0135, 0435, 0520 Gatwick Airport to London Victoria will no longer run
- The first Gatwick Express trains will depart at 0500 from London Victoria and 0550 from Gatwick Airport

Sundays

- Thameslink services early on Sunday mornings after St Pancras – Blackfriars closes at 0045 will operate as follows, formed of 12 car trains:

  0115, 0215, 0315, 0415 Three Bridges to one of Blackfriars, London Bridge or Balham, depending on engineering work, calling at Gatwick Airport and East Croydon
  0201, 0301, 0401 from one of Blackfriars, London Bridge or Balham to Three Bridges, depending on engineering work, calling at East Croydon and Gatwick Airport

Connections will be available at Balham or London Bridge to/from the “Night Tube” network, including St Pancras International and London Victoria.

- The first train departing London Victoria will be the 0500 Gatwick Express
- 0112 Gatwick Airport to London Victoria will not run
- 0159, 0259, 0359 Three Bridges to London Victoria will not run
- 0200, 0300, 0330, 0400 and 0430 from Victoria to Gatwick Airport / Three Bridges will not run
- The first train from Brighton will be the 0400 Brighton to London Victoria, calling at stations as now, including Gatwick Airport at 0505

STRICTLY CONFIDENTIAL

PAPER: **APPENDIX 4**
PAPER TO: **SECRETARY OF STATE FOR TRANSPORT**
DATE: **30th DECEMBER, 2016**
FROM: **CHRIS GIBB**
SUBJECT: **GTR FUTURE FRANCHISE STRATEGY**

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1. Purpose of Paper

This paper raises a number of strategic questions about the future franchise strategy for activities that are currently part of the TSGN / Govia Thameslink Railway (GTR) franchise.

2. Background

The TSGN franchise was formed by combining the Gatwick Express, Southern, Thameslink and Great Northern franchises into one single entity, with the primary objective of making changes to the railway in 2018 to deliver the new Thameslink operation. As part of this significant change people, trains, routes and stations change between the constituent parts, and doing this within one entity has many advantages, even though it has created a very large operation.

I have observed that within GTR there is a widely held view that the franchise is a "here today, gone tomorrow" entity. Most employees appear to remain loyal to the constituent brands, e.g. Gatwick Express. At all levels of GTR and the industry nobody is clear what the future holds at the end of the franchise in 2021, but the direction of travel is currently towards combining the operations to deliver short term efficiencies. This may make it more difficult and expensive to disentangle the constituent brands in 2021, if it is decided to do that.

There is also pressure from TfL to devolve more rail services to their control, and to do this quicker than the currently published 2021 target date. TfL's new London Overground concessionaire Arriva Rail London Ltd. commences operations on 13th November, 2016, and I understand the contract has been written with expansion of services in mind.

3. Options for Change

I have quickly reviewed the current operation with both a short term and long-term perspective. There is a widely held view that GTR is too large, with over 6,000 employees and a diverse group of routes and brands. The 2018 Thameslink project is the priority, and focus on that is necessary as the project remains high risk on many levels. Much change and dependency between Southern and Thameslink people and activities will be necessary during this period. Meanwhile GTR is under significant pressure in respect of industrial action and the poorly performing Southern services.

3.1 Southern Metro

Southern "Metro" services, which are very tightly connected with the rest of the operation, with a high degree of mutual dependency, for example for traincrew who are interchangeable within shifts and in scarce resource. Timetable planning around Victoria and London Bridge is very difficult and constantly changing. Now is not the time to try and disconnect Southern Metro from GTR, as it will significantly increase the risk to overall service delivery in the short term and in 2018, with no short term benefits that I can see. I believe Southern Metro performance will improve significantly in early 2018, when most Thameslink trains resume running via London Bridge, and decisions should be taken in 2019 about the future of this part of the franchise, in the run up to letting new franchises in 2021.

It is desirable to give guidance to GTR now if removal of “Southern Metro” from “Southern” in 2021 is to be a done in a way that minimises performance risks and industrial action, and ask GTR to propose options to create a separate “Southern Metro” entity in 2020, ready for the letting of new franchises or concessions by DfT or TfL in 2021. GTR’s franchise agreement already contains a clause requiring them to submit recommendations regarding the future franchise(s) shape later in the current term.

3.2 Great Northern Metro

This frequent service operates between Moorgate, Hertford and Welwyn Garden City (GN4 and GN5 on the map below), and is largely a self-contained operation. Some services currently continue to Stevenage and Letchworth, but it is proposed to cut most of these back to Hertford from 2018, as there are insufficient paths to run these services on the ECML between Stevenage and Hitchin. If an additional platform is constructed at Stevenage it may be possible to extend these services to there in the future.

25 new Class 717 six-car trains are being built by Siemens as a dedicated fleet for this route, and will be maintained by GTR at their Hornsey Depot. The line between Drayton Park and Moorgate is a former underground line transferred to BR in 1976 and partly converted for main line trains. It retains various Underground characteristics, such as third rail electrification with a fourth return rail, and tripcocks at all signals, and I believe Old Street and Moorgate stations are owned by London Underground as part of shared stations, and are in need of modernisation. The track and signalling is owned and operated by Network Rail.

The Metro operation includes approximately 28 stations between Hatfield, Watton-at-Stone and Moorgate.

Other current Great Northern services run between Kings Lynn, Cambridge, Peterborough and Kings Cross, and these will be part of the Thameslink operation from 2018, with most services continuing to destinations south of London and a few running to Kings Cross. I understand Great Northern drivers will be “temporarily” split between Metro and Thameslink in 2017 to avoid them all having to learn the cross London routes and Class 700 trains, so there may then be a some division for TUPE purposes. At present it is proposed not to initially train about 100 drivers on Class 700 trains, spread across several locations, and it is proposed to open new drivers depots, for example at Welwyn Garden City and Finsbury Park. These proposals have not yet been approved by DfT, and recruitment has not yet begun. However there is still risk that splitting the driver workforce, who currently enjoy variety of work, may be unpopular, and more work is required to evaluate this. All Great Northern Metro services are currently DOO.

The Great Northern Metro services mainly use the slow lines on the four track section between Finsbury Park and Welwyn Garden City, with future Thameslink, VTEC and Open Access operators mainly on the fast lines. The two track line between Langley Junction and Alexandra Palace via Hertford is normally only used by Great Northern Metro services and freight, though it is a diversionary route for VTEC and Open Access services. Network Rail is already used to dealing with multiple operators on the ECML.

The current Great Northern Operations & Traincrew Control at Kings Cross is proposed to be transferred to Three Bridges, although is currently “on hold”. I understand that few of the experienced controllers wish to move, and are likely to take redundancy. Moving the entire Great Northern activity to Three Bridges is therefore high risk, as these are critical people. A similar recent exercise moving people from West Hampstead to Three Bridges is believed to have had consequences for current performance. If only the Thameslink activity is moved in 2017/18, leaving Great Northern Metro Control at Kings Cross, I believe this reduces the transfer risk to both parts of the operations.

I believe there is an option to transfer the Great Northern Metro operation to TfL and it's London Overground concession in 2018. If TfL / the London Overground concessionaire were to take the lead in this transfer, and the implementation of the new trains and service, this could reduce risks associated with the Thameslink programme, led by GTR.

However to do this, a decision should be made immediately, and discussions commenced with TfL, GTR and the London Overground concessionaire.

3.3 East Croydon – Milton Keynes

This service was created by the last Southern franchise in 2006 as a new business venture, and has proved popular with passengers. It connects South London via Kensington and Shepherds Bush with Watford and stations to Milton Keynes, and does not run into any London terminus. It shares the West London Line through Kensington with TfL's London Overground service from Clapham Jn to Stratford, itself a new service initially introduced in 1994, and redeveloped, with new stations, from 2007 onwards.

The service has been severely reduced since July, 2016 due to driver shortages, and no date for the full service resuming has been announced. The service normally operates hourly, with extra peak services between Shepherds Bush and Clapham Junction. LOROL have been running short notice extra services from Shepherds Bush at the times of some peak GTR services to alleviate overcrowding.

The service is operated by Southern drivers from Norwood, adjacent to Selhurst which is a large driver depot with a high turnover, and it is time consuming and expensive for them to learn the complex WLL / WCML to Milton Keynes, with 25kV overhead lines. This task is ongoing, alongside the training needs for the 2018 changes. The services are not DOO, and a Selhurst conductor works all services. No crews are dedicated to the Milton Keynes service, and TfL / the London Overground concessionaire would need to recruit and train traincrew, probably at a location close to wherever they decide to maintain the trains. If this service transferred to London Overground, became DOO, and was combined with electrification of the Uckfield line (see separate paper), no Selhurst conductors would no longer be required in that role. The London Overground concessionaire's core business is the operation of trains that run on both third rail and 25kV overhead wires.

The service serves key stations already operated by the London Overground concession, such as Kensington Olympia and Shepherds Bush. No stations are associated with this service.

The service is currently operated by GTR Class 377 units. I estimate that seven train sets of varying length are deployed daily from the Southern Class 377 fleet, with some of these in use only in the peaks to provide extra capacity in West London. GTR are currently considering how services can be increased to 8 car formations to deal with overcrowding, though there are potentially platform length issues with longer trains. TfL and the London Overground concessionaire may have an option to continue to use these trains, maintained at Selhurst, or they could probably switch to Class 319 trains, depending on platform length suitability. The trains could be maintained at Willesden (Bombardier), Bletchley (LM) or Northampton (Siemens) or Selhurst (GTR). They could also explore other longer term new build options for trains and depots in the London, Watford or Milton Keynes areas. London Midland currently run a small Class 319 fleet on the WCML, with maintenance at Bletchley / Northampton, which was transferred from Thameslink.

Redeployment of the seven Class 377 units within GTR would see strengthening of services and some contingency to allow for further Class 700 reliability growth. Once the Class 700 fleet is fully operational on Thameslink, and assuming they take over all Thameslink services, the GTR Class 377 fleet would no longer operate on any 25kv overhead line routes (unless Uckfield is electrified; see separate paper), so the pantograph and 25kv equipment can be temporarily disabled,

resulting in less maintenance costs.

I believe there is an option to transfer the East Croydon – Milton Keynes operation to TfL and it's London Overground concession in 2018. TfL may decide to change the service, for example by not running it north of Watford Junction, or running it to an alternative southern destination other than East Croydon. They could also develop the combined West London line service to better match available capacity to demand. They would have a number of crewing and rolling stock options, but should be able to operate the service more efficiently than GTR in the longer term, without the involvement of Selhurst. If the transfer of the service and its redevelopment was led by TfL and the London Overground concession, this could reduce risks associated with the 2018 Thameslink programme, led by GTR, as it is one less service complex group to manage. It would also remove GTR's engagement with the West London Line (Anglia NR Route) and the WCML (LNW NR Route). The London Overground concessionaire already deals extensively with both these Routes.

However to do this, a decision should be made immediately, and discussions commenced with TfL, GTR and the London Overground concessionaire.

3.4 Ashford – Hastings

The Ashford – Hastings route is currently a service operated by 12 Class 171 diesel units, running as through services from Ashford / Hastings to Eastbourne and Brighton. The trains run empty to and from GTR's Selhurst depot for maintenance. GTR's 2018 Timetable consultation has proposed reducing the service back to Ashford / Hastings, and concentrating the fleet there to provide more capacity to relieve current overcrowding.

In my opinion this service in its new form, in December, 2018, should transfer to the new South Eastern franchise. Bidders for that franchise should be asked to include it, and identify the most efficient way to run the revised service, and maintain the trains in Kent or East Sussex rather than Selhurst. Other possibilities exist that bidders should explore, such as bi-mode trains and electrification. Bidders will already be obliged to review arrangements for train maintenance and stabling as part of providing additional train capacity on South Eastern for the future. There are potential under utilised and rail connected depot facilities at Ashford and St Leonards, Hastings that bidders will no doubt consider as part of their wider depot strategy.

4. Conclusion

I recommend that DfT urgently consider the three above suggestions.

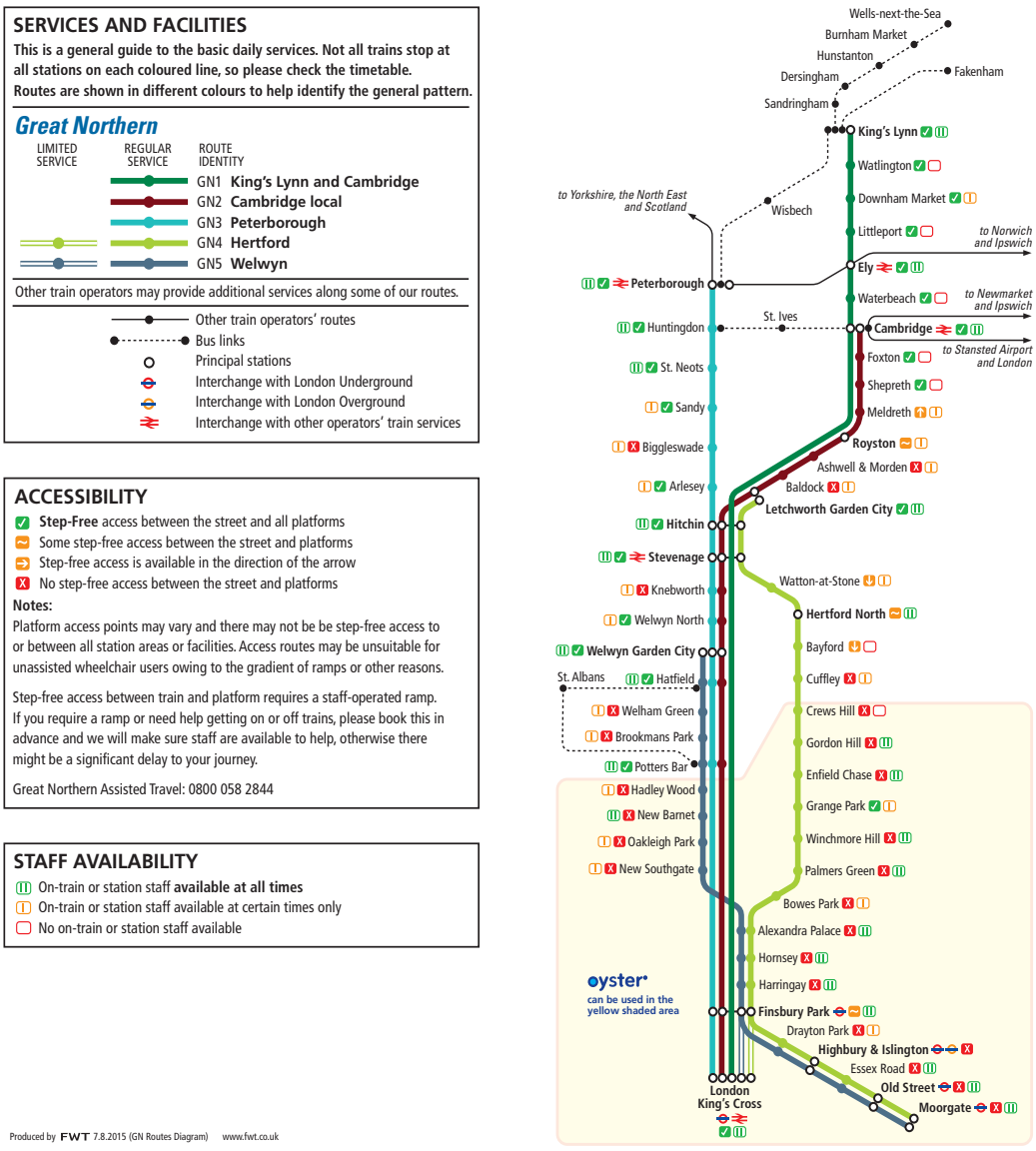
Transferring these two services in 2018 to TfL and the London Overground concessionaire will be seen by many as a "punishment" for GTR, and the next step in devolution of inner London commuter services to TfL. All London Overground services are currently DOO, after the conclusion of a dispute. Organisations such as London Travel Watch will welcome the decision. It is hard to see any "losers", or any additional significant long terms costs once the transfer has occurred, unless it is decided to enhance services and stations.

TfL and its London Overground concessionaire would have to mobilise quickly to lead the transfers of people, stations, service planning and rolling stock, and take over leading the acceptance of the new Siemens Class 717 trains. However they have plenty of experience of this, and are currently leading a new train project for 45 new Bombardier trains to operate their routes out of Liverpool Street.

TfL is currently making experienced people redundant, and this could be possibly be deferred for two years to help in managing the transfer.

I believe that this will focus GTR and its resources on delivering the 2018 Thameslink Project,

which currently is high risk on many levels. GTR will be left managing Thameslink core services, Gatwick Express and Southern only from 2018, which for now remains a logical sensible entity while the new Thameslink operation is introduced and settled down.



Note that the current 2018 Thameslink Timetable proposal will limit GN4 to Hertford North to Moorgate only, with a bus connection between Hertford North and Stevenage, due to insufficient capacity at Stevenage.

STRICTLY CONFIDENTIAL

PAPER: **APPENDIX 5**
PAPER TO: **SECRETARY OF STATE FOR TRANSPORT**
DATE: **30th DECEMBER, 2016**
FROM: **CHRIS GIBB**
SUBJECT: **MODERNISING THE UCKFIELD LINE**

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1. Purpose of Paper

This paper outlines potential benefits, options and risks related to electrification of the route between Hurst Green and Uckfield.

2. Background

The Uckfield line connects the towns of Uckfield, Crowborough and Edenbridge to Croydon and London. The complete route is 46 miles long, of which the 25-mile long branch between Hurst Green Junction and Uckfield is not electrified. It is one of the few routes in the South East that is not electrified. It passes through rural areas of Kent and terminates in East Sussex.

In 1985 the branch from Eridge to Tunbridge Wells, and a diesel train maintenance depot at Tunbridge Wells, were closed. Some of this line has since reopened as a heritage railway. The route between Sanderstead, Hurst Green and East Grinstead was electrified in 1987 with 750v DC third rail.

In 1990, due to the poor state of the track, 12 miles of the Uckfield branch were reduced to single track, and modern signalling with track circuits installed, controlled from Oxted signalbox. Line speed is generally 70mph.

In 1994 a significant accident occurred at Cowden when two trains collided on the single track, killing five people. One of the trains passed the signal protecting the single track at danger; a risk now mitigated on the route by TPWS, SPAD alert signals and GSM-R.

Figure 1 – Class 171 in Uckfield platform – the end of the line

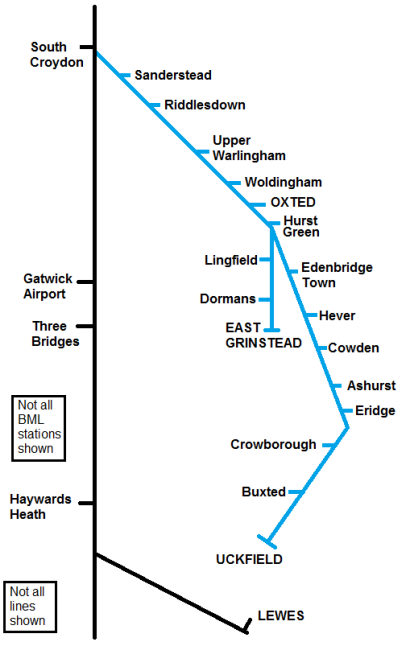


Figure 2 – map (not to scale)

Services are operated by a fleet of 56 Class 171 diesel vehicles (figure 1) based at Selhurst Depot, of which 44 are required for the Uckfield route and the remaining 12 for the Ashford – Hastings line. This modern 23m-vehicle fleet was introduced in 2004. In 2016 it was increased in size, with the addition of converted Class 170s from Scotland, to enable ten coach peak workings. This has been necessary to accommodate passenger volume growth on the route. Platforms were extended in 2015 to accommodate 10 23m vehicles or 12 20m vehicles. The Class 171 fleet is maintained at Selhurst, with all trains returning there at night, apart from one set stabled at Oxted.

The Uckfield line train service consists of hourly services to London Bridge, increasing to half hourly in the peak hours. Two evening peak services require passengers from London to the Uckfield line to change trains at Oxted. On Sundays an hourly service operates between Uckfield and Oxted, connecting there into / out of Victoria – East Grinstead services.

Some of the passenger catchment area is shared with South Eastern's Hastings – London route, and I believe demand is influenced by a fares disparity. For example an annual season ticket from Wadhurst to London is £4,680 (journey time to London Bridge 58 minutes) and Crowborough is £2,844 (journey time to London Bridge 68 minutes). The two stations are 15 minutes / 8 miles apart by car. I think these prices have drifted apart since the Hastings line was electrified in 1986, and services steadily improved thereafter.

The draft local plan for the Wealden District is for 19,950 new dwellings to be built between 2013 and 2037, of which 7,200 have been approved and allocated under the current plan. About half of these new dwellings are being built, or will be built, in the Buxted / Uckfield area. S106 funds arising are already earmarked for local road improvements. Other smaller housing developments are envisaged elsewhere on the route.

3. The London & South Coast Rail Corridor Study

Stakeholders have been campaigning for the reopening of the 25-mile line between Uckfield and Lewes, which closed in 1969, and the use of this route as a new line between Brighton and London (www.BML2.co.uk). Parsons Brinkerhoff has recently reviewed this concept for DfT in the as-yet-unpublished "London & South Coast Rail Corridor Study". This has concluded there no case for "BML2" and there is a "*poor transport case for reopening*". It goes on to propose that the LEPs consider how a future local scheme could contribute to economic growth, and how it could be funded. The Study supports Network Rail's strategy to focus on the existing Brighton Main Line, and increase capacity there through continued investment in improved infrastructure, signalling and trains.

The Study also considers Uckfield line electrification, using a cost estimate of £150m - £250m, and a redoubling of the single track. The "recommended way forward" is "*We accept that there is currently no case for electrifying the Uckfield line on an as-is basis without redoubling. Redoubling, with possible electrification, may be necessary to support certain options for Lewes – Uckfield reopening, as noted in Chapter 6. This should be addressed in the technical work to support the new approach we are recommending for Lewes – Uckfield*".

I believe the figures of £150m - £250m may have come from a past study of the costs of electrifying the Uckfield line, *but also* converting East Grinstead – South Croydon from third rail to overhead power supply. I do not consider this is necessary. Separate experts have suggested to me that a cost in the range of £75m - £95m is more likely for electrifying Uckfield – Hurst Green alone, whether this is with AC overhead or DC third rail. To this should be added the desirable signalling alterations at Crowborough and the construction of the sidings I am proposing.

I think Network Rail or Parsons Brinkerhoff could have examined a wider range of options to establish the benefits from Uckfield electrification. In particular the "overall industry / taxpayer

benefit" of such a scheme has not been fully explored. I will set out further options in the following section that will significantly improve the business case.

4. Making the case for Electrification

I believe further factors should be considered before dismissing electrification, as follows:

4.1 Passenger Capacity can increase

Depending on seating configuration there would be an increase in seat numbers with the replacement of peak ten car Class 171s (674 seats) with twelve car Class 377s (714 seats). It would also be possible to operate Class 700 trains on the route with 666 seats and space for standing for a further 1,088. Such capacity improvements would be welcome on the whole route, but particularly between East Croydon and London Bridge in the peaks. Class 377s and Class 700s have through corridor connections between all vehicles, improving passengers' ability to find a seat, and on board supervisors' ability to undertake better revenue protection and customer service. A ten car Class 171 is typically three units coupled, with no walk-through connection between the three units.

GTR's long-term fleet strategy is under review at present, in discussion with DfT. I believe that towards the end of the franchise there will be sufficient surplus dual voltage Class 377 units to take over the Uckfield line services. Approximately 36 vehicles would also become available from the East Croydon – Milton Keynes service if that service transfers to TfL / London Overground control (see separate paper) between 2018 and 2021, and is operated by other types of trains. Further vehicles will be available from the existing GTR fleet by 2020, enough to replace 44 current Class 171 vehicles, and will be more than sufficient to increase peak services from 10 cars to 12 cars. The Anglia Class 379 fleet is similar, and available from 2019 onwards, but currently without DC shoegear.

The two-trains-per-hour weekday peak East Grinstead – London Bridge services are proposed to form part of the Thameslink service pattern from 2018, continuing through London to Bedford and formed of Class 700 trains. It may be possible to also extend several peak Uckfield – London Bridge services through the Thameslink core to destinations north of London, though this would need to be in place of other Thameslink services that have been proposed in the current 2018 timetable consultation. Whilst this would be welcome along the whole route, the main benefit would be providing additional peak services between East Croydon and Blackfriars / City Thameslink / Farringdon / St Pancras International, without requiring extra paths or infrastructure between Croydon and London Bridge. The services would need to be formed of Class 700 trains. I would not recommend running more than two or three trains like this, and only in the peaks, as I do not think the Thameslink performance should be dependent on a route with any single track, or for the general performance of the Uckfield line to depend on Thameslink for the same reason.

The 44 Class 171 vehicles displaced are from a Class 170 family common across the UK, and would immediately provide extra capacity and better passenger comfort on other routes.

4.2 Passengers can have better performance and a better timetable

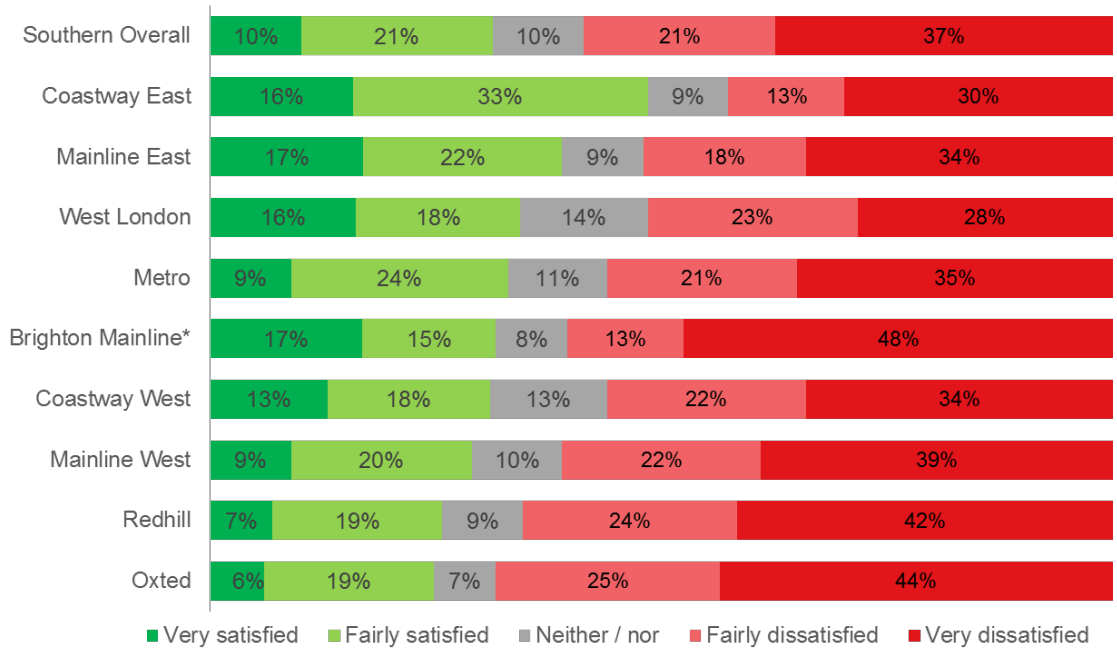
The operation of London Bridge, the Brighton Main Line between London and South Croydon and the service between London, Oxted and East Grinstead are all planned around accommodating the needs of the Uckfield line diesel fleet. Arrivals from Uckfield at London Bridge must form departures to Uckfield, both in day-to-day operations, including disruption, and in long term strategic planning. To maximise capacity for passengers arriving trains must promptly form departures, and the more rolling stock constraints present, the more difficult it is to maximise capacity for passengers.

If the Uckfield line is electrified and operated by the large GTR dual voltage fleets this all changes. The operation is immediately more flexible when being planned, and when being delivered, as the electric trains can form any service on arrival at London Bridge.

At present when there is any disruption trains turn round short of their destination, usually at East Croydon or Crowborough, to minimise delays to later services. I examined one four week period this year and found that 43 trains in the London / East Grinstead / Uckfield service group had turned round short of their destination. Because of the dedicated diesel rolling stock it is impossible to “step up” rolling stock, for example at London Bridge, to use another train set to form a departure to Uckfield, enabling it to depart on time and run throughout. This means that service recovery after an incident usually takes longer on the Uckfield line than other routes.

As a result the Uckfield line gets an above average proportion of negative media coverage, for example http://www.bbc.co.uk/news/uk-england-38161935 .

National Passenger Satisfaction data reflects this, with the Oxted line showing some of the lowest satisfaction on Southern on performance:



Source: Autumn 2016 NPS data – Satisfaction with punctuality and reliability *less than 50 responses

The Uckfield service currently has to operate independently of the East Grinstead service as the electric and diesel trains cannot couple. If both services were operated by compatible sets, the planning of the service can better match passenger demand. For example off peak trains could couple at Oxted northbound, and uncouple at Hurst Green southbound, reducing train paths and costs between there and London, but still providing sufficient seating capacity. The ability to split trains at Hurst Green could provide two additional through evening trains from London Victoria (1723 and 1823) to the Uckfield line, with no extra paths or costs.

On Sundays the Uckfield line could have through trains to London by coupling trains at Oxted northbound, and uncoupling at Hurst Green southbound.

The signalling system does not currently provide for trains to couple at Hurst Green going north, but this is possible at Oxted, although not currently used. It will be possible for trains to split at Hurst Green going south, enabling the second half to depart as soon as the first half has passed clear of the junction, and minimising journey times. This is subject to ORR agreement, as it is defined as new “permissive working”, but I consider that agreement will be forthcoming.

Increased coupling of services at Oxted could have a negative impact on performance, as both portions must be on time at Oxted for a punctual arrival in London, and the trains need to reliably and quickly couple mechanically and electrically. For this reason I would generally not recommend coupling of northbound morning peak services, which in any case will need to be up to 12 cars from both East Grinstead and Uckfield to meet demand concentrated over a short demand period.

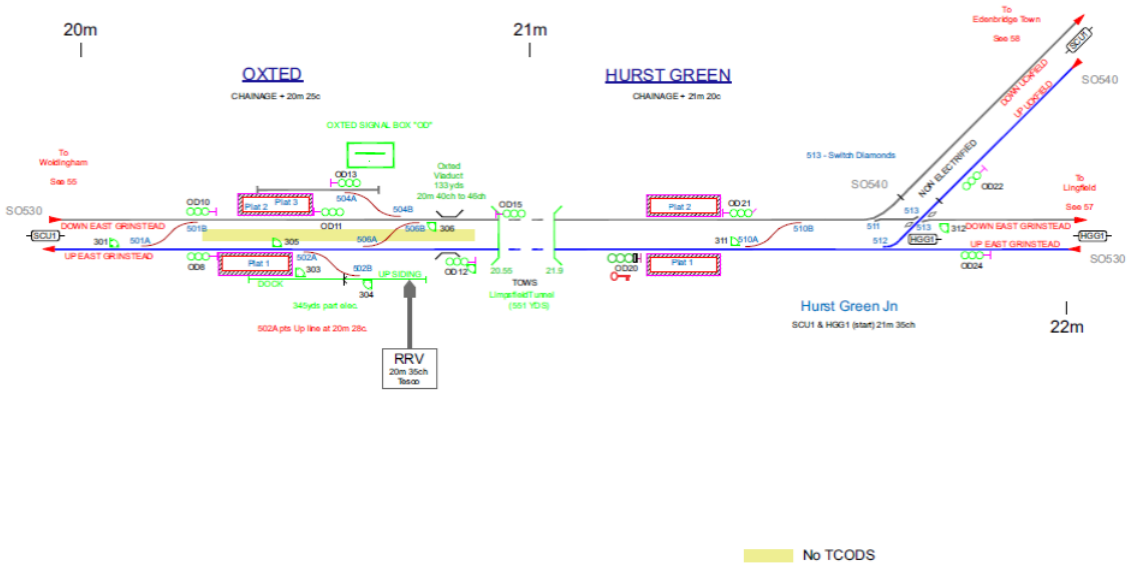


Figure 3 – Oxted / Hurst Green track and signalling layout

The Class 171 fleet does not have “Selective Door Operation”, so the ten car Uckfield services cannot call at all of the intermediate stations between Oxted and East Croydon, some of which have shorter platforms. An all Class 377 fleet would allow a review of the stopping pattern, perhaps sharing these stops more equally between Uckfield and East Grinstead services to better match capacity to demand, and accelerate some East Grinstead services by up to five minutes.

4.3 Double tracking the route is not necessary

The existing infrastructure can support a half hourly service, and the long passing loops offer a degree of flexibility to accommodate late running. I do not believe it is necessary to redouble the route: many single-track railways in Europe operate very reliably. The former track bed can be used to keep the necessary infrastructure for electrification within the footprint of Network Rail land wherever possible, keeping costs and timescales down. Should it ever be decided to reopen Uckfield – Lewes as a local service, the existing service, up to half hourly, can be extended on to Lewes and elsewhere without redoubling the sections between Uckfield and Hever.

4.4 The current fleet and depot use is inefficient

The existing diesel Class 171s have to return to Selhurst most nights for fuelling and servicing. This means that early each morning a cavalcade of empty trains runs from Selhurst to Uckfield, starting at 0430, returning in the evening, finishing at 0144, and leaving a very short window for overnight maintenance of both trains and infrastructure. This is the opposite of the predominant passenger flow, which is from Uckfield / Crowbrough / Edenbridge to Croydon and London in the morning, and back in the evening. One unit is stabled at Oxted, with the crew travelling by taxi to/from Selhurst. The whole operation is fundamentally inefficient and inherently unreliable.

I believe that a policy of stabling and cleaning four 12 car electric trains at Crowborough overnight would save approximately 75,000 miles per annum of empty train mileage, with no loss of passenger revenue. Train mileage determines the costs of many elements of operation, such as drivers, train maintenance, fuel consumption and infrastructure maintenance, all of which would reduce. If one assumes a cost of £3.00 per vehicle km (cost of crew, rolling stock maintenance, fuel and infrastructure), and all the empty stock miles are for ten car trains, then the saving to the industry from reducing empty train miles would be approximately £3.6m per annum.

I believe there is space within the existing railway owned land to accommodate the necessary new sidings, and there is a ground frame controlled connection to the main line and disused sidings - see https://youtu.be/vdiuhZvCcJw and the appendix. The signalling would ideally require to be altered in the station area to enable regular shunts and stabling of empty trains in the proposed sidings, but it would be possible to continue using the groundframe, if it was well maintained, until such time as the route is re-signalled. An overnight member of staff would be needed to operate the ground frame, but could also service the trains. A Crowborough based operation would start at 0500, and finish at 0030, giving more time for overnight infrastructure maintenance.

Selhurst Depot is one of the largest and busiest on the network. The small diesel fleet takes up disproportionate space, with its fuelling, shunting and engine maintenance needs. At present a ten coach Class 171 must be uncoupled to be fuelled. The removal of this fleet and the creation of sidings at Crowborough would make space for 60 more electric vehicles to be stabled and maintained as demand grows. This requirement is recognised, but not funded, in current CP6 planning for additional sidings on the site of the former Norwood Yard. There is hardly enough capacity for stabling the existing electric fleet, let alone expansion, and this directly impacts on both the performance and efficiency of the wider GTR operation. Selhurst would focus on Class 455 and 377 trains only, increasing overnight flexibility and reducing delays, both at start of service and at other times. Other options exist for the maintenance of the 12 vehicles needed for Ashford – Hastings, much closer to that route, if it remains a diesel route in the long term. Removal of the diesel fleet from Selhurst avoids some of the significant costs of creating new stabling facilities there and elsewhere on the network in constrained and expensive locations, often involving land acquisition.

A current Network Rail scheme to invest c. £400k in the Selhurst diesel fuelling facilities to accommodate ten coach trains is currently being developed. I understand that this scheme is likely to require signalling alterations, and as a result the cost is more likely to rise to £3m -

£3.5m. Options will be available for a decision in April, 2017. This scheme can be halted if it is decided to proceed with electrification instead. I consider that this kind of investment is money wasted – it is one more package of investment needed to sustain diesel operation of the Uckfield line, which does nothing to solve the main issue, which is the continued operation of one diesel route at the heart of the GTR network.

Diesel trains such as the Class 171 are generally reliable trains, but there is simply more equipment to go wrong than on a Class 377 electric train, so replacing diesel trains with electric trains will undoubtedly give an improvement in performance.

4.5 Crewing can be more efficient

The current Uckfield service is crewed by Norwood drivers and Selhurst conductors. As can be seen from 4.3 above they spend many unproductive hours each day moving empty trains between Selhurst and Uckfield. The service is assumed by all previous studies to be crewed by drivers and conductors indefinitely, and the Class 171 units are not equipped for DOO.

I propose that with electrification the service becomes driver only operated, with on board supervisors, as will be the case for the rest of the GTR network by 2021. I believe most services should be worked by crews based at Crowborough, recruited locally for the purpose, and with a close association with the communities they would serve. The shorter window of operations, from 0500 at the earliest to 0030 at the latest, would allow Crowborough crews to work efficient early and late shifts – for example 0600-1430 and 1430-2300. The current Norwood drivers have to work less efficient early, late and nightshifts, such is the time span of movements round the clock from 0430 to 0144.

I believe accommodation can be created at Crowborough station to support a small and efficient depot of approximately 30 traincrew, and several nightshift train cleaners. These are not additional people to current plans; they are 30 traincrew recruited at Crowborough instead of Selhurst / Norwood over the next four years.

4.6 Diesel trains that are PRM compliant will be in high demand in the next five years

Rolling stock is required to comply with Persons of Reduced Mobility Technical Specification for Interoperability (PRM TSI) by 1st January, 2020. There is not enough diesel rolling stock currently to achieve this nationally, and, with no new diesel trains being built and growing passenger demand, this will be difficult to achieve. The 44 vehicles working the Uckfield line are from the ubiquitous Class 170 family of PRM compliant trains. Changing the coupler from Dellner to BSI is all that is required to convert them back from Class 171 to Class 170. Releasing them onto the rolling stock market in time for 2020/1, with a short derogation if necessary, will materially aid national PRM compliance, and quickly benefit disabled passengers in other parts of the country.

4.7 The Environment

There are 21 departures from London Bridge each weekday, formed of up to ten Class 171 vehicles, each with a 315kW diesel engine that does not meet the emissions standards set for diesel engines built today. The central London emissions from these trains, combined with overnight noise issues in built up areas such as Norwood, are unwelcome, especially when compared to modern electric trains.

5. Electrification

5.1 AC v DC ?

I have discussed this question with a range of experts in several organisations. I have not ruled out extending the third rail system to Uckfield, and have considered both options. The ORR are

keen to discourage third rail extensions on safety grounds, and have outlined their views in a document entitled “ORR’s Policy on Third Rail DC Electrification Systems”. I have considered this document and discussed it with several experts in the field, including the ORR.

Popular opinion is that it should be cheap, safe and easy to extend third rail electrification. However I have found this not to be the case in respect of the Uckfield line. The largest single item cost is the connection to the National Grid, and this is necessary for both third rail and overhead systems. A third rail system would require feeder stations every 2-3 miles, whereas overhead may only require one feeder station for the 25 miles between Hurst Green and Uckfield.

Given the availability of dual voltage trains on the GTR network for the foreseeable future, I believe the preferred option for electrification should be 25kV AC overhead electrification. I have been told by several experts that it should be cheaper than an extension of the third rail. I believe there will be performance benefits from an overhead system, particularly in winter, and a minor reduction in journey times from faster acceleration and DOO operation.

It is well established that an overhead AC system is electrically far more efficient than a DC third rail system, with a far lower level of transmission wastage and losses. Electricity for traction costs will therefore be lower with an AC option. System maintenance costs will also be lower – for example no de-icing will be required in winter, and most infrastructure maintenance can be done with live AC overhead wires, whereas DC third rail must be isolated.

The overhead electrification should cover the 25 miles between Uckfield and a changeover point south of Hurst Green Junction. Third rail would be extended for a mile from Hurst Green Junction to this changeover point (see figure 5), where trains would change from third rail to overhead power, or v.v., on the move, without any time loss. ORR have indicated to me they would agree to this short extension of third rail.

Figure 4 – Hurst Green Junction, looking left towards Uckfield and right towards East Grinstead

Figure 5 – South of Hurst Green Junction, looking south – location for the “on the move” change over from third rail to overhead traction and v.v.

A National Grid connection will need to be identified to feed the line, and consideration given to whether it would be sufficiently reliable to power the route without an alternative connection. National Grid only work on an emerging costs basis on this kind of connection, so predicting the cost and timescale can be difficult. Nevertheless electrification experts have experience of this.

This will be the largest cost element of electrification. I have not been able to establish where the National Grid connection is best achieved.

Ideally motorised isolation switching would be provided to easily and safely enable power to stay on in the Crowborough sidings at night to power stabled trains while infrastructure maintenance and renewal work was being carried out elsewhere along the route with the power switched off.

The existence of the empty trackbed on 12 miles of the route, and other empty railway owned land, is an opportunity to build all or almost all of the equipment needed on railway property, reducing costs and timescales. There are three tunnels, one of which is single track in a twin track bore. These may be addressed using the increasingly common “overhead conductor bar”, requiring less clearance. Some minor road bridges and footbridges may need raising or conversion to meet current accessibility standards.

Maintenance of 25 miles of overhead electrification in a region of third rail may be a challenge, but I don’t see it as insurmountable. A well specified and well built system should operate reliably for many years before any significant renewal is needed. Much of the electrical equipment can be designed to be routinely inspected by power system contractors without going on the operational railway.

5.2 How to design, build and operate the electrification

Network Rail has little experience of accurately costing and delivering electrification schemes, and all available enhancement funding is committed. A novel approach is therefore needed for this project as a pilot scheme to explore alternative approaches.

Part 1 to Schedule 6.1, clause 5 of GTR’s franchise agreement envisages GTR procuring “technical services” from SNCF, and the scope of this is not limited. Within the terms of the franchise agreement I believe SNCF could specify, design and cost the electrification as outlined in 5.1, working closely with Network Rail. Keolis and its partners, including SNCF, could then procure the electrification works and undertake these during the remaining term of the franchise, working closely with GTR to minimise passenger disruption and maximise the benefits to the long term passengers and operations.

I believe Keolis could also raise private sector funding from a range of sources to cover the cost, assuming it to be in the range of £150m - £250m as stated in 3 above. I also believe that by adopting standardised SNCF electrification practices, it would be possible to do it more quickly and cost effectively. From the range of opinions I have heard, a more likely cost of the complete scheme would be £75m - £95m.

In 2012 the 5.5 mile long single track Paisley Canal line in Scotland was electrified by a Network Rail / ScotRail Alliance for £12m, half the original estimate, by introducing special wire height standards that limit the use of non-electric trains. The scheme did not require a new National Grid connection. At £2.4m per mile, on a similar basis Uckfield electrification would cost £55m, but the Uckfield line has double track and a National Grid connection to consider, so £75m - £95m is broadly consistent. The Paisley Canal scheme took six months from authorisation to the first electric train running. The approach was prompted by the McNulty Rail Value for Money study.

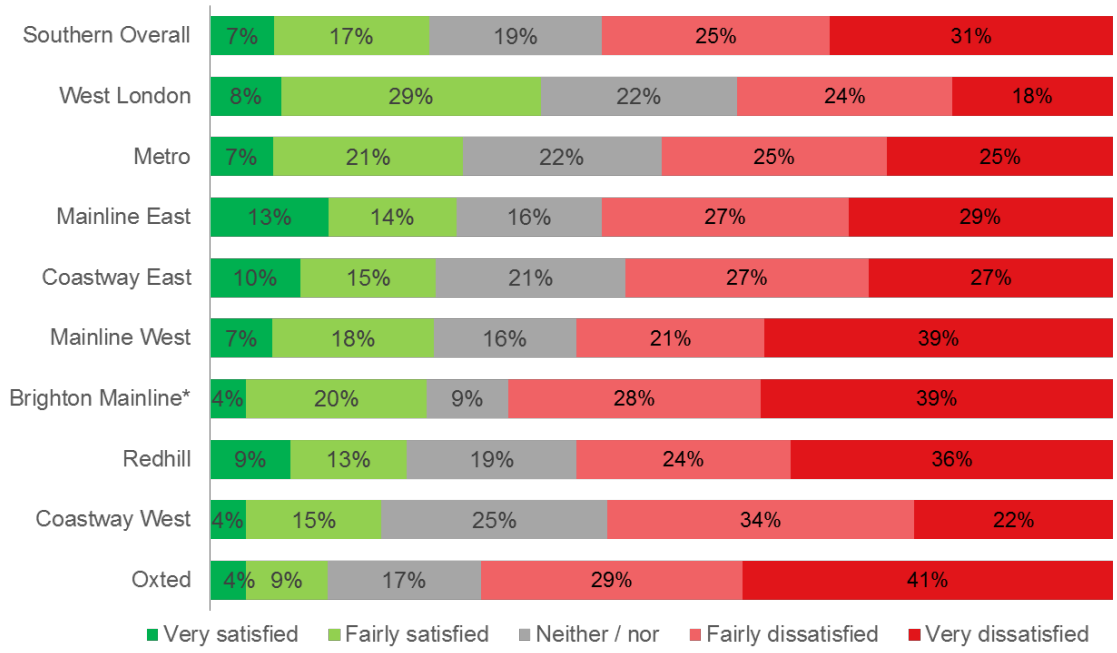
The CEO of Keolis, Alistair Gordon, told the Secretary of State in November that Keolis would like to discuss how they could deliver this project, along the lines set out above.

The basis of a private sector investment and a return could be as follows:

The electrification equipment could be owned by the investor body indefinitely. They would receive an income from a surcharge on the metered electricity provided to the train operator – “power by the hour”, priced to provide an appropriate return on the investment in the

electrification equipment asset, and fund its maintenance and eventual renewal. This would be paid by the train operator directly to the investor body, and would be partly offset by the operator no longer having to pay for diesel fuel. The investor body would be responsible for system maintenance and renewal. In the event of a system failure resulting in non-provision of power, then no payment would be made. This approach should incentivise SNCF, Keolis, GTR and their partners to minimise the cost of the electrification, whilst designing, building and maintaining a highly reliable system as quickly as possible.

Separately I think it would be reasonable to increase fares with an improved service, to bring them more into line with those charged on the Hastings - London line. An annual season ticket from Crowborough to London should rise in small steps from the current £2,844 towards £4,680, as long as the electrification is a success and delivers increased passenger capacity and improved performance. This should happen from the next franchise onwards. However, as the following shows, there is a lot to do on this route to improve passengers' satisfaction with overall value for money, compared to other Southern routes:



Source: Satisfaction with Value for Money, NPS Autumn, 2016 * less than 50 responses

As a pilot scheme of this kind I think it would be appropriate for Network Rail to have a right to buy the electrification equipment at a predetermined price at various points during the anticipated life of the equipment.

Additionally Network Rail could let a small concession for the maintenance of the rest of the infrastructure for the section between Hurst Green Junction and Uckfield to the investor body. The investor body would then be responsible for maintaining and renewing the track, signalling, structures, earthworks and overhead power system together, with Network Rail being the System Authority, operating the signalling system and being the infrastructure Duty Holder.

I see no reason for Network Rail to object to such a pilot scheme. Indeed they should expect to learn from the SNCF and its partners, to develop new ways of attracting infrastructure enhancement investment and new ways of contractualising construction, maintenance and renewal. They will also participate in the benefits from improved performance driven from the removal of the fleet of diesel trains.

There is no doubt that there is currently an appetite for such private sector investments amongst infrastructure investment specialists; several have contacted me in recent weeks to see if there were any opportunities arising from the work I have been asked to undertake.

A sceptic might say that the railway should not depend on a privately owned power source to run trains. However it will be understood that we already do that, as we neither generate traction power, not handle its transmission around the country and to the railway network. I see no reason why, with the right incentives and penalties, we should not bring the private sector point of power supply closer to the train.

5.3 Risks

The main risk will, in my view, be the need to develop new relationships between trains, tracks, signalling and power systems, the owners / operators of these assets and regulators and government. The new relationships will need to be effective during system design, approval, construction, testing and operation. I do not see any of this as insurmountable. If we do not grasp and manage these risks, we will simply continue as before, and an innovative scheme of this nature simply will not happen.

Overhead electrification is not isolated from the rest of the infrastructure. A good relationship with Network Rail will be essential to avoid issues with interference, buried cables, vegetation, the signalling system, drainage, track position in relation to the contact wire and other elements of the infrastructure.

The line between Sanderstead and East Grinstead was electrified as cheaply as possible in 1987, and the 11kV power supply may not be strong enough to support all the Uckfield trains running on electric traction between Hurst Green and Sanderstead. Further work is required to establish if further feeder capability is needed on this section.

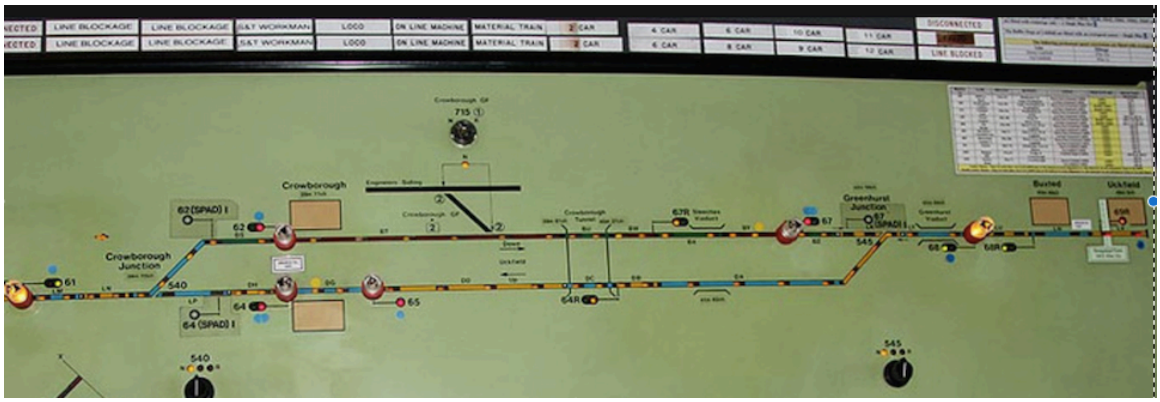
Given the ability of a small overhead power fault, or an incident such as a fallen tree on the wires, to cripple an electrified railway for days, this eventuality, however unlikely, should be considered at each stage of design, contractualisation, construction and operation. Whose job will it be to fix the system if this happens, will they do it immediately and why?

There is also a risk that the project may take longer than expected to deliver. However it should be a simple scheme compared to the third rail electrification of the adjacent Hastings line (32 miles long, mostly double track), which took three years and cost £24m (1986 prices; c. £75m at today's prices). The challenge to today's railway industry, government and regulators is to electrify Hurst Green to Uckfield to a similar timescale and cost, without compromising on essential modern safety standards.

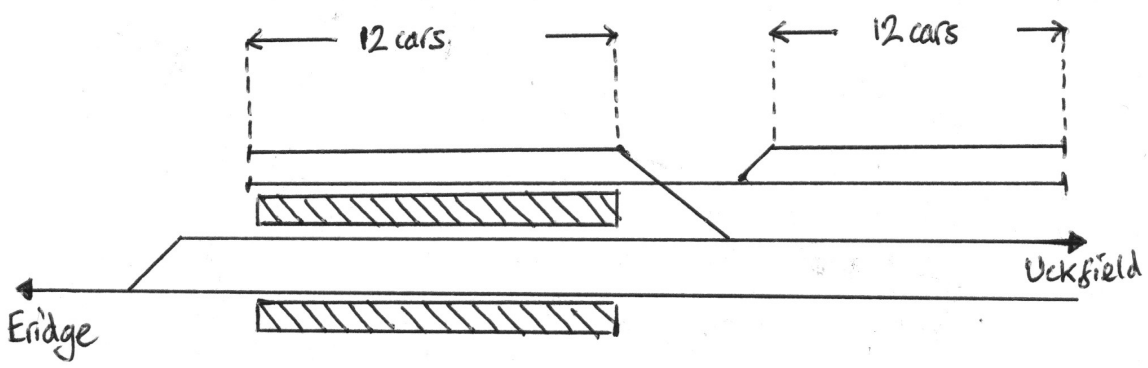
6. Conclusion

I commend this proposal to electrify Hurst Green to Uckfield with 25kV overhead electrification to government.

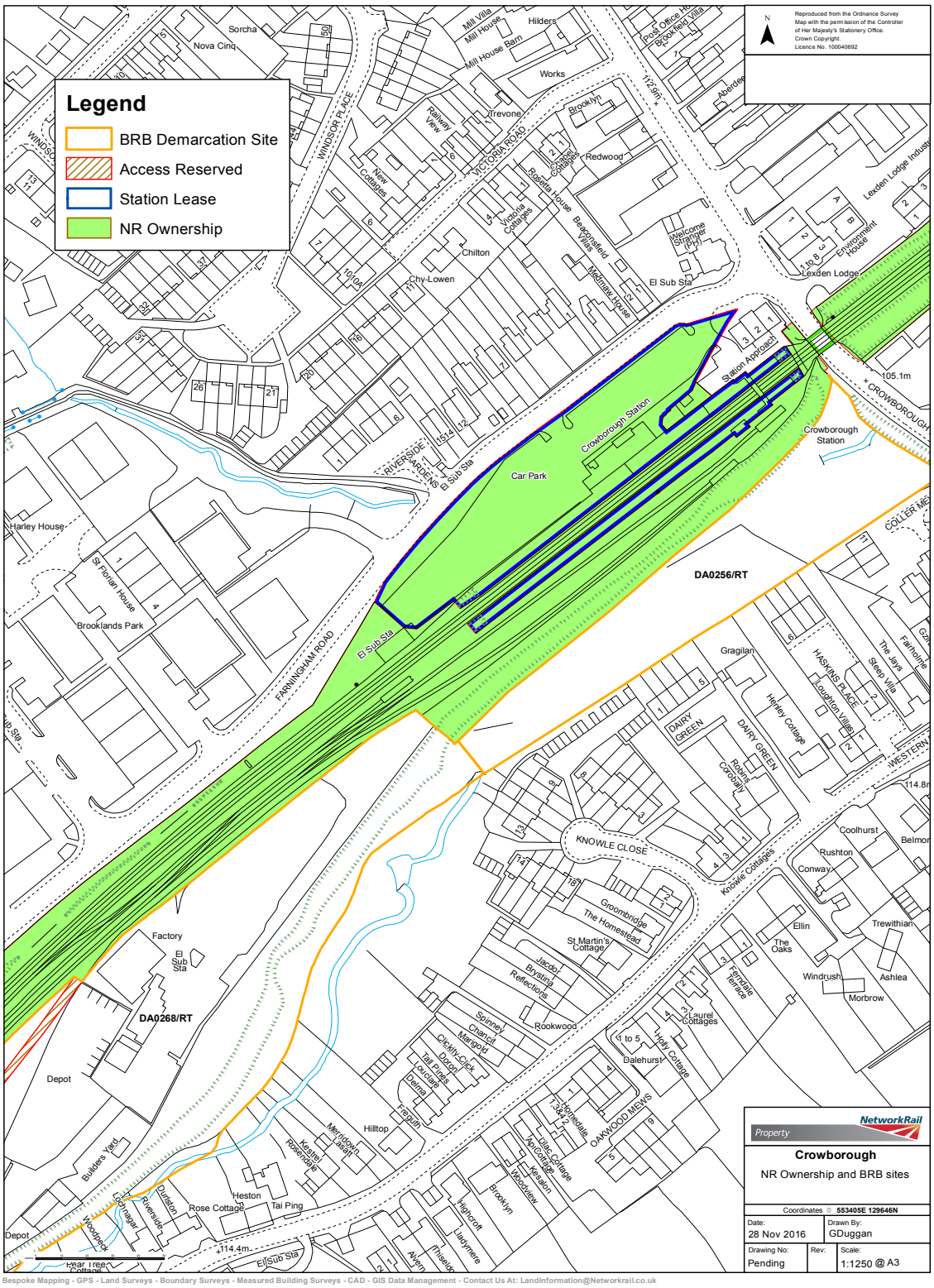
APPENDIX - CROWBOROUGH



Oxted Signalbox – Crowborough station layout, showing existing rarely used engineers siding in black controlled currently by a ground frame. Changes to the signalling would be desirable to enable the sidings to be used for regular empty train shunts and stabling, but not essential: a well maintained ground frame could enable access to the sidings until such time as the route signalling is renewed. A night-shift shunter would be required to operate the ground frame if it remained.

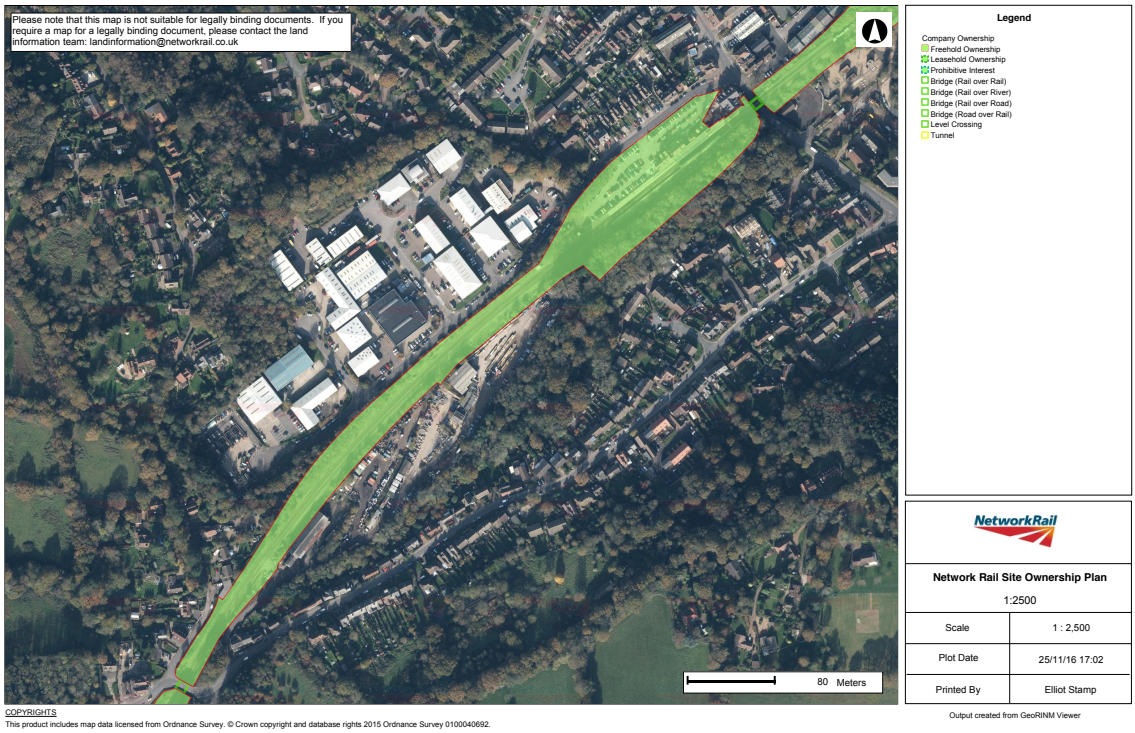


Crowborough station – proposed layout to accommodate four stabled 12 car trains in four sidings.



Crowborough land ownership showing how Network Rail own the freehold of all the land proposed for use as new sidings. All of this land is currently not in use. Most of the sidings shown on the map have been removed or are disused – it is these established track beds that I propose to re-use for the four train stabling sidings.

The areas marked above in yellow (ref DA0268/RT and DA0256/RT) are owned by London & Continental Railway (formerly British Rail Property Board) and are currently mostly in use as a builders yard. I suggest that if the sidings area owned by NR is modernised and tidied up as part of this proposal, the some or all of the LCR area may be suitable for housing and car parking. The housing would be within an easy walk of the station, 68 minutes from London Bridge and 40 minutes drive from Gatwick Airport.



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PAPER: **APPENDIX 6**
PAPER TO: **SECRETARY OF STATE FOR TRANSPORT**
DATE: **30th DECEMBER, 2016**
FROM: **CHRIS GIBB**
SUBJECT: **GTR COMMERCIAL STRATEGY**

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1. Purpose of Paper

This paper outlines the need for a new GTR Commercial Strategy from January, 2018.

2. Background

GTR consists of all or parts of three former TOCs – Gatwick Express, Southern and Great Northern / Thameslink. All of these three TOCs were in competition for revenue between them, and this was particularly acute on the Brighton Main Line. There were three teams setting and managing fares and ticketing products, in competition with each other and other teams in many cases. Revenue growth formed an important element in the profits of all three TOCs, and revenue decline a significant risk to the profits of these TOCs. Revenue growth could be achieved in broadly two ways: by receiving a larger share of static rail revenue on the routes, or a static share of a larger rail revenue on the route, or a mix of both.

Fares and commercial strategy have a significant impact on the customer experience, obviously, but also on many aspects of railway operations such as passenger flows at stations, the volume and length of enquires, use of capacity on trains, the provision of passenger information, the management of disruption, and timetable planning.

On a commuter railway such as GTR the system capacity is largely determined by the peak demand, and on many peak flows on many services this network is close to capacity, particularly to/from London. The off peak period is different, and despite the rise of more flexible employment habits, there is a lot of empty capacity on off peak services. To improve the efficiency and profitability of the system, it is desirable to attract additional business to fill this capacity at whatever discounted price an innovative commercial strategy can market and retail. This is especially the case when a large amount of off peak capacity is an obligation under the terms of the franchise contract, and cannot be reduced to match the underlying demand that would exist if there were all day prices. Even if the off peak service could be reduced, the most expensive assets – the trains and infrastructure – would only sit idle and earn nothing. In such a system every empty seat that makes a journey on the railway is a missed opportunity to earn revenue, provide a societal, economic and environmental benefit to the country and improve the overall economics of the rail industry. A good commercial strategy should make the most of this opportunity.

The railway system is not an isolated transport activity, with limited on rail competition and few choices for passengers. Many passengers, particularly in off peak times, have choices to drive, go by coach / bus, underground, taxi, or simply not to travel at all. For many journeys in the South East rail should be the best option, with several alternatives suffering from congestion, unpredictable and unproductive travel time. Some passengers have a degree of choice by route, influenced by time and ease of driving to different stations, and parking at these stations. This choice is influenced by price, reliability, ease of getting a seat and car parking availability, and is often not visible to a rail operator unless they know their passengers well.

3. Today's Commercial situation

Today's GTR franchise retains the brands of the former TOCs within one train operating company. Most of the fares and commercial strategy is still how it was left by the previous three TOCs, and each of the brands offers brand specific fares. The fares are subject to the franchise agreement regulation, so the fares can only increase by the prevailing regulated fare increases, which is generally RPI at present. The current GTR franchise manages the revenue and fares on behalf of DfT, who take all revenue risk and opportunity and approve all proposals for change.

3.1 There is a wide range of fare choices on many routes. Here is a selection of the fare types available to passengers for a typical journey on the Brighton Main Line:

Anytime single	Any permitted route	Not Gatwick Express
Anytime return	Not underground	Thameslink only
Off-peak single	First class	Railcard discounts
Off-peak return	Standard class	London termini
Super off-peak return	The Key Smartcard	Season ticket–Thameslink only
Advance single (Southern only)	Oyster single	Season ticket–any permitted
Southern only	Contactless single	plus London Travelcards
London specific terminus	Southern Daysave off peak	
Southern Day Save Off Peak	Overseas sold tickets (e.g. Britrail Pass)	

All of these tickets have some kind of restriction that applies.

Figure 1 - Gatwick Airport station TVM assistance and booking office, with the Station Manager helping a passenger.

For a random day from Gatwick to London departing between 1030 and 1055 I found the following tickets available for sale:

1030 to Victoria (Gatwick Express)	£19.90 Anytime single, any route
	£26.70 Off peak day return, any route
1033 to London Bridge	£11.60 Off peak day return, not Gatwick Express
	£10.30 Anytime single, Thameslink only
1040 to St Pancras	£11.10 Off peak day return, not underground
1054 to Victoria	£12.00 Advance single, only this specific train

If one used contactless or Oyster one would have paid between £9.40 and £19.90 for each single journey, as contactless and Oyster can only handle single tickets. Oyster "capping" does not apply on this route. For a return journey there are almost always return tickets available that are cheaper. Another limitation of contactless and Oyster is that they cannot handle first class tickets. Passengers using contactless or Oyster are charged the fares difference up to Gatwick Express fares if they touch in or out at the Gatwick Express platform at Victoria, which does not happen if the train uses a different platform, and is difficult to manage at busy times. I understand that 25% of passengers travelling from Gatwick Airport to London by train are now using contactless or Oyster. I am concerned that because of the self service nature of contactless / Oyster, passengers may be paying more for journeys than they need to, and they are neither taking advice from a booking office clerk nor seeing a range of tickets offered on a TVM.

3.2 I also looked at season tickets, and found the following options:

<u>From Brighton to London – Annual Season ticket</u>

Brighton – London Terminals, Thameslink only	£3,794
Brighton – Travelcard 1-6, Thameslink only	£4,096
Brighton – London Victoria, any route	£4,108
Brighton – London Terminals, any route	£4,452
Brighton – Travelcard 1-6, any route	£5,244

I have spoken to the passenger representatives on the Project Board, both of whom commute on the Brighton Main Line, who have confirmed that some commuters do buy Thameslink only season tickets, if they know for sure they are going to Blackfriars / City Thameslink / Farringdon / St Pancras or they are particularly price conscious. Most passengers prefer the flexibility of the "any route" ticket, especially when services are unreliable.

It is also clear that during disruption any tickets become quickly valid on any service. Disruption is so common at present that I don't believe there is much enforcement of brand specific tickets, which work most ticket gates regardless of the service used.

There are also fares anomalies and split ticketing opportunities, as on most of the network, and many of these existed in paper fares manuals before privatisation and were less visible to passengers. For example the Anytime Day Return from Eastbourne to Victoria is £59.30, whereas buying an Anytime Day Return Eastbourne to Aldershot, and adding a Day Return Clapham Junction to Victoria or Waterloo, costs a combined £40.60, saving £18.70. Both options are valid on peak trains at 0654 from Eastbourne and returning on the 1757 from Victoria. Resolving an anomaly like this is not easy – does one simply increase the Eastbourne – Aldershot fare to £59.30, affecting a few passengers who genuinely make that journey (and no doubt many who buy it when travelling to London), or does one reduce the Eastbourne – Victoria fare to £40.60, delighting a huge number of passengers (who have not realised they can buy the Aldershot tickets), no doubt, but losing a significant amount of revenue in the process? Of course increasing the Aldershot fare would be prohibited under current fares regulation. In any truly cost neutral "fares simplification" there will be some passengers who pay less, and some who pay more.

There are some fares that represent very good value for money and offer a lot of flexibility. One example of these is the Southern Daysave Off-Peak ticket, costing £18.50 and giving unlimited

travel on off-peak Southern services: it is not valid before 10:00 Monday to Friday (except Bank Holidays) and not between 16:15 and 19:15 Monday to Friday when boarding trains from East Croydon, London stations (Victoria, London Bridge, Clapham Junction or any Zone 1-6 station). For most longer distance off peak and weekend return journeys on Southern branded services this is the cheapest fare option.

I understand that the fares strategy under the GTR franchise has been to freeze the "any route" tickets and wait for the cheaper "Thameslink only" fares to "catch up", with the objective of harmonisation. However as RPI has been so low, there has been very limited progress on doing this. There has been very thorough work developing the 2018 timetable to match existing passenger demand, driven in part by today's commercial strategy, but no review of that strategy is currently planned.

3.3 In conclusion the current commercial strategy is best summed up as follows:

- Premium pricing on Gatwick Express
- Cheapest tickets on Thameslink
- Advance fares on Southern – train specific
- Competing fares with other TOCs between Peterborough, Cambridge and London
- More expensive tickets valid on all brands / all routes
- First class not widely used by first class ticket holders – generally just longer distance commuters who want to increase the chance of getting a seat

Operator specific ticketing was important to the previous operators as it was the easiest way to ensure they got all the revenue from tickets used on their services, rather than taking the ORCATS allocation of "any route" tickets determined by the timetable and ticket type demand profiles. This strategy is less relevant now, with data from ticket gates, smart tickets, train-load weighing and all the brands being under one TOC. It is easier now to assign ticket revenue to specific service groups than it has ever been in the past, so the logic for operator specific tickets is diminished. The logic for selling train specific advance tickets to fill off-peak capacity is stronger than ever with more off-peak capacity, as long as tickets and ticket barriers are set to enforce the train specific validity. There is also widespread criticism of how complex the ticketing is on this route; even though most of the ticketing has existed in this way for more than twenty years.

It is debatable whether a premium fare can be justified for Gatwick Express services, but this has been the case for more than twenty years and earns some additional revenue, particularly from overseas visitors to whom the "Gatwick Express" brand has been marketed for many years. At present the premium fare is about space – passengers are paying a premium for higher satisfaction with "sufficient space" (see table below). Journey times are slightly faster – 3-4 minutes in many cases. There is a history of overseas Gatwick Express ticket sales at premium prices, but internet ticket availability has undermined that. I have heard a range of views on this subject. I am not suggesting abolition of the Gatwick Express service; I think there remains a strong case for a fast service between Brighton, Gatwick and London, as long as the train capacity is efficiently used in full as part of the overall capacity strategy on the route. Using the capacity of Gatwick Express more effectively is not about simply stopping the trains at East Croydon (which would use up more capacity at the most congested location on the line) – it is about having an overall commercial strategy for GTR that maximises the use of *all* the available capacity.

The implications of Commercial Strategy have a significant impact on Network Rail. Overcrowding causes station dwell times to be exceeded, causing delays, many of which are "sub threshold". Unless Network Rail can prove otherwise, these delays are compensated by Network Rail to GTR. Overcrowding of any services often prompts Network Rail and other parties to look for expensive and disruptive infrastructure solutions, even when a solution may lie with a commercial strategy that optimises the use train capacity more effectively. At major stations such as Victoria, pedestrian flows, gateline and concourse capacity are all significantly influenced by

commercial strategy. Network Rail has no involvement in the commercial strategy, little understanding of it and no financial incentive to grow passenger volume or revenue. The joined up thinking between commercial, operations and infrastructure strategy only comes together at DfT level. This should be an area where Alliances are more active in the future, as long as incentives between the parties are more aligned than at present.

4. Towards a Commercial Strategy for 2018

4.1 There are many substantial changes over the next two years, most of which are connected to commercial strategy; some of these are:

- Current poor performance, disruption, industrial action and refunds, followed by an urgent need to regain lost business, particularly off-peak discretionary travel, as quickly as possible, through innovation, fares and marketing activity
- New trains on Gatwick Express and Thameslink
- Thameslink network expands to Peterborough / Cambridge
- New timetable – more capacity
- Services switched between Thameslink and Southern brands, and branded trains in use on other routes (e.g. Thameslink Class 700s on Victoria – East Grinstead).
- Crossrail interchange at Farringdon
- Delay repay 15, and automatic delay repay
- Growth in contactless / Oyster / Key Card
- Continued growth in passenger demand

I believe it would be normal to have a comprehensive and detailed commercial strategy in place underpinning the business case for all of the above. However I do not believe this to be the case.

It is necessary to have a comprehensive and detailed commercial strategy for the following reasons:

- Maximise use of overall capacity, and minimise overcrowding
- Maximise overall revenue within government specified limitations, and generate new revenue by making tickets simpler, presenting clear choices, better matched to passenger needs and easier to buy
- Maximise passenger volume carried by the committed train fleet and timetable – getting best value for the country's investment in the railway as a system
- Define simple products that passengers understand and want to buy online or at stations
- Minimise the possibility of miss-selling tickets and passengers paying more than they should
- Minimise the options for fraud and the incentive for ticketless travel
- Minimise the queuing at booking offices and ticket vending machines
- Minimise the retailing, back office and settlement costs
- Facilitate effective and efficient delay repay
- Continued competition between GTR Peterborough / Cambridge - London services with other TOCs

I believe that the extensive product changes in 2018 require a comprehensive and detailed commercial strategy to be developed to address all of these objectives.

My main reason for saying this is that I am concerned about the efficient use of capacity, particularly south of London. It is clear to me that many passengers to/from Gatwick Airport travel on Southern and Thameslink services because they are cheaper than Gatwick Express. I have stood at Gatwick Airport booking office and watched passengers offered the "Express" or the "cheapest fare", and most, when understanding the options, chose the cheapest fare. I have not observed a full Gatwick Express train, formed of a new 12 car train, whereas I have seen many

Southern and Thameslink trains full with airport passengers and their luggage travelling to/from London. These trains often exceed their booked dwell time at stations. My concern therefore is that the fares structure is influencing demand in such a way that train capacity is not optimally used, resulting in worse overcrowding and causing delays. Many observers have considered in isolation the fares issues on the route, the timetable issues or the infrastructure issues. This is flawed: the optimum solution can only be identified if all of these are considered together.

Figure 2 Empty new Gatwick Express carriage, 1319, 25th November, between Victoria and Gatwick. The front four coaches were completely empty throughout the journey.

Premium ticketing may be perceived to currently earn additional revenue for the Gatwick Express brand, but inefficient use of overall system capacity may mean it inadvertently drives substantial additional costs too, such as additional trains and infrastructure. An example of this is the platforms at Gatwick Airport, which have been judged to be too narrow for current passenger volumes. If all passengers to London had the flexibility to join the first available peak / off-peak fast service, including Gatwick Express trains starting from Gatwick Airport, it may be possible to avoid the very disruptive and expensive platform widening, as has been achieved at Birmingham New Street. In a randomly chosen off-peak hour there are 16 trains per hour from Gatwick Airport to London Victoria, London Bridge or Blackfriars, taking between 30 and 41 minutes. That's a departure every 3m 45s on average, with most now formed of 12 car trains. A different commercial strategy should be able to fully utilise this frequency and capacity so avoid the need for platform widening, and improve the satisfaction of all Brighton Mainline passengers with "sufficient room for all passengers to sit/stand", regardless of their journey on the route.

Train operator route	% satisfied or good with "sufficient room for all passengers to sit/stand"
Heathrow Express	88
Heathrow Connect	81
GTR Gatwick Express	75
GTR Thameslink: South	65
SWT Longer distance	65
GTR Thameslink: North	58
South Eastern: Mainline	54
GTR Great Northern	52
GTR Southern: Sussex Coast	52

Source: National Passenger Survey, Spring, 2016

This is illustrated by the passenger satisfaction data above, showing the proportion of passengers that are “satisfied or good” with “sufficient room for all passengers to sit/stand”. I have included Heathrow, SWT and South Eastern for peer comparative purposes.

In my view an effective commercial strategy should include a plan to quickly drive Sussex Coast satisfaction up to 60-65%, even if this reduced Gatwick Express passenger satisfaction from 75% to 65%-70%, as this would, overall, result in many more satisfied passengers. The strategy should also address the transfer of services from Great Northern to Thameslink: North, with the aim of settling satisfaction of both groups at 60-65%. Future strategy should aim to drive overall satisfaction from 60-65% to 75-80% through tactical interventions with infrastructure, timetable, trains, passenger information and stations.

The low level of satisfaction with capacity on GTR Great Northern is mainly associated with the GN Metro service to Moorgate, which will see more services and new trains later in the current franchise.

4.2 It is relevant to compare Gatwick Express with Heathrow Express, which takes 16 minutes from Terminal 2/3 to Paddington. Heathrow Express typically charges £22.00 single and £36.00 return (£24 single, £36 return if travelling between 0700 and 1000 Monday to Friday, and ticket purchased at station or on board). Carnets and advance tickets are available. The “neutral retailing” rules don’t appear to apply at Heathrow, as these fares are actively sold from the airport arrivals channel, without any mention of cheaper options. Heathrow Connect is a slower service, taking 27 minutes, but costs £10.30 single and £20.60 return. London Underground’s Piccadilly line takes 47 minutes to Piccadilly Circus, and using Oyster or contactless this costs £5.10 single between 0630 and 0930 Monday to Friday, and £3.10 single at other times. Unlike at Gatwick Airport no operator at Heathrow is currently willing or obliged to offer the full range of rail fares to London, which vary from £3.10 to £24.00 for a single journey. One effect of that, I suggest, is that a significant proportion of passengers use Heathrow Express, making good use of the train capacity on all the routes and contributing to high levels of passenger satisfaction with “sufficient room for all passengers to sit/stand”. However it should be noted that the Heathrow route is half the journey time of Gatwick, and is a very different kind of commuter activity.

4.3 I recommend that GTR are asked to develop a strategy, with the necessary professional expert support to do this properly. Proposals should be researched and developed between February and July, 2017, followed by appropriate consultation and approval. The revised fares need to be uploaded to systems from October, 2017, communicated to passengers and staff and fully implemented in January, 2018.

Once the strategy has been determined, consideration should be given to introducing elements of it earlier, during 2017, if systems, communications and staff training permit this to be done properly.

Government needs to indicate at the outset whether the strategy should be one where no passenger pays any more than currently, or whether a small proportion of passengers might pay more than currently, or have more restricted ticket use, in the interests of the majority of passengers who may benefit from increased satisfaction with capacity, greater ticket flexibility and lower fares in some cases.

I recommend that the following options should be considered as part of the strategy:

4.3.1 Implementation in full of the “Action Plan for Information on Rail Fares & Ticketing”, published on 13th December, 2016, during 2017/18.
4.3.2 Engagement with staff involved with ticket retailing to gather their ideas.
4.3.3 Review of previous passenger surveys and customer relations feedback.

4.3.4 Abolition of brand specific tickets for a trial period of two years – 2018-2019 – to allow demand to respond to the new timetable and settle naturally, without the influence of differential prices, and simplify the overall ticketing offer, whilst possibly preserving the option to return to premium pricing in 2020, particularly for Gatwick Express. With passenger volume having grown very significantly it is much harder to justify use of capacity to support a premium fare on this service, whist simultaneously having overcrowding and dwell time delay on other services as a result.

4.3.5 Train specific advance tickets should continue on off-peak services during this period, and be extended to Gatwick Express, and become the prime method of attracting demand to specific services with spare capacity for longer distance journeys. Advance tickets should be available on the day of travel if previously unsold.

4.3.6 Review ways of communicating to intending passengers which trains are expected to have available seating capacity, and the availability of Advance tickets on these trains.

4.3.7 Smart tickets, e-tickets, mobile ticketing should be encouraged, which in turn will allow more precise data on journeys made, and facilitate delay repay. The strategy should be consistent with a target of abolishing all paper tickets at some point in the future.

4.3.8 Options for zonal tickets and so called “single leg” pricing.

4.3.9 Reviewing the role of first class, and consideration of other methods of offering a higher probability or a certainty of having a seat on specific services.

4.3.10 The use of simple fixed price “supplements” for Gatwick Express, as an alternative to building the premium fares into the “any route” fares, if it is established that Gatwick Express must continue to have premium fares. Supplements are widely used in other countries, on board, on line and at stations, but I believe are prohibited in the UK by the Ticketing & Settlement Agreement.

4.3.11 Pricing tickets to different London termini the same or differently, rather than by specific brands, to spread demand and maximise revenue. Tickets to London St Pancras from Sussex are often cheaper than tickets to London Victoria at present. Alternatively abolish tickets to specific London terminals and make London tickets valid to all south London terminals, and cheaper than north London terminals.

4.3.12 Implications for cross London National Rail tickets (“+” tickets: including London Underground, and “not London Underground” tickets) with both new Crossrail journey options and increased Thameslink frequency and network.

4.3.13 The pricing and capacity use strategy between Peterborough and London, and Kings Lynn, Cambridge and London, where Thameslink services will compete with other TOC services and pricing.

4.3.14 The pricing and capacity use strategy in respect of the new Thameslink routes, such as into Kent, and how this relates to other TOCs.

4.3.15 Predicting passenger demand for services in the new timetable against a range of different commercial strategies, and identifying the options that give passengers the best possible chance of getting a seat whilst at the same time maximising revenue.

4.3.16 Take into account poor performance in 2016/7 when determining the fares from January, 2018, and incorporate any discount and fares increase into the overall commercial strategy for 2018.

4.3.17 Understand the overcrowding effects and revenue loss or gain that might result from the elasticity of demand if all fares were reduced to the “Thameslink only” fare for 2018/9.

4.3.18 Review car park pricing, especially where passengers have a choice between stations, to influence car park use to match available train capacity wherever possible.

4.3.19 Remove some fares anomalies and compare fares with adjacent alternative routes.

4.3.20 The use of electronic “carnet” tickets, which may be more attractive to passengers with more flexible working arrangements than conventional season tickets.

4.3.21 Establish a strategy to quickly recover the off peak discretionary travel that has been lost due to service unreliability and industrial action.

4.3.22 A 2018/9 marketing strategy to support a programme of fares changes and maximise the revenue from the 2018 timetable changes, new pricing strategy, new journey options and new capacity. This strategy should aim to initially grow the overall revenue sufficiently to offset revenue losses caused by actions that effectively reduce fares, such as in 4.2.7

and 4.2.15. The seemingly ubiquitous Crossrail will become the Elizabeth Line; what will Thameslink become? The Thameslink brand, if it is to be more than simply a tired franchise obligation, must be refreshed and actively owned by its staff, passengers and stakeholders, otherwise it will be the poor relation to the Elizabeth Line. The simultaneous success of both in late 2018 is critical to the success of London, and the railway industry in the South East.

4.3.23 Finally developing an accurate, challenging and independently reviewed revenue budget for the period 2018-2021.

5. Conclusion

The 2018 timetable should be supported by an effective commercial strategy that maximises the use of the available capacity and overall revenue, whilst simplifying the available ticket range.

Southern performance project

21 December 2016

DRAFT

L.E.K.

Standard Disclaimer (1 of 2)

NON-DISCLOSURE RULES AND LIABILITY DISCLAIMER

To: Network Rail Infrastructure Limited, 1 Eversholt Street, London NW1 2DN (the "Customer")

Southern Performance Project: L.E.K. Draft Report Dated 19 December 2016 (the "Draft Report")

1. **Introduction**

1.1 This Draft Report has been prepared by L.E.K. Consulting (International) Limited ("L.E.K." or "we") at the request of the Customer in connection with the "Project".

1.2 This Draft Report is for the sole benefit and use of the Customer. This Draft Report has been prepared to address the interests and priorities of the Customer and not the interest or priorities of any third party.

1.3 This Draft Report must be construed in the context in which it was prepared including the constraints relating to availability of time and information, the quality of that information, the instructions agreed with the Customer and our assumptions and qualifications, in each case, as more fully set out in this Draft Report.

2. **Disclosure**

2.1 This Draft Report is confidential. Unless otherwise agreed in writing with L.E.K., you are not permitted to copy, publish, quote or share content from, disclose or circulate this Draft Report or any part of it.

2.2 No recipient, including the Customer, may rely on this Draft Report

2.3 Notwithstanding paragraph 2.1:

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(b) you may disclose a copy of this Draft Report to legitimate authorities in the discharge of regulatory obligations.

2.4 You accept that all costs and expenses (including related legal and professional adviser expenses) incurred by L.E.K. in discharging or extinguishing L.E.K. liability to third parties arising from or as a result of your breach of the terms of this paragraph 2 shall be foreseeable and recoverable as loss and damage.

3. **Limitation of Liability**

3.1 Save in respect of the Customer, your interests and priorities are not known to us and have not been considered in the preparation of this Draft Report. Unless otherwise agreed in writing, you are not a client of L.E.K. and we owe no obligations or duties to you in respect of this Draft Report whether in contract, tort (including negligence), breach of statutory duty or otherwise.

3.2 Save as we have agreed with you in writing under an engagement letter, reliance letter or non reliance letter, L.E.K. shall have no liability to you or any third party for any loss or damage arising out of or in connection with, the disclosure of the Draft Report by us to you, the receipt by any third party of the Draft Report through you, or any reliance placed on, or use of, the Draft Report by you or any third party, howsoever arising, whether arising in or caused by breach of contract, tort (including negligence), breach of statutory duty or otherwise.

Standard Disclaimer (2 of 2)

3.3 Nothing in this disclaimer shall exclude or in any way limit L.E.K.'s liability to you for (i) fraud, (ii) death or personal injury caused by L.E.K.'s negligence (including negligence as defined in s. 1 Unfair Contract Terms Act 1977), (iii) breach of terms regarding title implied by s. 2 Supply of Goods and Services Act 1982, or (iv) any liability to the extent the same may not be excluded or limited as a matter of law (including under the Financial Services and Markets Act 2000).

3.4 This Draft Report shall be governed by the laws of England.

REPORT CONTEXT

Attention: The following points of context are directed at third parties receiving this Draft Report with, or without, our permission and the Customer.

1. Our principal task has been to analyse and present data on performance regimes. This Draft Report is intended to assist the Customer in understanding and evaluating those issues.
2. This Draft Report is not intended as a recommendation to proceed or not to proceed with the recommendations which decision requires consideration of a broader range of issues and is a commercial decision for the Customer to make entirely at their own risk.
3. This Draft Report has been prepared from and includes information about the railway, and other publicly available information sources. The provenance, authenticity, completeness and accuracy of this information may not have been verified. We did not complete such verification and cannot confirm that such verification has been completed by a third party before L.E.K. received this information. L.E.K. makes no representation and gives no warranty, in either case express or implied, as to the provenance, authenticity, accuracy or completeness of such information.
4. This Draft Report has been prepared under time constraints and is not exhaustive or based on all available information about the issues. This Draft Report does not reveal the matters which would have been identified by unrestricted investigation and research. In particular, the short time constraint, the complexity of the issues and our limited opportunity to access information, conduct research, interview the management of the railway affects the utility of this Draft Report.
5. The interests and priorities of persons other than the Customer are not known to us and have not been considered in the preparation of this Draft Report. Consequently, if you are not the Customer, the issues addressed in this Draft Report and the emphasis given to them may not fully or adequately address the issues of interest or relevance to you and your role in the Transaction.
6. Save for reliance on such matters by the Customer as permitted under the letter of engagement, L.E.K. makes no representation and gives no warranty, guarantee or other assurance that all or any of the assumptions, estimates, projections or forecasts set out in this Draft Report are accurate, reasonable or will materialise or be realised and nothing contained in this Draft Report is or should be construed or relied upon as a promise as to the future.
7. This Draft Report is based on the information of which we were aware at the time this Draft Report was prepared. The occurrence of change after the date of issue of this Draft Report affecting this Draft Report is a risk accepted by all parties receiving this Draft Report. Unless otherwise agreed in writing with you, L.E.K. is not obliged to update this Draft Report after its date of issue for your benefit or obliged to advise you of the availability of information not previously available even where we learn of information which if known at the time of preparation of this Draft Report would have lead us to vary the content of this Draft Report.
8. Your reference to this Draft Report is not a substitute for the investigations you would ordinarily undertake or those investigations that you would be recommended to make given your involvement in or in connection with the Transaction.
9. Your acceptance of this Draft Report under the terms of this letter is in replacement of all Draft Reports you may have received from us in connection with the Project.

Agenda

- **Introduction & Executive Summary**
- Project context
- Current performance regimes
- Proposed future direction
- Appendix

As part of Chris Gibb's review of GTR/Southern performance, L.E.K. has reviewed relevant incentive regimes and recommended a way forward to improve alignment

- As part of Chris Gibb's review of Govia Thameslink Railway (GTR)/Southern performance, we have worked towards the overarching questions we were asked to address:
  - what are the current targets, incentives and penalties?
  - how could this be changed (without primary legislation) to create an incentivised "alliance" with consistent objectives and a common understanding of train performance that achieves a "joined up approach to running the train and tracks and make things work better for the public"?
- Our work has focused on alignment of operations and maintenance between GTR and Network Rail (NR), recognising that NR also has a long term responsibility as infrastructure manager. Our findings are not expected to adversely affect any interactions/decisions focused on long term outcomes
- We have developed our findings based on discussions with key stakeholders (more details on the following pages), data provided primarily by GTR and NR, and our field visit(s) to Three Bridges ROC
- This project is not a systems review and so L.E.K. has operated on the assumption that the performance data sets, and summaries thereof, provided by NR/GTR are sufficiently accurate and form a reasonable basis for the analysis undertaken in this review. Although there are delay attribution issues on Southern which affect the quality of historical data, this has not influenced our recommendations
- The scope of work has excluded: any assessment of the accuracy of the underlying data; cost-benefit analysis of any changes to performance measurement, reporting or targeting; and all Industrial Relations (IR) issues affecting GTR/Southern operations and performance
- This report summarises our assessment of the existing regimes and recommends a new, simpler regime that better aligns the parties, including a high level implementation plan

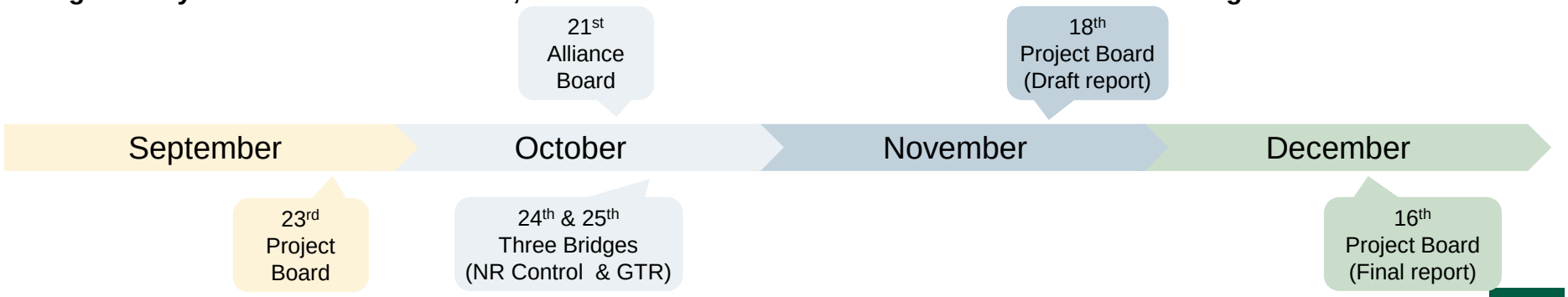
Meetings with key stakeholders (1 of 2)

Stakeholder	Name	Position	Date
GTR	Charles Horton	Chief Executive Officer	04 Oct; 01 Nov; 12 Dec
	Nick Brown	Chief Operating Officer	17 Nov; 08 Dec
	Dyan Crowther	Former Chief Operating Officer	12 Oct
	Wilma Allan	Chief Financial Officer	14 Oct
	Jo Fay	Head of Business Change	28 Oct
	Stuart Cheshire	Passenger Service Director for Thameslink Services and Great Northern	28 Oct
	Angie Doll	Passenger Service Director for Southern and Gatwick Express	23 Nov
	Robert Moss	Head of Strategic Risk	23 Sep; 28 Sep; 6 Oct; 19 Oct; 27 Oct; 23 Nov; 29 Nov; Ongoing
	Gerry McFadden	Engineering Director	19 Oct
	Stephen Fusi	Financial Planning and Analysis Manager	28 Sep
	David Walker	Head of Revenue Development	26 Oct; 14 Nov
	Rebecca Holding	Head of Performance	01 Nov
	Kerri Ricketts	Head of Customer Experience	14 Nov
	Felicity Tolley	Group Head of Marketing (Go-Ahead)	14 Nov
	John Fenn	Operations Manager	25 Oct
NetworkRail (Centre)	Sir Peter Hendy	Chairman	24 Nov
	Jeremy Westlake	Chief Financial Officer	26 Sep
	David Waboso	Managing Director of Digital Railway	23 Nov
	Jo Kaye	Network Strategy and Planning Director	26 Oct
	Peter Swattridge	Head of Regulatory Economics	18 Oct; 28 Nov
	Fiona Dolman	Capacity Planning Director	19 Oct; 07 Nov
	Stephen Draper	Performance Analysis Manager	14 Oct; 28 Nov
	Caitlin Scarlett	Senior Regulatory Economist	18 Oct
	Julia Culley	Performance Analyst	26 Oct
NetworkRail (SE)	John Halsall	Route Managing Director	10 Oct; 11 Nov; 06 Dec
	Andrew Derbyshire	Chief Operating Officer	01 Nov
	Steven Knight	Programme Director (Route Change) [Thameslink]	08 Nov
	Paul Rutter	Former Area Director [Sussex]	04 Nov
	Rob Bricker	Operations Manager [Three Bridges]	24 Oct
	Melanie Foster	Route Commercial Manager	4 Oct; 28 Nov
	Tyson Singleton	Route Performance Manager	28 Sep; 24 Oct; 28 Nov; 06 Dec; Ongoing
	Simon Greenwood	Performance Analysis Manager	04 Oct; 24 Oct; 28 Nov; Ongoing
	Sarah Williams	Customer Relationship Executive	28 Nov
	Andriana Shiakallis	Customer Manager, GTR	10 Oct
	Lee Amass	Delay Attribution Manager	10 Oct

Meetings with key stakeholders (2 of 2)

Stakeholder	Name	Position	Date
Keolis	Alastair Gordon	Chief Executive Officer	28 Nov
	Colin Lea	Business Development Director	28 Nov
Department for Transport	Peter Wilkinson	Managing Director, Passenger Services	02 Nov, 14 Dec
	Jane Cornthwaite	Markets Director, Passenger Services	04 Oct, 04 Nov, 08 Dec
	Richard Howkins	Commercial Manager Performance	07 Oct
	Max Mir	Finance Clearance Manager	01 Dec
	Tim Stamp	Divisional Manager, Strategic Finance and Planning	01 Dec
ORR Office of Rail and Road	Joanna Whittington	Chief Executive	02 Nov
	Graham Richards	Deputy Director, Rail Planning & Performance	17 Oct, 31 Oct, 03 Nov, 10 Nov, 09 Dec
	Nigel Fisher	Head of Operations and Network Regulation	31 Oct
	Deren Olgun	Senior Economist	31 Oct
Rail Delivery Group	Paul Plummer	Chief Executive Offer	07 Nov, 22 Nov
	Gary Cooper	Director, Operations, Engineering & Major Projects	14 Dec
	Richard Evans	Head of Passenger Services Policy	22 Nov
transportfocus	Anthony Smith	Chief Executive	09 Nov
	Mike Hewitson	Head of Policy and Issues	09 Nov
	Linda McCord	Senior Transport Manager	09 Nov
Independent	Paul Robinson	Independent Consultant	05 Oct, 11 Oct, 01 Nov, 15 Nov, 30 Nov

Alongside key stakeholder discussions, we have also had several other interactions with the organisations:



Summary of findings (1 of 5)

1. Performance on GTR (including GTR and NR South East (SE) infrastructure) is the worst in GB rail. Delays per incident and therefore reactionary delays have grown at a very fast pace. This worsening performance has been driven by a wide range of simultaneous events and factors, such as:
   - significant level of crowding at stations due to large and growing passenger volumes
   - a heavily used network that has a relatively high number of flat junctions with conflicting moves
   - major infrastructure changes (i.e., Thameslink programme) and significant incidents (e.g., infrastructure failure at Purley)
   - relatively large number of rolling stock types; traincrew training and availability issues; and industrial disputes
2. Our work with GTR and NR has focused on the performance regimes between GTR, NR and DfT
3. Our work shows that the performance regimes only have a limited impact on frontline staff behaviour in running the railway
   - frontline staff are generally not working to the regimes and instead focus on 'doing the right thing'
   - such decisions are informed by the situation, known precedents and various written procedural documents and guidelines (e.g., contingency plans for major incidents / service recovery frameworks)
   - staff are aware that the regimes lead to important financial flows for GTR and NR, but beyond understanding the importance of delay attribution, frontline staff are not able to compute the financial benefits or costs to their employer, or to the railway as a whole, from their actions because the regimes are quite complex and some elements of the computation are not known widely
4. Performance regimes are important, though, because they do influence resourcing and investment decisions and the overall strategies and aims of GTR and NR (SE)
5. There is currently a mismatch between the performance regimes for NR and GTR and there are too many metrics underpinning these regimes
   - NR is very focused on the Public Performance Measure (PPM), as of CP5, whilst PPM does not appear in GTR's Franchise Agreement (FA) and GTR's financial exposure under Schedule 7.1 is measured on train delay minutes, cancellations and short formations
   - this replaced a previous mismatch where NR was focused on train delay minutes whilst franchises were more focused on PPM
   - of the 12 performance measures that appear across the contractual / regulatory matrix for GTR and NR, none appear twice

Summary of findings (2 of 5)

6. We recommend that GTR & NR should be measured on the same metric. This would end the mismatch between PPM and train delay minutes, and would enable integrated, joined up working together between GTR and NR (SE)

7. Current performance incentives of the two organisations – PPM (NR) and Schedule 7.1 (GTR) – have significant flaws
   - PPM is a flawed measure in that it is not passenger weighted, not proportional to impact (because of the step change at 4:59 in how it is measured), and not attributed to parties so, strictly, neither party can wholeheartedly own it
   - whilst GTR's regime in Schedule 7.1 is TOC attributed only, it does not have any passenger weighting; and there are annual targets with limited incentive to improve performance throughout the year. Moreover, the benchmarks and payment rates are quite blunt being at TOC level and incorrectly treat all routes and service times to be equal

8. A new metric, Customer Time (CT) is recommended to be introduced as a pilot for both GTR and NR (SE) on the infrastructure that supports GTR. The separate Southeastern franchise would not be included in the pilot
   - CT is more passenger focused than existing metrics, and this one metric can be used throughout the industry to measure suppliers, infrastructure, and train operations, as well as being published to customers
   - CT can be calculated from the Schedule 8 metric of Weighted Average Minutes Lateness (WAML), including deemed minutes for cancellations and estimated loadings per Service Group as per Schedule 8
   - CT can be calculated internally every day and reported publicly every period and year. For 2015/16, GTR passengers experienced c.1.1 billion minutes of lateness, being an average of c.3-4 minutes lateness per passenger journey
   - CT can be attributed to GTR and NR, using existing Delay Attribution (DA) processes and rules

9. DA serves an important industry purpose of providing detailed information for root-cause analysis and hence underpins a rational approach to prioritising investments and changes to improve performance
   - however, current processes are manual and resource intensive, with a significant backlog of disputes
   - over time DA processes should be made more efficient through automation of data collection and mechanisms for expediting resolution of disputes. It is hoped that Digital Railway may facilitate this

10. Over time, the industry should move from 5-yearly calibration of estimated number of passengers (for Schedules 8 & 4, and CT) on any given service towards live actual data to calculate CT
    - the calculations underpinning CT should eventually be the actual number of passengers on a train multiplied by how late they were. This requires a careful, and gradual, move towards live data as the basis of frontline decision making, therefore aligning frontline decisions with the overall regime, and with passenger interests, in a way that does not happen at present

Summary of findings (3 of 5)

11. The new regimes should be set up anticipating that all financial flows will be transparent and subject to public and political scrutiny. This is a different paradigm from the origins of rail privatisation and requires that payment flows are both economically rational and publicly explainable as far as possible

12. GTR is, we understand, moving to Delay Repay (DR) from 15 minutes. The DfT has committed to this initially for GTR before rolling out to other TOCs. Moving DR to 15 minutes raises the potential liability significantly. Moves to automate claiming should also raise passenger claim rates. We recommend:

    - GTR should pay out the total amount arising from all eligible passengers to a new Community Fund, from which DR claims can be drawn by passengers. Initially the calculation of eligible passenger numbers should be based on existing Schedule 8 estimates which over time should move towards more accurate loading measures (e.g., using class 700 weighing), in parallel with the CT calculation
    - the railway would therefore be seen to pay for all delays of over 15 minutes, and not to benefit from low claim rates
    - NR should contribute to the Community Fund, via GTR, for its attributed share of total delays and cancellations. This will increase the financial exposure on NR; however, the DfT receives farebox revenue from GTR and we propose that this be used to fund NR's contribution to the pilot
    - passengers would see that the whole railway is funding DR compensation, and therefore the parties are aligned to work together to avoid delays
    - the Community Fund should be earmarked for railway improvements in the region, and so passengers experiencing delay can see that all penalties associated with DR are either going to passengers directly through claims or to future passenger benefits; governance of the funds will need to be independent and will require careful definition

13. GTR's Schedule 7.1 should be based on CT rather than train delay minutes as at present. The new regime should be calibrated to be approximately proportionate to the existing Schedule 7.1 regime in order to avoid altering GTR's risk profile

    - NR should have a similar financial regime to reinforce alignment, whilst this increases NR financial exposure, under these proposals the DfT should fund NR a fixed amount to cover baseline cost of the CT Incentive. If performance improves, increases in farebox revenue could make the new regime cost neutral to the DfT versus the current regime

14. The pilot launch of CT on GTR and NR (SE) would be most effective if PPM were no longer reported nor published for GTR and not included for GTR in NR (SE) scorecard, in order that GTR and NR staff and management are not looking over their shoulders at PPM measures when making decisions based on CT. Some dual-running of the calculations would be valuable to allow the pilot to be assessed in due course

Summary of findings (4 of 5)

15. A workforce incentive based predominantly on CT and in part on DR savings for both GTR and NR staff could be beneficial in aligning frontline staff to the organisational targets, should management develop an appropriate safety plan for implementation approved by the ORR, and wish to implement the incentive. Workforce incentives should be measured periodically and paid out annually; the same amount could operate across both NR & GTR. Amounts payable would not be linked to salary levels, but would be equal across all staff depending on the contribution of categories of staff to performance improvements

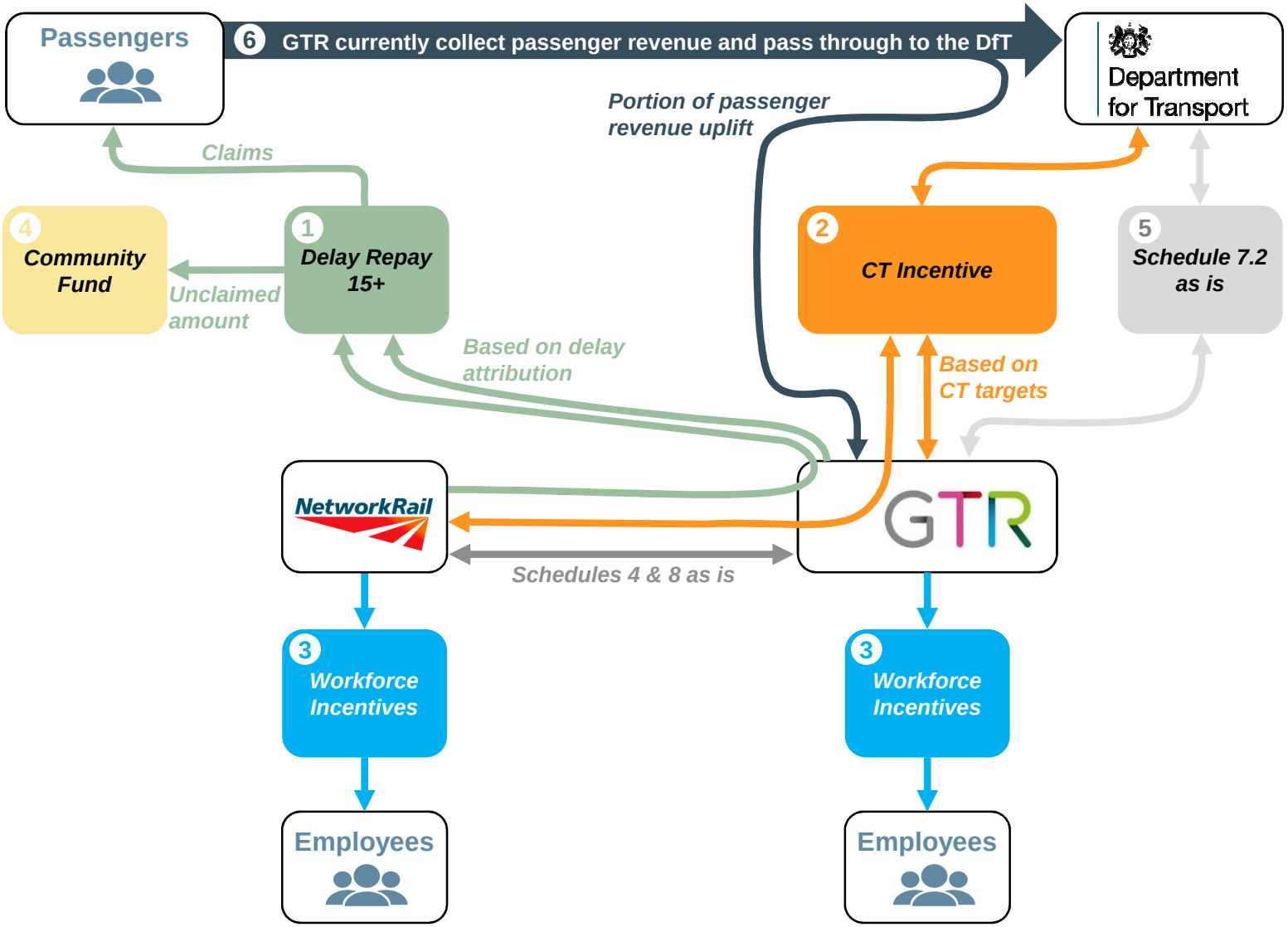
16. Schedules 8 and 4 of GTR's Track Access Agreement (TAA) with NR and Schedule 7.2 of GTR's FA should remain as at present. In the medium term, the industry should consider the following:
    - Schedules 8 and 4 could be calibrated more frequently by ORR to accurately assess MRE for different Service Groups
    - improved calibration of Schedule 4 discounts could help align TOCs to NR's long term asset quality objectives by sufficiently compensating them for associated disruption. Moreover an additional, CT-based incentive beyond MRE as part of Schedule 4 could be considered; this can help achieve net savings to the industry by encouraging both parties to conduct most cost efficient renewals

17. GTR should be incentivised to grow revenue by retaining a share of revenue increases. We recommend that a proportion of GTR's revenue growth versus London and South East average growth is to GTR's account (both as a incentive for out-performance and penalty for under-performance). This would restore an incentive to grow revenue to the party best placed to influence it

18. Communication with passengers on performance should become much more personalised and transparent, to improve loyalty and build trust. Suggested additional features on the existing GTR app(s) include:
    - specific, relevant performance information for a passenger's own journeys (see page 11), compared with an average for a station pair, Service Group, or TOC, split by peak and off peak
    - information regarding the causation of delay and split of recent CT between GTR and NR, initially for the whole TOC, but in the future for each Service Group, or station pair used by the individual passenger
    - single touch DR claims, allowing for contribution to Community Fund
    - journey time and cost comparisons with other transport modes

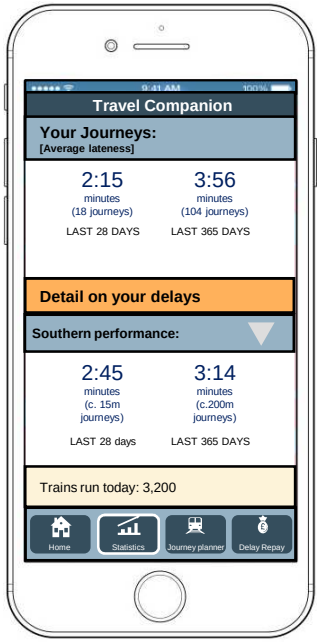
19. The findings from this review are aligned with the thinking of the National Task Force (NTF) for CP6 and the House of Commons Transport Select Committee's 'The future of rail', published October 2016. The suggested package of changes listed above should act as an informative pilot on GTR and NR (SE), with wider roll-out to be considered by the industry for CP6

Summary of findings – proposed set of regimes (5 of 5)



The new CT measurement will be meaningful both to passengers and industry participants

Performance perception	*New Measure for GTR and NR(SE):* **Customer Time (CT)** (average lateness per pax journey, minutes: seconds)	*Old measure:* **PPM** (percent of trains within 5 minutes of timetable at final destination)
LSE long run average	1:45 – 2:15	90%
Poor performance	3:00 – 3:30	80%
Example bad day	4:15 – 4:45	70%



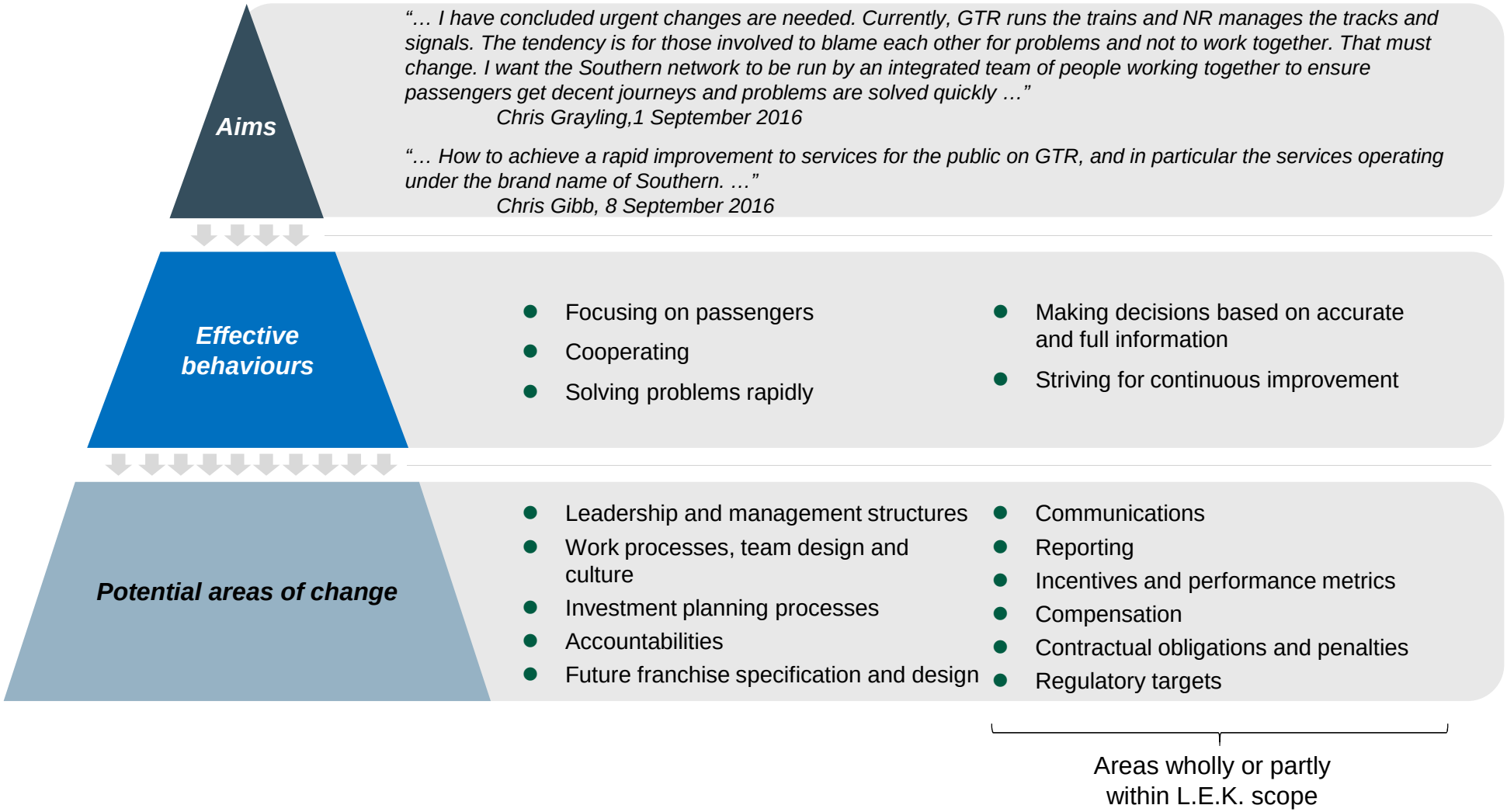
As industry infrastructure and data collection improve, the calibration of the new regimes can become more precise

	Initial characteristics in 2017 pilot on GTR	Improved characteristics developed through CP6
DR from 15 minutes	• Predominantly manual passenger claims • Low claim rate • Based on train lateness data and estimated passenger loadings • Attributed in line with Schedule 8 (currently a delayed process)	• Predominantly automated passenger claims • High claim rate • Based on passenger lateness data • Attributed immediately
CT Incentive	• Passengers can view basic performance data • Based on train lateness data and estimated passenger loadings • Complexities, e.g. missed connections, excluded • Passenger flows measured every Control Period • Rapid feedback of Customer Time • Attributed in line with Schedule 8 (currently a delayed process)	• Passengers can view specific performance data • Based on passenger lateness data • Complexities, e.g. missed connections, included • Passenger flows measured real time, e.g. by train (annual, periodic or daily calibrations would also represent improvement on initial) • Real time feedback provided to frontline staff • Attributed immediately

Agenda

- Introduction & Executive Summary
- **Project context**
- Current performance regimes
- Proposed future direction
- Appendix

L.E.K. has focused on a few specific areas of change to encourage effective behaviours among GTR/NR staff and help deliver the project aims

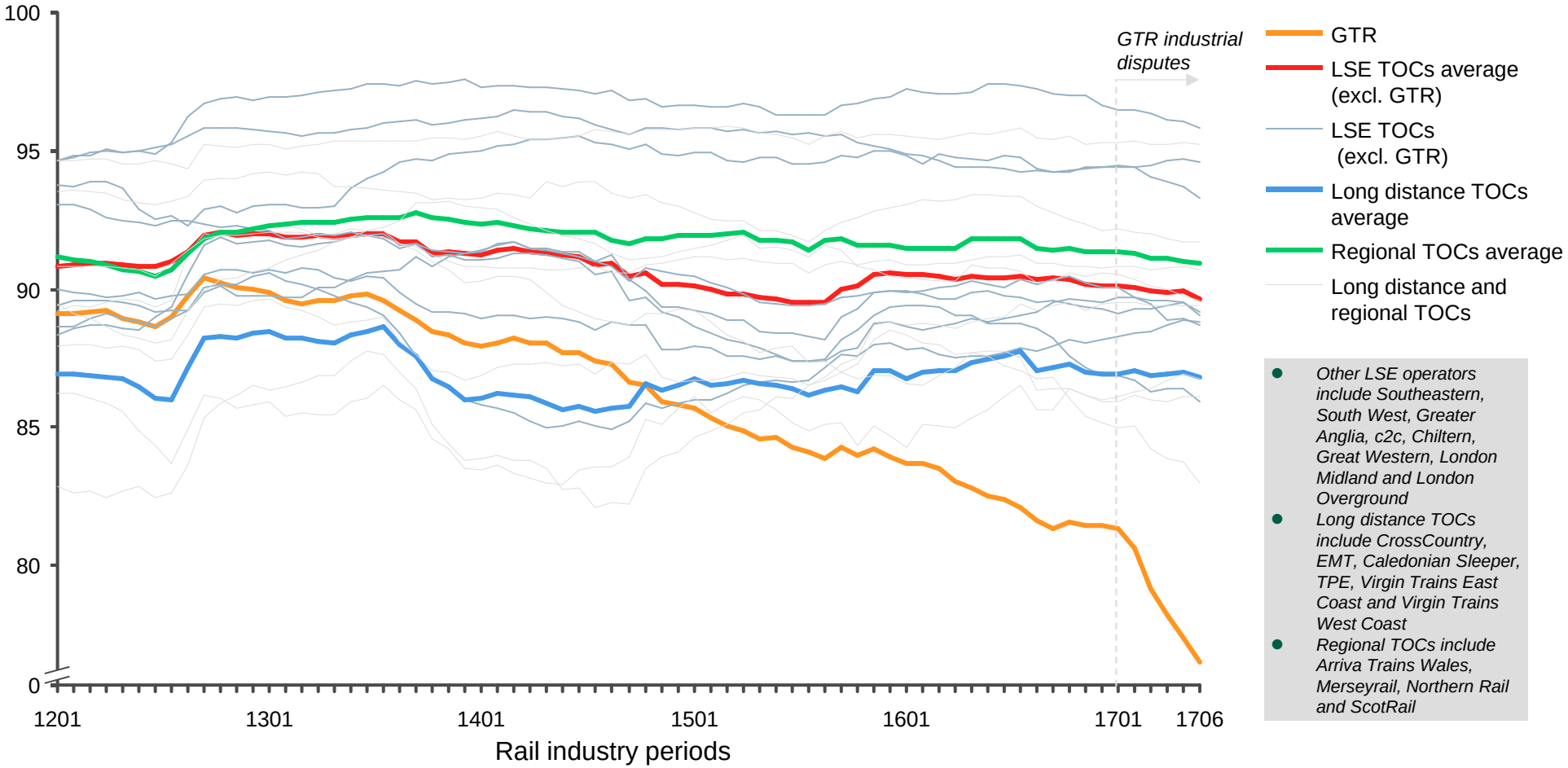


Source: Industry press; Management information

GTR is the worst performing TOC in terms of PPM and has deteriorated in recent periods

Public Performance Measure (PPM) by TOC* – Moving Annual Average (2011/12 – 2016/17)

Percent



- *Other LSE operators include Southeastern, South West, Greater Anglia, c2c, Chiltern, Great Western, London Midland and London Overground*
- *Long distance TOCs include CrossCountry, EMT, Caledonian Sleeper, TPE, Virgin Trains East Coast and Virgin Trains West Coast*
- *Regional TOCs include Arriva Trains Wales, Merseyrail, Northern Rail and ScotRail*

Note: * PPM reflects current franchise structure (e.g., GTR includes previous Southern, GN and Thameslink)
Source: ORR; L.E.K. analysis

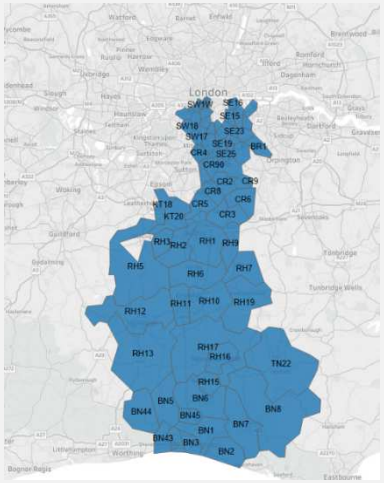
L.E.K.

GTR passengers (especially commuters) are unhappy with the value for money proposition of train travel and how TOCs value their time

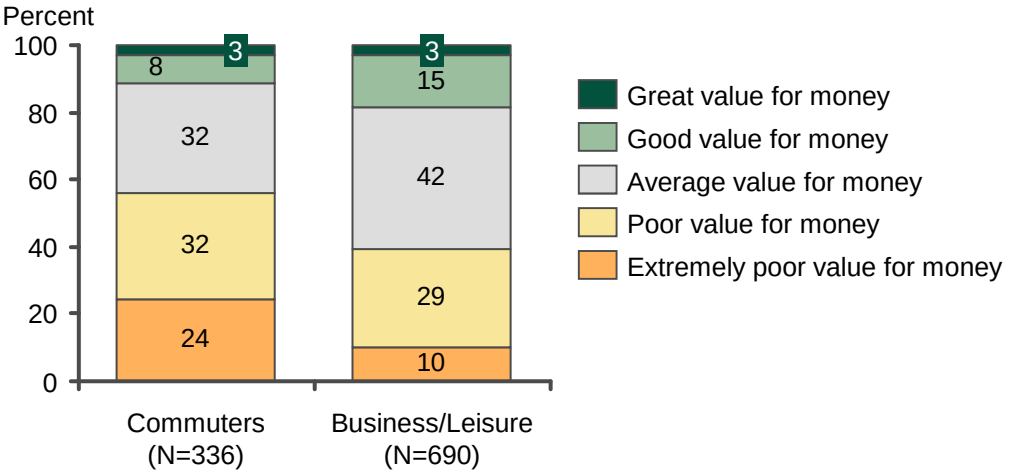
Targeted survey for GTR/Southern passengers

- L.E.K. is surveyed c.1,000 passengers living in areas served by Southern^
- Each respondent passed the following criteria:
  - had taken the train in the last three months
  - last trip (or regular commute) was between two stations served by GTR services^^
  - does not work in the rail industry (nor family)
- Summary findings have been included in this report

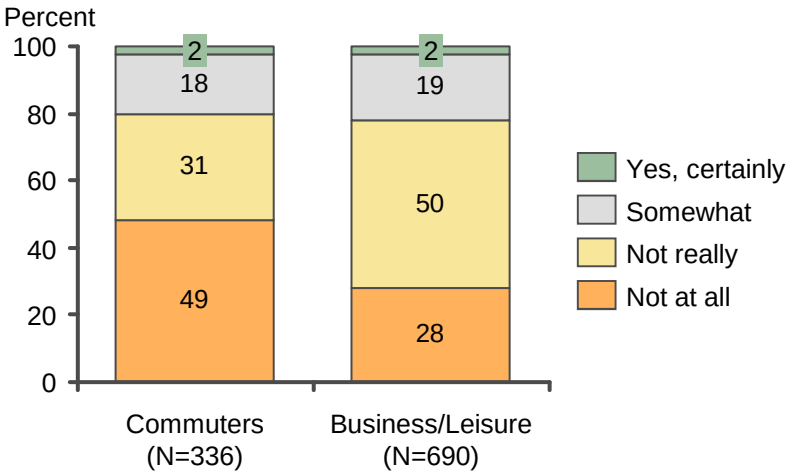
Targeted postcode sectors



Passenger view on if travel by train is good value for money*



Passenger view on if train companies value their time**

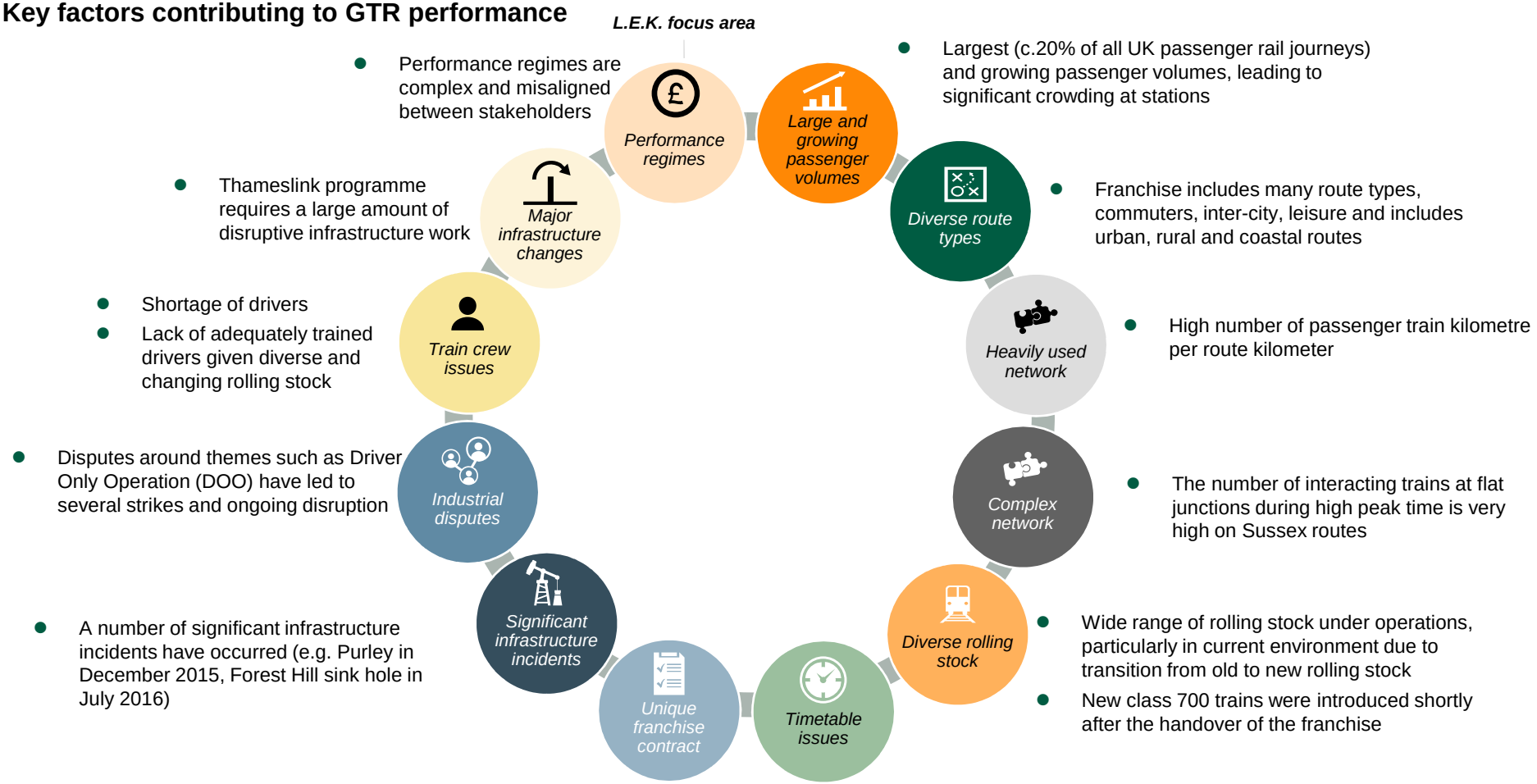


Note: * Survey question: "Do you currently feel that travelling by train is good value for money?" ** Survey question: "Do you currently feel that train companies value your time?", ^sample age and gender demographics are consistent with those of the Southern Rail NPRS Spring 2016 survey, ^^GTR focus was not communicated to respondents – they did not know which train stations were of interest when answering

Source: L.E.K. Passenger Survey

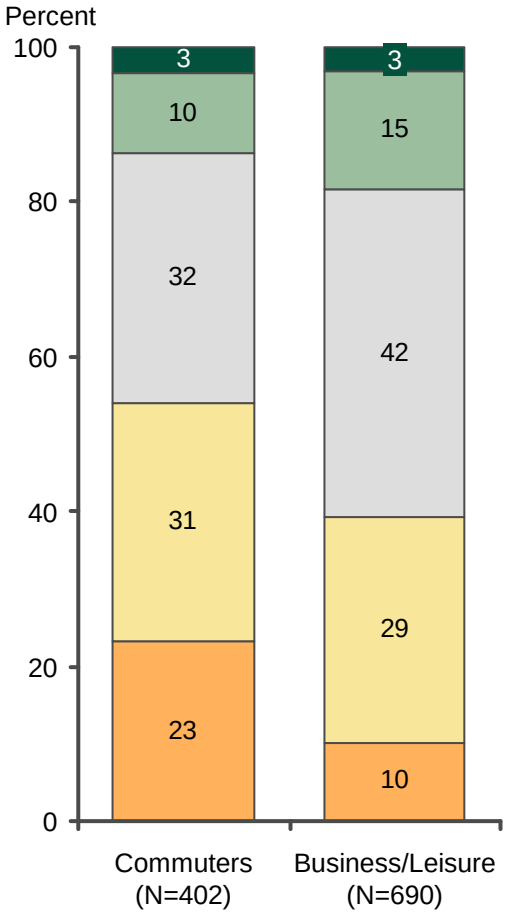
A broad range of factors are contributing to poor performance on GTR

Key factors contributing to GTR performance



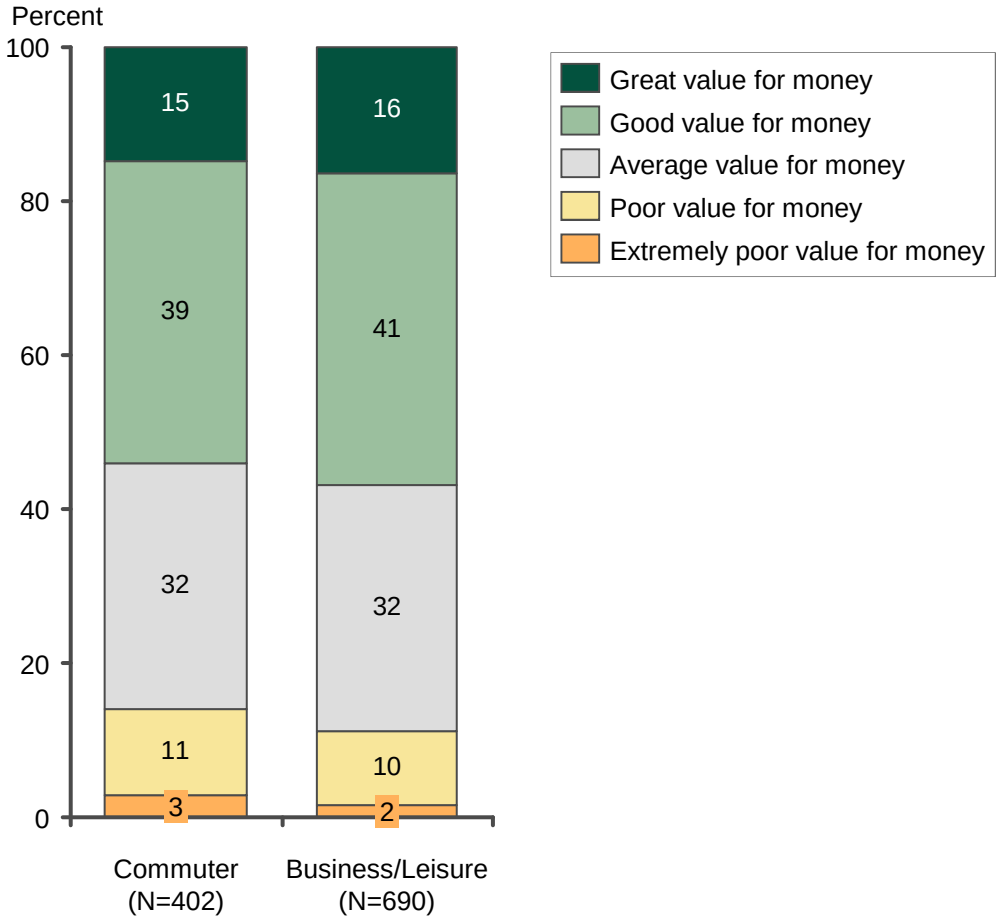
On-time performance would encourage c.40% more passengers to consider rail transport as good or great value for money

Passenger view on whether travel by train is currently good value for money*



c. 40% more passengers would consider rail good or great value for money if trains were always on time

Passenger view on whether travel by train would be good value for money <u>if trains were always on-time</u>**



Note: * Survey question: "Do you currently feel that travelling by train is good value for money?"; ** Survey question: "If trains were always on time, would you feel that travelling by train is good value for money?"

Source: L.E.K. Passenger Survey

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Whilst GTR has financial incentives to improve performance, NR is more subject to reputational risk associated with public regulatory targets

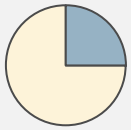
Influence of financial and reputational incentives on public and private organisations

Financial incentive / risk

Reputational incentive / risk

Private organisation
e.g., GTR

(Schedule 7.1, 7.2, 8)

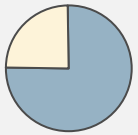


(Public perception)

Predominantly incentivised by financial incentive/risk

Public organisation
e.g., NetworkRail

(Schedule 8)



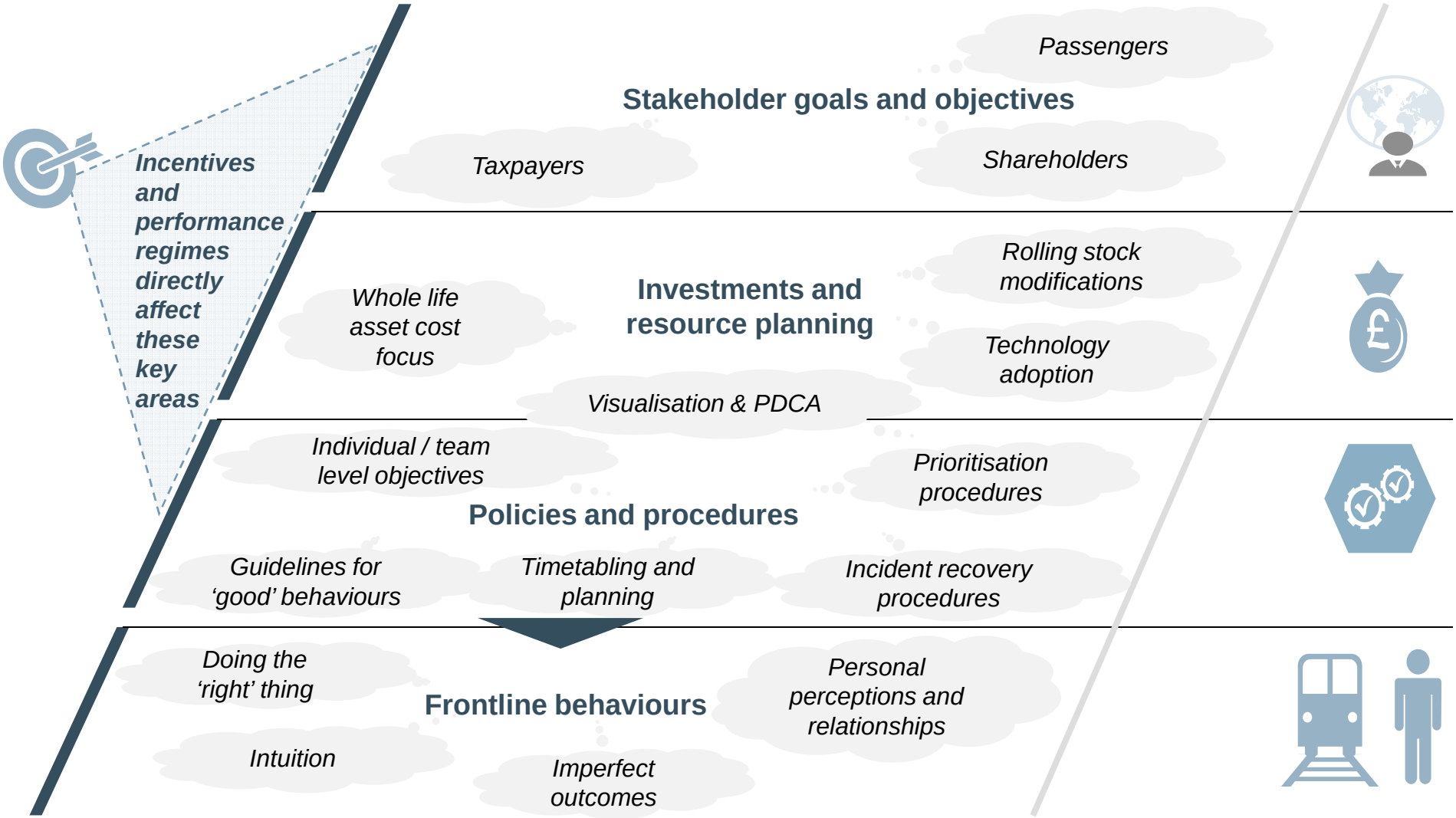
(ORR regulated targets: PPM/CaSL)

Predominantly incentivised by reputational incentive/ risk

Financial incentive/risk

Reputational incentive/risk

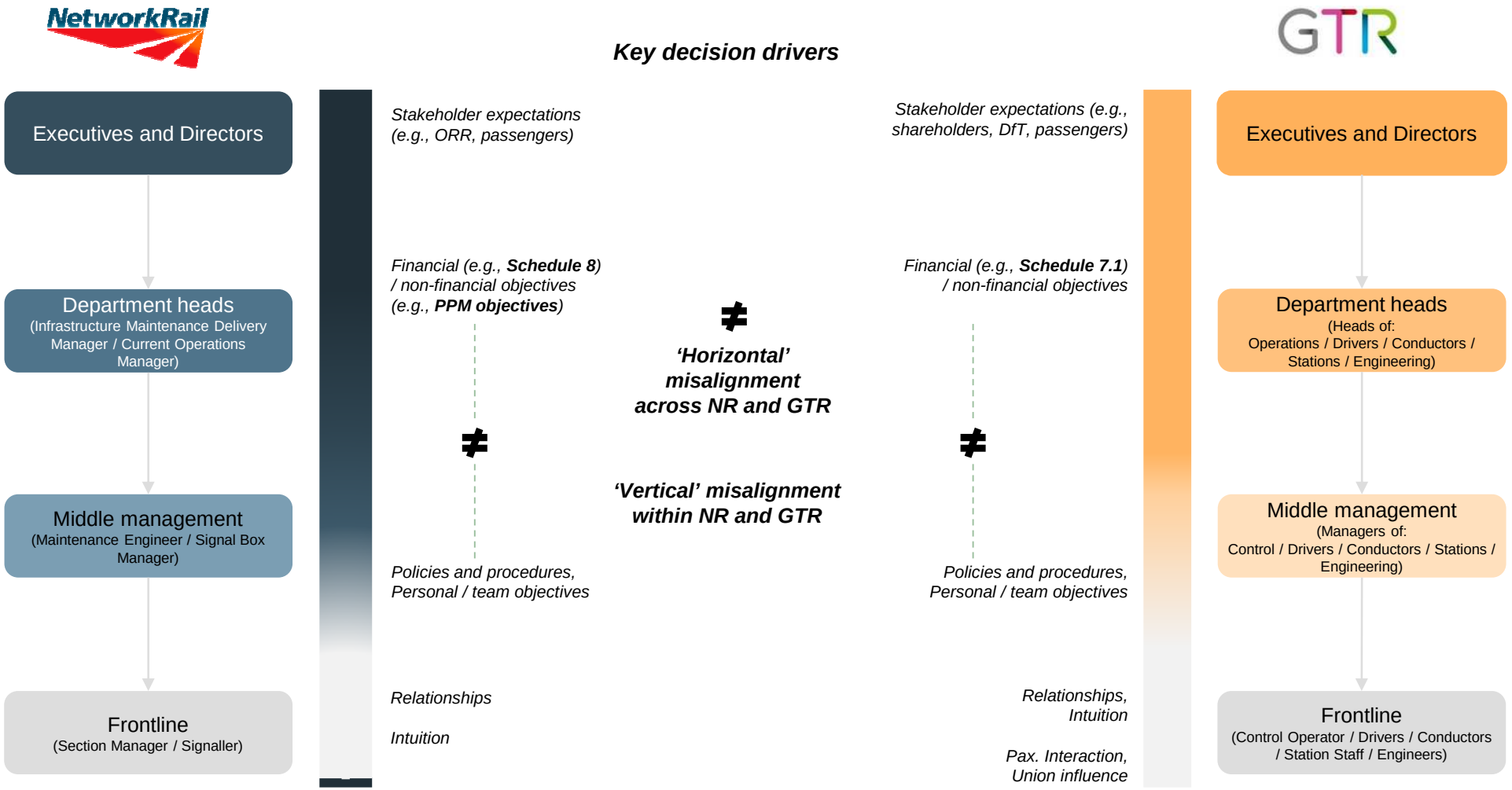
Existing performance regimes do not influence frontline behaviours. However they do affect goals, investment decisions and to an extent policies/procedures



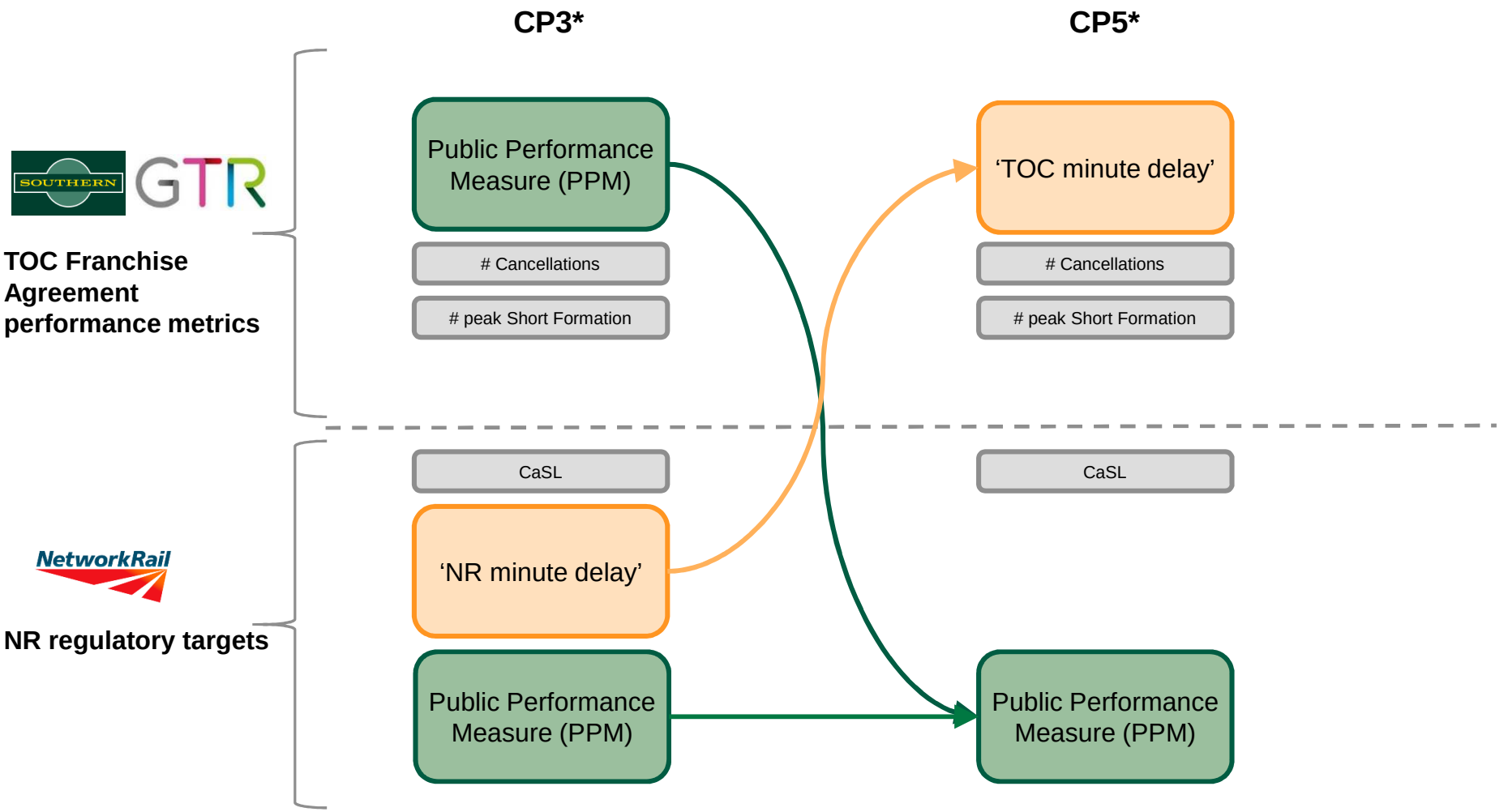
Frontline behaviours are rarely (if ever) driven by performance regimes

Incentives and decision criteria are not fully aligned horizontally between NR and GTR, nor vertically within each party

Key drivers of performance related decisions by organisation and position



Over years, the key metric for GTR has shifted from PPM to minutes delay, whilst NR has moved in the opposite direction



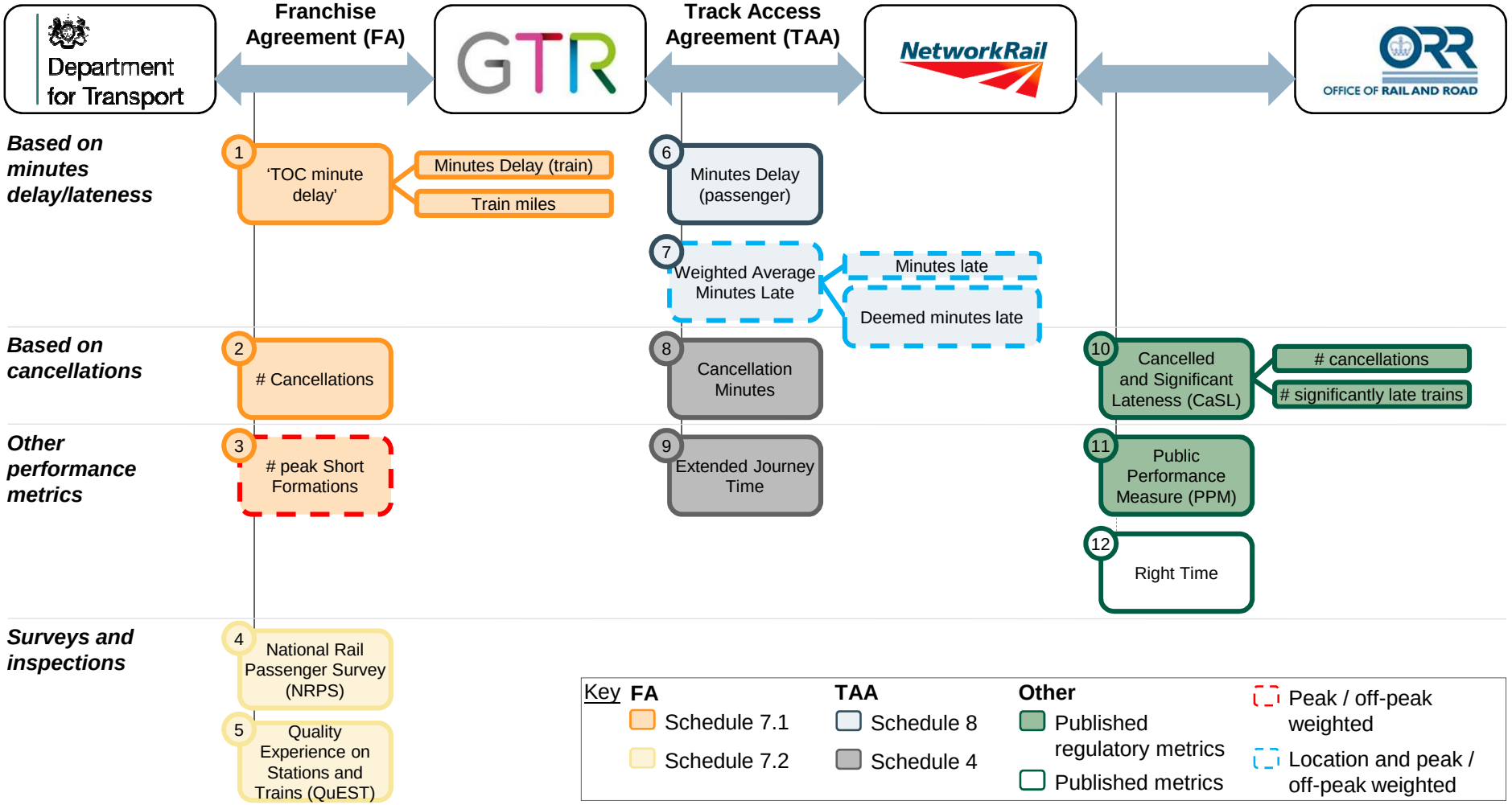
Note: * TOC franchise agreements do not align with Control Periods, Franchise agreement periods are 2003-9 and 2015-21. Southern franchise agreement was PPM focused from 2003, Delay Minutes were introduces in 2009 agreement

Source: Franchise contracts; ORR; Network Rail

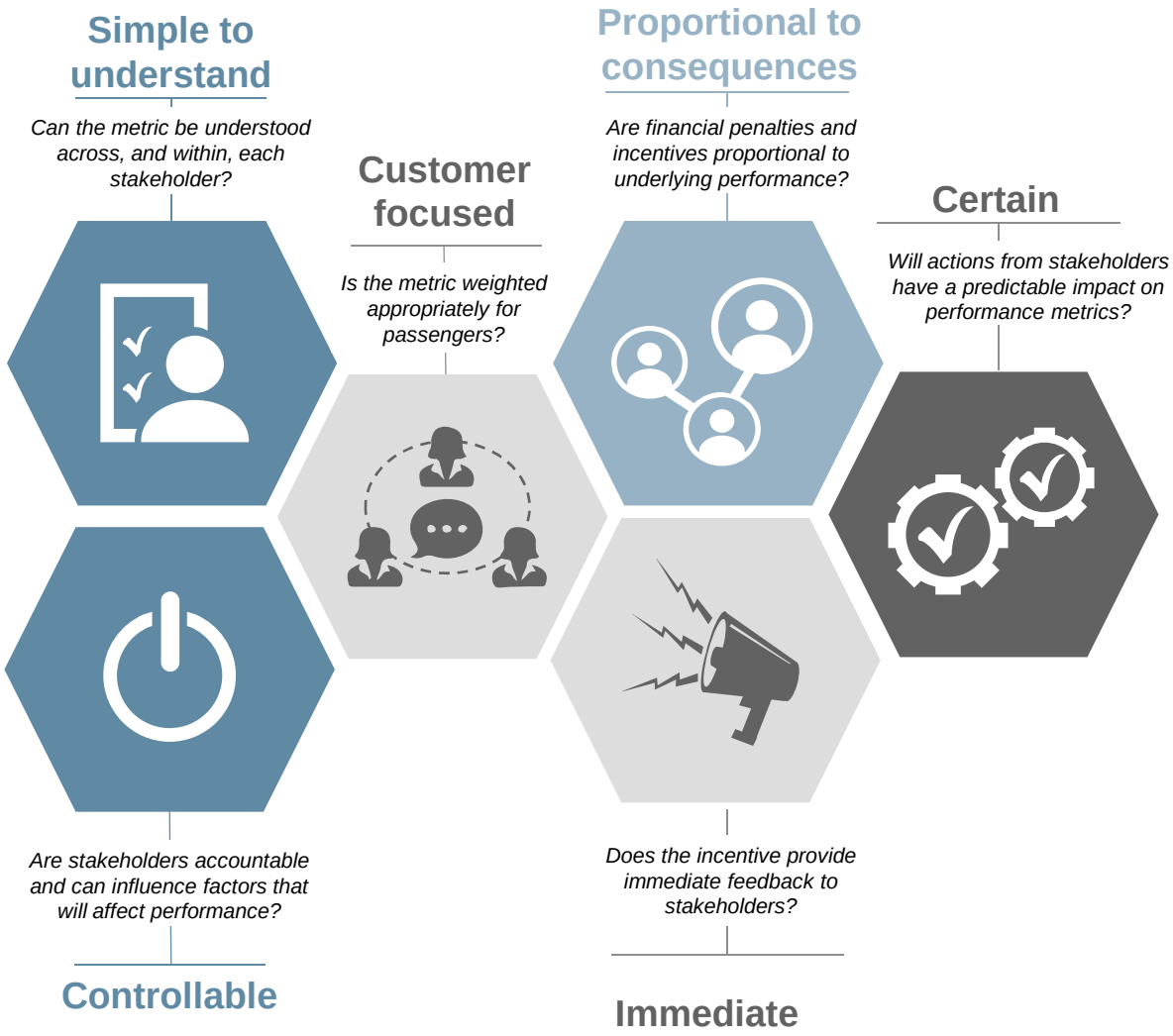
L.E.K.

Currently, 12 diverse performance metrics appear in the key relationships; no metric appears identically in two separate relationships

Performance metrics used in different stakeholder relationships



Desirable attributes of an effective incentive



Source: L.E.K. framework

Existing metrics and regimes have some inherent flaws

Assessment of existing metric options against desirable attributes

Key: ● Favourable ○ Unfavourable

	PPM	Schedule 7.1	Schedule 7.2	Schedule 8	Right Time (% of station stops)
Simple to understand	◕ *Digestible single figure for public consumption*	◔ *Complex with multiple components*	◔ *Complex with multiple components*	◔ *Highly complex*	◕ *Digestible single figure for public consumption*
Customer focused	○ *No passenger weighting*	○ *No passenger weighting*	◑ *Partly based on passenger survey*	◕ *Passenger-weighted, but not thoroughly*	○ *No passenger weighting*
Proportional to consequences	◔ *Ignores lateness at intermediate stations; step change at five minutes*	◑ *Cap and breach distort proportionality*	◑ *Cap and breach distort proportionality*	◕ *Each delay minute / cancellation affects outcomes*	◑ *Measures lateness at all stations; step change at one minute*
Certain	◕ *Outcomes based on simple, clear rules*	◔ *High level of disputes*	◑ *Some certainty, but exposed to exogenous factors*	◔ *High level of disputes*	◕ *Outcomes based on simple, clear rules*
Immediate	◑ *Metric only updated once terminus is reached*	◑ *Attribution takes several days minimum to resolve*	○ *Feedback collated at infrequent intervals*	◑ *Attribution takes several days minimum to resolve*	◕ *Metric only updated when train stops at station*
Controllable	◔ *Not directly attributable; affected by several parties and exogenous factors*	◕ *Only attributed delays/cancellations*	◑ *Quest tangible/ controllable; NRPS not attributed, affected by multiple factors*	◕ *Fully attributable; reasonable link between actions and outcome*	◔ *Not directly attributable; affected by several parties and exogenous factors*

L.E.K.

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A single metric of Customer Time (CT) will increase passenger focus and will help improve alignment across and within the two organisations

Passenger focused metric

- **Customer Time (CT):** an aggregated metric of all passenger lateness
- Weighted towards majority of passengers i.e. appropriately factoring peak and busy routes
- Same single metric for TOC and NR
- Able to be cascaded down to the frontline in both organisations

Passenger focused regime

- GTR and NR to pay for DR claims
- Incentive based on Customer Time
- New metrics can be cascaded through organisations and financial incentives provided to teams
- GTR to possibly have some exposure to passenger revenue

Passenger focused communication

- App to track individual Customer Time
- Able to improve predictability of individual travel (based on historical and predictive trends)
- App can facilitate DR claims
- Provide additional features to help passengers plan and improve their journey experience

The CT metric can be calculated by aggregating delays experienced by GTR customers, combining peak and off-peak lateness

- CT is the aggregate length of lateness experienced by all passengers in a period of time
- CT can be divided by the number of journeys to have an individual relevant metric,
  - this is the AML (Average Minutes Lateness - the average number of minutes a passenger was late as they disembarked the train)

GTR - Illustrative estimate of CT in 2015/16

ILLUSTRATIVE ESTIMATE

Peak

Passengers on peak train services *c.200 million pax journeys* **X** **Weighted AML during peak services** *c.3.5 mins* **=** **Peak CT** *c.700 million customer mins*

Off-peak

Passengers on off-peak train services *c.150 million pax journeys* **X** **Weighted* AML during off-peak services** *c.3.0 mins* **=** **Off-peak CT** *c.450 million customer mins*

Increases in passenger volumes will increase CT even if Weighted AML remains constant, as such targets based on CT should be normalised for changes in passenger volume and communication regarding the figure should focus on Weighted AML

CT *c.1.1 billion customer mins*

Includes delays and cancellations. Short formations to be added, as per next page

To the extent that passengers are treating the service as a metro, Lateness may overstate their experience of lost time

Source: Network Rail; ORR

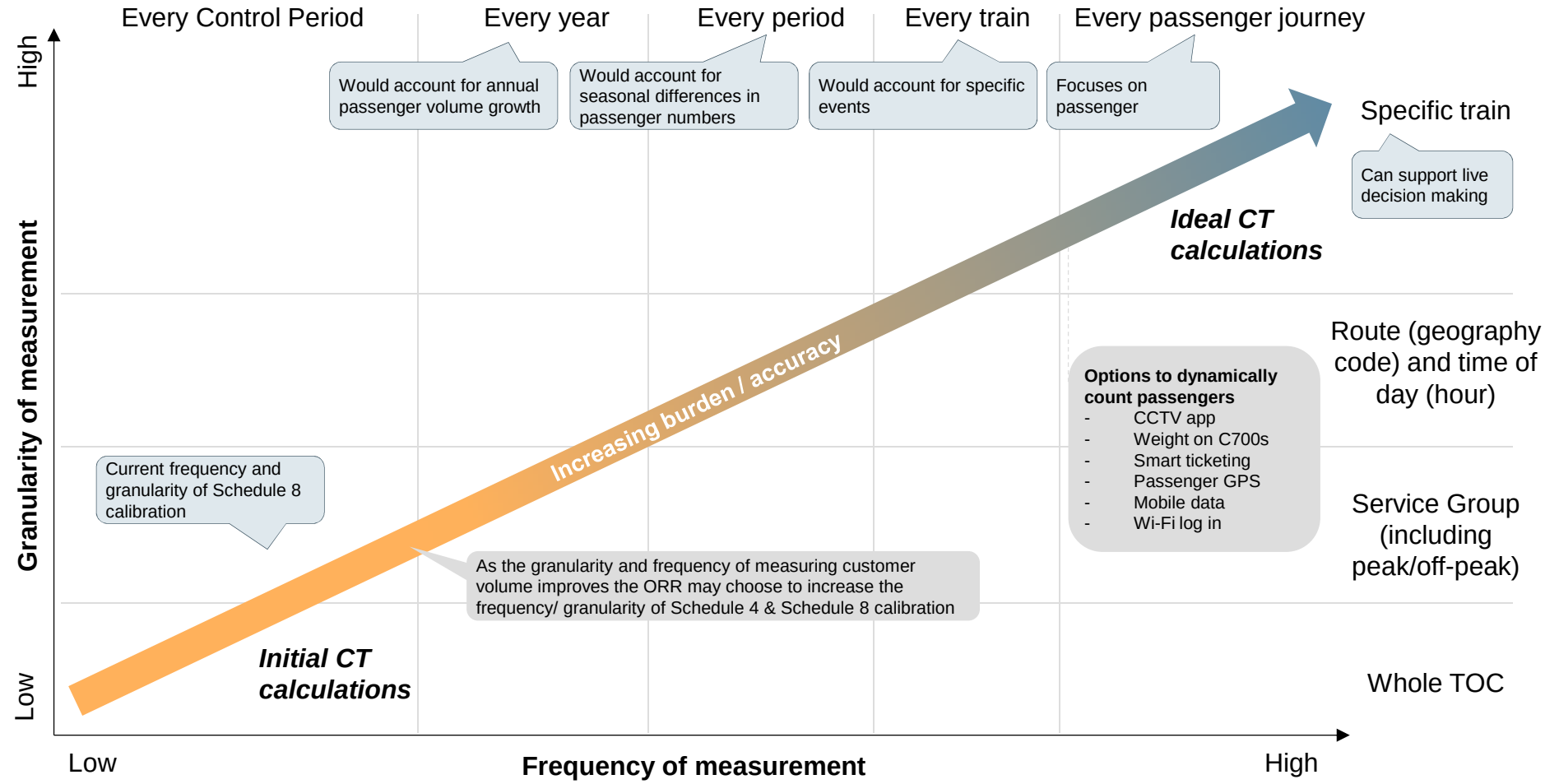
There are several complexities of passenger journeys which require consideration. All can in principle be addressed by CT

CT treatment of specific situations

	Late running trains	Cancellations	Short Formations	Missed connections
Description	• A group of passengers arrive at their destination station late as the train they are travelling on is delayed	• A cancelled stop of a service has the equivalent effect on passenger time as the time to the next running service (service interval)	• A short formation may cause overcrowding preventing passengers from boarding a train and forcing them to wait for the next service • Delays caused by slow loading will be captured in the CT calculation	• A small late arrival at an interchange station may cause significant lateness to the passenger if they miss a connecting train • Not captured in any current performance metrics
CT calc.	**CT =** Number of passengers arriving late x minutes late at destination station	**CT =** Service interval x number of passengers cancelled on	**CT =** Service interval x Number of Passengers crowded off	**CT =** Service interval x Number of passengers connecting
Pilot calculation	**CT =** Implied number of passengers using service (from Schedule 8 calibration) x minutes late at destination station *Trains which arrive early are deemed to arrive on time*	**CT =** Deemed minutes (as per Schedule 8) x Implied number of passengers using service (from Schedule 8 calibration	**CT =** Deemed minutes (as per Sch. 8) x Implied number of passengers using service (from Sch. 8 calibration) x Proportion of train missing *(peak Service Groups only)*	Not currently included Methods of incorporating in measure of CT should be investigated, such as the survey method used by SBB in Switzerland
Questions	• How can CT calculation best proxy individual passenger movements?	• Actual or defined service interval? For which onward journey? • Should cancellation have an additional penalty due to discomfort caused?	• Actual or defined number of passengers crowded of? • Service interval should be a weighted average of trains to all possible destinations?	• Actual or defined service interval / passengers connecting? Which connecting journey? • How to estimate the number of passengers connecting? • How should connections with different TOCs be dealt with?

Measurement of the number of customers can be done at varying levels of granularity and frequency

Frequency and granularity of customer number measurement options



CT compares well against other metrics on key desirable attributes

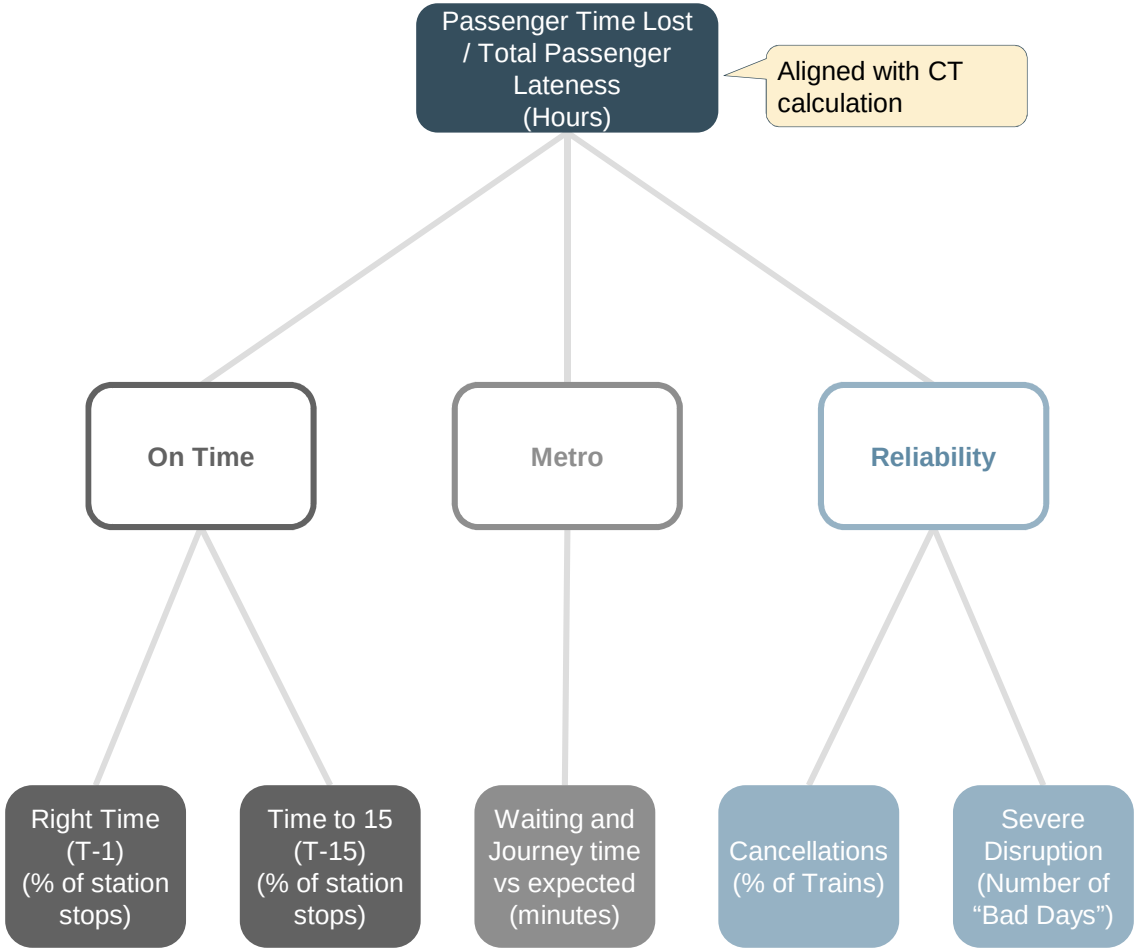
Assessment of existing metric options against desirable attributes

Key: ● Favourable ○ Unfavourable

	PPM	Schedule 7.1	Schedule 7.2	Schedule 8	Right Time (% of station stops)	CT (Initial)	CT (Ideal)
Simple to understand	*Digestible single figure for public consumption*	*Complex with multiple components*	*Complex with multiple components*	*Highly complex*	*Digestible single figure for public consumption*	*Straightforward and accessible*	*Straightforward and accessible*
Customer focused	*No passenger weighting*	*No passenger weighting*	*Partly based on passenger survey*	*Passenger-weighted, but not thoroughly*	*No passenger weighting*	*Passenger-weighted, based on available proxy*	*Passenger-weighted; based on granular passenger flow numbers*
Proportional to consequences	*Ignores intermediate stations; step change at five minutes*	*Cap and breach distort proportionality*	*Cap and breach distort proportionality*	*Each delay minute / cancellation affects outcomes*	*Measures lateness at all stations; step change at one minute*	*Each passenger lateness minute affects outcomes*	*Each passenger lateness minute affects outcomes with increased accuracy*
Certain	*Outcomes based on simple, clear rules*	*High level of disputes*	*Some certainty, but exposed to exogenous factors*	*High level of disputes*	*Outcomes based on simple, clear rules*	*Similar level of disputes to Schedule 8*	*High certainty on attribution through improved DA processes (covered later)*
Immediate	*Metric only updated once terminus is reached*	*Attribution takes several days minimum to resolve*	*Feedback collated at infrequent intervals*	*Attribution takes several days minimum to resolve*	*Metric only updated when train stops at station*	*Attribution based delays in line with Schedule 8*	*Attribution immediately collected*
Controllable	*Not attributed; affected by several parties and exogenous factors*	*Only attributed delays/cancellations*	*Quest tangible/ controllable; NRPS not attributed, affected by multiple factors*	*Fully attributable; reasonable link between actions and outcome*	*Not directly attributable; affected by several parties and exogenous factors*	*Fully attributable*	*Fully attributable with increased accuracy*

NTF proposals for CP6 metrics also centre around Passenger Time Lost / Total Passenger Lateness, which is aligned with the calculation of CT

Overview of NTF proposed CP6 metrics



- NTF proposes TOCs and NR use a basket of metrics for CP6, centred around Passenger Time Lost / Total Passenger Lateness
- Passenger Time Lost is in line with the suggested CT measure
- In the GTR pilot, we recommend that CT is the only metric used for financial incentives for GTR and NR
  - other metrics may be used internally by GTR or NR for diagnostic assessment
  - however, other metrics should not be used for any financial incentives or regulatory oversight, in order to keep management focused and aligned on just one overall measure

Source: National Task Force

TfL's Lost Customer Hours (LCH) metric also has many similarities with the proposed CT metric

What passenger-focused metrics does TfL use?

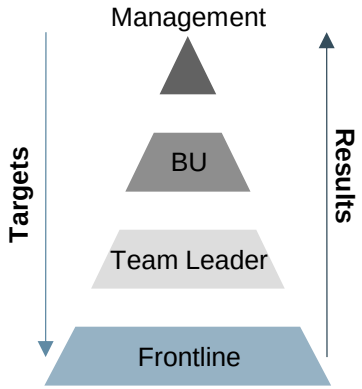
Metric	Comment
LCH	Amount of customer hours lost due to disruptions of two minutes or more on the London Underground
Excess journey time (EJT)	Difference between actual journey time and 'estimated journey time' for any two stations. Average excess journey time is based on all passenger trips and encompasses all components of the journey (e.g., platform waiting time)

How does TfL measure LCH?

LCH = Number of passengers x Delay time (hours)

- Delay time is monitored for each train as they pass through stations
- The number of passengers is estimated based on tube line, location and time of day (peak & off-peak)
- Passenger data is re-calibrated on a yearly basis

How does TfL report and cascade these metrics?



- LCH is reported and attributed through the organisation, and each employee considers the metric on a daily basis
- Targets are cascaded down to operational team level
- Teams are incentivised by end-of-year bonuses reflecting performance

Other take-aways

- LCH causal attribution allows London Underground to focus their infrastructure investments
- Only disruptions greater than two minutes are considered
- The metric considers that an incident may force customers to use an alternative longer route or another mode of transport
- LCH is converted into pounds for business case developments

Source: TfL

Switzerland's SBB is a good example for the use of passenger-focused metrics, on a vertically integrated railway

What passenger-focused metrics does SBB use?

SBB CFF FFS

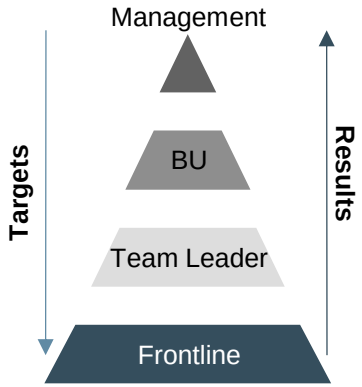
Metric	Comment
RVMin ("Passenger delay minutes")	The total passenger delay minutes across a train as calculated on this page
Customer punctuality (%)	Measured as a percentage of passengers arriving less than three minutes late (and not missing a connection) at a number of hub stations

How does SBB measure "Passenger delay minutes"?

Passenger delay minutes = Number of passengers x Minutes delay

- Lateness minutes are measured at c.50 hub points
- The number of passengers refers to those at their final destination who have encountered a delay
- Cancellations and missed connections are taken into account with a 30 minutes surcharge

How does SBB report and cascade these metrics?



- Management receive quarterly and monthly reports and analyses
- Targets are set quarterly at Business Unit level and cascaded down
- Incident debriefings and systematic analysis are performed by frontline staff

Other take-aways

- Evaluation of performance is possible on the following day
- Performance is continuously improved through;
  - adapting timetable and production planning
  - ensuring the provision of good quality, authoritative data
- Customer punctuality includes a component that considers connections
- "Think in Seconds" is part of the intra-company communication

Source: SBB

Performance regimes should be more focused on passengers

Passenger focused metric

- CT: an aggregated metric of all passenger lateness
- Weighted towards majority of passengers i.e. appropriately factoring peak and busy routes
- Same single metric for TOC and NR
- Able to be cascaded down to the frontline in both organisations

Passenger focused regime

- GTR and NR to pay for Delay Repay (DR) claims
- Incentive based on CT
- New metrics can be cascaded through organisations and financial incentives provided to teams
- GTR to possibly have some exposure to passenger revenue

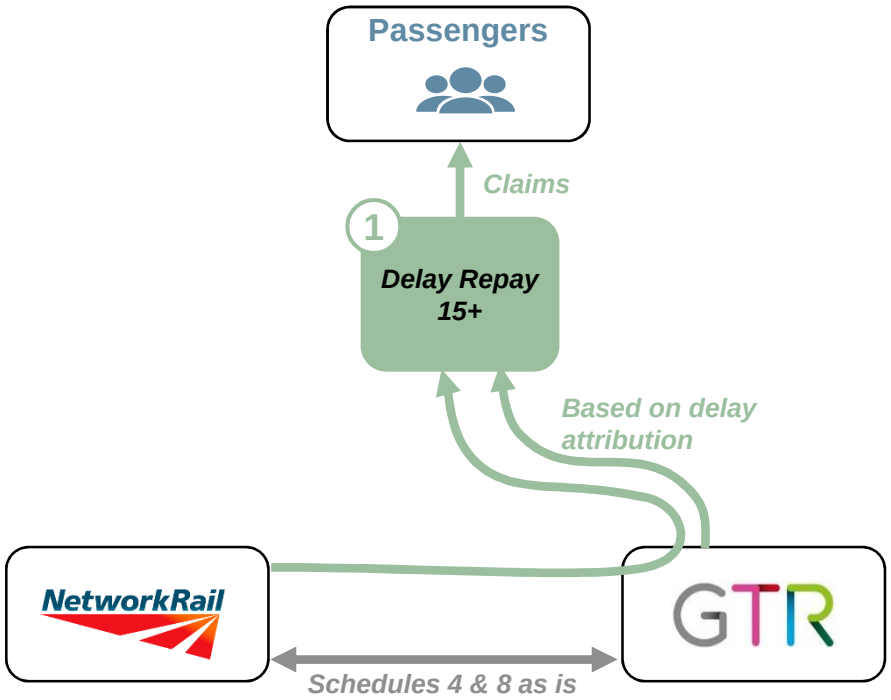
Passenger focused communication

- App to track individual CT
- Able to improve predictability of individual travel (based on historical and predictive trends)
- App can facilitate DR claims
- Provide additional features to help passengers plan and improve their journey experience

Both GTR and NR should contribute to DR to passengers for the delays that they cause to passengers

1

Key attributes of regime	Rationale
• DR is used as an incentive to encourage parties to improve performance	• Directly connects passenger compensation to industry incentive
• NR pays its attributable share of DR payments	• NR should be incentivised by the value of DR they cause
• GTR itself pays its attributable share of DR payments, rather than the DfT	• GTR should be incentivised by the value of DR they cause, while protecting them for the claims associated with delays they did not cause
• NR contributions are based on periodic delay and cancellation attribution	• Prevents day-to-day involvement of NR in the DR scheme
• Schedules 4 & 8 exist as is	• Schedules 4 & 8 protect GTR from revenue loss due to NR (although at present most payments are passed on to DfT and not retained by GTR)



Introduction of DR 15

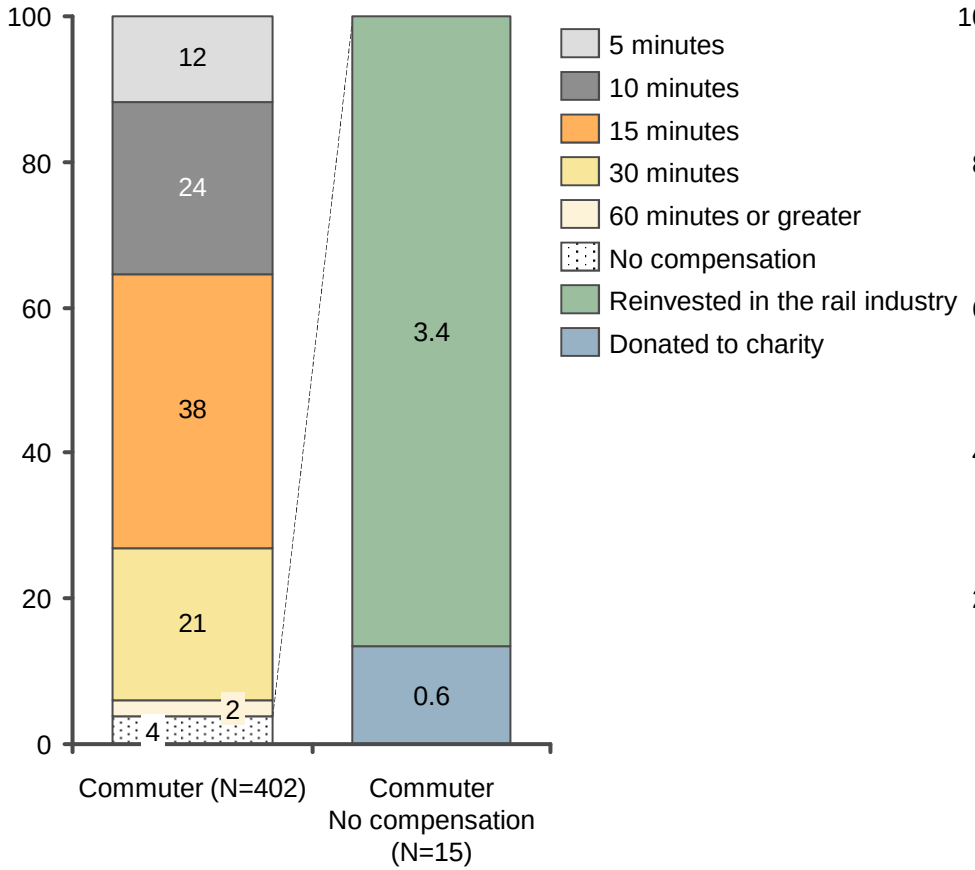
- In October 2016 the DfT announced DR 15, introducing compensation for passengers delayed by >15 minutes (25% of a single ticket, or 25% of the fare paid for the affected portion of a return ticket)
  - this is supplementary to the existing DR thresholds of 50% refund for 30+min delays and 100% refund for 60+min delays
- The change has been committed to by DfT and will first be launched as a pilot on GTR services and then rolled out to other TOCs

A large proportion of GTR passengers favour the announced 15 minute threshold for DR

1 ***Delay Repay***

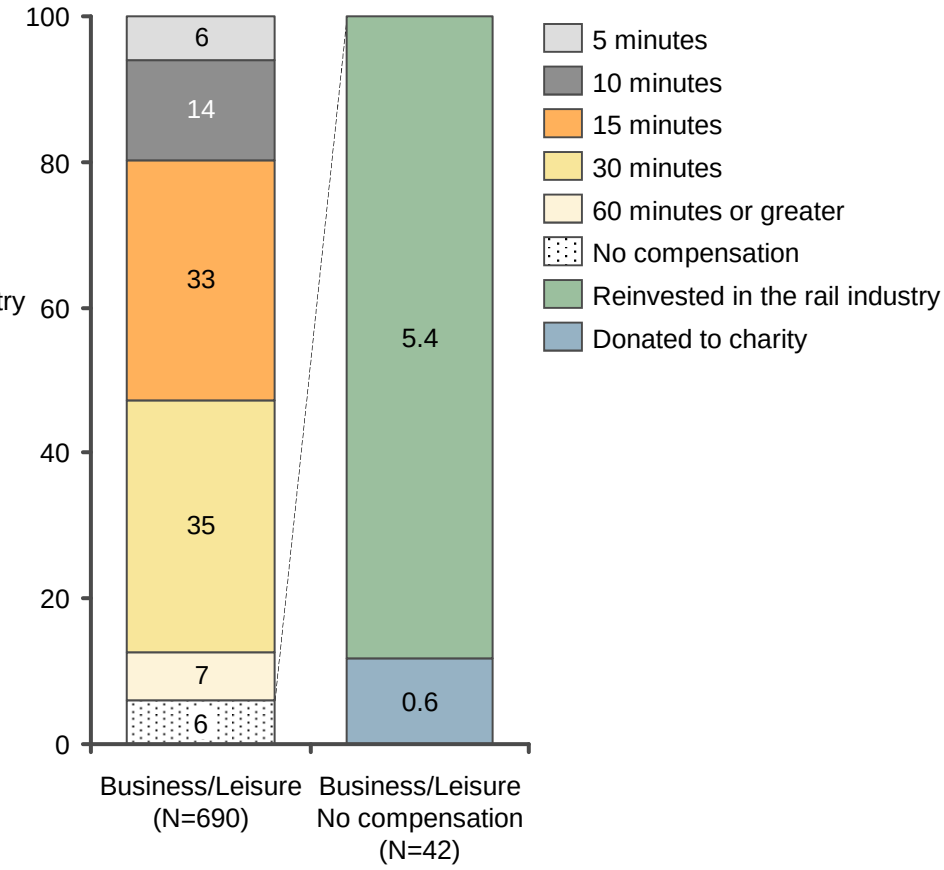
Commuter views on delay compensation and the threshold at which it should start*

Percent



Business/Leisure passenger views on delay compensation and the threshold at which it should start*

Percent

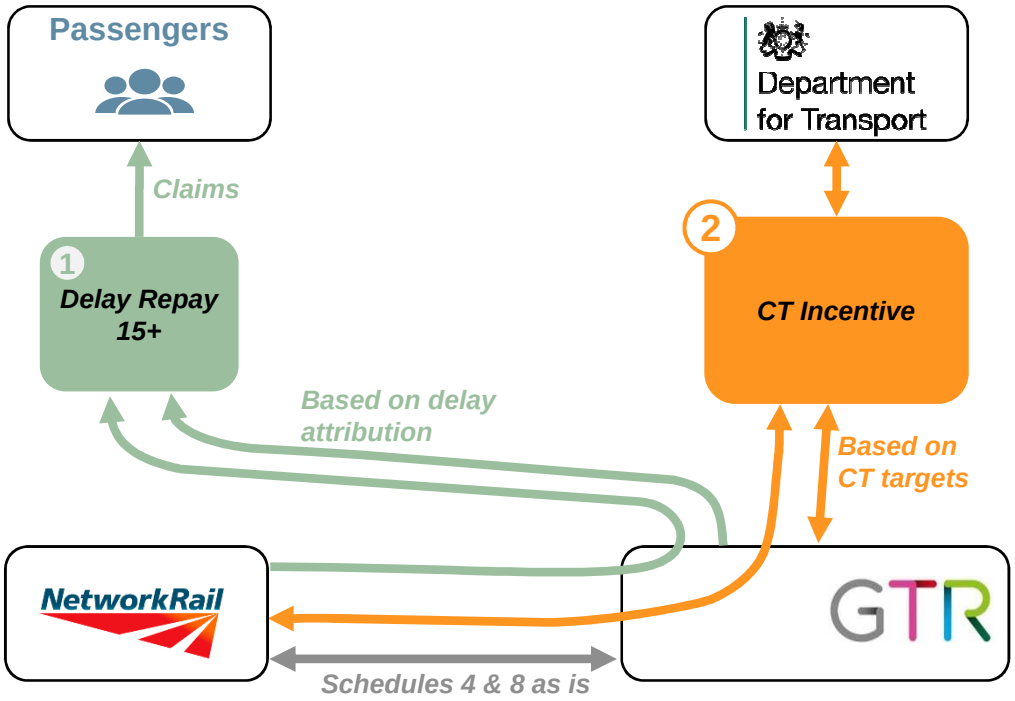


Note: * Survey question: "In your opinion, by how much would a train have to be late for passengers to be eligible for compensation?"
Source: L.E.K. Passenger Survey

A new CT based incentive should be implemented in addition to DR

2

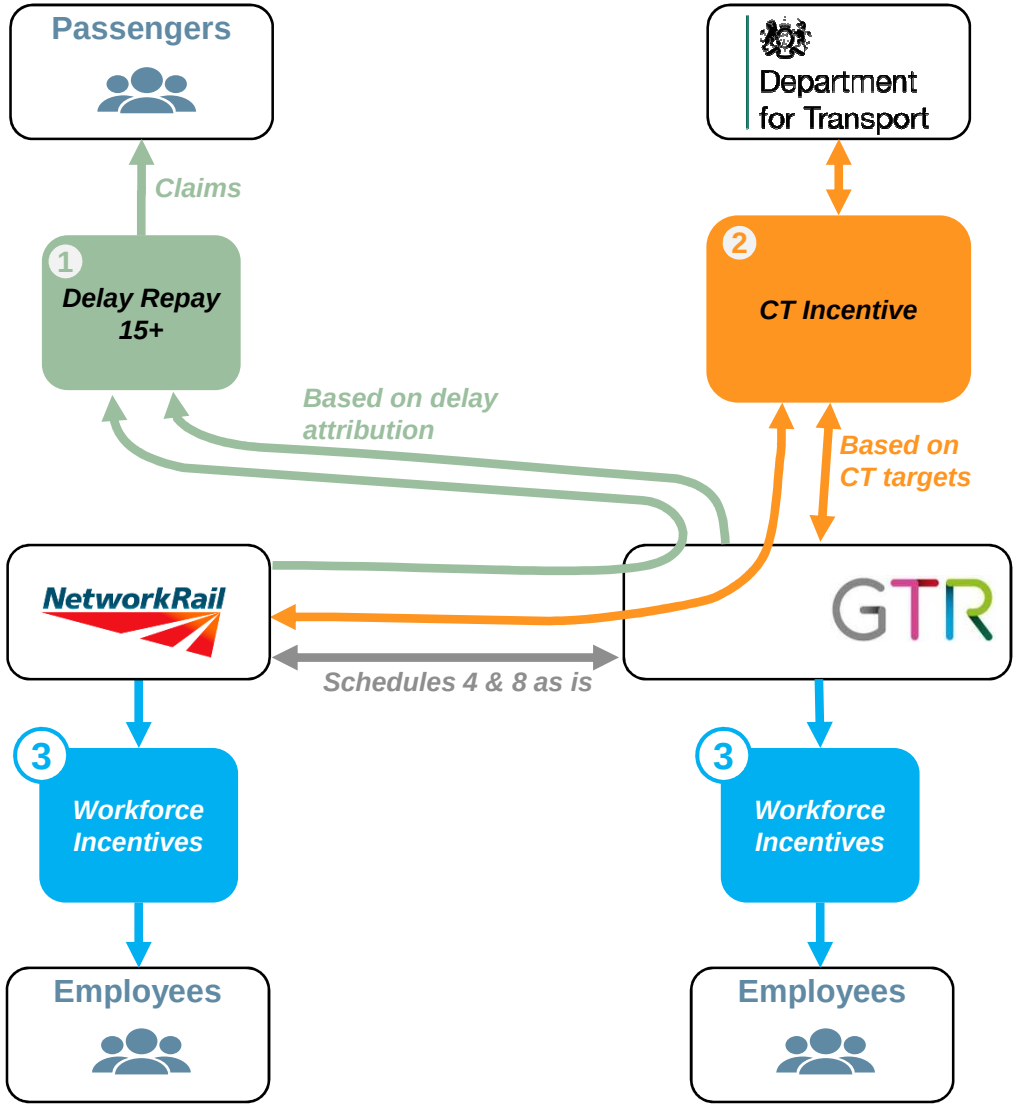
Key attributes of regime	Rationale
• Introduce incentive based on CT targets for GTR	• Provides additional incentive beyond current DR eligibility • Two-way, rewarding regime offers positive incentive for GTR to improve performance • Incentive as a replacement to Schedule 7.1, with a more passenger focused metric
• NR is also incentivised by the CT regime	• GTR & NR are financial held to account on the same metric, reinforcing principles of accountability and transparency • Should government shareholding in NR reduce, provides appropriate financial incentive for NR to improve performance
• Payments are calculated periodically as opposed to annually	• Avoid loss of incentive in periods of extreme performance



Incentives can be passed on to the workforce within both NR and GTR

3 Key attributes of regime	Rationale
• GTR and NR utilise workforce incentives with their respective employees	• Vertically align throughout key stakeholders
• Workforce incentives based on department level CT targets	• Financially incentivise employees to improve performance
• Calculated periodically, paid annually based on cumulative value of individual periods	• Avoids staff losing incentive part way through the year and significant pay-out
• Same target amount for every employee	• Sum can be discussed openly • Fairness across GTR and NR
• Management assumed to maintain safety standards	

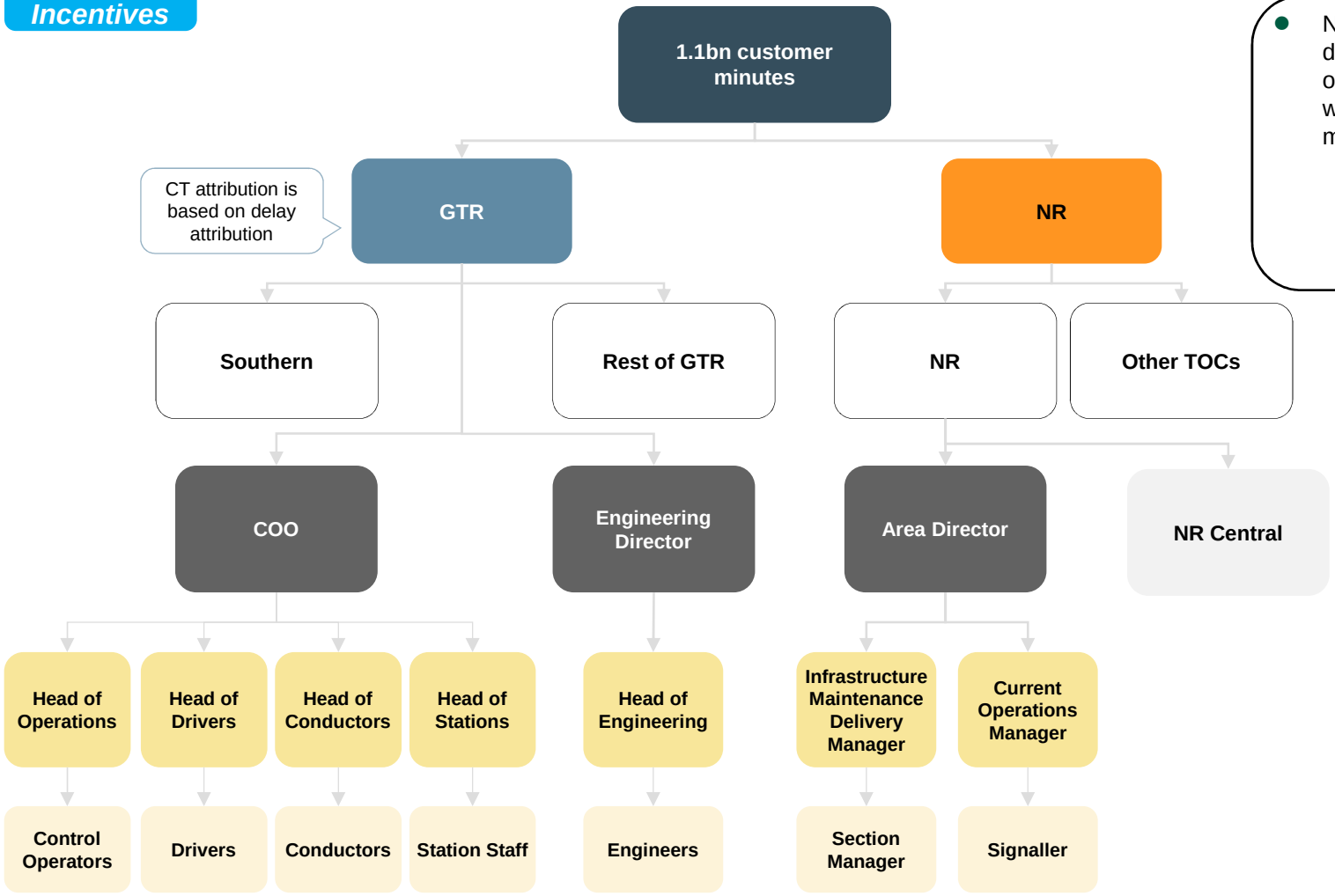
NR and GTR management should develop a safety plan for implementation to be approved by ORR



The CT metric enables vertical alignment within organisations

3 *Workforce Incentives*

Illustrative breakdown of CT



ILLUSTRATIVE ESTIMATE

- NR and GTR would need to determine how organisational functions align with the customer minutes metric
  - identify the appropriate target performance for difference functions and teams

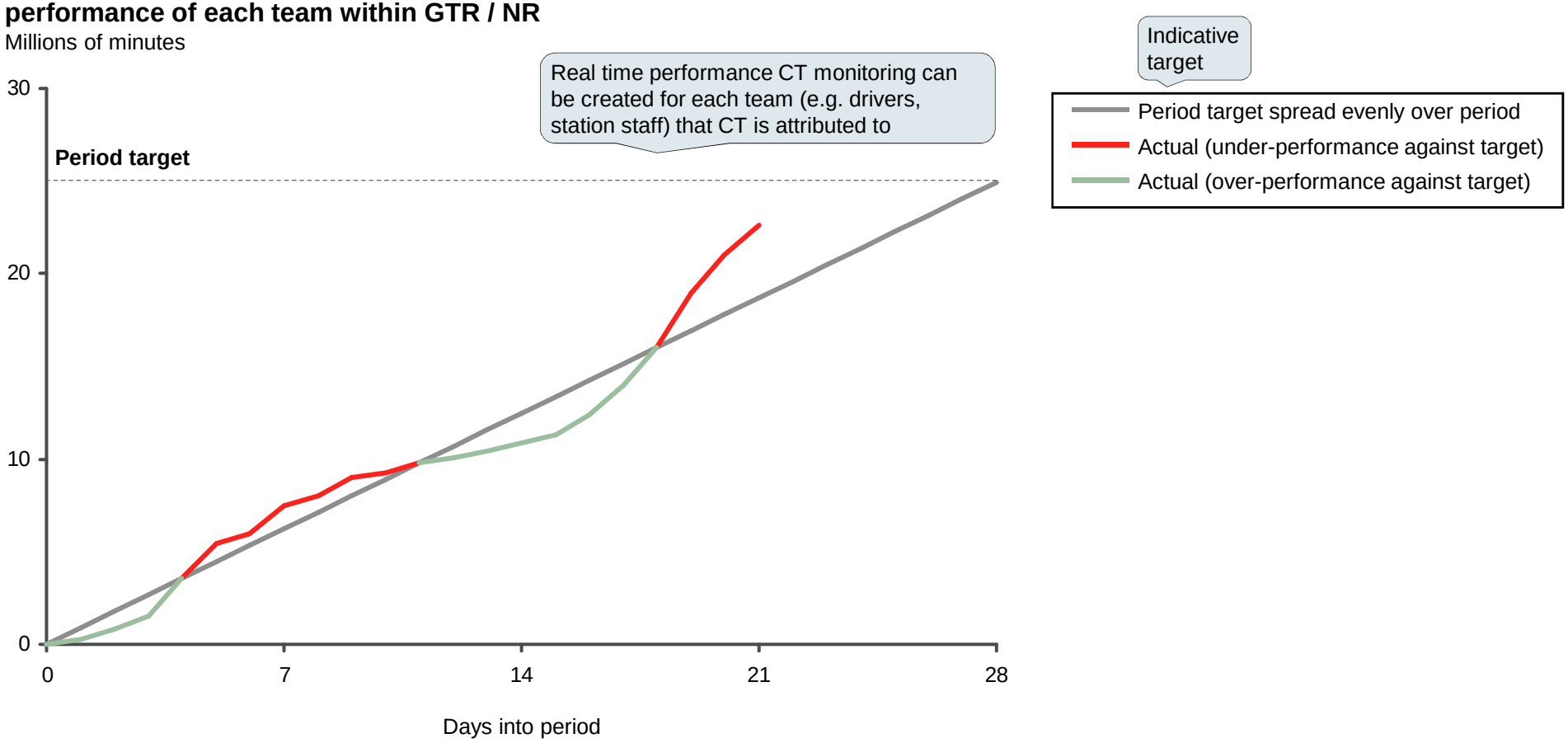
Performance against CT can also be communicated internally and cascaded throughout key stakeholders

3 *Workforce Incentives*

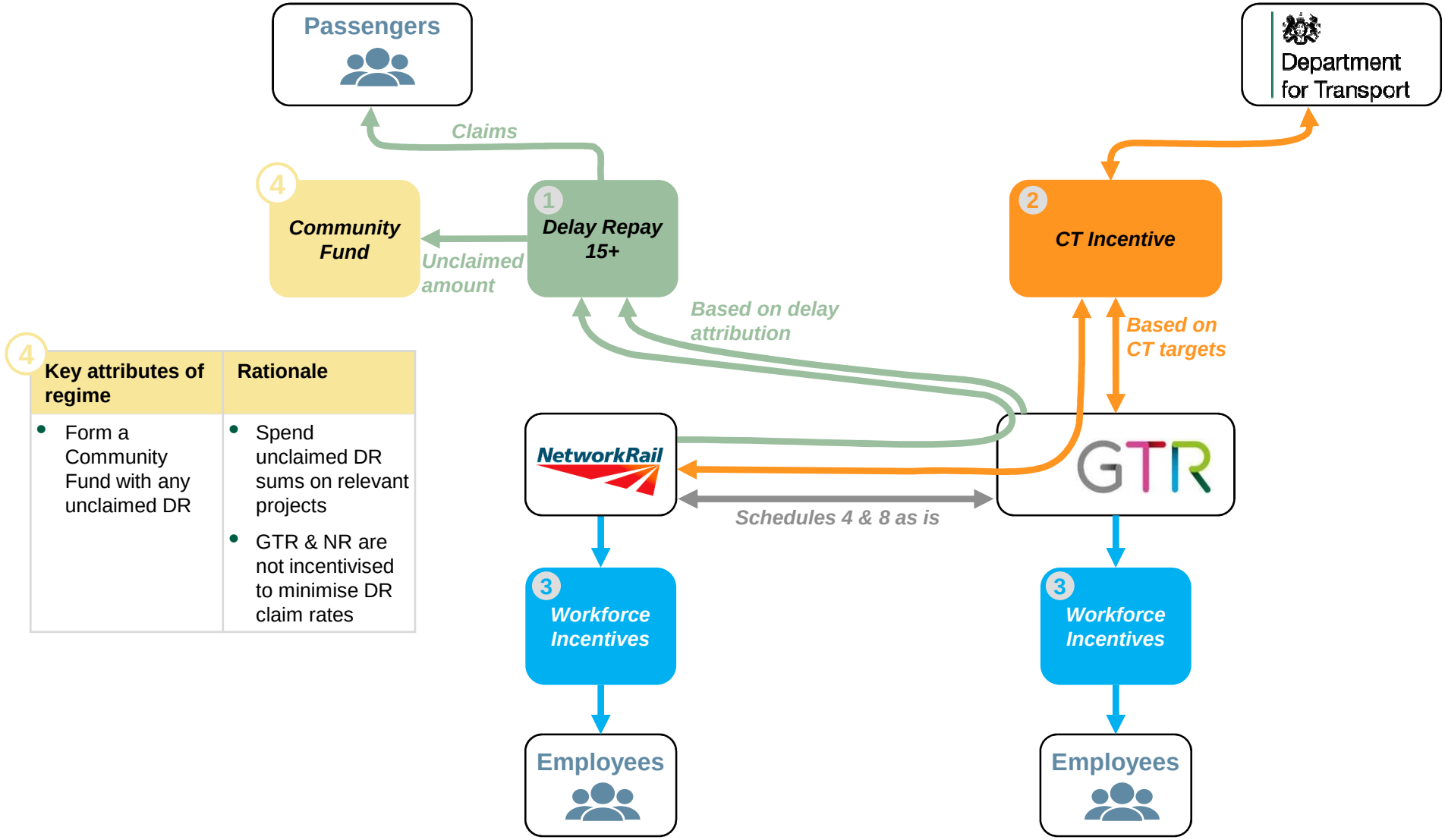
ILLUSTRATIVE

Illustrative internal communication of real time CT target-based performance of each team within GTR / NR

Millions of minutes



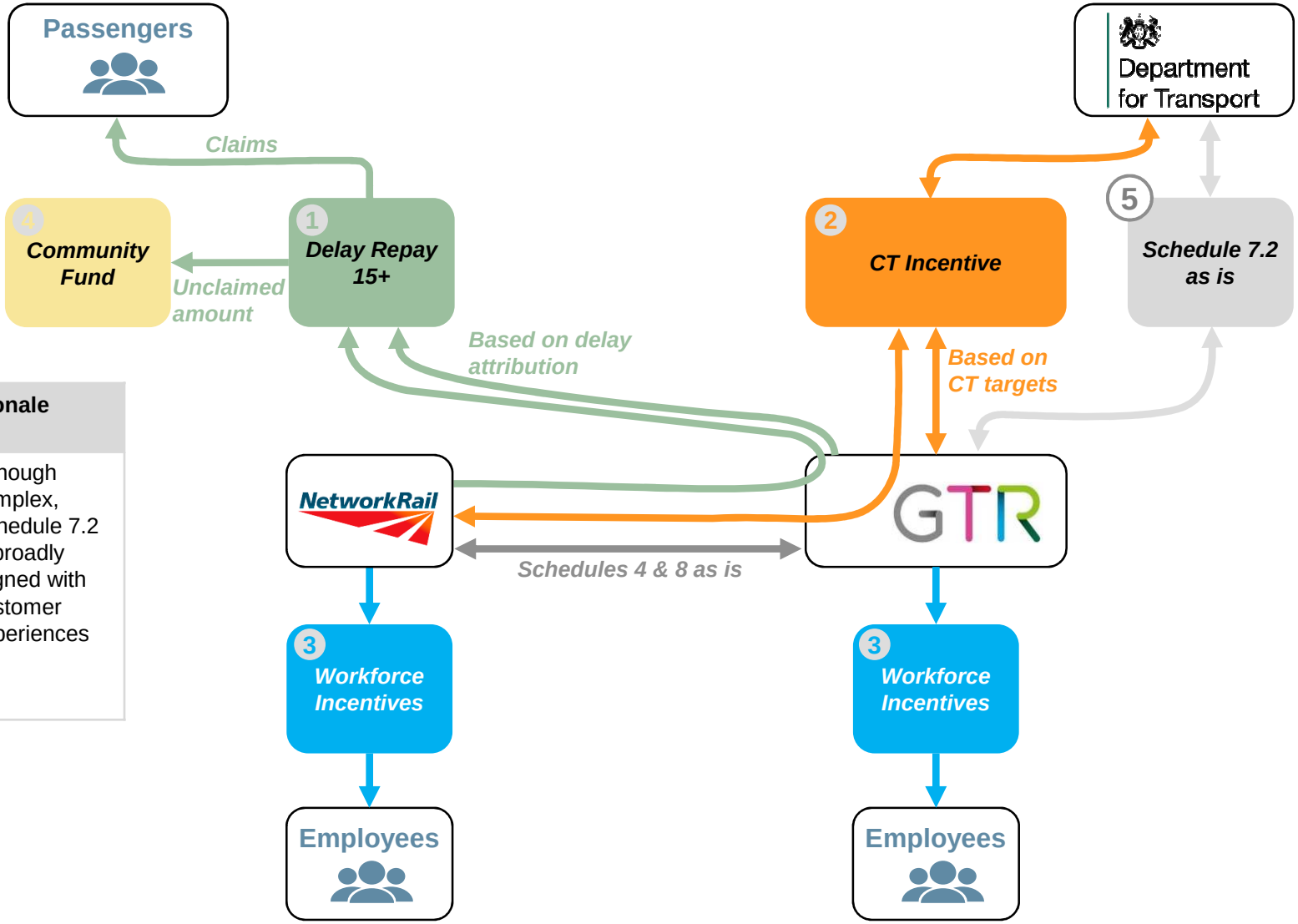
A Community Fund should be considered for any unclaimed DR



4

Key attributes of regime	Rationale
• Form a Community Fund with any unclaimed DR	• Spend unclaimed DR sums on relevant projects • GTR & NR are not incentivised to minimise DR claim rates

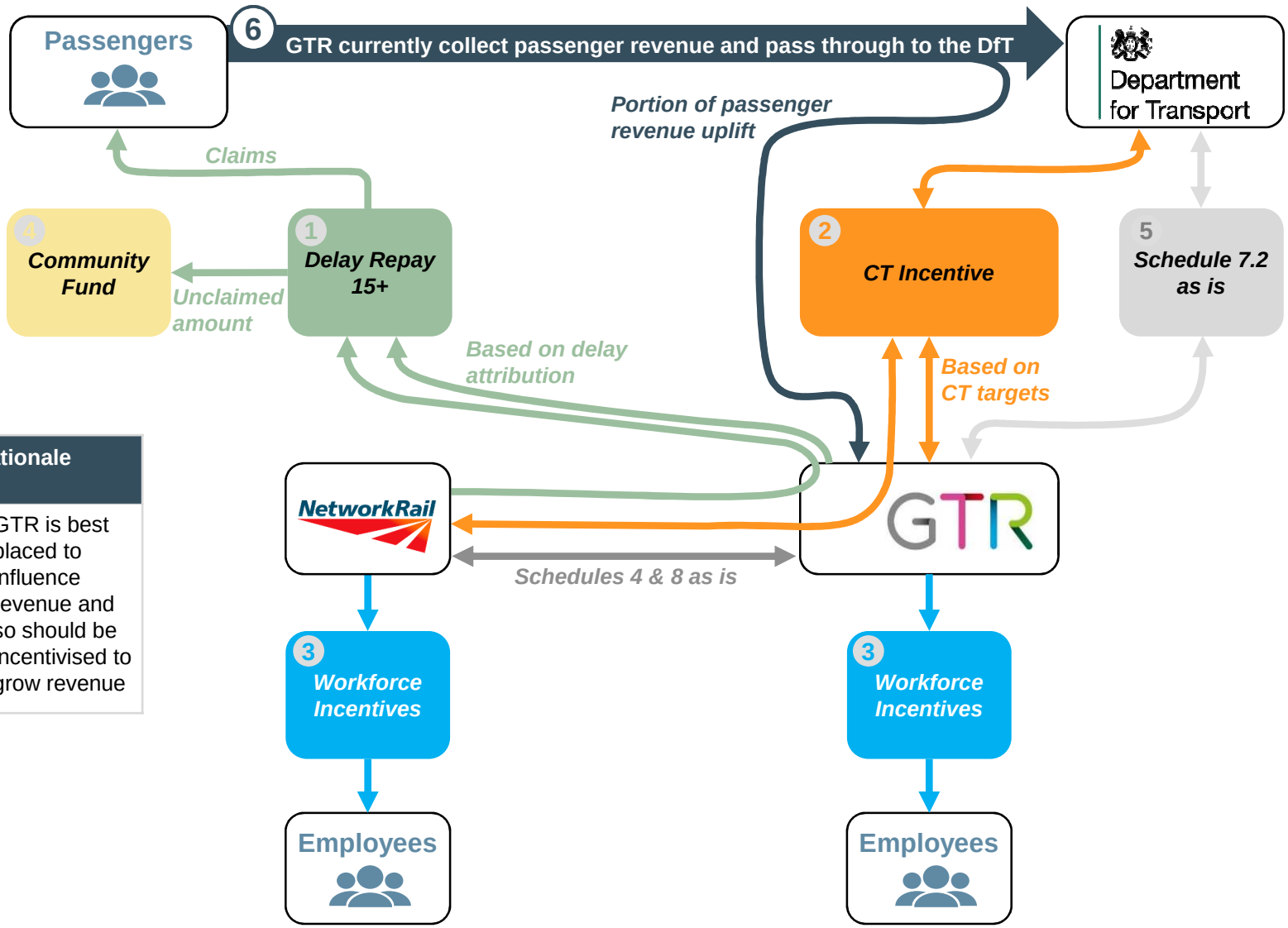
GTR should continue to be incentivised to improve customer experiences by Schedule 7.2



5

Key attributes of regime	Rationale
• Retain Schedule 7.2 as is, and consider options for reform in the medium term	• Although complex, Schedule 7.2 is broadly aligned with customer experiences

GTR could be incentivised with a portion of any uplift in passenger revenue



6

Key attributes of regime	Rationale
• GTR retain a proportion of revenue uplift	• GTR is best placed to influence revenue and so should be incentivised to grow revenue

The thinking of the NTF and the Transport Select Committee on performance is in line with the recommendations from this review

Overview of NTF and TSC findings and recommendations

Key: aligned | Not aligned/to validate

	NTF: CP6 Passenger Performance Metrics – A Proposal March 2016	Transport Select Committee: The future of rail October 2016
Findings	• *Passenger expectations are not being met* • *NR and TOC are motivated by different metrics* • *Passenger expect 'on time' to mean arriving within one minute. Every minute of lateness reduces overall passenger satisfaction by 1.5%*	• *PPM is not in line with passenger experience and can lead to perverse behaviours not in line with the best interest of the passenger* • *NRPS is only a narrow 'snapshot' taken twice a year of a passengers particular journey*
Recommendations	• **Encourage greater alignment between TOC and NR**, by having one core metric with sub-metrics feeding into it ✓ • **Focus more on passengers,** by having a core metric that relates directly to passenger experience ✓ • **Minimise delays throughout the network rather than only at the terminus,** by using 'On Time' sub-metrics for each station ✓ • **Consider new requirements of metro services,** by introducing a separate sub-metric adapted to high-frequency trains ?	• **PPM should be abandoned as the headline measure of TOC performance** ✓ • **Improve the NRPS to more accurately reflect the experience of passengers,** by using online surveys and surveying non-users of rail travel, and by carrying out the NRPS at least quarterly ✓ • "Right-time" measures should be established X

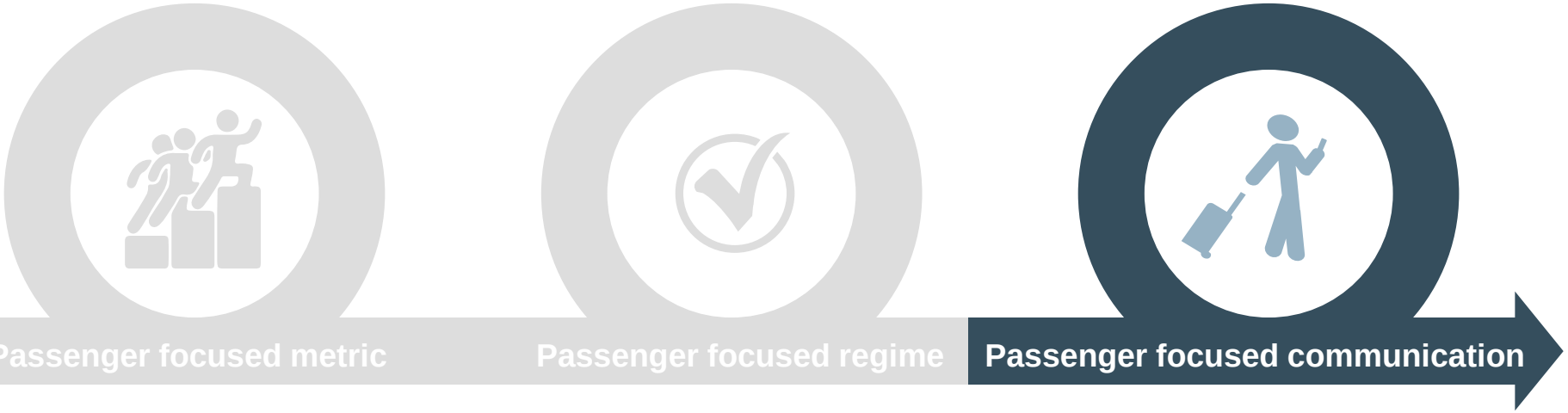
The importance of *metroisation* within GTR needs to be validated. It is suggested that performance is measured in terms of CT and the proportion of passengers which use GTR services as a metro is monitored

PPM should be replaced by CT rather than "Right Time" to avoid disproportional implications of a one-minute cut-off, and to include passenger weightings

Source: NTF; Transport Select Committee

L.E.K.

Communications with passengers should be made more personalised and should help improve their journey experience



Passenger focused metric

- CT: an aggregated metric of all passenger lateness
- Weighted towards majority of passengers i.e. appropriately factoring peak and busy routes
- Same single metric for TOC and NR
- Able to be cascaded down to the frontline in both organisations

Passenger focused regime

- GTR and NR to pay for Delay Repay (DR) claims
- Incentive based on CT
- New metrics can be cascaded through organisations and financial incentives provided to teams
- GTR to have some exposure to passenger revenue

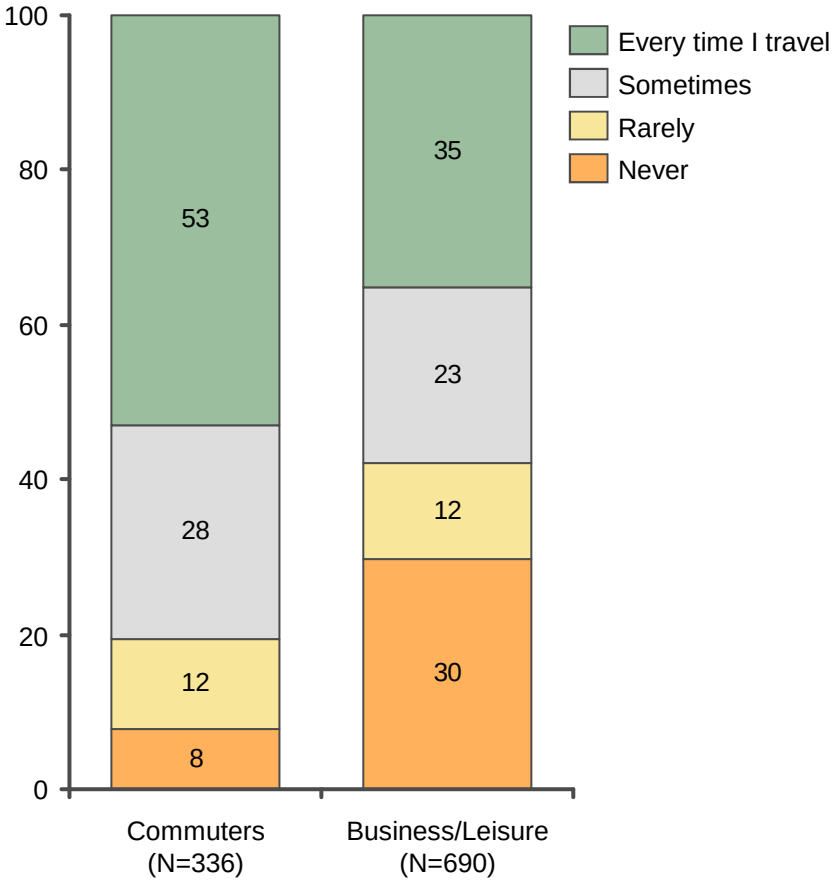
Passenger focused communication

- App to track individual CT
- Able to improve predictability of individual travel (based on historical and predictive trends)
- App can facilitate DR claims
- Provide additional features to help passengers plan and improve their journey experience

A large proportion of GTR passengers frequently use mobile apps for checking train performance. However, only a few feel satisfied with the information received

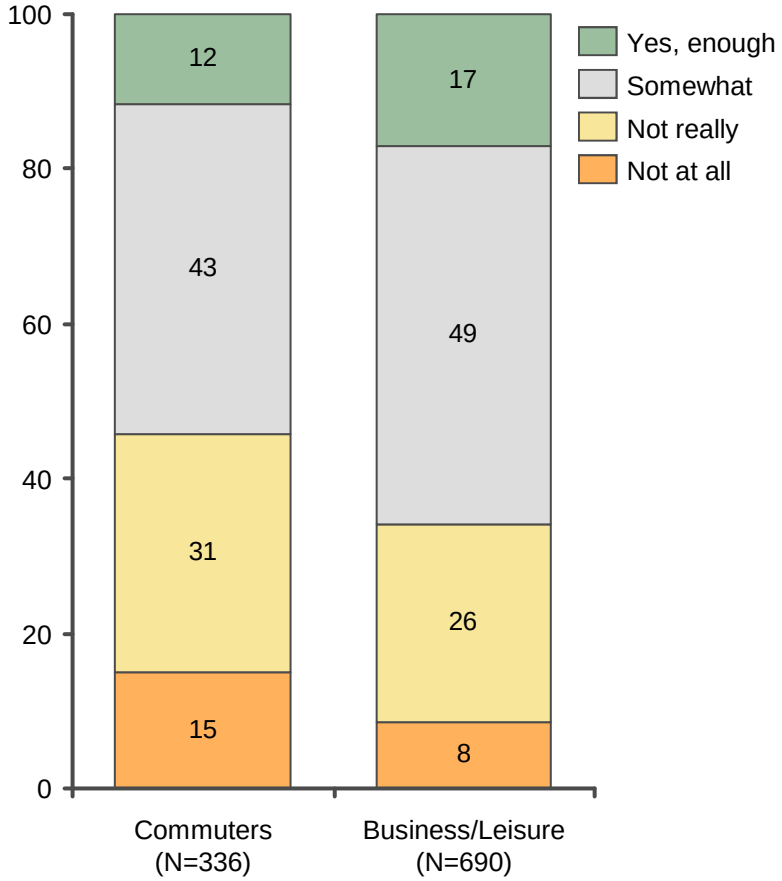
Frequency of using mobile applications to check live on-time train performance*

Percent



Passenger opinion on provision of live on-time performance information from Train Operators**

Percent

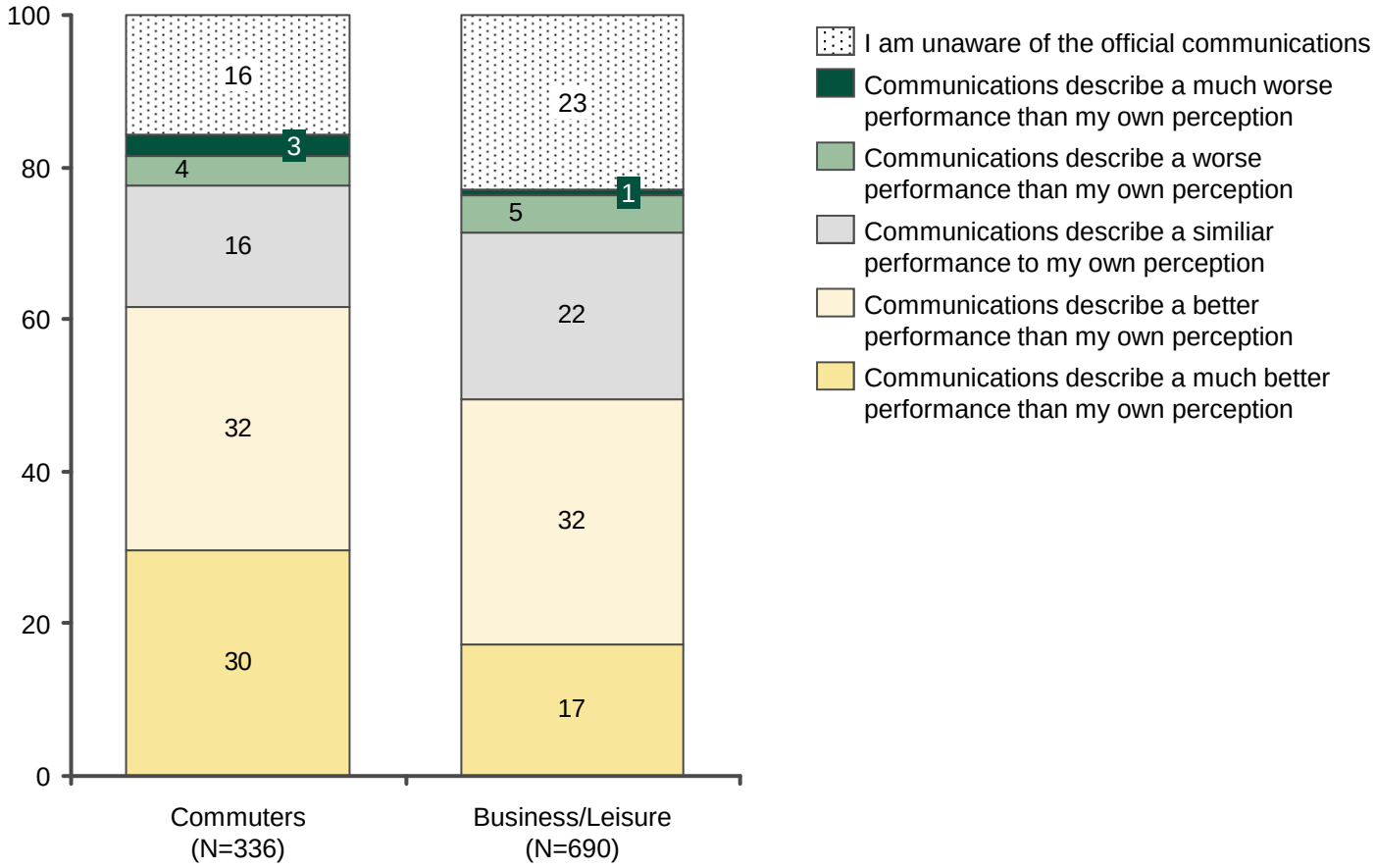


Note: * Survey question: "How often do you use a mobile application to check whether trains are on-time?" ** Survey question: "Do you feel the train operators give you enough information about the live on-time performance of their service?"

Source: L.E.K. Passenger Survey

Most passengers feel official performance statistics do not accurately reflect their personal journey experience

Passenger perception of communicated performance statistics*
Percent



Note: * Survey question: “How do the on-time performance statistics communicated by the rail industry compare with your own perception of train performance?”
Source: L.E.K. Passenger Survey

GTR's mobile app(s) should include personalised performance related information

Core features

Optional features

Personalised performance measure

- Communicate performance measures focused on individual's personal journey(s), i.e. personalized CT
  - based on customer selection of specific train, time window, GPS location, smart ticketing, etc.

TOC-wide metrics

- Show TOC-wide CT metric performance (in the same currency as their individual performance) and the causation behind delays

Delay Repay

- Facilitate the claim of DR and verify eligibility
  - verified by traditional means and/or additional data (GPS, smart ticketing, Wi-Fi log in etc.)

Journey planning

- Help plan journeys and view estimated delays using predictive analytics
  - user can choose the most reliable train within a selected time window

Multimodal transport selection

- Compare journeys by rail to other modes by journey time (including predicted delays) and price

In-journey experience

- Provide in-journey experience assistance, such as carriage selection support based upon historical data, which can help reduce dwell times

L.E.K.

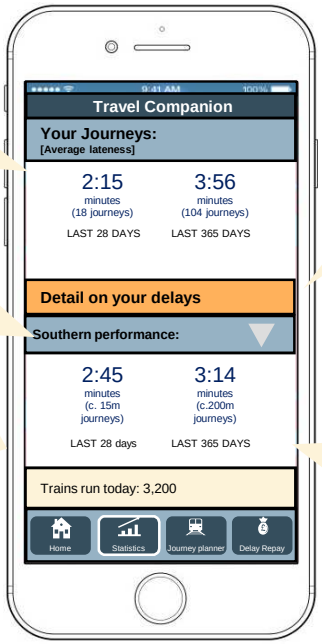
The proposed core features of the app should show passengers the performance metrics relevant to their personal journey(s)

Personalised performance measure and TOC-wide metrics

Shows average lateness (CT) for journeys taken by the user

Options to compare own performance experience with TOC wide, Service Group and station pair, by peak and off-peak

Shows average delays across the entire Southern/GTR network, and the number of journeys over which the delays occurred



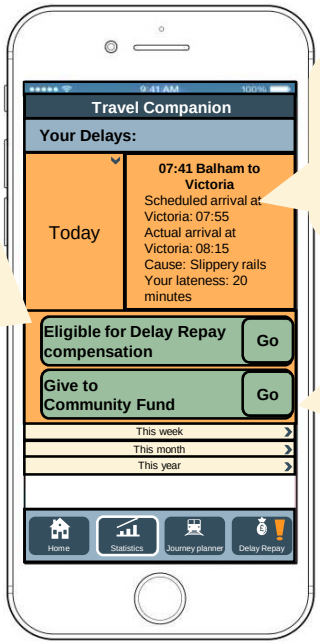
Allows user to see more detail on delays (e.g. causation)

By showing performance over a long period of time, users can compare their journeys with the rest of the network

Recent performance experience and Delay Repay

Mobile applications should be used for DR claims, given smartphone penetration levels, and the easiness of claiming that they could facilitate

Other routes to DR will require the existing level of proof that the passenger was on a specified train, and be more cumbersome



Displays each journey taken by the user, performance information including causation (attribution) and whether they are eligible for DR compensation for those journeys

Users are given the opportunity to donate their DR compensation to a Community Fund which will be reinvested back into the network, to improve services

L.E.K. passenger survey suggests c.5% of passengers claiming may choose to do this

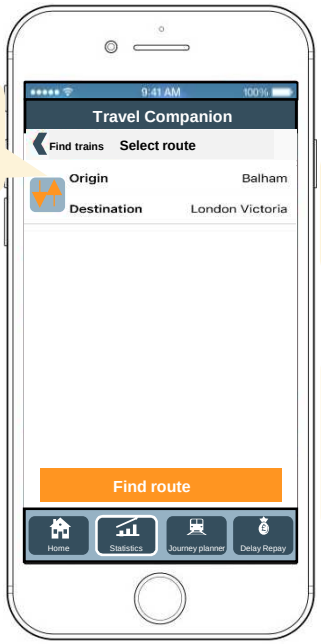
Source: L.E.K. passenger survey

Passengers can manually select their journey(s) or use automated options

Personalised performance measure

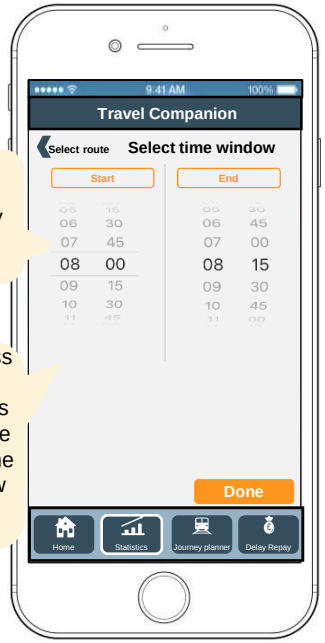
Personalised journey window selection (manual)

Passenger selects their daily journey (on going or ad hoc)

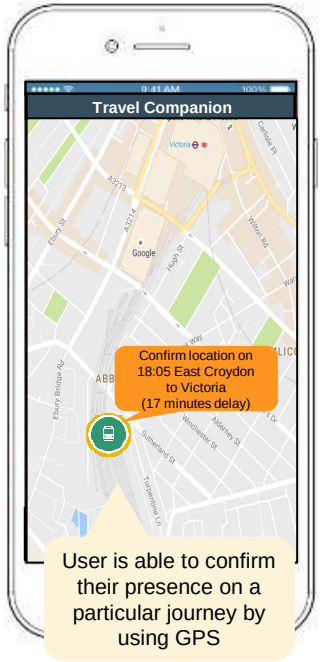


Select usual journey time window – highly customisable selection

Personal lateness (as showed on previous page) is either an average of trains within the selected window or of particular selected trains



Location-based journey confirmation



User is able to confirm their presence on a particular journey by using GPS

Smart ticketing and contactless payments integration

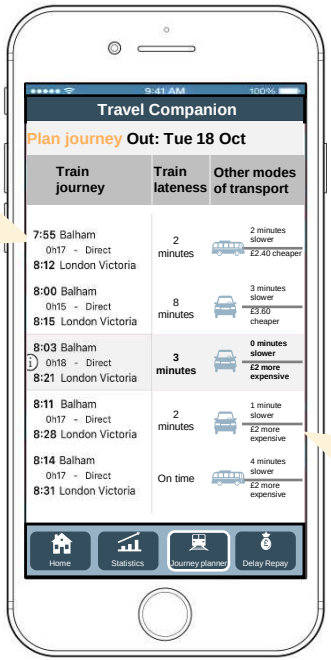
Automated recording of touch-in and touch-out

Inferred unique train or average of multiple trains (with option for the user to refine specific train taken)

The app can assist passengers in making multi-modal journey choices, and performance data should be open to third party developers

Journey planning / comparison

Provides details of typical delays to journeys meeting the user's selection criteria allowing passenger to choose most reliable train



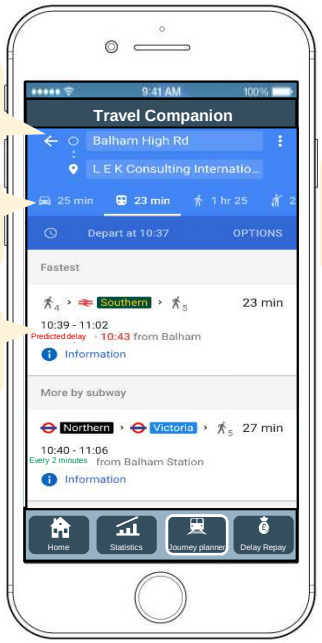
Compares with alternative modes of transport (based on price and total journey time)

Multimodal transport selection

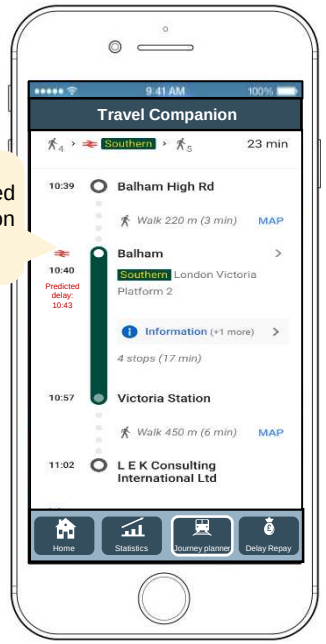
Passenger selects their journey

Routes via multiple transport modes are shown

Using historical data, the app can predict delays



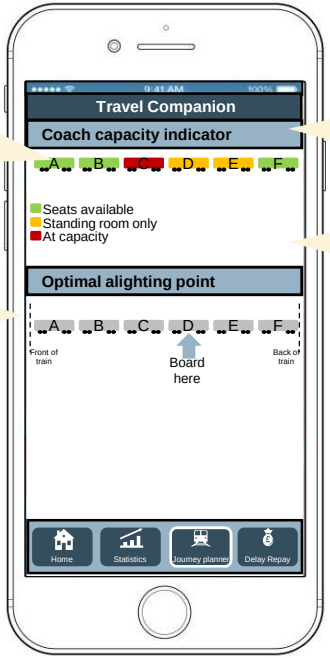
The user is guided to their destination using GPS



The app could provide passengers with information to assist journey choices and improve in-journey experience

In-journey experience assistance

Guide passengers' boarding decision



Helps to reduce dwell time on busy services

Alongside punctuality, comfort is a key driver of customer satisfaction

Advises on optimal point for station arrival for exit/connection

Improving customer information

Agenda

- Introduction & Executive Summary
- Project context
- Current regime
- Proposed future direction
- Appendix
  - **Current performance regimes**
  - Other processes and regimes

Current performance regimes (1 of 2)

Structure of existing measures and associated key issues

- **PPM** is the commonly publicised measure that records percentage of scheduled trains which successfully run their entire planned route and arrive at their terminating station within five minutes of the scheduled time
  - PPM does not accurately reflect passenger experience as there is no passenger or peak vs. off-peak weighting
  - it only records lateness at the final station the service calls at, where only a certain amount of passengers travel to
  - Each train is either a pass or fail, as a result a 4'59" delay is treated completely differently to a 5'01" delay. Attribution of responsibilities between parties is therefore not possible

- **Schedule 7.1** is a component of the Franchise Agreement between GTR and the DfT, that incentivises GTR to minimise delays, cancellations and short formations (peak time only)
  - the regime is based on a set of annual target benchmarks to compensate and monitor (for default) GTR's performance on self caused TOC delays, cancellations and short formations (established by the Delay Attribution Process)
  - Schedule 7.1 does not include any passenger weighting, e.g. treating delays to a crowded morning peak train in a similar manner as an off peak train with limited passengers
  - several perverse incentives arise from regime due to implicit trade-off between delay minutes, cancellations and short formations
  - bands between breach and target are inappropriately narrow, with most GTR performance to date being out of the range. Near the end of a performance year, GTR may have no incentive to improve if previous periods performance already place them above breach levels

Current performance regimes (2 of 2)

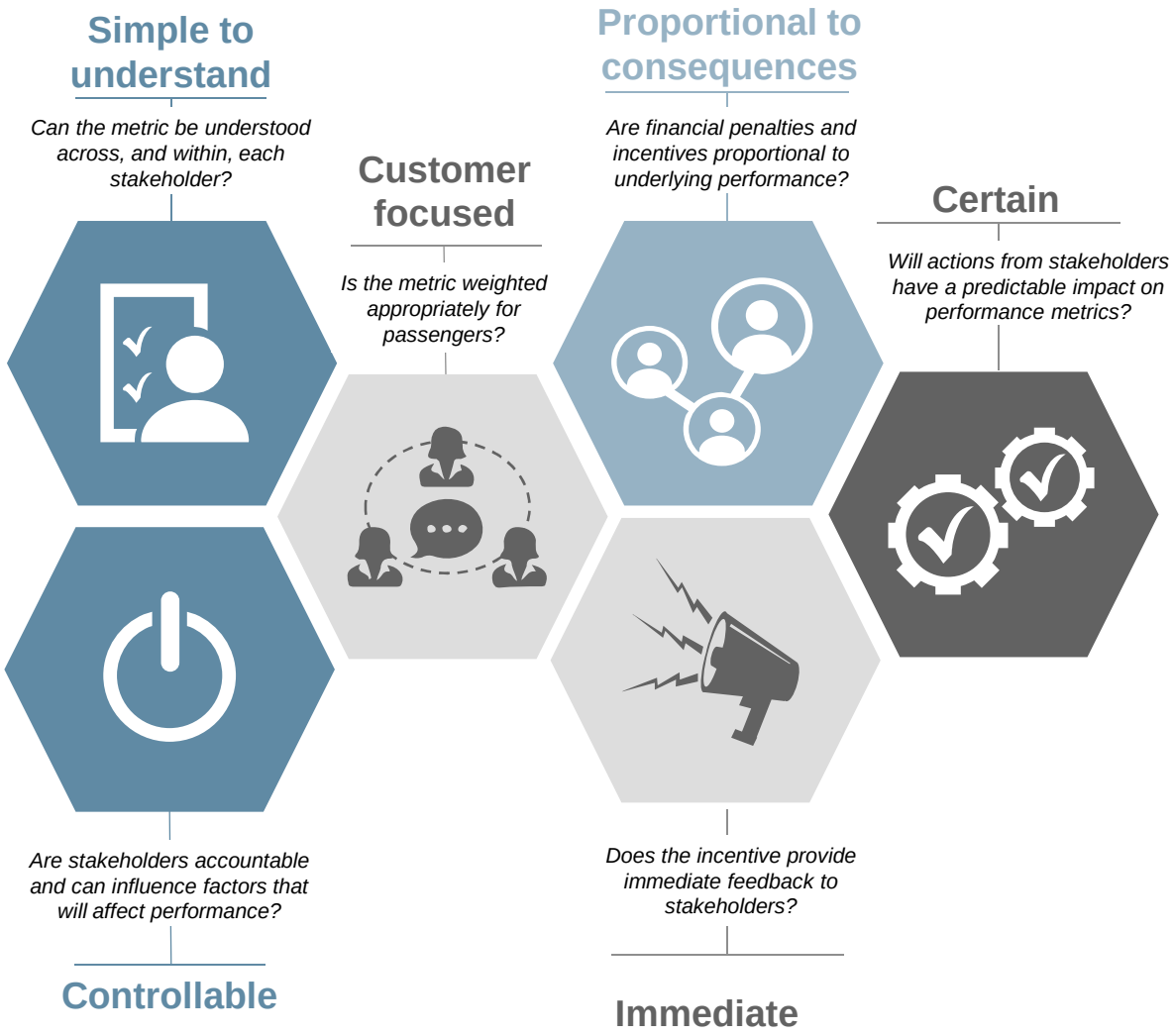
Structure of existing measures and associated key issues (cont.)

- **Schedule 8**, as part of Track Access agreement between the TOC and NR, is designed for mutual compensation for any lateness caused by either of the two parties (NR/TOC), or by another TOC. As such aligns it aligns NR's incentives with the TOC and provides TOCs with confidence and insulation from external risks
  - the regime is passenger weighted, thought to accurately represent the value customers place on delay and creates suitable incentives for investment. However the calibration is only done once for each 5-year Control Period
  - passengers experience is reflected in the marginal cost of a minute lateness at stations with high passenger volumes compared to stations with low passenger volumes
  - Lateness is allocated to each party proportionally to the delay allocation split that results from the Delay Attribution Process

- The **Delay Attribution Process** compares scheduled and actual train passage times at Recording Points, and then attributes delays of more than 3 minutes to either NR or GTR
  - DA serves an important industry purpose of providing detailed information for root-cause analysis and hence underpins a rational approach to prioritising investments and changes to improve performance
  - current processes are manual and resource intensive, with a significant backlog of disputes

- **Schedule 7.2** is a component of the Franchise Agreement between GTR and the DfT, that incentivises GTR to provide a good level of customer experience. It is based on both QuEST (Quality Experience on Stations and Trains) inspections and NRPS (National Rail Passenger Survey) performance related results
  - the regime directly engages passengers but there is not a direct link with individual train performance and accountability is not attributed
  - feedback is collected infrequently and highly influenced by exogenous factors therefore limiting the impact of the regime

Desirable attributes of an effective incentive



Existing metrics and regimes have some inherent flaws

Assessment of existing metric options against desirable attributes

Key: ● Favourable ○ Unfavourable

	PPM	Schedule 7.1	Schedule 7.2	Schedule 8	Right Time (% of station stops)
Simple to understand	◕ *Digestible single figure for public consumption*	◔ *Complex with multiple components*	◔ *Complex with multiple components*	◔ *Highly complex*	◕ *Digestible single figure for public consumption*
Customer focused	○ *No passenger weighting*	○ *No passenger weighting*	◑ *Partly based on passenger survey*	◕ *Passenger-weighted, but not thoroughly*	○ *No passenger weighting*
Proportional to consequences	◔ *Ignores lateness at intermediate stations; step change at five minutes*	◑ *Cap and breach distort proportionality*	◑ *Cap and breach distort proportionality*	◕ *Each delay minute / cancellation affects outcomes*	◑ *Measures lateness at all stations; step change at one minute*
Certain	◕ *Outcomes based on simple, clear rules*	◔ *High level of disputes*	◑ *Some certainty, but exposed to exogenous factors*	◔ *High level of disputes*	◕ *Outcomes based on simple, clear rules*
Immediate	◑ *Metric only updated once terminus is reached*	◑ *Attribution takes several days minimum to resolve*	○ *Feedback collated at infrequent intervals*	◑ *Attribution takes several days minimum to resolve*	◕ *Metric only updated when train stops at station*
Controllable	◔ *Not directly attributable; affected by several parties and exogenous factors*	◕ *Only attributed delays/cancellations*	◑ *Quest tangible/ controllable; NRPS not attributed, affected by multiple factors*	◕ *Fully attributable; reasonable link between actions and outcome*	◔ *Not directly attributable; affected by several parties and exogenous factors*

L.E.K.

PPM

PPM is a simple, public facing, industry wide measure of performance

Schedule Description

Role & Objectives

- PPM is a component of the **NR regulatory target** set by the ORR for NR. It is also the public measure of reliability used by train operators
- It's role is to ensure that trains are reliable and punctual. It also ensures transparency to the public

Metrics

- PPM shows the percentage of trains that arrive at their final station *on time*
- 'On time' is defined as within five minutes for short distance routes (or within ten minutes for long distance routes) of the scheduled arrival time

Information Collection

- A trains arrival time is captured on arrival at terminus and compared against the scheduled arrival time
- No attribution of the cause of PPM failures takes place between NR and the TOC

Benchmarks

- **NR targets** are set by the ORR, who can intervene with enforcement action including financial penalties
- **TOC targets** are set by NR, however they are not contractual in nature and TOCs do not face any consequences from NR should they fail to meet these

Calibration

- The level at which PPM fails (five or ten minutes) is not recalibrated
- The timetable is adjusted twice a year (except in an emergency), and can result in changes to scheduled arrival times
- Service cancellations can be made before 2200 the day before (either by NR or by GTR with approval of DfT) which do not then count towards PPM (the timetable is modified as a consequence)

Assessment of metric against desirable attributes

Simple to understand

Metric is easy to understand even though the definition of "on-time" is slightly opaque for the public

Customer weighted

Metrics is train focused and does not account for passenger loading

Proportional to consequences

Each train is either a pass or fail based on a threshold – as a result a 4'59" delay is treated completely differently to a 5'01" delay. Intermediate stations are not considered

Certain

Outcomes are based on simple, clear rules

Immediate

As soon as the train has reach its destination, PPM can be updated

Controllable

Metric is affected by several parties and exogenous factors; responsibilities of a failed PPM are not attributed

Source: GTR-TSGN Franchise agreement

L.E.K.

7.1 Schedule 7.1 is a complex and non customer-focused regime, hindered by a slow Delay Attribution Process

Schedule Description

Role & Objectives

- Schedule 7.1 is a component of the **Franchise Agreement** between **GTR** and the **DfT**
- Its role is to financially incentivise GTR to perform well, by defining pay-outs from one party to another based on performance metrics

Metrics

- **'TOC minute delay'** (per 1000 train miles)
  (a train is delayed for a reason attributable to GTR)
- **# TOC Cancellations**
  (a train is cancelled for a reason attributable to GTR)
- **# peak Short Formations**
  (a train is made up of fewer carriages than planned in peak time)

Information Collection

- Delays of more than **3min** are registered in the **TRUST** system
- The **Delay Attribution Process** defines what proportion of the delays become 'TOC minute delays'. Many attributions are disputed and not settled for months

Benchmarks

- **Targets** are set by the DfT for each metric and performance year
- '**Cap**' and '**Breach**' performance thresholds are also set for each metric – beyond which there is no incentive – in order to limit the maximum pay-outs for each party
- Performance is monitored at four week intervals via a Moving Annual Average, but financial flows are calculated once a year

Calibration

- **Pay-out rates** are **calibrated once** for the entire franchise and at TOC level rather than Service Group level. They vary depending on whether GTR is performing above or below target
- **Benchmarks** are **calibrated annually** also for the entire franchise
- The band between annual cap and breach thresholds is narrow, reducing the impact of the incentive

Assessment of metric against desirable attributes

Simple to understand	Schedule 7.1 contains three significantly different components and has various pay-out rates
Customer focused	The key metrics within Schedule 7.1 do not consider the number of passengers on a train. The first metric focuses on delays whereas customer experience is more impacted by lateness
Proportional to consequences	Flows are calculated annually and the band between breach and cap is very narrow, meaning that the marginal cost of a delay or cancellation can be zero
Certain	Outcomes are often heavily disputed, as seen through the level of unsettled payment amounts. The three component metrics may be played against each other depending on pay-out rates
Immediate	Cancellations and Short Formations can be measured on the day. 'TOC minute delay' has a longer time lag due to the attribution process
Controllable	The three metrics are directly linked to GTR performance and are not impacted by exogenous parties

Source: GTR-TSGN Franchise agreement

7.2 Schedule 7.2 is partially based on direct customer feedback, but is infrequently collected and highly affected by exogenous factors

Schedule Description

Role & Objectives

- Schedule 7.2 is a component of the **Franchise Agreement** between **GTR** and the **DfT**
- Its role is to financially incentivise GTR to provide a good level of **customer experience**, by defining pay-outs from one party to another based on survey and inspection results

Metrics

- **Passenger Experience Measure** (PEM) based on
  - **Quality Experience on Stations and Trains (QuEST)** results (based on inspections of train and station facilities – not impacted by train performance)
  - **National Rail Passenger Survey (NRPS or NPS)** results (of which c.30% is train performance related)

Information Collection

- NPS results are collected through surveying c.4,000 passengers once or twice a year (usually spring and autumn). QuEST results are obtained though audits and inspections carried out every 4-week period
- PEM is calculated by combining NPS and QuEST results (with weighting factors)
- **PEM Payments** are calculated every year by comparing this sum to a Benchmark and applying Pay-out Rates

Benchmarks

- **Benchmarks** are set by the DfT as targets for the TOC
- '**Ceiling**' and '**Floor**' metric thresholds are also set in order to limit the maximum pay-outs for each party

Calibration

- Benchmarks, Ceilings and Floors are **calibrated for each performance year**
- Pay-out Rates are **calibrated once for the whole franchise period** and at TOC level rather than Service Group level. They vary depending on whether GTR is performing above or below target

Assessment of metric against desirable attributes

	**Simple to understand**	Schedule 7.2 contains multiple components spread across two different collection methods
	**Customer focused**	Focuses on assessing customer service but only a small portion is affected by customer perception of performance
	**Proportional to consequences**	The band between breach and cap is narrow, potentially resulting in ineffective incentives
	**Certain**	Results are influenced by a high number of exogenous factors
	**Immediate**	Feedback is collated infrequently and impact of changes can take a while to be perceived by customers
	**Controllable**	Survey results are not attributed and influenced by exogenous factors. but QuEST results are controllable.

8 Schedule 8 is also complex and hindered by a slow Delay Attribution Process, but does have the benefit of considering passenger weightings

Schedule Description

Role & Objectives	• Schedule 8 is a component of the **Track Access Agreement** between **GTR** and the **NR** • It's role is twofold: - ensure that NR receives an **appropriate share of the profits/losses** derived from the TOCs service performance - ensure that GTR is penalised for causing delays to other TOCs (via the "**Star-model**")
Metrics	• **Weighted Average Minutes Lateness (WAML), based on** Minutes Late and Deemed Minutes Late (arbitrary penalty of Minutes Late for a cancellation)
Information Collection	• Minutes Late are calculated at each **Monitoring Point (MP)**. Minutes Delay above a 3min threshold are calculated at each **Recording Point (RP)** • Minutes Late are allocated to each party proportionally to the Minutes Delay attribution split coming from the Delay Attribution Process, then summed up considering MP weightings and number of stops per MP • The two payments (**Performance Sums – NRPS and TPS**) are calculated by comparing the attributed WAML to a benchmark, then multiplying by a **Busyness Factor** (how often a Service Group stops at a station) and a **Payment Rate**
Benchmarks	• **Performance Points** (benchmarks) are set for WAML at Service Group level for each performance year • Performance related financial flows are calculated once every 4-week period
Calibration	• Payment rates are set by ORR and are calculated based on the **Marginal Revenue Effect** (lost future revenue). For NR they reflect lost GTR profit/loss (that is in effect passed on to DfT), whereas GTR payment rates reflect other TOC profit/loss. They are calibrated in an **initial calibration** year • NR and GTR benchmarks are also set by ORR at **Service Group level**. For every Control Period, they are calibrated in an **initial calibration** year, then lowered every year in-line with improvement expectations.

Assessment of metric against desirable attributes

	**Simple to understand**	The calculation methodology underpinning Schedule 8 is complex in nature
	**Customer focused**	Schedule 8 is customer weighted through the use of infrequently calibrated Monitoring Point weightings
	**Proportional to consequences**	Each delay minute or cancellation impacts the outcome and financial flows related to Schedule 8
	**Certain**	Outcomes are often heavily disputed, as seen through the level of unsettled payment amounts
	**Immediate**	Attribution of delays often takes a significant period of time to resolve. Unsettle periods dates back up to 18 periods
	**Controllable**	Schedule 8 clearly separates TOC caused delays and NR caused delays

Source: GTR-TSGN Franchise agreement

Right Time is a simple, public facing measure of performance similar to PPM. No industry financial flows or regulatory targets are currently based on Right Time

Right Time

Schedule Description

Role & Objectives

- Right Time is a published metric that is expected to gradually replace PPM as NR's regulatory target and the public measure of reliability used by train operators
- Its current objective is to measure how train operators perform against a more rigorous definition of 'on time'

Metrics

- Right Time measures the percentage of trains that arrive at their final station *on time*
- 'On time' is defined as within one minute of the scheduled arrival time (for all routes, including long distance)

Information Collection

- A trains arrival time is captured on arrival at terminus and compared against the scheduled arrival time
- No attribution of the cause of Right Time failures takes place between NR and the TOC

Benchmarks

- There are currently no regulatory or other targets or benchmarks for Right Time used by the industry

Calibration

- The level at which Right Time fails (1 minute) is not recalibrated
- The timetable is adjusted twice a year (except in an emergency), and can result in changes to scheduled arrival times
- Service cancellations can be made before 2200 the day before (either by NR or by GTR with approval of DfT) which do not then count towards Right Time (the timetable is modified as a consequence)

Assessment of metric against desirable attributes

Simple to understand	Metric is easy to understand, and "on time" is comprehensible, although the metric is not yet widely publicised
Customer weighted	Metric is train focused and does not account for passenger loading
Proportional to consequences	Each train is either a pass or fail based on a threshold – as a result a 0'59" delay is treated completely differently to a 1'01" delay. Measures lateness at all stations
Certain	Outcomes are based on simple, clear rules
Immediate	As soon as the train has reach a station, Right Time can be updated
Controllable	Metric is affected by several parties and exogenous factors; responsibilities of a failed Right Time are not attributed

Source: GTR-TSGN Franchise agreement

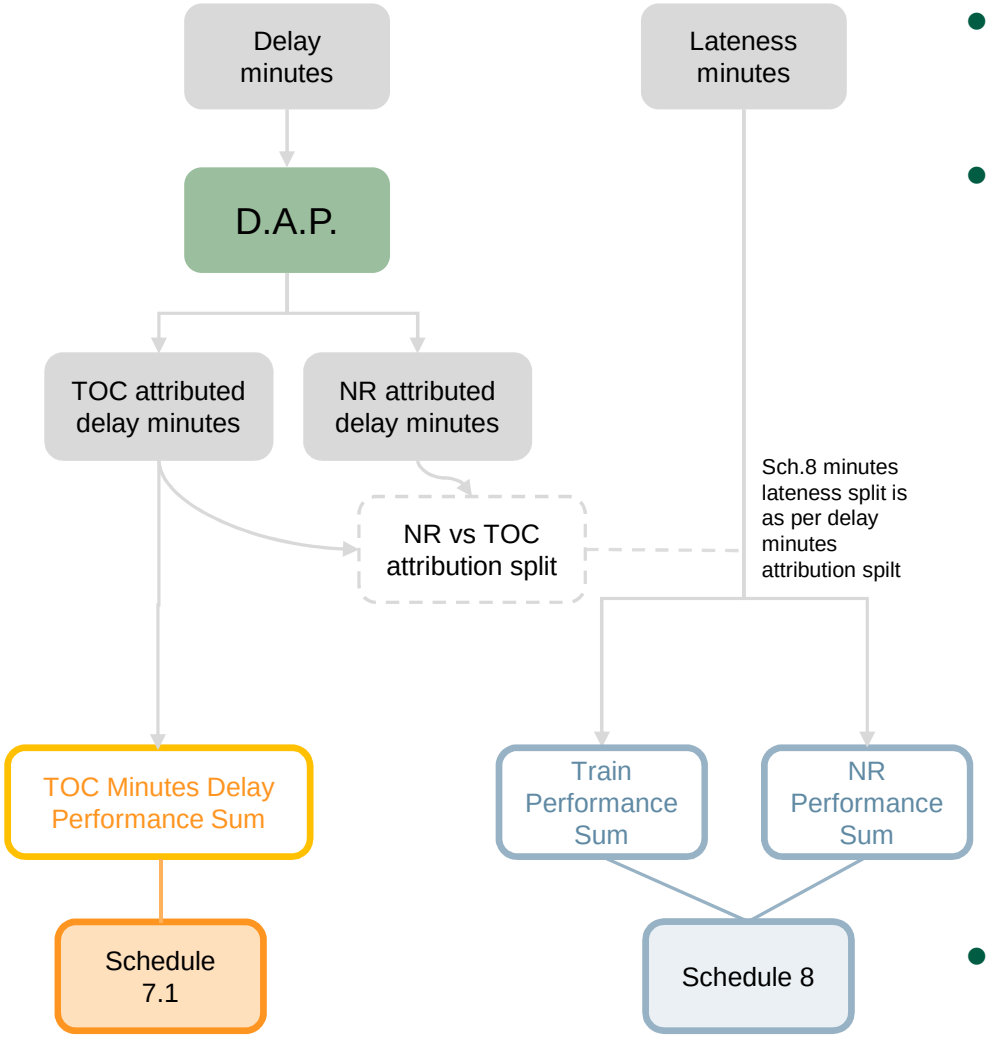
L.E.K.

Agenda

- Introduction & Executive Summary
- Project context
- Current regime
- Proposed future direction
- Appendix
  - Current performance regimes
  - **Other processes and regimes**

GTR and NR are held accountable for the disruptions they cause via the Delay Attribution Process

DAP



- The purpose of the **Delay Attribution Process (D.A.P.)** is to hold parties accountable for these disruptions and carry out root cause analysis
- The process works as follows:
  - by comparing scheduled and actual train passage times, lateness and delays measurements can be inferred by the **TRUST** system
  - delays above a **threshold of 3 minutes** are attributed by the on-duty 1st level NR attribution clerk to a **primary cause**, from which can be inferred a responsible party (e.g. NR or GTR).
  - within 2 working days, GTR has to respond (via a level 1 attribution assistant) to incidents attributed to the TOC either by accepting responsibility and cascading it to the appropriate internal responsible manager (attributing **root cause**) or by sending the incident back to NR level 2 team with supporting evidence
  - incidents can then be escalated to levels 3 and 4 if needed. If disputes are not resolved within 42 days an incident is considered as “timed-out”; the two parties then agree on how an independent committee (e.g. **Delay Attribution Board**) should determine the final attribution
- Delays are also categorised as either **primary** (the delay is directly related to the primary cause) or **reactionary** (the delay is resulting from a prior delay to the same or any other train)

Source: Delay Attribution Guide - September 2016

DAP

A two-character TRUST Delay Code allows to track both the incident's Primary Cause, from which can be inferred the responsible party, and the Root Cause

TRUST log entry

Delay Code

- First character (letter)
- Second character (letter/digit)

	Primary cause and responsible party	Root cause
		Examples:
NR	I & J – Non Passenger's Charter Excludable infrastructure problems	IC – Track circuit failure
NR	O – NR Operating causes	OB – Delayed by signaller not applying applicable regulating policy
NR	P – Planned or excluded delays/cancellation	PE – Cancelled due to planned engineering work
NR	X – Passenger's Charter excludable events the responsibility of NR	XC – Fatalities or injuries caused by being hit by train
NR	Q – NR internal non-Operating causes	QH – Adhesion problems due to leaf contamination
NR	Z – Unexplained delays and cancellations	ZZ – Unexplained loss in running
TOC	T – Passenger Train Operator causes*	TG – Driver
TOC	V – Passenger's Charter excludable events the responsibility of TOC	VD – Passenger taken ill on train
TOC	R – Station Operations Causes	RH – Station evacuated due to fire alarm
TOC	M & N – Passenger and Freight Train Operator Fleet problems	MU – Depot operating problem
TOC	F – Freight Train Operator causes*	FA – Dangerous goods incident
TOC	A – Freight Terminal Operations causes	AE – Congestion in off NR network Terminal or Yard

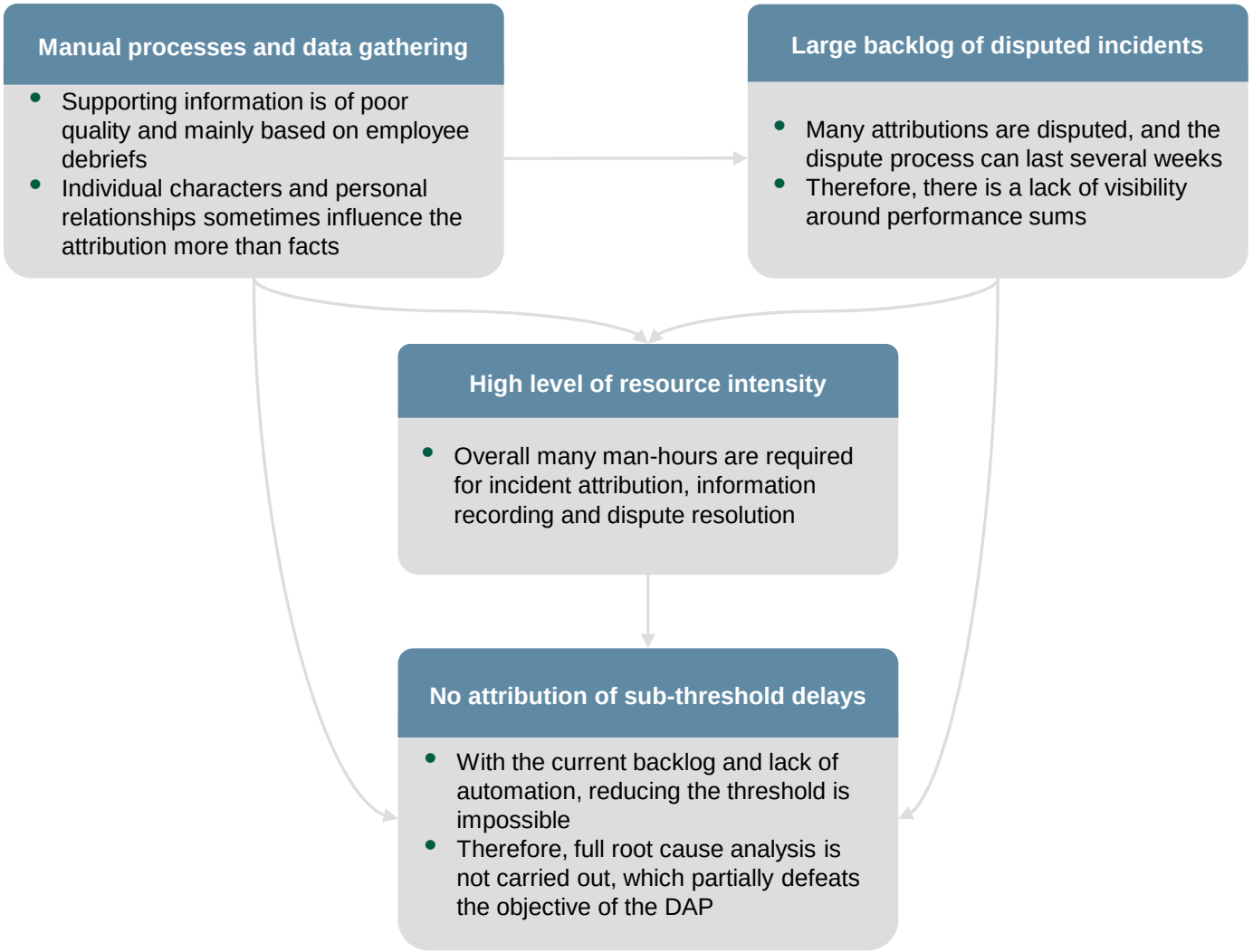
More than 200 delay codes

Note: * Excluding Fleet and Station problems
Source: DAB Delay Attribution Guide Sep 2016

L.E.K.

DAP

The D.A.P. is a manual and resource intense process with an outstanding backlog. The current need for a 3min threshold prevents full root cause analysis



L.E.K.

Volume Incentive

NR is incentivised to make network capacity available through a Volume Incentive

Schedule Description

Role & Objectives

- The Volume Incentive regime is designed to incentivise NR to adjust network capacity in response to changes in train operator demand
- The Volume Incentive is paid in the form of an adjustment to NR's budget for the following Control Period

Metrics

- Network Rail's Volume Incentive is based on four metrics, each with their own payment rate:
  - Passenger train miles
  - Passenger farebox revenue
  - Freight train miles
  - Freight gross tonne miles

Benchmark and payment rate

- Each of the metrics in NR's Volume Incentive is benchmarked against a national, cumulative baseline growth rate across a Control Period, e.g. passenger train miles – 6.6%, passenger farebox revenue 17.4% (real)
- NR are required to break down the national baseline by route, and annually
- The payment rates under the Volume Incentive are calculated nationally and for the entire Control Period, e.g. in CP5 they fund NR with an additional £1.39 per passenger train mile, and £0.03 per pound sterling of passenger farebox revenue

Calibration

- The baselines and payment rates for NR's Volume Incentive are published are formed as part of ORR's Final Determination, and are published at the beginning of each Control Period
- For CP5 the incentive is a two-way, symmetric regime, whereas previously no reduction to NR funding would occur should train operator demand be less than expected
- For CP5 the incentive is capped at a £300m / (£300m) adjustment to NR funding for CP6

Possible levers for reform

Adjust metric payment rates

- Increase scale of incentive
- NR were provided only c. £60m in extra funding for CP5 based on CP4 Volume Incentive calculations

Adjust metric benchmarks

- Configure benchmarks to encourage NR to provide additional capacity faster

Adjust frequency of payment

- Calculate Volume Incentive financial flows annually rather than every Control Period, to provide a shorter feedback loop

Source: Network Rail

L.E.K.

Southern performance project: supplementary draft material

22 December 2016

DRAFT

L.E.K.

Supplementary to our Draft Report, we have worked to calibrate the new Customer Time (CT) regime

- Supplementary to our Draft Report, in which we illustrated the scale and direction of possible financial flows in the proposed regimes, we have done further work to calibrate these regimes. In particular, we have focused on calibrating the proposed CT regime
- We recommend that the new CT regime generates the same payment outcomes to and from Govia Thameslink Railway (GTR) and the Department for Transport (DfT) as under the current regime, Schedule 7.1, in two different performance scenarios, to avoid altering GTR's risk profile mid-franchise
  - the performance scenarios considered are 2015/16 actual GTR & Network Rail (NR) performance, and an 'improved' scenario equivalent to the 2016/17 PPM target (83.9%) for GTR services, as agreed between NR & GTR via the scorecard, and regulated by the ORR
- We have therefore calibrated the payment rate and benchmarks of the new CT regime such that the payment outcomes match those under Schedule 7.1 in the two aforementioned performance scenarios
  - however, due to the trade-offs inherent in Schedule 7.1 across its three component metrics (minutes delay, cancellations, short formations), the kinked payment rates, and the cap and breach levels – which we recommend are reformed for CT – financial flows under the current and proposed regimes cannot be identical in all performance scenarios
- This calibration can be extrapolated to create an equivalent benchmark for NR South East (SE) using the attributed split of delays, while the payment rate remains the same for both GTR and NR (SE)
- During our work, while we have received Schedule 8 financial flows between GTR and NR, we have not had access to the Schedule 8 model which calculates these flows from lateness data. Subsequently, other than for 15/16 actual performance, Schedule 8 financial flows are estimated based on the observed relationship between these flows and lateness data
- We expect that once CT is introduced and behaviours change to focus on minimising CT, the relationships observed between different metrics and the profile of delays and lateness will change, meaning the financial flows based on CT may vary. The flows illustrated here are therefore indicative

A payment rate of £0.16 per minute of customer time and a benchmark of c.370m customer minutes should be used for GTR's new CT regime

GTR 15/16 actual performance under current and proposed regimes

Indicative

15/16 actual performance	Current regimes: Schedule 7.1			Proposed regimes
	TOC Minute Delay	Cancellations	Short Formations	CT
15/16 actual performance*	19.09 – 19.65 *(minutes delay per 000 train miles)*	1.92 – 2.03 *(%)*	1.22 – 1.26 *(%)*	392 *(millions of minutes)*
Benchmark	20.30 *(minutes delay per 000 train miles)*	1.51 *(%)*	0 *(%)*	367 *(millions of minutes)*
Performance vs benchmark	0.65 – 1.21 *(minutes delay per 000 train miles)*	(0.41) – (0.52) *(%)*	(1.22) – (1.26) *(%)*	(25) *(millions of minutes)*
Payment rate	3,500,000 *(£)*	17,200,000 (1.51% – 1.73%) *(£)*	2,600,000 (0% – 1.22%) 5,100,000 (1.22% – 1.40%) *(£)*	0.16 *(£)*
Performance sum	2.3 – 4.2 *(£m)*	(3.8) *(£m)*	(3.4) – (3.2) *(£m)*	4 *(£m)*
Net GTR position (Millions of pounds)		**(4.9) – (2.8)**		**(4.0)**

Financial flows similar in both regimes under 15/16 actual performance

Note: * Range of flows due to unsettled *force majeure* and service recovery claims
Source: Network Rail; L.E.K. analysis

L.E.K.

This payment rate and benchmark would also give similar financial flows for current and proposed regimes under 'improved' performance

GTR 'improved' performance under current and proposed regimes

Indicative

'Improved' performance	Current regimes: Schedule 7.1			Proposed regimes
	TOC Minute Delay	Cancellations	Short Formations	CT
'Improved' performance*	16.64 – 17.13 *(minutes delay per 000 train miles)*	1.67 – 1.77 *(%)*	1.06 – 1.10 *(%)*	342 *(millions of minutes)*
Benchmark	20.30 *(minutes delay per 000 train miles)*	1.51 *(%)*	0 *(%)*	367 *(millions of minutes)*
Performance vs benchmark	3.17 – 3.66 *(minutes delay per 000 train miles)*	(0.26) – (0.16) *(%)*	(1.10) – (1.06) *(%)*	25 *(millions of minutes)*
Payment rate	3,500,000 (17.26 – 20.30) *(£)*	17,200,000 (1.51% – 1.73%) *(£)*	2,600,000 (0% – 1.22%) *(£)*	0.16 *(£)*
Performance sum	10.6 *(£m)*	(3.8) – (2.8) *(£m)*	(2.9) – (2.8) *(£m)*	4 *(£m)*
Net GTR position (Millions of pounds)		**3.9 – 5.0**		**4.0**

Financial flows similar in both regimes under 'improved' performance

Note: * Range of flows due to unsettled *force majeure* and service recovery claims
Source: Network Rail; L.E.K. analysis

L.E.K.

The scale of flows to and from GTR would be similar across all current and proposed regimes

GTR financial flows under current and proposed regimes

We expect that once CT is introduced and behaviours change to focus on minimising CT, the relationships observed between metrics, and the profile of delays will change. The financial flows illustrated here are therefore indicative

Indicative

	Financial flows to / (from) GTR under proposed regime (Millions of pounds)	15/16 actual performance		Improved performance	
		Current regimes	Proposed regimes	Current regimes	Proposed regimes
New regimes	Delay Repay payments to passengers	-	(6)	-	(5)
New regimes	Schedule 7.1 / CT incentive payments to DfT*	(5) – (3)	(4)	4 – 5	4
New regimes	Workforce incentive payments	-	-	-	(2)
New regimes	Passenger revenue uplift (2%) above benchmark (5.4%)	-	-	-	6
Existing regimes as is	Schedule 7.2	4	4	4	4
Existing regimes as is	Schedule 8 payments under TOC regime (TPS)**	(6) – (4)	(6) – (4)	(5) – (4)^	(5) – (4)^
	Net GTR position	**(7) – (3)**	**(12) – (10)**	**3 – 5**	**2 – 3**

Schedule 7.2 calculated in calendar years. 15/16 actual based on 2016 performance to date

Close to cap Schedule 7.2 cap of £4.2m

Note: * Calculated as per earlier slides; ** Range of payments due to unsettled disputed minutes. Scaled up from periods 1605 – 1613 to give a full year, i.e. using the periods available that include Southern, and which exclude industrial disputres; ^ Estimated based on the observed relationship between Schedule 8 financial flows and lateness data, using an improvement in AML proportional to the assumed improvement in CT

Source: Network Rail; L.E.K. analysis

L.E.K.

Under the proposed regimes, the DfT should contribute more to NR (SE) to incentivise improved performance than currently

Department for Transport

DfT financial flows under current and proposed regimes

We expect that once CT is introduced and behaviours change to focus on minimising CT, the relationships observed between metrics, and the profile of delays will change. The financial flows illustrated here are therefore indicative

Indicative

	Financial flows to / (from) DfT under proposed regime (Millions of pounds)	15/16 actual performance		Improved performance	
		Current regimes	Proposed regimes	Current regimes	Proposed regimes
New regimes	Funding Network Rail for Delay Repay	-	(10)	-	(10)
New regimes	Funding Network Rail for CT incentive	-	(7)	-	(7)
New regimes	Schedule 7.1 / CT incentive payments to DfT from NR	-	7	-	(7)
New regimes	Schedule 7.1 / CT incentive payments to DfT from GTR*	3 – 5	4	(5) – (4)	(4)
New regimes	Passenger revenue uplift (2%) above benchmark (5.4%)	-	-	29	29
New regimes	Passenger revenue uplift sharing arrangement with GTR	-	-	-	(6)
Existing regimes as is	Schedule 8 payments under NR regime (NRPS)**	35 – 54	35 – 54	24 – 36^	24 – 36^
	Net DfT position	**38 – 59**	**29 – 48**	**48 – 61**	**19 – 31**

Fixed funding equal to estimated DR liability in 15/16 to be sourced from existing DfT DR budget currently used to pay passenger DR claims through GTR

Fixed funding equal to the difference between 15/16 actual performance and benchmark in financial terms

Note: * Calculated as per earlier slides; ** Range of payments due to unsettled disputed minutes. Scaled up from periods 1605 – 1613 to give a full year, i.e. using the periods available that include Southern, and which exclude industrial disputes; ^ Estimated based on the observed relationship between Schedule 8 financial flows and lateness data, using an improvement in AML proportional to the assumed improvement in CT

Source: Network Rail; L.E.K. analysis

L.E.K.

NR's financial flows remain identical under 15/16 actual performance, and would be less negative with 'improved' performance

NR financial flows under current and proposed regimes

We expect that once CT is introduced and behaviours change to focus on minimising CT, the relationships observed between metrics, and the profile of delays will change. The financial flows illustrated here are therefore indicative

Indicative

	Financial flows to / (from) NR under proposed regime (Millions of pounds)	15/16 actual performance		Improved performance	
		Current regimes	Proposed regimes	Current regimes	Proposed regimes
New regimes	Funding from DfT for Delay Repay	-	10		10
	Delay Repay payments to passengers (via GTR)	-	(10)	-	(8)
	Funding from DfT for CT incentive	-	7	-	7
	CT incentive payments to DfT	-	(7)	-	7
	Workforce Incentive payments	-	-	-	(1)
Existing regimes as is	Schedule 8 payments under NR regime (NRPS)*	(54) – (35)	(54) – (35)	(36) – (24)^	(36) – (24)^
	Net NR position	**(54) – (35)**	**(54) – (35)**	**(36) – (24)**	**(21) – (9)**

Fixed funding equal to estimated DR liability in 15/16

Fixed funding equal to the difference between 15/16 actual performance and benchmark in financial terms

Note: * Range of payments due to unsettled disputed minutes. Scaled up from periods 1605 – 1613 to give a full year, i.e. using the periods available that include Southern, and which exclude industrial disputes; ^ Estimated based on the observed relationship between Schedule 8 financial flows and lateness data, using an improvement in AML proportional to the assumed improvement in CT

Source: Network Rail; L.E.K. analysis

John Halsall

Network Rail South East

Cottons Centre,

Tooley Street

London

SE1 2QG

Nick Brown

Govia Thameslink Railway Ltd

Monument Place

24 Monument Street

London

EC3R 8AJ

19th December 2016

THAMESLINK 2018 OPERATIONAL READINESS

As 2016 draws to a close, we have reviewed progress towards the Thameslink, 2018 key outputs, in conjunction with Chris Gibb who has been asked to do this by the Secretary of State. The project is moving from the construction phase to the operations phase, and our leadership of this needs to change to reflect this. Successfully delivering the enhanced Thameslink service to our customers and clients in 2018 represents a major challenge to us, but also to all of you, our wider industry partners. It is with this in mind that we write this letter.

From January we will split our all day four weekly Govia Thameslink Railway Alliance Board in two. The morning session between 0900 and 1230 will continue as the "Alliance Board" to focus on the short and medium term challenge of jointly running Govia Thameslink Railway's service, under the brands of Southern, Thameslink, Gatwick Express and Great Northern. In the afternoon we will hold a new meeting, titled "Thameslink 2018 Industry Readiness Board" ("TL18IRB"). This new Board will focus on delivering 2018 readiness between Govia Thameslink Railway, Network Rail and all our industry partners, and cover all aspects of operational, station and customer preparations. We ask that each industry partner is represented at the Board by a decision maker, able to play a full part in this complex and demanding project for their organisation, which will affect passengers across a large part of the network, from Peterborough to Brighton, and Bedford to Littlehampton, as well as London.

Chris Gibb has been asked to independently chair this Board by the Secretary of State. He will be accountable to the Thameslink Programme Board and the Secretary of State for its success. He will be supported by Steve Knight from Network Rail. Separately Chris will continue with his role as an independent Non Executive Director of Network Rail. The Board will be time limited, and will meet until early 2019.

Through this new Board we also wish to give ourselves and our industry partners assurance that all the elements of this new system will be ready. To achieve this we will copy best practice from Crossrail, and create an Independent Assurance Panel. As with Crossrail this will be a small expert team led by Chris Green, and they will review all the system elements over the next eighteen months, submitting four weekly reports to the Thameslink 2018 Industry Readiness Board for consideration. Chris Green will start work in January, and will be supported by Jo Fay from Govia Thameslink Railway.

Thameslink 2018 Industry Readiness Board will meet between 1300 and 1700 on the following dates in 2017:

Friday, 13th January, Monument Place

Friday, 10th February, Cottons Centre

Friday, 10th March, Monument Place

Friday, 7th April, Cottons Centre

Friday, 5th May, Monument Place

Friday, 2nd June, Cottons Centre

Friday, 30th June, Monument Place

Friday, 28th July, Cottons Centre

Friday, 25th August, Monument Place

Friday, 22nd September, Cottons Centre

Friday, 20th October, Monument Place

Friday, 17th November, Cottons Centre

Friday, 15th December, Monument Place

We look forward to your organisation's active support at this Board, and look forward to working with you in 2017.

Yours sincerely,

Nick Brown	John Halsall
Chief Operating Officer	Route Managing Director
Govia Thameslink Railway	Network Rail

Alliance Newsletter

The Alliance between GTR and Network Rail has been forged to improve operational performance by working collaboratively.

December 2016

INSIDE - Page 2: New depot and new trains for Great Northern; Page 5: We're one team at Victoria

Pulling together

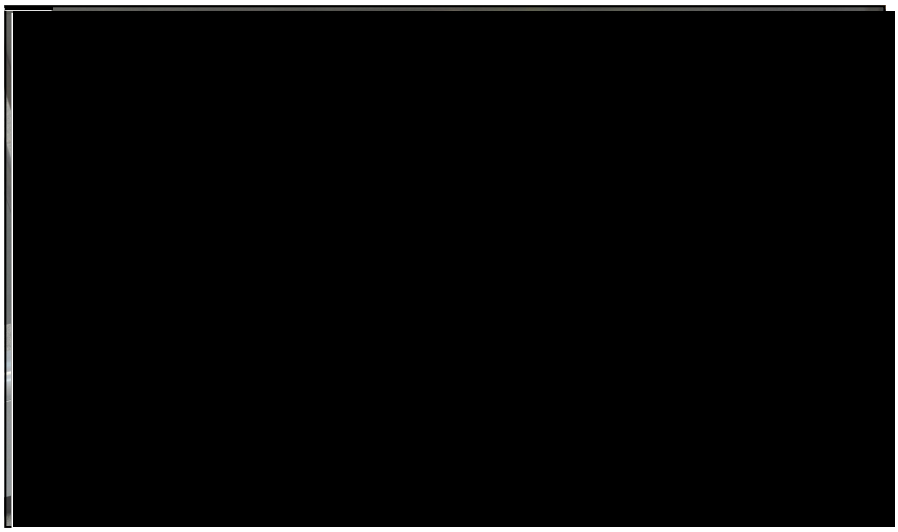
DURING industrial action it isn't possible to provide a full railway service for customers but it is still important to provide a robust timetable and as much support and advice as possible.

The Alliance board recognised this and resolved that Govia Thameslink Railway (GTR) and Network Rail would liaise closely.

Scott Brightwell, GTR Operations Planning Director, said: "We decided to plan jointly with Network Rail for the industrial action as we knew there would be unprecedented disruption for passengers. The planning included our Network Rail colleagues in Milton Keynes and in our joint control at Three Bridges.

"We are also working with South East maintenance teams looking for opportunities to do additional work during the industrial action and approving possession requests promptly. Plus, more than 40 staff from both organisations have also volunteered at stations on the Brighton Mainline and across south London."

John Halsall, Network Rail's South East Route Managing Director, said: "I would like to thank everyone who has volunteered to help our station teams during the industrial action.



"It is really important we do everything we can to support our colleagues at GTR and passengers. I'm really pleased at the way we are working as one team to meet our shared goals.

"Network Rail has an obligation to keep all stations on the route safe from the risk of overcrowding and to help keep passengers informed of travel options. Providing station volunteers helps us to do this."

Scott added: "We are working closely with the BTP at stations and at the control centre at Three Bridges to manage passenger flow and prevent overcrowding and security issues.

"This is the best we've worked together right across the railway industry as other operators have also been involved to help things run as smoothly as possible.

"There have been regular conference calls between BTP, Network Rail, GTR and other train operators. It's the most collaborative effort I have ever been involved in.

"It is a credit to the teams that we've been able to provide this level of service to passengers on very difficult days. It has exceeded my expectations."

The GTR and Network Rail team have also provided volunteers at stations to help Southern, Gatwick Express and Thameslink passengers understand the impact of the strikes and their travel options.

Great Northern shows off its first-ever air conditioned train at King's Cross station

Cool running takes our GN services to new level

GREAT Northern is now running the first new trains in a generation between London, Peterborough and Cambridge thanks to collaboration by GTR and Network Rail.

The modern Class 387/1 has come from the Thameslink route is steadily replacing trains that are 28 and 35 years old.

They have air-conditioning, two-by-two seating with tables and power points throughout and modern passenger information systems.

There are spaces for people in wheelchairs, fully accessible toilets and other features for people with disabilities.

As well as confirming the train would 'fit' along the route by carrying out gauge testing, Network Rail made a number of changes trackside. The train's equipment that's used to collect power from the overhead lines also had to be modified for the route after Network Rail carried out tests.

GTR's project team carried out numerous tasks to bring the train into service, including building a complete database of every platform on the route so that train software would open the right number of doors on the correct side at stations.

GTR's Head of Engineering and Asset Management Simon Green said: "We've worked closely with our partners at Network Rail to bring in these new trains which we've heard passengers really appreciate."

Hornsey depot ready for new trains

GREAT Northern passengers are set to see a transformation in rail services with the help of an enlarged, modernised train depot, which is now one of the biggest in the UK.

The traincare centre at Hornsey in north London will house and maintain a £1bn-worth of new train fleets, including the trains featured left.

It makes possible a new, high intensity Thameslink service from Great Northern stations across central London to London Bridge, Gatwick and beyond as part of the Thameslink Programme.

Hornsey now boasts a new state-of-the-art maintenance building, built by Siemens for the new Thameslink trains, large new sidings and improved servicing facilities for the other fleets.

Vitally, trains can now be directed around the depot from an updated control room — before someone had to go out to manually set the points.

Network Rail and GTR worked closely on the project. Network Rail installed 11km of overhead lines, and used more than 17,500 hours of possession access over two years to upgrade and connect the enhanced depot.

Why tunnel vision is going to be good for Balcombe

Alliance prioritises improvements

BUSY Balcombe Tunnel has a history of issues that cause significant disruption to Southern's main rail route, the Brighton Main Line.

On 1 December, for example, this major artery was blocked on and off for over five hours by a signal failure. Southern had to thin out services and even after engineers repaired the fault, drivers and trains were so far out of their normal position, passengers had a very difficult journey home.

So it's hardly surprising that the tunnel has been earmarked by the alliance for major improvement work.

Part of this is a full review of assets within the tunnel, such as signalling, but some improvements have already been made or are about to follow as part of a £720,000 project.

Network Rail Project Manager Hailey Bradfield took advantage of a separate weekend engineering line closure in the area, to replace rails in the tunnel.

That removed a speed restriction put in place because of a risk of broken rails, which had been having a real impact on trains.

She said: "We re-railed over 2,000 yards of track on the down and up lines, unclipping 2,500 sleeper fittings.

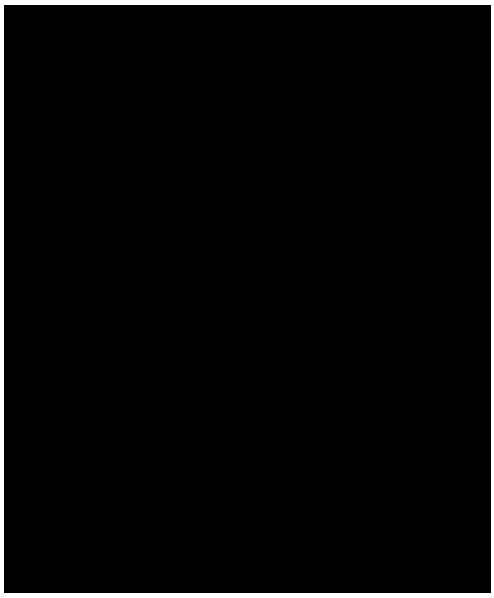
"Working closely with the other teams helped us to deliver the project to plan and improve performance through the line."

Next steps

The project was managed by Infrastructure Projects (IP Track), working with the Network Rail Access Planning, Supply Chain Operations , Maintenance and Route Asset Management teams, and undertaken by Colas Rail.

The next step in the project is to stop water running into the tunnel which can cause signal failures and other problems. That work will be carried out in February.

Ian Massey, Project Manager, said: "We are looking at the design for waterproofing the tunnel shafts so that we can make the tunnel more resilient.



Speed improvement: New rail has already made a difference at Balcombe — waterproofing will follow

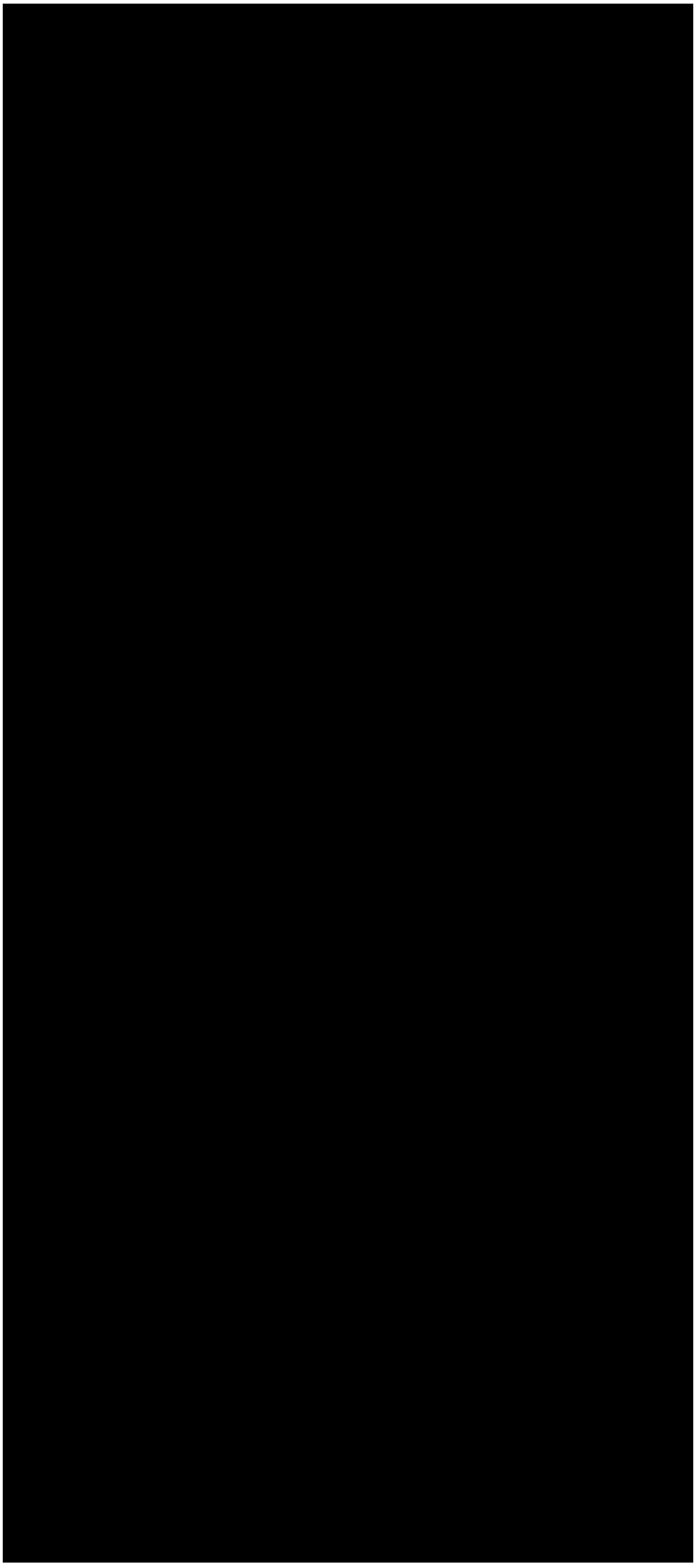
Learning lessons from Luton

NETWORK Rail engineers have been riding train cabs with Thameslink to spot possible issues and prevent another signal failure similar to the one that blocked much of the route at Luton for three days last month.

Investigations showed a redundant signal cable (left) came loose on an overhead gantry and touched the 25,000 volt overhead power lines, sending a surge of electricity into equipment.

The signal cable was disconnected from the system several years ago and Network Rail has been revisiting worksites from that period to check on the work carried out.

As part of the review of how this major incident was handled, the two organisations have also been examining how the revised timetable on the days of the disruption could have been better communicated to staff and passengers.



New director will aim for 1-team ethos

NETWORK Rail is introducing a new role of station director to the South East Route to bring closer working with train operators and a one-team ethos across its managed stations (*learn about Victoria's one team approach overleaf, on page 5)*.

The director's initial focus will be London Bridge station where they will be working with staff and train operators to provide more consistent, timely and high quality information to passengers.

The new director will also work closely with the Thameslink Programme and Transport for London to provide the best possible service to passengers during and after construction work to deliver a completed station that everyone will be proud of.

One of their objectives is to introduce business improvements that will help to drive up and maintain customer satisfaction, which is measured twice a year by the National Passenger Survey.

In addition, they will develop strong relationships and strategic plans with retailers, businesses, local communities and local authorities to deliver excellent customer service.

Don't spend a penny!

Following conversations between Network Rail, GTR and Southeastern, passengers will no longer be charged to use the toilets at Victoria and Charing Cross stations. The story has received some positive coverage by a number of national newspapers, the BBC and passengers.

We're one team at Victoria!

A SINGLE team of customer service staff has been improving the passenger experience at Victoria station.

In true alliance style, Team Victoria is an initiative created to encourage closer working relationships between all Victoria station staff from Network Rail, Gatwick Express, Southern, Southeastern and British Transport Police.

Hannah Watson, Southern Station Manager, said: "We need to recognise we all work at the same station. We regularly meet together and discuss who's responsible for what. When everyone understands each other's roles, we can all just get on with doing what needs to be done. Our improvements are locally driven and jointly designed."

Recent National Rail Passenger Survey (NRPS) scores have shown there's room for improvement where staff availability is concerned, so they've hired more staff. Henry Bates, Network Rail Station Manager, said: "To improve our NRPS scores, we've put on additional customer service assistants and shift station managers. We've also worked closely to improve our plans and customer service delivered during disruption, whether planned or unplanned. During major engineering works such as full blocks of platforms 9-19, we've developed better plans and a better understanding of each other's responsibilities to improve the customer experience even when buses replace trains or customers need to take alternative services."

The team has also improved the signage at Platforms 15-19, making it clearer for our customers to see signs and reduce crowding. Barriers have also been installed to complement the signage and make it easier for staff and customers alike, in a very busy area of the station. Gatwick Express has also invested in rebranding platforms 13/14, primarily used by these services, to make them more visible to those unfamiliar with the station.

Hannah, Henry, Jason Clarke (Southeastern Manager) and Mark Boon (Gatwick Express Manager) can regularly be seen on the floor identifying ways they can enhance the customer experience. They also encourage, receive and listen to feedback from their teams.

One team: It's a true alliance of collaborative working at Victoria — they even have their own shared badge (pictured top right) and are looking to have one shared uniform in the New Year

Dispatching new ideas

PLATFORM staff have to walk back some 100ft to dispatch trains on some platforms at Victoria. The alliance is looking at installing better placed equipment to reduce the time it takes to dispatch trains and help improve timekeeping at the busy station.

STRICTLY CONFIDENTIAL

APPENDIX 11 - SUMMARY OF RECOMMENDATIONS

Number	Page	Paragraph	Subject	Appendix	Action to
1	4	3.2.1	GTR Franchise Agreement Review	9	DfT
2	4	3.2.2	Role of System Operator		NR
3	6	4.1.2	The Big Plan		DfT / NR
4	6	4.1.2	Thameslink 2018		DfT
5	6	4.1.2	The Overnight Railway	3	DfT / NR / GTR
6	6	4.1.2	Daytime Possessions		NR / GTR
7	7	4.1.3	Class 442s		DfT / GTR
8	7	4.1.3	Transfer of rolling stock to South Eastern		DfT / GTR / LSER
9	8	4.1.3	Transfer of GTR Routes	4	DfT
10	8	4.1.3	Uckfield Line	5	DfT / NR / Keolis
11	8	4.1.3	Class 455s	2	DfT
12	8	4.1.3	Class 700s		DfT
13	9	4.1.4	Cambridge		DfT / GTR
14	9	4.1.4	Bedford		DfT / GTR
15	9	4.1.4	North Kent		DfT / GTR / NR
16	9	4.1.4	Ashford		DfT / GTR
17	9	4.1.4	Future Stabling Facilities		DfT / NR
18	10	4.1.5	Littlehampton		GTR
19	10	4.1.5	Driver Manpower Plan		DfT / GTR
20	10	4.1.5	Traincrew Depot Strategy		GTR
21	10	4.1.5	Crowborough	5	DfT / GTR
22	11	5	Major Station Schemes		DfT / NR
23	11	5.1	Commercial Strategy	6	DfT / GTR
24	12	5.1	Gatwick Airport Station		DfT / NR / GTR
25	13	5.2	Station Shelters		DfT / GTR
26	13	5.3	London Terminal Leadership		NR / GTR / LSER
27	13	5.4	Train dispatch		NR / GTR
28	14	5.5	Suicide Prevention		NR / GTR
29	15	6.1	GN Control		GTR
30	15	6.1	Traffic Management		NR
31	16	6.1	Wrong Regulation		NR
32	17	6.3	Little used stations		DfT
33	17	6.4	Off Peak services		DfT / GTR
34	18	6.4	Timetable Firebreaks		ORR
35	19	7	Objectives, Incentives and Performance Metrics	7	DfT / ORR
36	20	8	Thameslink Programme Governance	8	DfT / NR / GTR
37	20	9	Future of GTR Franchise	9	DfT
38	22	10	Level Crossings		DfT