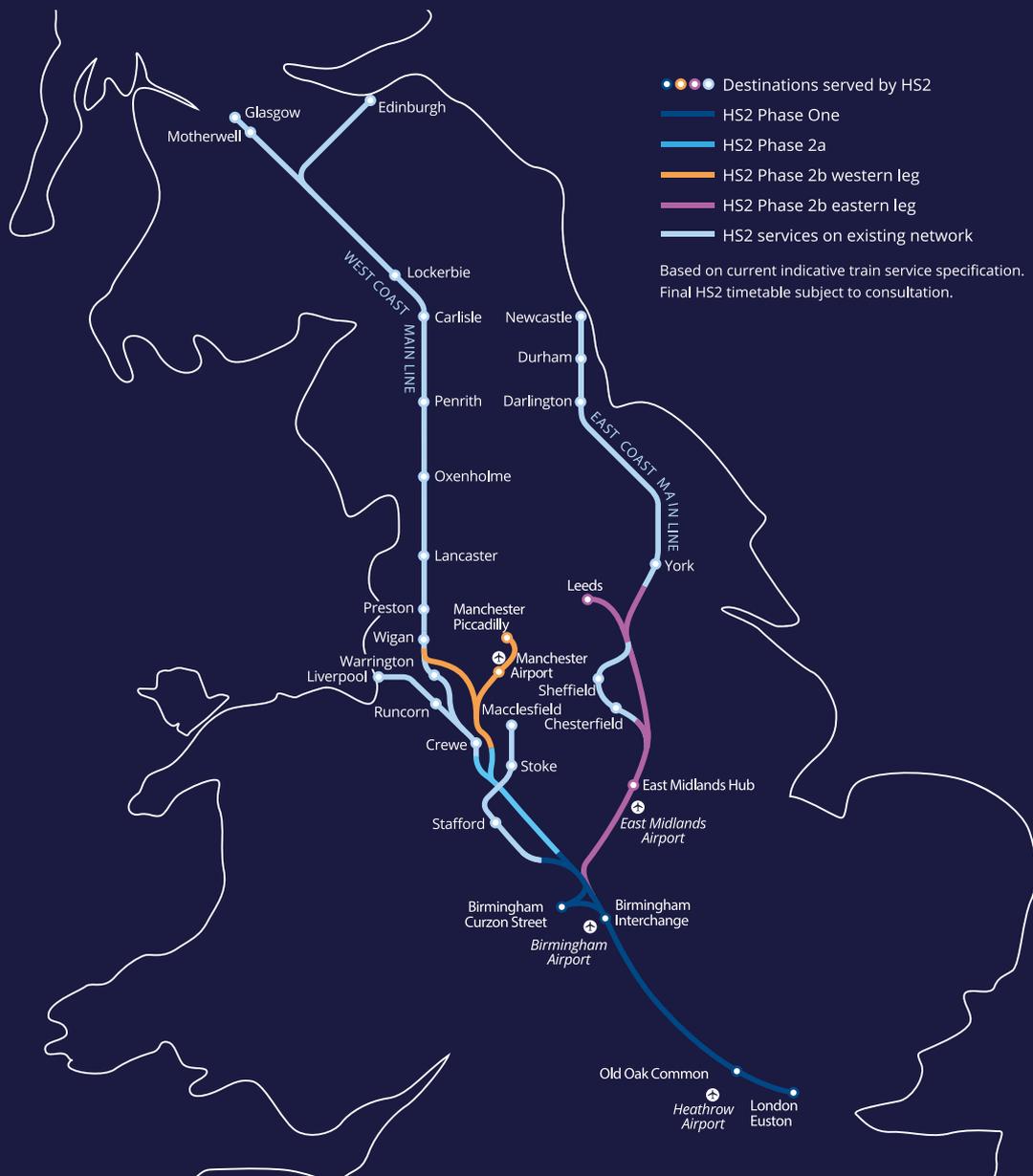


## High Speed 2: The case for released freight capacity

Produced by Logistics UK Policy

Rail freight is vital to the UK economy and its targets for decarbonisation. It has played an important role in supporting the UK economy and society through the COVID-19 pandemic, and we must create the right environment for rail freight to thrive. High Speed 2 (HS2) will present opportunities for freight on the existing rail network. Logistics UK is seeking assurances from Government and other stakeholders that there will be released capacity for rail freight as a result of HS2.



This paper sets out the potential for HS2 to provide additional freight capacity, examines the way in which the released capacity will be assessed and agreed and proposes ways to enhance the role of freight in the process and the outcomes.



Each freight train can take up to **76 HGVs** off the road.



The rail freight industry contributes **£870 million per year** to the UK economy.



**32% increase** in tonnes for rail freight forecasted. Growth of **3% per year** until 2033.



The sector carries over **£30 billion** worth of goods per year, including fuel, construction material, supermarket containers, metals and much more.

The entire HS2 network will create space on the existing rail network for up to **144 extra freight trains** per day.



Rail freight reduces CO<sub>2</sub> emissions by **76%**, compared to road.

Source: MDS Transmodal, Rail freight forecasts, July 2019 – Department for Transport, 'High Speed Two, Phase Two. Strategic Case', July 2017  
 ORR, Number of freight train movements <https://dataportal.orr.gov.uk/media/1700/number-of-freight-train-movements-table-1310.xlsx>  
 ORR, Rail market share, <https://dataportal.orr.gov.uk/media/1701/rail-market-share-table-1312.xlsx>

## The need for more rail freight capacity

Prior to the COVID-19 pandemic, the UK rail network was operating at close to full capacity. This was evident in both the passenger and freight market. This paper is based on the assumption that society will recover from the impact of the pandemic and that passenger travel patterns will return to pre-COVID levels.

In-depth forecasts prepared for the rail industry, based on extensive macro-economic, policy and mode comparison analysis, indicate that if there was sufficient capacity to meet freight demand, then growth would be substantial; the central case forecasts an increase of 32% in tonnes (46% in tonne km), with intermodal tonnes doubling<sup>1</sup>. Network Rail's most recent freight review forecasts a freight tonnes per km growth of 3% per year until 2033. Increasing demand for rail freight is driven by an increase in global trade<sup>2</sup> and in supply chains serving retailers across the country.

There is ample evidence that capacity for rail freight is constrained. The number of freight train movements has nearly halved over the last 15 years, from 416,053 in 2003/4 to 220,711 in 2018/19<sup>3</sup>. Rail freight has delivered substantial productivity improvements during this period,

and, despite the capacity crunch, has maintained its market share compared to road and water over the same period, at around 5% of freight lifted and around 9% of freight moved<sup>4</sup>. While capacity is constrained owing to a busy network, there is no doubt that improvements have been made by freight operators in efficiency and productivity, allowing higher tonnages to be moved on each train.

## HS2 capacity release opportunities

Britain's new high-speed railway, High Speed 2 (HS2) is now being built and, once operational, will shift long-distance passenger traffic from the current rail network onto its new line. This will create extra capacity needed to improve both regional passenger and freight services on existing routes.

This paper focuses on how Phases One and 2a of HS2 will release capacity on the West Coast Main Line (WCML). The Government backed HS2 in its entirety following the independent Oakervee Review into whether and how the project should proceed. Formal construction of Phase One commenced in September 2020, following the granting of Notice to Proceed in April. The two phases of the project are combined by the Government and industry bodies when considering released capacity. It is important not to lose sight of the importance of providing national, end-to-end paths;

<sup>1</sup> MDS Transmodal, Rail freight forecasts, July 2019

<sup>2</sup> Department for Transport, 'High Speed Two, Phase Two. Strategic Case', July 2017

<sup>3</sup> ORR, Number of freight train movements <https://dataportal.orr.gov.uk/media/1700/number-of-freight-train-movements-table-1310.xlsx>

<sup>4</sup> ORR, Rail market share, <https://dataportal.orr.gov.uk/media/1701/rail-market-share-table-1312.xlsx>

this issue is briefly discussed below and will be the subject of future analysis.

Sub-national Transport Body, Midlands Connect, predicts that the full HS2 network will create space on the existing rail network for up to 144 extra freight trains per day, enabling more freight to travel between Southampton, London Gateway, Felixstowe, the Midlands, Ditton, Trafford Park and Scotland<sup>5</sup>, all vital routes for supply chains.

HS2 will release capacity in phases. HS2 Phase One (London to West Midlands) will provide a dedicated route for long-distance passenger services between London, Birmingham and Handsacre (north of Lichfield on the Trent Valley line). This will release capacity on the southern part of the WCML. It is worth noting that if the Handsacre junction became operational under HS2, it would act as a significant bottleneck on the WCML, as HS2 trains would be re-joining the WCML at this point. At this stage, it is unclear how these services will be timetabled, which provides an additional risk for freight capacity.

At present, across the day there is an average of only one freight train on the WCML between London and Rugby (and on to Crewe via Nuneaton) in each direction: typically, northbound, two paths per hour are used in mornings and early afternoons but none in the later afternoon and early evening during the London homeward commuter peak<sup>6</sup>. South of Rugby, there are an average of four freight paths per hour in each direction during off-peak hours. This changes further north as trains leave and join the WCML.

For Phase One, released capacity could support an additional three freight paths per hour in each direction, including one additional freight path per hour each way north of Camden Junction off-peak, one additional freight path per hour each way north of Bletchley off-peak and one additional freight path per hour each way north of Nuneaton<sup>7</sup>.

The potential capacity released is substantial. When Phase One and Phase 2a of HS2 become operational, it is estimated that the railway could attract approximately half the passengers who would otherwise use WCML train services<sup>8</sup>. Intercity trains removed from the WCML could release capacity for up to 11 new fast commuter or freight trains per hour<sup>9</sup>.

The Northampton Loop, where the four-track WCML splits into 2 x 2 track bits from Roade to Rugby, is currently a bottleneck for rail freight, almost running at full capacity. It is unlikely there will be any increase in available capacity over the Northampton Loop, and so moving passenger traffic onto HS2 is the only way to release more capacity on this piece of infrastructure.

Linked to this, it is important to be mindful that the Daventry International Rail Freight Terminal (DIRFT) and

the new Northampton Gateway terminal are located on the Northampton Loop, which will increase rail freight traffic substantially, adding pressure to this already-congested part of the network.

As currently planned, Phase Two would be delivered in three stages: the Bill to authorise construction of Phase 2a (West Midlands – Crewe) is in its final Parliamentary stages, while a Bill for the Western Leg of Phase 2b (Crewe to Manchester, with a junction at Golborne Junction) is being prepared. The Eastern Leg of Phase 2b (West Midlands to Leeds) is subject to the Integrated Rail Plan (IRP) process, which is expected to report in December 2020.

Phase 2a will enable long-distance passenger services to operate over the dedicated high-speed line from London Euston to just south of Crewe. This could remove up to seven trains per hour in each direction from the existing network between London and Crewe.

Decisions remain over Phase 2b, not least the eastern leg of Phase 2b, which is subject to review as part of the Department for Transport's forthcoming Integrated Rail Plan, and the junction at Golborne. However, subject to signalling renewal plans for the Crewe area, it would be possible to add freight capacity from London to the Liverpool area in which there are several important freight terminals. It is also key to reduce constraints of the two-track section north of Crewe. Capacity released on the East Coast Main Line (ECML) could be used to serve intermodal flows from East Anglia and the Thames Gateway to Yorkshire and North East England<sup>10</sup>. It is thought these may be unlikely to be routed via the WCML, but they remain important in the consideration of wider network capacity.

At Crewe, there is significant industry support for proposals for a new 'hub' station which removes the need for platforms on the 'independent lines', which would affect freight capacity and performance through Crewe and access to Basford Hall freight site<sup>11</sup>. As well as north-south connectivity and access to Stoke, HS2 services at Crewe will help to connect North Wales and the Mersey Dee region to the economic hub of London and the South East<sup>12</sup>.



First materials by rail delivery for the construction of Phase One arrives at Washwood Heath on 25 August 2020. (Photo: courtesy of HS2 Ltd.)

5 Midlands Connect, 'Oakervee Review HS2 Submission letter', September 2019

6 Steer, HS2 Released Capacity Study: Summary Report, July 2017

7 Rail Freight Group (RFG), 'Rail Freight & the West Coast Main Line', 2018

8 HS2 Limited, Phase 2a Information Paper, F5: future train service patterns on the west coast main line corridor

9 HS2 Chairman's Stocktake, August 2019

10 Steer, HS2 Released Capacity Study: Summary Report, July 2017

11 Rail Freight Group (RFG), 'Rail Freight & the West Coast Main Line', 2018

12 HS2, 'Crewe', 2020

## Economic and environmental case for rail freight

The rail freight industry contributes £870 million per year to the UK economy and supports an economic turnover of £5.9 billion<sup>13</sup>. The sector carries over £30 billion worth of goods per year, including fuel, construction material, supermarket containers, metals and much more. Each freight train can carry up to 76 lorries worth of goods, reducing carbon dioxide (CO<sub>2</sub>) emissions by 76% compared to road<sup>14</sup>. With thousands of people employed by freight operators, rail freight is a vital part of the economy, particularly for retail, manufacturing and ports across the UK.



Port of Dover, Kent.

Ensuring released capacity for rail freight as a result of HS2 will enable greater modal shift to rail, helping to meet environmental targets. Certainty over the future of capacity for rail freight will allow operators to continue to invest in rolling stock, greener alternatives and infrastructure, contributing to the economy as we enter a period of recovery.



The UK Government has announced a target of **net zero** for UK **greenhouse gas (GHG)** emissions by 2050.

While passenger rail services have been severely impacted by the COVID-19 pandemic, rail freight operations have continued, with additional opportunity for end-to-end freight paths. From launching express services dedicated to delivering essential medical supplies, food and hygiene products to running extended length trains to stock supermarkets, businesses within the rail transport sector have shown their flexibility, resilience and efficiency in the face of the pandemic. It is vital Government acknowledges its importance; operators across the sector must have increased access to the national rail network permanently. As passenger numbers begin to recover, support for rail freight will be just as important. Only through this increased access can rail freight continue delivering for the UK and support the economic recovery.

<sup>13</sup> Network Rail, 'The Value and Importance of Rail Freight', April 2013

<sup>14</sup> Rail Delivery Group, 'Sustaining the Benefits of Rail Freight for the UK Economy', 2014



Freight trains carry a variety of items, from construction materials to food and clothing, a lot of which ends up in our supermarkets.

## Government principles for released capacity

The Government has set out the following principles<sup>15</sup> to be used in order to ensure service development makes best use of the released capacity that HS2 Phase One and Phase 2a will deliver:

- An aim that, wherever it is feasible, all places with a direct London service retain a broadly comparable or better service after Phases One and 2a open.
- To provide additional commuter capacity where it is most needed.
- To spread the benefits of long-distance and inter-regional services to the many towns and cities that can be served by the available capacity created on the existing rail network.
- To fully integrate Phases One and 2a services into the wider national rail network.
- To provide potential capacity for growing rail freight sector requirements.
- To improve performance by making timetables more robust.

It is important to note that the principles call for the provision of "potential capacity" for growing freight. In other words, there is no policy or legal requirement that a proportion of released capacity must be allocated to freight. The freight community will need to engage in the planning and timetable process to ensure current access rights are retained and to bid for further capacity. Assurances will also support investment decisions to be taken that will enable growth in the mid-long term. Clarity is needed to be able to make these accompanying investments (eg, rolling stock and facilities) to support using released capacity.



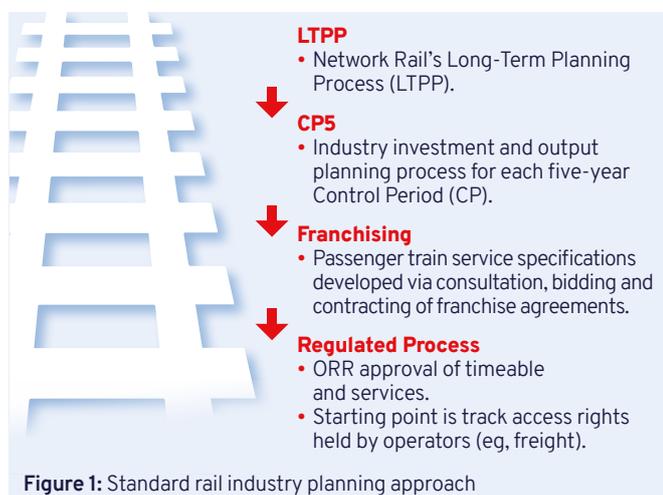
Port of Tilbury, Essex. (Photo: courtesy of HS2 Ltd.)

<sup>15</sup> HS2 Limited, Phase 2a Information Paper, F5: future train service patterns on the west coast main line corridor

## Timetable development and the West Coast Partnership

Developing a new timetable for the WCML following the development of HS2 is a substantial challenge, with many technical, commercial and legal issues to resolve. Typically, timetable development is done by following a standard approach, starting with long-term planning and ending with detailed passenger and freight timetables. This process is briefly summarised in Figure 1, below, with further details in the Annex.

The process for developing the new timetable for WCML to accommodate capacity released by HS2 will see the regular franchising process replaced with two additional steps: an initial Network Rail (NR) review (referred to here as “iteration zero”), followed by detailed proposal development by the West Coast Partnership and NR, in consultation with stakeholders. These stages are summarised below.



### “Iteration Zero”: Network Rail initial development

There is currently work underway by NR looking at the integration of HS2 into the network. This is the opening phase of the long-term process to define the train service, or “concept train plan”, that will operate once the new railway is built and integrated into the rest of the network. This will ensure the timetable is robust and deliverable prior to the commencement of the industry timetable bidding processes.

Most of the work has been carried out in-house by NR engineers and train planners, with structured engagement with key stakeholders (including some freight representatives) to test assumptions and reassure them that their views are being considered. It is not planned to make the results of this work fully public at this stage, although more engagement should be possible.

Although no decisions can be made yet, full consideration is being given to the role of freight, both the protection of current capacity and options for additional capacity, and could include protected “windows” for freight, or at a minimum allowance for “premium paths” (ie, fast-moving intermodal paths). Further analysis and decisions will be made through the next stages of the process.

## West Coast Partnership (WCP)

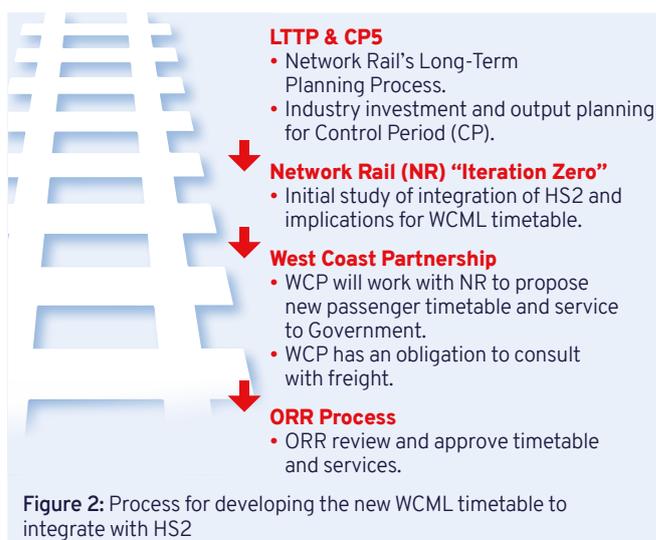
There will be a complete ‘recast’ of the WCML timetable to accommodate released capacity generated by HS2. This will enable the industry to prioritise the train service specification and enable an optimised timetable which meets capacity and performance requirements. A leading actor in this process will be the WCP.

The WCP is a commercial partnership between two passenger rail companies, Trenitalia and the First Group partnership. The partnership operates the Avanti West Coast passenger franchise, currently operating on the WCML, having replaced Virgin Trains in December 2019<sup>16</sup>. The WCP will develop options to advise the Secretary of State, led by analysis of the market, which will subsequently trigger a wider public consultation.

Freight industry stakeholders have raised questions of both freight knowledge and impartiality in respect of this arrangement<sup>17</sup>. There are mitigations in place: the final development work for a timetable will be worked up with Network Rail, which will lead the actual timetabling process, and other industry partners. In addition, there are obligations in the franchise agreement that require WCP to consult with stakeholders, including freight interests. Nevertheless, it is arguably a significant conflict of interest to task the incumbent passenger operator with leading development of a timetable that it will subsequently run.

## Office of Rail and Road (ORR) Regulated Process

The final decisions on the allocation of capacity will be set out using the regular rail timetabling processes, with ORR approving and becoming involved where there are conflicting bids. As with passenger franchises, the ORR must take existing rights and contractual obligations as a starting point. This stage should theoretically provide protection for existing freight paths, but ORR will not be able to insist on additional freight capacity being made available.



<sup>16</sup> For further information on the WCP please see <https://www.westcoastpartnership.co.uk/>

<sup>17</sup> Presentation to House of Commons Select Committee High Speed Rail (West Midlands to Crewe) Bill On behalf of Rail Freight Group and Freightliner, 14 May 2019

## Joining the dots: The importance of end-to-end paths

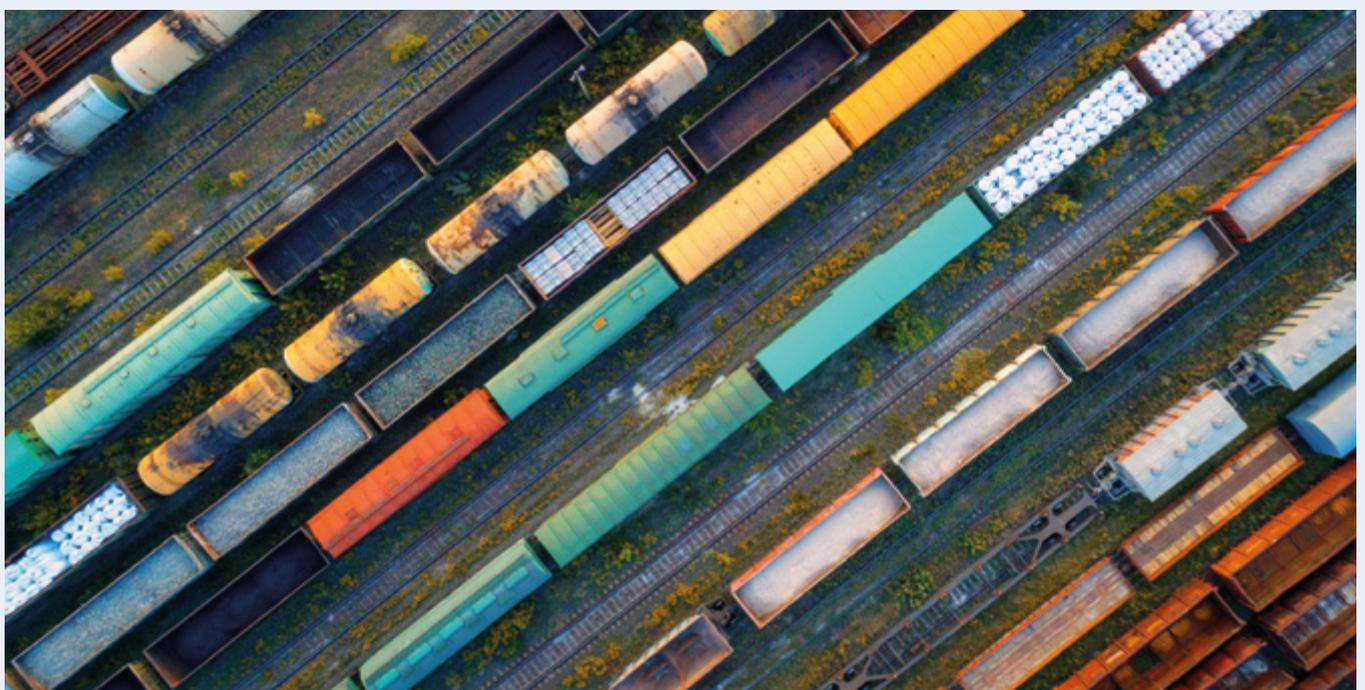
The use of capacity released by Phase 2b on the WCML and ECML by freight may require investments on local lines, since freight services generally do not begin or end their journeys on the WCML or ECML themselves. This conclusion has been reinforced following engagement with train planners involved in the initial technical work. Capacity released due to Phases 1 and 2a will essentially provide a “trunk” route; whether it will be possible to find paths to join up to other places is a different matter.

More positively, our understanding is that there is technical work underway to explore end-to-end paths and create an initial timetable for testing with the industry. This will surface any trade-offs that might be needed to add capacity, such as conflicts with passenger train services or infrastructure enhancements. The opportunity to make best use of HS2

released capacity could therefore provide a significant boost to the freight sector’s ongoing campaign to support measures to unlock capacity across the UK. A detailed discussion of these issues is beyond the scope of this paper but is a subject to return to for a future study.

## Conclusions: How to achieve HS2’s potential for freight

The opportunity for freight via released capacity from HS2 is substantial. The conventional network is at capacity; there are almost half as many freight trains using the network as there were 15 years ago. It is not an exaggeration to say that HS2 is likely to be the only opportunity this century to generate a substantial increase in capacity for rail freight in the UK. Even with the announcement of Government commitment, there is still a huge amount to do to get the full project approved.



To ensure the full support of the logistics community, the following steps should be taken:

- 1 Government should reconsider its principles for released capacity. There should be clear and unequivocal support to grow rail freight.**
- 2 WCP should, right from the start, fully welcome freight interests into its analysis and option development, to ensure freight growth can be accommodated while respecting the other principles set by Government.**
- 3 ORR should ensure the existing contractual and regulatory safeguards for freight are respected and enforced; not just for HS2 but for the UK network as a whole.**
- 4 End-to-end journeys: All parties must work cohesively to reduce barriers to a fully national strategic freight network, with capacity released by HS2 at its core.**

## Annex: The rail industry planning and timetable process<sup>18</sup>

### **Network Rail's Long-Term Planning Process (LTPP)**

As required by its regulated Network Licence, Network Rail uses this process to work with operators, local authorities and Local Enterprise Partnerships (LEPs) to develop scenarios for demand, agree priority uses for the capacity available and assess value for money options for investment.

### **The industry investment and output planning process for each regulated five-year Control Period (CP).**

The rail industry is funded and regulated in five year Control Periods, with Control Period 6 (CP6) starting in 2019 and running until 2024, when CP7 begins. The key statutory and regulatory processes include the issuing of the Secretary of State's High Level Output Specification and the Office of Rail and Road's Periodic Review and final determination. These processes set the funding available and the regulated outputs for Network Rail, establish investment priorities and set overall capacity, safety and performance outputs for the rail industry.

### **Franchising, including the Secretary of State's franchise specification and service development undertaken by franchise bidders and operators.**

Potential train service requirements are consulted on in the development of new franchise competitions, and additional service enhancements are then proposed by participating bidders; the results of this process are then included in the franchise agreements contracted with the successful parties. The frequency of services, number of stops and maximum journey times across the franchise are then specified in franchise agreements as a minimum train service requirement. The franchising approach aims to give operators some contractual flexibility to vary and develop the services they operate, respond to commercial experience and changes in passenger demand, improve efficiency and to innovate; this may include developing new or underserved markets within their franchise area.

### **The regulated timetabling process and regulated track access decisions.**

Before any train service can be introduced, it must be approved by the Office of Rail and Road (ORR), which has regard to its statutory duties in taking its decisions and must take into account the results of consultation. The starting point for the timetabling process is the track access rights which are held by operators through their Track Access Agreements. Applications for track access rights are considered and determined by the ORR independently of Government. In making a decision, the ORR is required to consider both its duties under Section 4 of the Railways Act and any additional guidance issued by the Secretary of State.

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<sup>18</sup> HS2 Limited, Phase Two a Information Paper, F5: future train service patterns on the west coast main line corridor

