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7 February 2025

Network Rail representations for applications affecting the West Coast Main Line (South)

As requested in ORR's correspondence of 23 January 2025, Network Rail is writing to ORR to provide representations in relation to one of the nine interacting locations listed in ORR's letter to the Industry dated 24 April 2024 on 'Competing and/or complex track access applications for December 2024, May 2025 and December 2025 timetable changes'. That interacting location is WCML South – Euston to Nuneaton.

The purpose of this representation is to provide an informed update to ORR with information regarding capacity availability on the West Coast Main Line ('WCML') South between London Euston and Rugby. Whilst the technical analysis referred to in this letter will be used as assurance of the proposed access rights for the current Section 22A's and Section 17's applications affecting the WCML (South), this representation does not constitute our final representations on any of the applications (or specific access rights within that application) currently being sought.

Our representations to each individual application are still going through internal due process, assessments and assurances and will be provided to ORR separately. Before the ORR considers directing any additional access on the WCML, there are a range factors that we believe the ORR must carefully consider this includes (but not limited to) capacity, performance and power supply generally, as well as the issues we highlight in this letter and appendices around capacity at Euston. We are providing some information on capacity, performance and pedestrian flow at Euston which can be shared at this time. Not all this information will relate to all of the applications on this geography and we have provided dates in the text below when we wish to provide further information (on performance and power.) As mentioned above this is not our final representation on these issues and we will provide these in the timescales set out. However, we want to provide you with the details of the some key risk and challenging areas.

Appendix A to this letter contains details of all passenger applications currently seeking access rights on the WCML (South), and Appendix B lists all freight applications seeking rights for services on the WCML (South).

Background and Context:

A restructured WCML timetable was introduced from December 2022. This followed a considerable period of collaborative industry timetable development, managed through an Industry Planning Group and (subsequently) an Event Steering Group ('ESG'). The aim of the timetable restructure was to release additional capacity compared to the pre-Covid timetable on the WCML, to meet passenger operator aspirations at the time, as well as to address the performance challenges experienced on both the WCML and West Midlands areas following the introduction of the May 2018 timetable. The restructured December 2022 timetable unlocked an additional hourly path between London Euston and Liverpool in each direction whilst also providing for 5 paths a day between London Euston and Stirling/Preston). Not all of these services are currently in the timetable and operating, Avanti West Coast Limited (Avanti) are taking a phased approach to their introduction and First Rail Stirling are due to commence operation in December 2025.

In response to a request from ORR to the Industry dated 24 April 2024, operators submitted applications for any future service aspirations affecting nine 'interacting locations', including the West Coast Main Line between London Euston and Nuneaton. 26 applications were received for the 20th May deadline which directly impact the WCML (South), of which 10 of these applications relate to passenger services and 16 applications relate to freight services.

For clarity, the following passenger applications contain access rights pertaining to WCML (South) :-

Caledonian Sleeper 9th
WMT 32nd
Avanti, 3rd, 14th, 17th & 18th
Lumo
Virgin
WSMR

Network Rail considers the Avanti West Coast 11th Supplemental Agreement submitted to ORR on 20 May 2024 as concluded given ORR has made a decision in relation to the application due to the application being for the December 2024 timetable and the rights expiring on the May 2025 timetable change date.

The freight operator's applications requesting rights on WCML (South) are as follows:-

Colas 10th
DB Cargo 83rd
DB Cargo 91st (subsequently withdrawn)
DCR 2nd
DRS 17th
FLHH 24th, 25th, 27th, 28th
FLIM 23rd, 24th, 25th 26th
GBRf 34th
Legge 2nd
Varamis 2nd

Details of these applications can be found in Appendices A and B. The majority of the rights within these applications are seeking paths to other destinations outside of the London Euston to Nuneaton corridor, and many include other interacting locations. Network Rail is currently not able to provide final representations concerning the access rights, and details of capacity assessments for the end to end journey (including power supply) until such time as the plan for completing the assessments, provided to ORR on 05 June 2024, 28 June 2024 and 12 August 2024 as updated on the 30th January 2025, has concluded.

Appendix A contains all applications which contain access rights requesting capacity on WCML (South) between London Euston and Rugby. The rights which traverse this section of track are highlighted as follows:

- Blue for passenger rights requesting capacity where services are not accommodated in the May 2025 timetable.
- Purple for passenger rights requesting capacity where services are accommodated in the May 2025 timetable.

Timetable Capacity

A Timetable Capacity Assessment was undertaken by Network Rail's Advanced Timetable Team ('ATT') in Autumn 2024 to assess the potential availability of additional train paths on the Fast Lines between London Euston and Rugby, within the existing (SX) timetable structure, which is in line with the standard hour pattern produced through the December 2022 ESG (see Appendix C). Of the passenger operators requesting services originating/terminating at London Euston, with the exception of West Midlands Trains' proposed 29th Supplemental Agreement (which sought an extension of access rights for both Slow and Fast Line services from Dec 24) all additional services would expect to utilise the Fast Lines between London Euston and Rugby to minimise journey time (particularly on longer-distance routes), which prompted a particular focus on Fast Line capacity in the ATT assessment. The capacity assessment therefore is most relevant in assessing passenger operator access rights due to the speed differential of freight services compared to high speed long distances services freight services are normally accommodated on the Slow Lines.

The December 2022 timetable restructure of the WCML unlocked additional timetable capacity, above the pre-covid timetable levels, on the Fast Lines of the WCML. This led to ORR granting access rights on a contingent basis for an additional hourly London to Liverpool service and on a firm basis for 5 trains per day (tpd) arriving/departing at London Euston, run by open access operator Grand Union Trains (GUT), now First Rail Stirling: 4 tpd between London and Stirling and 1 tpd starting/ terminating short at Preston. As part of the Interacting Rights workstream several other operators are looking for paths, which due to their long-distance characteristics would normally be planned using the Fast Lines on the south of the WCML.

The ATT assessment indicated a theoretical available capacity of 9 Up direction paths and 9 Down direction paths on the Fast Lines after the inclusion of Euston-Stirling and the 2nd Liverpool services which have rights. These figures include paths identified in the December 2022 Concept Train Plan (CTP) but currently not associated with any access rights currently held by operators. The ATT assessment looked at capacity solely between London Euston and Rugby, and did not consider the feasibility of whether end to end paths for origins / destinations sought further north could be accommodated; linking them to form a coherent service to/from locations beyond Rugby may prove to be a challenge due to capacity constraints elsewhere. Within the unsupported applications there are 46 paths in the down direction and 50 in the up direction either originating or arriving at London

Euston, far more that the potential theoretical capacity available.

Network Rail is currently unable to comment on the ability to accommodate the rights between their origin and destination as work to assess the access rights in full is continuing in accordance with the plans provided to ORR on 05 June, 28 June and 12 August 2024 as updated on the 30th January 2025.

Timetable performance

Further analysis of performance on the WCML (South) will be provided in subsequent representations to ORR (end of April 2025), however as part of the ATT Capacity Assessment some initial consideration of performance risks associated with utilising the theoretical timetable capacity was undertaken.

It is important to have a timetable that is resilient. A resilient timetable is one that on a good day when no major unplanned disruption is taking place, can withstand typical variations in train presentation without significant spread of delay between services and across service groups. This is typically a function of either the content of the timetable plan itself or the content of the resource plan.

Factors that underpin a resilient timetable plan include:

- Firebreaks in the timetable at key conflict points to prevent spread of delay service group to service group.
- Turnaround times that are robust to minor delays on inbound workings.
- Dwell times that reflect reality.
- Robust analysis before compliant but risky moves are introduced e.g., overtaking, splitting and joining, repeated re-occupations on minimum headways etc.

The performance assessment contained within Appendix C considered the impact on timetable resilience and the interaction between the identified theoretical timetable capacity and the timing (and performance) of other existing services which are currently planned directly ahead of the identified paths.

This is summarised in Tables 1 and 2 below.

Up direction slot (arrivals at Euston)	Timeliness of service prior
1058 arrival	9A31 >3minutes at Watford Junction 54% of the time
1258 arrival	9M50 >3 minutes at Watford Junction 64% of the time
1558 arrival	9A53 >3minutes at Watford Junction 41% of the time
1658 arrival	1B49 >3minutes at Watford Junction 63% of the time
1858 arrival	1Y56 >3minutes at Watford Junction 54% of the time
2143 arrival	1A77 > 3 minutes at Watford Junction

	67% of the time
2158 arrival	9M59 >3minutes at Watford Junction 67% of the time

Table 1. Timing and punctuality of adjacent Up Fast Line services in the (SX) June 24 timetable

Down direction slot (departure from Euston)	**Timeliness of service prior**
0836 dept	1H63, >3min late at Rugby 53% of the time
0936 dept	1H64 >3min late at Rugby 43% of the time
1136 dept	1H66 >3min late at Rugby 42% of the time
1236 dept	1H67 >3 min late at Rugby 37% of the time
1436 dept	1H69 >3min late at Rugby 36% of the time
1736 dept	1H72 >3min late at Rugby 73% of the time
1836 dept	1H73 >3min late at Rugby 73% of the time
1936 dept	1H74 > 3 min late at Rugby 65% of the time

Table 2. Timing and punctuality of adjacent Down Fast Line services in the (SX) June 24 timetable

The timing and performance of the existing services running immediately prior to the theoretical timetable capacity identified was based on data from the June 2024 timetable, which has the limitation of not containing *all* Fast Line services for which access rights are currently held by operators. For example the June 2024 timetable doesn't contain the proposed new services by First Rail Stirling (previously developed by Grand Union Trains), which are not expected to commence operation until December 2025, nor the outstanding additional Avanti West Coast services between Euston and Liverpool, both of which were identified in the December 2022 CTP, and have access rights, but are not yet running. The introduction of these additional services onto the Fast Lines is likely to have an impact on wider WCML (South) performance and therefore the T-3 figures quoted above, has not taken into consideration the impact expected from these services.

Figure 1. below is a count of services running on minimum headway on the Fast Lines between Milton Keynes Central and Willesden Junction comparing the actual December 2019 timetable with the December 2022 structure contained in the Concept Train plan (upon which today's timetable is based), and variations thereof. It demonstrates how the number of services running on minimum headway in the December 2022 structure timetable has increased since 2019. The introduction of the remaining Avanti Liverpool services and First Rail Stirling services will further increase the number of services planned on minimum headway, thus further reducing the resilience of the timetable. Any services introduced in the potential 9 available paths would further increase the number of services planned on minimum headway, reducing the number of firebreaks in the timetable and the ability to withstand typical variations in train presentation without significant spread of delay between services and across service groups. This is because the identified 9 paths, in most cases, are replicating the hourly path of the First Rail Stirling services in the hours that they do not run.

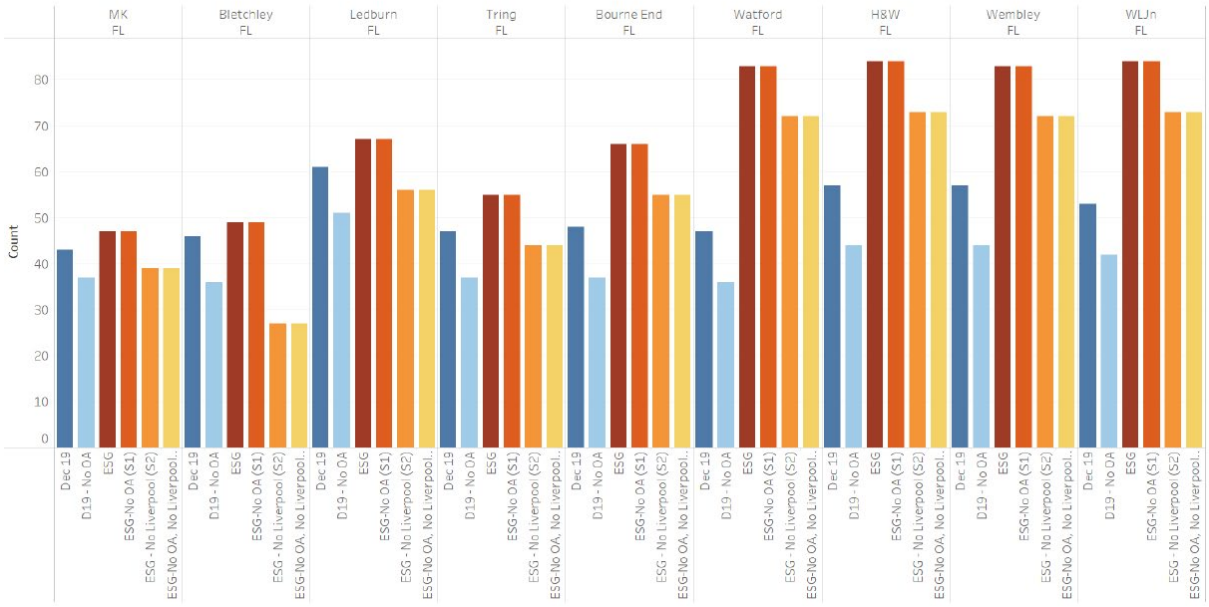


Figure 1. Count of services running on minimum headway on the Fast Lines between Milton Keynes Central and Willesden Jn

As part of December 2022 ESG, some performance sensitivity testing to assess the impact of adding additional services was undertaken. Table 3 below (included in the simulation modelling for the December 2022 ESG, and widely shared) highlighted the expectation that overall performance will deteriorate once the additional Avanti Liverpool services and First Rail Stirling services commence operation. For example overall Time to 3 arrivals at London Euston was expected to drop from a 3.6% improvement on the December 2019 timetable to a 0.4% improvement on the December 2019 timetable once the additional Liverpool and Stirling services are accommodated.

The Network Rail view (previously expressed both during and following the December 2022 ESG) is that the clear performance delta between the sensitivity test outputs (both T-1 and T-3 metrics), and the specific risks highlighted for the Up Fast Line (between Rugby and Euston) indicates that the quantum of Fast Line services contained in the December 2022 CTP had reached a critical threshold level in terms of manageable capacity utilisation, beyond which the introduction of any further services was likely to trigger a notable compromise to network performance through increased reactionary delay.

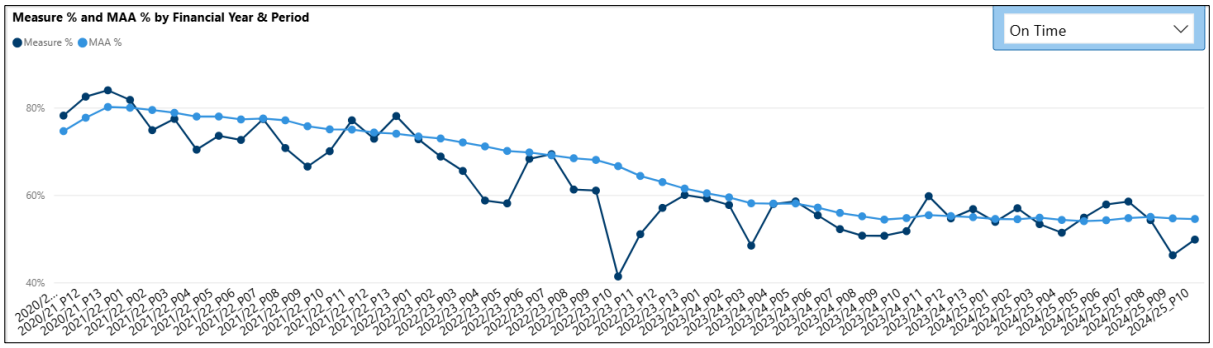
Metric	Operator	Dec-19		Dec-22 Difference to Dec 19			
				Full Timetable		Without Additional Identified Flows	
		T-1	T-3	T-1	T-3	T-1	T-3
All Stations	Overall	76.0%	91.1%	5.3%	1.2%	7.7%	2.4%
	Avanti West Coast	66.2%	84.7%	3.6%	0.5%	11.6%	5.6%
	West Midlands Trains	75.2%	92.3%	9.5%	2.1%	10.6%	2.7%
	Cross Country	66.2%	88.1%	10.3%	2.3%	13.7%	2.3%
Up Euston Arrival	Overall	67.2%	85.9%	0.4%	0.5%	8.9%	3.6%
	Avanti West Coast	66.8%	81.6%	-5.2%	-0.1%	6.3%	3.6%
	West Midlands Trains	68.9%	90.1%	6.0%	-1.7%	8.9%	0.3%
	Arriva Rail London	66.7%	88.6%	14.4%	4.1%	14.6%	4.1%

Table 3. Punctuality impacts on Dec 22 timetable options

Station	Base Dec 19		Dec 22 All Services (Difference)		Dec 22 No Additionals (Difference)	
	T-1	T-3	T-1	T-3	T-1	T-3
Watford	77.60%	91.20%	3.00%	0.10%	6.80%	2.90%
Milton Keynes	78.00%	92.40%	1.90%	-1.00%	7.50%	2.20%
Northampton	79.70%	95.20%	4.50%	0.40%	6.90%	1.40%
Rugby	79.40%	92.30%	2.00%	0.50%	5.00%	2.30%
Coventry	73.80%	93.10%	11.90%	2.00%	13.40%	2.80%
Stafford	78.20%	91.90%	2.60%	1.00%	3.00%	1.90%
Crewe	80.80%	92.20%	2.70%	0.90%	3.00%	1.40%
Stoke	66.20%	87.30%	8.70%	3.60%	9.20%	4.00%
Warrington	73.20%	89.60%	0.70%	-1.90%	1.40%	-1.30%
Wigan	70.80%	88.50%	3.40%	0.90%	4.10%	1.50%

Table 4: Time to X metrics at key intermediate stations

Moving on to current network performance, the graph below shows the percentage of On-time arrivals at London Euston for mainline operators along with the Moving Annual Average (not including ARL). Last quarter, P8-10 FY24/25 saw a Right-time arrival average of 50.2% for mainline operators. Since Covid we can see the performance trend for On-time arrivals to be declining. It is also the case that each timetable change since December 2022 has seen an increase of quantum of services running on the WCML, as the industry has continued to recover from the effects of Covid, and in-line with operator recovery plans underwritten by funders. There is much focus on WCML performance improvement through initiatives such as the 'First 60 Miles Plan' which aims to improve both the number of failures experienced but also how incidents are managed and recovered – but performance on WCML remains fragile. It is also the case that service recovery is a joint industry activity, and is a function both of Network Rail and Operator capability to deliver against agreed service recovery plans; challenges such as traincrew availability and fleet reliability can lead to variable outcomes depending on the nature of the disruption. In the absence of systemic change, reactionary impacts are only expected to worsen as service levels increase.



Given all of the above we would expect resilience to be significantly reduced in an already poor performing area of the network should additional access rights and services be accommodated.

Passenger flow at Euston Station

The ORR will be well aware of the challenges associated with Euston station. You will in particular be

aware of the improvement notice that issued in Q4 2023. This was closed out in December 2023.and further in December 2024, Network Rail concluded phase one of its plan to continue driving improvement in the operation of the station and the customer experience. Whilst significant improvements have been made in accordance with our 5 point plan, challenges persist which will only be exacerbated through the introduction of additional services.

Pedestrian Flow Analysis has been undertaken for London Euston station; as stated in our response to ORR dated 28 June 2024, in order to be able to complete the assessment independent of the outcome of the high level capacity analysis plan, the assessment was completed based on the December 2022 timetable structure including the additional Avanti Liverpool services and First Rail Stirling Services and anticipated passenger growth from the introduction of the services.

Appendix D shows the concourse assessment undertaken for Euston station, focusing on theoretical concourse size based upon the Network Rail Station Capacity Planning Design Manual (NR/GN/CIV/100/03). The analysis focuses on deriving comparative concourse sizes suitable for accommodating the current train service and additional passenger demand as a result of more services.

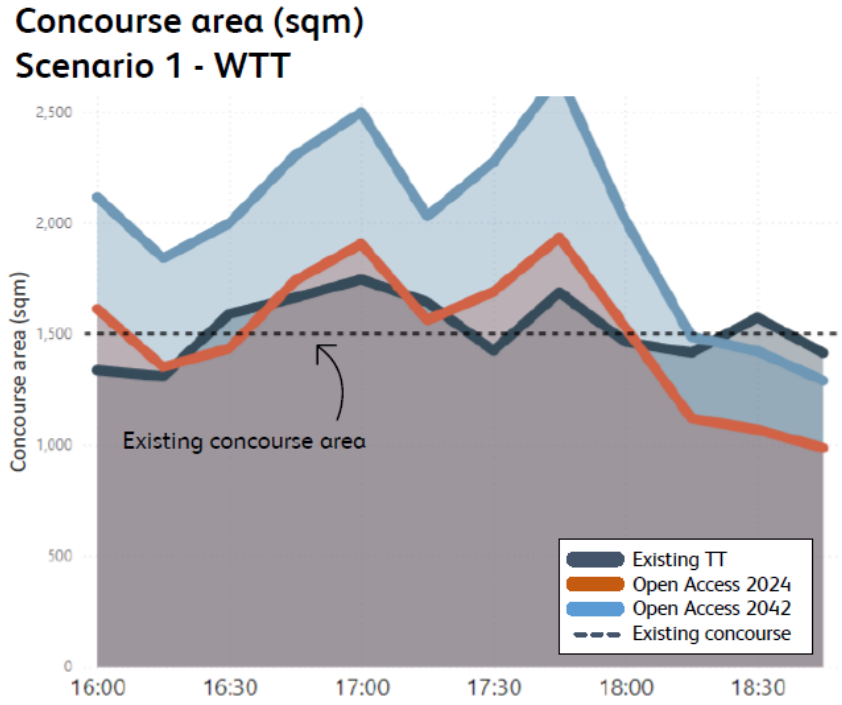


Figure 2. Concourse area (Sq mtrs) for Scenario 1 – existing WTT and rights sold.

The graph above is based on a scenario of the current timetable and variations including the additional Liverpool and Stirling services with expected growth projections for 2042 and passengers starting to arrive 30 minutes before departure with any passengers arriving within 15 minutes of departure assumed to travel straight to the platform. This shows that when the Liverpool and Stirling services are included demand is particularly concentrated creating two 15 minute periods which are distinctly busier. Once passenger number growth has been allowed for it shows that the concourse is expected to exceed capacity for most of the evening peak.

Appendix D includes several scenarios with delays to boarding and departure. Scenario four includes delays to boarding or up to 12 minutes and delays in departures up to 20 minutes which shows the current timetable, without the additional Liverpool and Stirling services significantly exceeding

concourse capacity for the majority of the evening peak.

Conclusions show that Euston Station is vulnerable to disruptions associated with delays and cancellations, as well as common cause variance in call to board announcements. The data suggests that even under the existing demand and timetable, the concourse design does not lend itself to accommodating spikes in demand well. In the short-run, introduction of additional services at London Euston may contribute to poorer passenger experience in the concourse. Additional services may limit station's ability to cope with common cause variance in train service, such as delays to boarding and departure. This means the station has less resilience to demand or operational fluctuation.

There also remains a restricted number of platforms at London Euston, with no funded plans to reintroduce a 17th and 18th platform. Passenger flow is primarily focused on number of passengers at a station at a given time, with arrivals and departures rather than requiring knowledge of origin or destination. It will therefore be possible to achieve a good understanding of the risk profile based on the quantum of services and associated passenger numbers within the Concept Train Plan, forming a basis which will allow for qualitative assessment of any differences to inform ORR in its decision.

HS2

Some of the access rights sought via these applications will interact with DfT and industry proposals, developed with West Coast Partnership Development ('WCPD') for HS2 operation. Specifically any rights where the services will continue north on the WCML after Rugby heading towards Stafford.

A captive service between Old Oak Common and Curzon Street (Birmingham) is planned to commence in the early 2030s. The current expectation is that HS2 service will then shortly afterwards begin running on the existing WCML – to a combination of Manchester, Glasgow and Liverpool, joining the WCML at Handsacre Junction (near Lichfield). Some existing long-distance services will be withdrawn at this point with replacement services added between London Euston and Birmingham New Street/Lichfield to better serve intermediate markets by making use of the capacity released.

A further section of the HS2 route (from Old Oak Common to Euston) will – subject to funding – be opened later in the 2030s at which point the full HS2 Phase 1 infrastructure will be in place. That will trigger another change to the WCML timetable as more services can be withdrawn from the WCML south of Handsacre and re-directed to/from London via HS2. Train service specifications for these three stages are in development, decisions about which will be based on ongoing work between HS2 Ltd and WCPD. No part of the current HS2 programme scope delivers additional capacity north of Handsacre Junction, and it will therefore be necessary to reduce the current train service by approximately one path for every HS2 path introduced.

The majority of proposed access rights included in Appendices A and B as requesting capacity on WCML continue to other locations and thus will interact and potentially utilize capacity required to accommodate the HS2 services.

Summary

This representation letter has been provided in response to a specific request from ORR regarding capacity on the WCML (South). Network Rail is aware that this representation letter does not

necessarily contain all the information expected to be produced as outputs from the assessment plans provided to ORR on 5 June, 28 June and 12 August 2024 (as updated 30th January 2025), as this work is still yet to conclude.

The focus of this representation letter is on the fast lines and services running into Euston as most passenger services within the WCML South originate or terminate at London Euston.

This makes London Euston the key location during times of perturbation for managing service recovery through the cancellation of services. As a terminus location, platform capacity is vital when managing perturbation as services must depart before arriving services can terminate. Moreover, not having the flexibility to move stock in either direction reduces the ability to free up capacity, resulting in the station becoming congested quickly.

In the above, Network Rail has highlighted the importance of maintaining a resilient timetable and the detrimental impact increasing the quantum of service can have on performance. Current performance metrics have been included that demonstrate performance is currently not meeting expectations and is expected to decline further once all services, which currently hold access rights, are running.

Pedestrian flow analysis shows that capacity at Euston is forecast to be exceeded more regularly and for longer durations once services are running for all current access rights. Any further growth to passenger number as a result of further access rights and services would further exacerbate the current challenges the station faces in passenger flow and the consequential passenger experience.

As the capacity assessment included in Appendix C has only been completed for the section of WCML between London Euston and Rugby, it cannot be assumed that paths would be available beyond Rugby to accommodate the access rights from their origin or to their destination.

Network Rail asks that whilst we continue to carry out our assessments, ORR progresses with its own assessments wherever possible to assist in making early decisions/ descoping the scale of applications requiring assessment from Network Rail.

Yours sincerely

Paul Harris

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