



All-Party Parliamentary Group for High Speed Rail

Response from **HS2 North West** (*HS2-NW*)
www.hs2northwest.org.uk

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HS2 North West

Prior to beginning the HS2 North West campaign I initially founded and managed the YesToHS2 which was an independent non-governmental campaign set up to promote the benefits of HS2. YesToHS2 was set up in in late 2010 in response to increasingly inaccurate claims that were being released by anti-HS2 campaign groups. YestoHS2 has since become a leading pro HS2 campaign and has had a central role in the task of helping to re-balance the HS2 debate. However I now feel that my time and resources would be utilised better if they are focused within the North West.

– Promoting the benefits of HS2 for the North West

HS2 North West aims to take forward work undertaken by the YestoHS2 campaign to promote the benefits of HS2. As the campaign manager for YesToHS2 I feel that if the pro campaign is to develop and gain more support then a new re-branded and re-focused campaign is required. As a member of the public residing in the North West I feel my efforts are best focused within the region, this will allow me to use my local knowledge and expertise in order to reach businesses and members of the public with a positive message about HS2.

As the North West will benefit from classic compatible HS2 services from 2026 it should be possible gain support from local business large and small. Both main Chambers (Liverpool and Manchester) fully support the development of a High Speed network connection North with South, so with their help it will be possible reach a great many business throughout the North West.

As one of a number of leading supporters of HS2 it is clear that my response to the APPG will be broadly geared toward the promotion of the further development of a national high-speed, high-capacity rail network. I feel I must stress though that my support is based on careful consideration of the facts, alternatives and the business case as presented by the the Dft. Having campaigned for and studied in depth the proposals for HS2 it is clear that there are no workable alternatives which will produce the capacity required in order to keep up with future demand levels.

How do you view the current capacity situation on Britain's railways?

There is no question that the UK's railway network is extremely busy with parts of the Network suffering acute capacity shortages. Growth in passenger demand has seen figures rise to the pre 1920s levels when passenger demand was at it's height, during this time though the UK rail network was some 50% larger than it is today.

All three of the UK's main lines are experiencing unprecedented levels of growth and all three have almost reached the limit of how many trains can be squeezed onto the lines. The Great Western and East Coast main lines will each see a capacity increase of around 30% (1) when new Intercity Express trains are introduced, with the GWML receiving a further increase after the line is electrified to both Cardiff and Bristol.

Both the ECML and GWML will see improvements over the next 5 to 8 years to further improve capacity including the introduction of new IEP trains, so there is room on these routes for some growth. The ECML, which will benefit from the second phase of HS2 to Leeds, is of particular concern to Network Rail who foresee capacity problems around the mid 2020s.

For the WCML however there is very little scope for increasing capacity, the £9bn update of the line has helped to increase capacity and cut journey times, however this reduction in journey time has seen passenger numbers double between the North and London over the last 5 years, with the line seeing a steady increase in passenger numbers of 5% per year, this despite the recent recession.

How do you view the current capacity situation on Britain's railways? Continued

- **WCML capacity**
- The West Coast Main Line which will be the first to see the benefits of HS2 if the line is built will see a increase in peak time capacity of around 20% (table 1) once new 11 car Pendolinos are brought into service.
- London Midland proposes operating the current fleet of class-350 Desiros at 176km/h up from 160km/h, which will reducing journey times and they say free up 2 addition fast line paths during peak. If Network Rail agree that the LM110 proposal is feasible then it may be possible to increase capacity by an additional 27% (table 1) on the WCML fast lines.
- In total it could be possible to boost peak capacity on the WCML by 43% with extra London Midlands trains and longer Virgin Pendolinos. However beyond this potential gain there is limited or no scope for increasing capacity on the WCML without further disruptive and costly infrastructure works. Network Rail have stated emphatically that even with the additional capacity proposed the WCML will in effect be full by the mid 2020s, with it appearing increasingly likely that the WCML will be full as early as 2020 even with longer trains in service.
- **Other routes**

London's suburban and interurban rail systems are of course busy also, however London will see the benefits of some £30bn worth of investment in infrastructure projects which should all be completed by 2019. The Crossrail and Thameslink projects will increase capacity massively on North-South and East West routes, with a further £10bn going toward improving current Underground networks to further boost capacity throughout central London.

Other busy routes such as the Manchester – Liverpool and Pennine routes are also often crowded, however electrification with the subsequent introduction of longer trains will help to ease overcrowding and speed up journey times on these economically vital routes.

What capacity do you believe Britain's railways will require in the future?

With the growth in passenger numbers reaching record levels it is crucial that adequate capacity is provided on all rail routes which are seeing unacceptable levels of crowding, be that main lines or local rail routes. The government must ensure that the network is able to keep up with demand whilst maintaining a high level of reliability. It would be unwise to simply over-utilise lines by trying to squeeze as many paths as possible onto the network. Utilisation greater than 80% (2) of maximum will lead to services becoming unreliable as it becomes increasingly difficult to recover services once trains have gotten into difficulty.

It should be possible to find extra capacity on busy local routes by introducing longer trains and more frequent services and in some ways it is easier to boost capacity on local rail routes than it is to increase capacity on the UK's crowded main lines.

Several key issues dictate the amount of passenger capacity that can be squeezed out of the main lines, for instance each of the three main lines have to provide services for both local and long distance passenger services. The mixture of local and long distance services is a particular problem for operators trying to provide services on the WCML, it is clear that long distance services often take precedence over local services. The 2008 VHF timetable saw the removal of stops on the WCML in a bid to improve journey times. This has been to the detriment of regional connectivity and has seen some towns losing regular services to London. Nuneaton for instance suffered a reduction in services to London after the introduction of the new high frequency timetable in 2008.

What capacity do you believe Britain's railways will require in the future? Continued

It is clear that there will be an ongoing problem providing local and long distance services on main lines which are becoming increasingly busy, this therefore leaves the government with difficult decisions to make in terms of which services should take precedence. It should not be the case of TOCs providing either more local services or more intercity services, however this is becoming the reality of trying to provide services on increasingly crowded routes (4). The situation as described makes it hard to answer the above question as it is difficult to see how more local/regional and national services can be provided — especially on the WCML for which spare train paths are nominal.

Put simply, capacity will be required for local, regional and long distance services without one adversely affecting the other whilst also aiming to provide capacity for the growing rail freight demand. However it is difficult to see how this can be achieved especially on the WCML, as the busiest mixed use line in Europe it has already seen local routes sacrificed in order to make way for more frequent and faster intercity services.

Current growth

- Recently Virgin reported that passenger numbers have more than doubled from 14 million passenger per year to 30 million in just 7 years (5), growth for Virgin Rail services alone was 30% between 2008 and 2011.
- Passenger numbers on London Midland routes grew by 9% in 2011 (6)
- HS2 Ltd have stated that passenger figures have already reached the levels which they predicted for 2021. In addition HS2 Ltd state that *“one third of the growth previously forecast by HS2 Ltd to occur on the WCML between 2008 and 2043 has been achieved in the last three years”* (7).
- Recent figures from ATOC show that passenger demand as whole has been growing by 5-6% a year.
- North-South rail freight is also growing with figures from Rail Freight Group showing growth of 56% over the past 8 years.

Future Growth Drivers

Population growth is one obvious factor that will dictate future passenger and freight growth, the UK population is growing at around 400k per year and is set to reach 70m by 2030 (8). Transporting passengers around an increasingly crowded Island will surely be a challenge for transport planners in the future and it is difficult to see how suppression of movement being achieved without impacting on the UK's economy. There is a clear link between freedom of movement within a city or country and economic activity, therefore the government must ensure there is enough capacity within the transport system to allow a growing population to move freely around the country.

Economic growth is also a factor which drives demand for travel, as stated previously there is a direct correlation between passenger demand and economic activity.

Looking at rail more specifically, there does appear to have already been substantial shift from air to rail, this is especially apparent for services between Manchester and London, for which rail now has an 80% share, up from 40% before the new Virgin timetable was put into place with faster journey times. It is therefore crucial to provide capacity where it is needed. This shift in demand also highlights the value that passengers put on time savings. New Pendolinos reduced journey times by between 20 and 30 minutes which happens to be the amount of time that will be saved again between Manchester and London after completion of the first phase of HS2 in 2026.

Future Growth Drivers continued

Another key factor which is driving rail passenger demand is fuel prices which are already beginning to have a positive effect on rail passengers figures. It is unlikely that drivers will ever see fuel prices return to pre 2000 levels, even if the Middle East stabilises in the short the medium term. The main future driver for fuel prices will be a reduction in output combined with increased demand from developing countries. It is therefore vital that government plans ahead and provides enough capacity within the public transport system to accommodate a shift from person motor vehicle travel to local and long distance mass transport.

– Planning for future trends

Looking further ahead into the future, it is my opinion that there will be another shift in the way people move around the country once electric vehicles are adopted more widely. I speculate that between 2020 and 2030 there will be a shift from long distance driving to rail and other forms of mass transport, this will be in part due to the limitations of electric vehicles, which until a batteries become much more efficient will be limited to journeys of 100 to 200 miles before requiring a full charge taking up to 12 hours. This is only speculation at this stage however it is important that the government anticipates changes in transport trends such as this in the future.

What is the best way of providing capacity and future-proofing Britain's rail network?

The only true way to “future-proof” the UK's ageing rail network is to build a new line, especially between North and South. Both the current main lines (ECML & WCML) which take passengers north are incredibly complex, busy and based on lines originally built some 150 years ago. Both of these lines have to cater for local services, intercity services and freight trains, which all have to jostle for paths on lines which are quickly running out of space.

The beauty of building a new line connecting North and South is that it removes almost entirely long distance services from the main lines which can in turn be used for more frequent local and regional services, with the addition of freeing up more regular paths for freight services. The benefits of a new line will be initially be felt by those towns and cities currently served by the WCML, even towns/cities that will not be serviced directly by the new line will benefit from more frequent services and in many cases faster services. For example if HS2 goes ahead then Lichfield and Tamworth will benefit from new regular fast services provided throughout the day by 200 km/h Pendolinos which will replace the current 160kmh London Midland Desiro services. Milton Keynes will benefit from up to 8 peak hour fast services to London which will be less crowded as majority of Northern passengers will choose HS2 services to get to London.

We must learn from the £9bn WCML modernisation program which quickly became a victim of it's own success, New faster services from the North were quickly adopted by travellers that would once have flown to London rather than getting the train. The passenger growth figures since 2008 are impressive — however even with more trains WCML services are often full during peak times with trains to Manchester, Birmingham and Glasgow amongst the most crowded.

Once the new line is extended to Leeds and Manchester it will free up more capacity between Manchester and Birmingham and crucially will free up capacity on the ECML for more local/regional services and freight services.

Building a new “conventional” speed with speeds limited to around 200km/h to 240km/h will reduce the cost the new line by around 10%, however the benefits of line will reduce by 30% when compared to a high-speed line. If a new line is to be built it is crucial that the initial the construction and operation costs are prepaid, it therefore makes more sense to build a new high-speed, high-capacity line which will cost only moderately more whilst producing a substantial return for the government.

HS2 Ltd predicts that if HS2 goes ahead there will be a increase in passenger numbers beyond background demand (3% from air, 8% from car & 24% addition trips (7)), this will be due to improved journey times which will see a further shift away from flying and driving between North and South. Phase 1 of HS2 alone will slash journey times from Birmingham to London by almost a half, will save 30 minutes from the journey from Manchester and Glasgow to London and will see a reduction of 20 minutes between Liverpool and the capital. It is therefore crucial that enough capacity is provided in order to ensure that not only is there enough capacity to keep up with background demand but also enough to cater for a modal shift away from flying and driving.

What is the best way of providing capacity and future-proofing Britain's rail network? continued

- **WCML Alternatives to High-Speed rail**
- It has been suggested that there are better and cheaper alternative for increasing capacity without building a new line, however both the government and Network Rail has said the alternatives would not produce enough capacity to to keep up with growing demand.
- The 51M group had claimed that it's WCML alternative could increase all day capacity 211% by spending just £2bn (3). Network Rail however identified cost of around £3bn (4) to fully implement the alternative.
- The capacity increase of 211% for 51M alternative was actually based on capacity spread thinly across the whole day and compared to today's capacity levels. However when evaluated in more detail it was revealed that during peak even if you compared the 51M alternative to today's levels in reality it would only increased capacity by a maximum 64% (table 2). This is based on work carried out by YestoHS2 and later confirmed by the findings of the Transporting select committee which looked into the plans HS2.
- 64% may seem like a more than adequate increase but this figure does not take into account plans already in place to lengthen Pendolinos or London Midlands' proposal to operate more peak time commuter trains. If you compare 51M's £3bn alternative with plans already in place it would produce an increase of of just 15%.
- Considering that Network Rail have made it clear that even planned and committed interventions the WCML will be full by the mid 2020s it is difficult to see how an increase of just 15% would benefit passengers in the future. Even if the £3bn so called alternative was implemented Network Rail say this itself will still see the WCML becoming full once again as early as 2030 (4).

What will the effects of providing extra capacity be, beyond addressing journey supply? What would be risked by failing to provide that capacity?

Put simply if not enough North-South capacity is provided then the only option will be to implement an airline style pre-booking arrangement putting an end to walk on tickets and artificially suppressing demand. A suppression in demand will initially lead to an increase in flying and driving between North and South which even in the short to medium term will be unsustainable. The long term outcome will be a return to the downturn faced by the North after the collapse of industrial sector in the 1960s.

A great deal of businesses from across the North have close ties to the capital and for many ease of access to London is vital for continued success. This isn't to say that London is the sole beneficiary of improved connections to the capital, it is simply a fact that some foreign investors often see the UK through the prism of London and often Heathrow and London are seen as the UK. It therefore makes sense for business in the North to have ties within London which relies heavily on there being an effective connection to the capital. By suppressing demand on these connections it will have the effect of forcing businesses which wish to grow to re-locate closer to London.

What will the effects of providing extra capacity be, beyond addressing journey supply? What would be risked by failing to provide that capacity? continued

– Technology

It has been claimed by those opposed to HS2 that technology will remove the need for many people to travel and that meeting face to face will soon be a thing of the past. However there is as yet no evidence of this and in fact it could be argued that the reverse is true, the very fact that rail passenger demand has returned to pre 1920s levels despite great technological leaps shows there is yet no actual basis that technology is or will replace the desire to travel. Studies so far show no link between technology and a decrease in travel, in fact most point to a complementary role (9), whereby technology reduces the number of shorter trips however causes an increase in long distance trips.

Technology is making it possible for London based firms to effectively operate offices in the North where operating costs may be much lower, it also makes it possible for Northern based firms to have offices in London which are able to tap into international markets more readily. However the fact that it is now easy to operate offices hundreds of miles apart means that when staff do need to meet they must have to travel further to do so.

Regularity of individual business trips may decrease with improved technology however this decrease is more likely to be replaced by a further geographical spread of personnel and skills. Therefore it stands to reason there could be fewer trips made but by an increasing number of people.

There is also one figure which brings into question the effectiveness of technology to reduce transport demand, that is the fact that only 30% (7) of those predicted to be travelling on HS2 services will be those making business trips. The other 70% will be tourists and those visiting family and friends I do not think anyone can argue that technology will ever replace the physiological desire/need that people have to meet family and friends face to face.

It would be unwise for the government to take a gamble on technology replacing the need to travel, and it would also be foolish to simply try to patch and mend the UK's crowded rail network. Passenger and freight figures will continue to rise for the foreseeable future so the only right decision would be to ensure there is enough capacity within the UK rail network in order to keep up with demand.

References

Table 1 WCML capacity comparison current, WCML current v 'Do-minimum*' and LM110** scenarios

WCML fast lines current		WCML 'do minimum'		WCML Current v 'Do minimum'		WCML 'do minimum' + LM110		Current v Do minimum LM110		Do minimum v Do minimum LM110	
Hourly seating capacity		Hourly seating capacity				Hourly seating capacity					
Off peak	4277	4482		4.8	%	4762		11.3		6.2	%
Peak	6300	7587		20.4	%	9032		43.4		19.0	%

Table 2 WCML capacity comparison 51M WCML alternative v current, 'Do-minimum*' and LM110** scenarios

WCML + 51M proposals		Current v 51m		Do minimum v 51m		Do minimum LM110 v 51M	
Hourly seating capacity							
Off peak	9771	128.5		118.0	%	105.2	%
Peak	10374	64.7		36.7	%	14.9	%

* The WCML "Do-minimum" scenario includes the lengthening of Pendolinos to 11 cars and committed infrastructure works that will be carried out to 2019 by Network Rail

** The LM110 proposal is in addition to the 'do-minimum' scenario and could add an extra 2 paths for London Midland services travelling at 110mph.

(1) http://www.agilitytrains.com/agilitytrains_superexpress.htm

(2) High Speed 2 Strategic Alternatives Study

(3) 51M Optimised Alternative to HS2 - The Scope for Growth on the Existing Network

(4) Network Rail Review of Strategic Alternatives to High Speed Two

(5) <http://mediaroom.virgintrains.co.uk>

(6) <http://www.go-ahead.com/media/news/2011news/2011-10-27.aspx>

(7) for HS2: Updated appraisal of transport user benefits and wider economic benefits

(8) Office for National Statistics

(9) -Telecommunications and Travel The Case for Complementarity. Patricia L. Mokhtarian

- Aggregate Relationships between Telecommunications and Travel. Sangho Choo

- Impacts of telecommunications on person travel and commercial vehicle operations. Thomas F. Golob