

**ALL PARTY PARLIAMENTARY GROUPS FOR HIGH SPEED RAIL – INQUIRY INTO RELEASED CAPACITY**

**Evidence submitted by the South Yorkshire Passenger Transport Executive (SYLTE) on behalf of the South Yorkshire Integrated Transport Authority (ITA) and Sheffield City Region (SCR)**

**Summary**

1. **SYITA believe that the demand on Britain’s rail network is fast becoming unmanageable.** Forecast growth on each of the north-south networks, without major interventions, will suppress the economic growth that the country so badly needs. Upgrading these networks alone will not provide sufficient capacity to enable Britain to compete with other international markets in the years to come.
2. Development of **a strategic rail network** is essential to building Britain’s medium/long distance capacity requirements for future generations. Without major intervention, the existing rail network is predicted to be at capacity in the next 20-30 years.
3. To support rail growth the **introduction of a national High Speed Rail (HSR) network** in parallel with existing rail infrastructure improvements will maximize connectivity between the UK’s city regions, helping to rebalance the economy.
4. Additional rail capacity **supports economic growth in the UK.** Business and freight will for the first time be able to have confidence in Britain’s transport system.

**1. How do you view the current capacity situation on Britain’s railways?**

- 1.1 The past 15 years have seen significant growth in passenger and freight use of the rail network in the city regions of the North.
- 1.2 The Sheffield city region Strategic Transport Model (SYSTEM+) estimates that rail demand will grow by around 4% per annum between 2007 and 2026 on the existing network. This figure is considerably higher at peak periods – between 7 and 9%.
- 1.3 Without any improvements to capacity, the SYSTEM+ analysis identifies that there will be severe crowding on many routes in the Sheffield city region in 2026. In particular this will impact on the routes from Sheffield to Derby, Nottingham, Manchester, Barnsley and Rotherham. The East Coast Mainline south of Doncaster is also identified as suffering from severe crowding.
- 1.4 The following table illustrates the levels of crowding currently being experienced on some of the routes in the Sheffield city region:

Route	% Overcrowded Services <sup>1</sup>
Adwick - Sheffield	67%
Doncaster - Lincoln Via Sheffield	20% - 80%
Huddersfield - Sheffield	33% - 67%
Hull - Sheffield	0% - 50%
Leeds - Sheffield (Stopper)	33%
Leeds - Sheffield via Rotherham	0% -100%

- 1.5 The recently conducted Yorkshire Rail Network Study (YRNS) has shown that limitations in connectivity between the North's city regions and the lack of spare capacity will constrain future demand growth. The current capability of the rail network in terms of capacity, journey times and reliability is restricting the potential for additional and faster services.
- 1.6 The rail service patterns between Leeds, Sheffield, Nottingham and Derby also reflect the compromise between freight trains, express trains and local stopping services sharing the same lines. In addition, there are a number of network bottlenecks where rail services are often delayed or timetables are compromised because of a shortage of "paths". Notable locations which impact on the local network are Sheffield northbound, Alfreton and approaching Nottingham. Together, these compromises result in slower journey times and delays which impact on the entire city region. For example, it takes almost two hours to travel the 70 miles between Leeds and Nottingham, via Sheffield, meaning the average speed of services equates to 36 miles per hour.
- 1.7 Unless addressed, these constraints will limit economic benefits and encourage car commuting whilst the levels of crowding predicted for the future is likely to suppress demand.
- 1.8 The level of economic activity between Sheffield and Manchester is lower than would otherwise be expected for city regions of such proximity and poor transport connectivity is a key contributory factor. Work undertaken by the Northern Way has illustrated that improving Transpennine connectivity could generate significant economic benefits.
- 1.9 Studies<sup>2</sup> have highlighted the particular importance of links from the Sheffield city region to Manchester airport. Providing increased capacity will, therefore, support enhanced economic connectivity between the Sheffield city region and Manchester city region.
- 1.10 If these links are allowed to reach, and remain, at full capacity, there is no scope for growth and, therefore, no opportunity to enhance economic activity.

## **2. What capacity do you believe Britain's railways will require in the future?**

- 2.1 Demand forecasting in the Sheffield city region demonstrates that there is an immediate need to provide additional capacity on most of the routes serving Sheffield station, as well as on the

<sup>1</sup> SYPTE and Northern Rail figures

<sup>2</sup> Ekosgen (2008) Joint Economic Study: Manchester and Sheffield Final Report, Manchester City Council

East Coast Mainline south of Doncaster, just to keep up with predicted growth. In addition, there is potentially suppressed demand on many routes, suggesting that widespread capacity improvements are required in the near future.

- 2.2 There is a clear need for faster and more frequent rail services between all the city regions of northern England. The Sheffield city region has close connections with the Leeds and Manchester city regions and many trains are suffering from increased levels of crowding. Recent years have seen investment in more frequent and faster trains between Sheffield and Leeds, but these are now also suffering from levels of crowding.
- 2.3 The YRNS has shown that there is strong evidence that good transport links can support economic interaction between city regions, which in turn supports a stronger regional and national economy. Without investment in additional capacity, the links from the Sheffield city region to Leeds, Manchester, Derby and Nottingham will worsen as increasing demand places more pressure on the network.
- 2.4 Growth has also been evident on the long-distance Inter-City network. Despite infrastructure upgrades to manage capacity, the patronage growth on the East Coast, West Coast and Midland Mainlines has resulted in overcrowding, especially on peak services. Demand growth is forecast to continue, with Network Rail projections suggesting that by 2036<sup>3</sup>, patronage on long distance journey types has a potential growth of up to:
- 78%** on East Coast Mainline (ECML)
  - 77%** on Midland Mainline (MML)
  - 89%** on West Cost Mainline (WCML)
- 2.5 The only way to manage this level of growth and to unlock any suppressed demand is to improve the capacity of these mainlines, both through infrastructure improvements to increase capacity and by investing in new rail lines, such as HS2. Since privatisation, all of the mainlines have seen an increase in the number of services, to the extent that they are now approaching capacity and there is very little opportunity to introduce new services to resolve the crowding without additional infrastructure.
- 2.6 As passenger demand continues to grow, there is a risk that freight services will be marginalised, resulting in slower services and lack of capacity to accept any growth in demand. This is likely to result in additional lorry journeys with a resulting negative impact on carbon emissions and congestion on the strategic road network.

### **3. What is the best way of providing capacity and future proofing Britain's rail network?**

- 3.1 It is clear that there are three areas for SCR where improvements in capacity are required:
- Local services within SCR (such as Sheffield to Rotherham, Barnsley and Doncaster);
  - City region connections (Manchester, Leeds, Nottingham and Derby); and
  - Inter-City links to London and other UK cities.
- 3.2 One of the problems of addressing all three of these areas, whilst still ensuring capacity is available for freight, is that they all share the same infrastructure and therefore, have conflicting

<sup>3</sup> Network RUS – Scenarios, Network Rail [2009]

requirements. In addition there is also the question of suppressed demand and many towns and cities are looking for new direct links, for example, Barnsley to London.

- 3.3 We believe the only way that the required capacity needs can be addressed is by building new railway lines, improving the classic lines and undertaking a full network review to make the most use of the available capacity.
- 3.4 Investment in the classic network alone will not create enough capacity to fulfil future demand<sup>4</sup>. Infrastructure improvements on the West Coast Mainline were welcome, however, this caused almost a decade of passenger disruption and costs significantly exceeded the original estimate (increasing from £2 billion to £8 billion) and the timetable delivered only an additional service during the peak<sup>5</sup>. Furthermore, predictions show that within 20 years the network will not be able to satisfy demand and therefore classic line improvements need to be supplemented with new rail lines.
- 3.5 If a new rail network is required, then the UK should use the technology available at the time of construction to build a network on par with other countries. A national HSR network will not only create the opportunity for economic growth in the UK, but will allow the country to trade easily with the rest of the world.
- 3.6 HSR will provide the catalyst for a step change in rail capacity and performance. We have undertaken some analysis on how the 'released capacity' from HSR would be best used<sup>6</sup>. The clear conclusion is that capacity released on existing rail routes (MML and ECML) by HSR will allow many improvements to services in SCR. Existing services to London should be retained, but new stopping patterns and routes introduced to provide direct links from more towns and cities that do not have them currently.
- 3.7 HSR alone will not release enough capacity to resolve the crowding in SCR and through connections to other city regions. Therefore, there is a requirement to invest in improvements across the classic network to increase journey speeds, remove bottlenecks and create new journey opportunities. This need is heightened when it is considered that the high speed network will only directly serve a limited number of places.
- 3.8 The Midland Mainline is the only north to south mainline without full electrification. Extending the electrified section north of Bedford and onto Leeds will improve the capacity and reliability of this important link as electric trains have better performance and improved reliability compared to diesel trains. In addition with other infrastructure improvements, upgrading the MML will enable journey time reductions to Derby, Leicester, Nottingham and Northamptonshire and reduce carbon emissions.
- 3.9 Other infrastructure schemes are required throughout SCR to release capacity for improved local services and strengthen connections to other city regions. In particular, removing existing

---

<sup>4</sup> Network Rail (2011) Review of Strategic Alternatives to HS2

<sup>5</sup> DfT (2012) High Speed Rail: Investing in Britain's Future – Decisions and Next Steps

<sup>6</sup> Eastern network Partnership, The case for High Speed Rail July 2011

bottlenecks at Dore, Wincobank Junction and Doncaster will provide an opportunity to improve service frequencies and reduce journey times.

#### **4. What will the effects of extra capacity be, beyond addressing journey supply? What would be the risk by failing to provide capacity?**

- 4.1 HSR would cut rail journey times from Sheffield to London by **40%** with an estimated journey time of 1hr 15 minutes<sup>7</sup> and release capacity on the classic network.
- 4.2 Currently journey times between London and SCR on the MML are poor, compared to other classic routes of a similar distance. Therefore, the journey time savings offered by HSR are important and non-marginal and will provide SCR businesses with a level of connectivity more comparable to other core city regions. HSR services will provide a catalyst to making the city region a more attractive location for business inward investment.
- 4.3 The proposed Eastern arm of HS2 serves the markets of several large conurbations which will benefit from their proximity to the route and contribute significantly to the overall business case. Studies undertaken on behalf of Leeds and Sheffield city regions show that the route north of Birmingham will connect up to **6.7 million people** and **3 million jobs**<sup>8</sup>. Reducing journey times between these key economic sectors could create a more integrated non-London economic zone, helping to rebalance the economy. The business sector within SCR recognises the economic benefits HSR will bring to the region and in a recent survey **91%**<sup>9</sup> of SCR businesses supported a national HSR network.
- 4.4 As well as improving north-south links in the UK, HSR would open up the larger business and leisure opportunities of European and global destinations, providing a realistic, sustainable alternative to air travel. With a link from HS2 onto HS1, the journey time from Sheffield to Paris could potentially be less than 5 hours, whilst the spur to Heathrow will provide SCR with a direct connection to this international gateway.
- 4.5 During the investigation of HSR for the UK, a number of alternative networks have been investigated by HS2 Ltd, the DfT and other interested groups (such as Greengauge 21). A study by Arup in 2010 compared the benefits of the proposed Y-shaped network with the "Reverse-S" network. This study concluded that the wider economic impacts of the Y totalled £2.3 billion over the 60 year appraisal period, compared to £0.4 billion for the "reverse-S"<sup>10</sup>. This was due to the additional locations and, therefore, population that the Y would serve.
- 4.6 Greengauge21s' Fast Forward report in 2009, considered a "reverse-E" network with a single stem on a central or easterly corridor with separate branches built westwards to serve Birmingham and Manchester. This had some attractions, but would likely trigger in the long run a need for four-tracking. It's likely phasing, including the construction of a new route across the Pennines would make it harder to deliver early capacity relief to the West Coast Main Line, reducing the immediate benefits and increasing the time and cost to build it.

<sup>7</sup> Economic Case for HSR to Leeds and Sheffield City Region [Arup & Volterra 2010]

<sup>8</sup> Economic Case for HSR to Leeds and Sheffield City Region [Arup & Volterra 2010]

<sup>9</sup> British Chamber of Commerce sector survey [2010]

<sup>10</sup> The economic case for HSR to Leeds and Sheffield city regions (Arup 2010)

- 4.7 Upgrading and electrifying the Midland Mainline, alongside existing committed improvements, could generate £450m worth of wider economic benefits by businesses becoming more productive as result of journey times savings of 13-14 minutes<sup>11</sup> between London and Sheffield. This will also enable journey time reductions to Derby, Leicester, Nottingham and Northamptonshire from SCR. When combined with the released capacity from HSR, this could provide direct connections from London to places not currently served, such as Barnsley.
- 4.8 The YRNS has shown that the rail freight industry also brings significant benefits to the national and local economies in the Leeds and Sheffield city regions. The current lack of capacity and functionality of the rail network inhibits the ability for rail freight to effectively serve the ports of the North, the growing inter-modal container market, the electricity supply industry and to offer a viable and more environmentally sustainable alternative to road transport. Additional capacity is required to allow for the growth in freight to happen without inhibiting passenger demand.
- 4.9 By failing to increase capacity, there is a high risk that crowding becomes intolerable, suppressing growth and restricting the ability for local economies to expand and adapt to changing environments. In addition the increased demand for travel could result in increased congestion and crowding on the strategic road network leading to an increase in carbon emissions and a reduction in air quality.
- 4.10 Without the provision of HSR, the only way of providing the required increase in capacity would result in huge disruption and potentially lead to significant impacts on city region economies whilst the improvements are being undertaken. It is also likely that without investment in new lines there will be very few opportunities to introduce new direct links and rail freight risks being marginalised.

---

<sup>11</sup> Upgrading and electrifying the Midland Mainline (Arup 2011)