THE CASE FOR HIGH SPEED RAIL

SHEFFIELD
City Region

leeds city region
intelligence driving growth

This document presents **the case for investment in a High Speed Rail network including Yorkshire.** High Speed Rail to the Yorkshire region will deliver major benefits and has strong support from all political parties as well as business and other stakeholders. In addition this document makes **the case for improvements to the existing classic network including Yorkshire.**

INTRODUCTION AND SUMMARY

The Leeds and Sheffield City Regions recently commissioned studies to examine the potential benefits of High Speed Rail serving the city regions and identify complementary options to improve existing rail services. The key conclusions are:

- High Speed Rail should be developed as a project that delivers national economic transformation, helping improve the connectivity with the key economic zone of London. Additionally, it could strengthen links between city regions in the north to create a stronger non-London economic zone to help develop a more diverse and better distributed UK economy.
- High Speed Rail to Yorkshire could be developed in a way that also brings wider benefits to the East Midlands and North East.
- There is a positive and strong economic case for a High Speed Rail link. The Leeds and Sheffield city regions have a combined population of 4.4 million and around 2m jobs. A new High Speed Line between London and Scotland via Yorkshire, and also serving the East Midlands and the North East, would deliver standard transport benefits of around £29bn and have a positive Benefit to Cost Ratio of 2.5. Furthermore, such enhanced connectivity could deliver additional productivity gains of at least £1.5 billion (within a sensitivity range of £1.3bn to £3.1bn depending upon assumptions and options) to the Leeds and Sheffield city regions from London over a 60 year period.
- HS2 should also examine linking the new High Speed Line to the Midland Main Line.
- High Speed Rail should be considered as part of a coherent, longer term, strategy for the development of the rail network – the development of high speed lines and the upgrade of existing rail routes are not mutually exclusive options. It will be important to secure upgrades to address capacity constraints in the short to medium term.
- Our analysis suggests that, in addition to substantial standard transport user benefits and a positive Benefit to Cost Ratio, enhancements to the East Coast Main Line could deliver significant productivity gains of £0.6-0.9bn, benefitting the Leeds and Sheffield City Regions, including Doncaster and York. An upgraded Midland Main Line could deliver almost £0.35-0.54 billion in productivity gains, mainly for the Sheffield City Region, with electrification of the line potentially delivered at no net cost to the rail industry over a 60 year period.
- There is also a strong economic case for upgrades to the main TransPennine routes, either as a HSR alignment or as improvements to existing routes.
- Alongside options to improve long distance travel routes, urban rail lines serving the main centres should also be improved to enhance capacity and connectivity. A package of measures, including faster, more frequent trains and electrification are potential solutions to achieve this. Good connectivity across the city regions to the main nodes for fast national inter-urban or High Speed Rail is vital.
- Potential routes for High Speed 2 (HS2) should be developed in such a way to consider a number of options, including a central route between London and Yorkshire parallel to the M1, whilst a more easterly alignment (via the Cambridge-Peterborough area) should also be assessed.

WHAT IS HIGH SPEED RAIL?

High Speed Rail refers to passenger trains that operate at speeds up to 400km/h, mainly on dedicated alignments, whereas the maximum speed on other UK routes is just 200km/h. The first UK High Speed Rail corridor (HS1) was opened on time and on budget in 2007, transforming journey times between London and Paris / Brussels. With intermediate stations at Stratford and Ebbsfleet, HS1 is facilitating the regeneration of the Thames Gateway and East London.

The outcomes of HS1 are comparable to many European examples, with significantly reduced journey times between the major cities supporting economic development. In conjunction with a complementary land use policy, investment in High Speed Rail has stimulated employment growth, and has supported comprehensive programmes of regeneration.

THE IMPORTANCE OF INVESTMENT IN RAIL

Transport connectivity is one of the factors critical to boosting economic performance, particularly as Northern Way research illustrates there is a £30 billion productivity gap between the north of England and other regions. This disparity has continued in spite of the substantial economic growth achieved in Yorkshire and the North East during the previous decade, prior to the recession. However, poor transport links, both within the city regions and externally to other destinations, cause slow journey times and a lack of direct journey opportunities, creating capacity and congestion problems, reducing the competitiveness of the North.

Links to the main national hub of London and international gateways such as Heathrow are vital, particularly for knowledge based sectors that increasingly trade internationally. Yorkshire and the Humber, the East Midlands and parts of the North East are at a particular disadvantage as they do not have direct flights to Heathrow. These restrict opportunities for commuting and business travel.

The constraints affecting transport connectivity have impaired the ability of the city regions to fulfil their economic potential. The under-skilled workforce, poor quality housing and barriers to investment also contribute to these problems. Leeds and Sheffield City Regions have been successful in developing knowledge-based sectors and services, with the highest number of employees in financial and business services outside London in the UK located in Leeds. Sheffield has achieved a higher rate of employment growth compared with Manchester or Birmingham in the last five years.

Research suggests that greater collaboration between the major economies in the north of England could generate agglomeration benefits. This could generate supplementary benefits that have already been realised in the south east. High Speed Rail should be developed as a project to deliver national economic transformation, helping improve the connectivity of the north of England with the key economic zone of London by bringing businesses within an easy days travel time of London.

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ONGOING WORK

In early 2009, the Government established High Speed 2 (HS2), a company responsible for examining route options for High Speed Rail corridors. To supplement their own analysis, UK Regions have been invited to submit evidence. Several stakeholders have published their own research, including:

- **Greengauge21**
- **Network Rail**
- **2M Group**
- **Northern Way**
- **High Speed Rail UK**

Leeds and Sheffield City Regions have also undertaken research to examine the potential productivity benefits that could be generated by a new High Speed Rail line. This was commissioned by Metro and SYPTE and carried out by Arup and Volterra. This work has been presented to HS2 and has been welcomed as a strong contribution to the business case.

HS2 will review these studies in conjunction with its own analysis, and are expected to announce their emerging findings by the end of 2009.

ROLE OF HIGH SPEED RAIL TO TRANSFORM CONNECTIVITY

In the UK, network capacity constraints are increasingly affecting the principal rail routes to / from London. If extra capacity is required to support forecast passenger growth, new alignments could be constructed to allow high speed operation. This would significantly reduce journey times between London and other major centres.

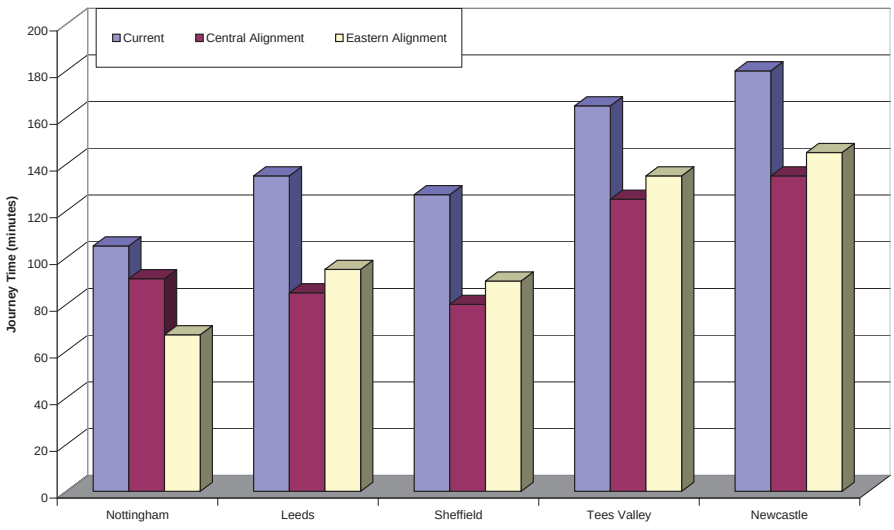
Transformational Journey Times

The introduction of High Speed Rail will enable trains to operate at up to 400km/h, compared with the current maximum of 200km/h. In addition to a north – south route between London and Scotland via the West Midlands and the North West, two indicative alignments have emerged for a north – south route via Yorkshire:

- Central: a route parallel to the M1 / A1 corridor from London via the East Midlands, Yorkshire, and the North East to Scotland; and
- Eastern: a route serving Peterborough, East Midlands, Yorkshire, the North East and Scotland.

Figure 1 below illustrates the potential changes in journey times to London. The high speed central alignment generally offers slightly faster journey times compared with the eastern route (except Nottingham). High Speed Rail could reduce journey times by 20 to 30 minutes from London to Leeds and 40 to 45 minutes for Sheffield compared with current timings, depending on the alignment chosen.

Figure 1: Comparison of Journey Times to London



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Indicative Costs

The affordability of High Speed Rail is a key challenge, particularly in a fiscally constrained funding scenario. This is a UK specific challenge, since the capital costs per route kilometre are significantly higher than continental schemes, in part due to higher land costs. Typical costs per kilometre for continental schemes are about £20-25 million. The average costs for HS1 are about £50m/km.

The indicative costs estimated by Greengauge21 suggest the average cost per kilometre of the new alignments is about £45m/km, similar to HS1. This indicates affordability will be a significant challenge for High Speed Rail.

Indicative Transport Benefits

A new high speed line from London to Scotland serving the Leeds and Sheffield City Regions would deliver substantial standard transport benefits of around £29bn and would have a positive Benefit to Cost Ratio of 2.5.

Furthermore, such enhanced connectivity could deliver additional productivity gains of £1.5 billion (within a sensitivity range of £1.3bn to £3.1bn depending upon assumptions and options) to the two city regions and London (not including the productivity benefits that may be generated by other regions). This estimate is based upon using existing methods for assessing Wider Economic Benefits, which are best suited to commuter rail routes and may not capture all of the transformational benefits of long-distance high speed routes.
The productivity benefits would reflect the competitive advantages for businesses, as a result of the closer proximity.

Network Accessibility

The implication of improved accessibility to the High Speed Rail network at several locations is a key trade-off. The need to serve numerous stations will improve accessibility, but headline journey times will be increased. It is expected 1-2 stops per region could represent a balance between journey times and convenient access. This reinforces the importance of complementary improvements to sub-regional rail connections offering seamless interchange.

Next Steps

From the evidence presented, it is clear there is a strong case for a High Speed Rail link connecting London and Scotland via the East Midlands, Yorkshire and the North East. The scale of capital costs presented earlier will inevitably create funding challenges, so stakeholders will need to lobby very strongly to make the case for High Speed Rail serving these regions, and ensure a consistent set of messages are disseminated to key decision makers.

INVESTMENT IN "CLASSIC" RAIL

The delivery of HS1 took about 15-20 years, so the construction of further High Speed Rail corridors in the UK will form part of a longer term strategy. Investment in the existing routes is vital to deliver short to medium term improvements. The potential measures are described below.

East Coast Main Line

In the short to medium term, there is scope to enhance existing services. Such measures, in comparison with High Speed Rail, could potentially be delivered at a lower cost, over a shorter timescale, but producing smaller benefits. For example, an investment package comprising timetable changes, selected infrastructure schemes and new rolling stock could reduce journey times to London, via the East Coast Main Line, from Yorkshire and the North East by around 15 minutes. This package has been identified in Network Rail's Strategic Business Plan and the High Level Output Statement; but stakeholders will still need to lobby to ensure the timely delivery of these measures.

Midland Main Line

A recent Network Rail study demonstrated the electrification of the Midland Main Line from Bedford to Nottingham and Sheffield offers a very strong business case, with a positive financial outcome. The Government announcement to prioritise the schemes for the Great Western Main Line and Liverpool to Manchester is a disappointing outcome for the East Midlands and South Yorkshire. Stakeholders need to continue lobbying DfT to ensure the Midland Main Line is included in the next phase of electrification. Speeds between Sheffield and London are also slower than other intercity routes, so stakeholders need to lobby for measures to raise line speeds, helping to cut journey times and improve connectivity.

TransPennine

A package of interventions to improve TransPennine connectivity could be implemented to reduce journey times and increase capacities. These measures would be linked to the Manchester Hub proposals and could be implemented alongside other interventions such as replacement of rolling stock, electrification and removal of capacity bottlenecks on the network.

Local Routes

There is a need to improve rail connectivity to major hubs. This could be delivered as part of a package of measures to deliver better service quality, additional capacity and faster journey times. In particular, electrification would reduce journey times, cut costs and provide greater energy security given rising fuel costs and also create strategic diversionary routes for long distance trains.

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