



# HS2 : High Speed Trains, Slow Speed Brains

What the Government and HS2 Ltd were told – but failed to understand

by Colin Elliff *BSc CEng MICE*



**HS2**

A horizontal band showing a blurred high-speed train in motion, with streaks of red, orange, and white against a grey background.

**£21**

A horizontal band showing a blurred high-speed train in motion, with streaks of blue, green, and yellow against a grey background.

**Billion**

A horizontal band showing a blurred high-speed train at a station platform, with streaks of yellow and red against a dark background.

**Wasted**

A horizontal band showing a blurred high-speed train in motion, with streaks of yellow and red against a dark background.

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## HS2 – High Speed Trains, Slow Speed Brains

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Issue	Date	Purpose
1	20/05/2017	Draft for comment
2	23/05/2017	Report expanded to include HSUK submission to Heywood Review
3	25/11/2017	Report expanded to include HSUK letter to Andrew Jones MP
4	24/06/2018	Report expanded to include HSUK petitions to HS2 Select Committees, letter to Chris Grayling MP & response to TfN Strategic Transport Plan

## **Executive Summary**

A process of public consultation is an integral element in the development of any public infrastructure project. It is vital not only to maintain public confidence, but also to ensure that the project remains true to its fundamental objective, of serving the public good.

Over the past 6 years, High Speed UK (HSUK) has contributed fully to the public consultations upon the HS2 project. In all responses, HSUK has identified multiple failures in every aspect of the design and development of HS2, which will leave the project completely unable to meet its core objective, of delivering “hugely enhanced capacity and connectivity” between the UK’s major conurbations.

The purpose of this document is to catalogue HSUK’s consultation responses, and to set out an ‘audit trail’ of evidence that has been submitted either to HS2 Ltd, or to other arms of Government. This evidence – summarised in Sections 5 – 18 of this report, and reproduced in full text in the Appendices – not only comprehensively identified all of HS2’s many failings through every stage of its development, it also made the case for a UK high speed network fully integrated with the existing railway system, with Heathrow and other major airports, and with HS1.

Given the gravity of the concerns expressed by HSUK, it would be reasonable to expect at least one of the following outcomes:

- A formal response from HS2 Ltd, explaining how and why each concern was misplaced.
- Appropriate changes to the HS2 proposals to address the concerns raised.
- All necessary technical engagement between HS2 Ltd and HSUK.
- In the event of failure to resolve a point of technical disagreement, appropriate information to be provided to MPs to allow them make their own informed decision.

However, none of these outcomes has happened. HS2 Ltd (along with all other official bodies charged with the development of an efficient transport system for the people of the United Kingdom) has quite simply ignored every HSUK input to the consultation process.

HS2 Ltd’s failure to engage in any way with the critical and well-documented concerns raised by HSUK (and by others) can only be interpreted as a total failure of process. However, this failure of HS2 Ltd’s consultation process is only one component of a much wider failure of due process that afflicts the entire development of HS2. These multiple failures are documented in Section 4 of this report, and are summarised in the following paragraphs.

### **1) Mismatch between HS2 Remit and HS2 Objectives**

The HS2 remit fails to specify that HS2 should deliver its objective of a network delivering “hugely enhanced capacity and connectivity” between the UK’s major conurbations.

## **2) Flawed Route Selection Process**

The HS2 remit effectively specifies its destructive route through the Chilterns AONB, and prevents proper consideration of less damaging routes along the M1 corridor far more able to deliver “hugely enhanced capacity and connectivity”.

## **3) Consultation Responses Ignored**

HS2 Ltd has failed to engage in any way with the critical concerns raised by HSUK. These concerns are fully documented in this report.

## **4) Absence of Independent Technical Review**

There has been no independent technical review to check whether HS2’s developing design could meet its capacity and connectivity objectives, and whether HS2 was technically the best proposal to deliver these objectives. In the absence of such review, HS2 Ltd has effectively been left to ‘mark its own homework’.

## **5) Failure to Undertake Network Performance Study**

HS2 Ltd has never undertaken the necessary study to demonstrate how the entire UK rail network will perform, with HS2 in place. The calamitous consequences of HS2 Ltd’s apparent neglect of any consideration of network performance are set out in *HS2 : High Speed to Almost Nowhere*. This study is effectively the network performance study that HS2 Ltd never troubled to undertake.

## **6) Hybrid Bill Process compromised by HS2 Ltd Design Failures**

All the failures outlined in the preceding paragraphs mean that MPs and Lords in Parliament have not been presented with the optimised and efficient railway proposal that they might reasonably expect when they voted to approve the HS2 Bill. This totally compromises the decision of Parliament, and it also compromises the work of the HS2 Select Committees, and the decision to restrict the right of petitioning to those directly affected.

## **7) Unfair Restriction of Right to Petition against HS2 Bill**

The restriction of the right to petition against the HS2 Bill to those directly affected by HS2 fails to recognise the fact that communities across the UK will be adversely affected by HS2 Ltd’s design failures, in particular its failure to design an integrated and optimised national network and thus meet its objective of “hugely enhanced capacity and connectivity”.

## **8) Cross-Party Consensus on HS2/Development of Single Option**

With all major political parties supporting the principle of HS2, no party has yet applied the necessary scrutiny to determine whether the detail of HS2 – which has been developed as a single option, with no alternatives presented either to politicians or the general public – will meet the objective of “hugely enhanced capacity and connectivity” on which its political support is based.

## **9) Ineffective Internal Civil Service Review**

The 2016 Heywood Review (undertaken by Sir Jeremy Heywood, Cabinet Secretary and Head of the Civil Service) into HS2's rising costs failed to engage with any of the concerns raised by HSUK as to the underlying issues of HS2's network inefficiency and inappropriate route selection. There is no indication that the Heywood Review has resulted in any worthwhile savings being generated.

## **10) Inactivity of Transport Select Committee**

The cross-party consensus on HS2 may well explain the apparent reluctance of the Transport Select Committee to investigate whether HS2 actually works efficiently as a railway network to deliver its capacity and connectivity objectives.

## **11) Failure of Select Committees to consider Public Policy Issues**

No Select Committee, and indeed no other Parliamentary body, has undertaken the necessary 'public policy' overview, to check whether the development of HS2 might be in conflict with other aspects of public policy, for instance:

- attainment of transport CO<sub>2</sub> reductions in compliance with the 80% reduction target of the 2008 Climate Change Act, or
- redressing of the North-South Divide through the improvement of connectivity and capacity between the UK's major regional conurbations, or
- protecting communities and green spaces (especially Areas of Outstanding Natural Beauty) from inappropriate development, or
- achieving value for money for the UK taxpayer, or
- ensuring that most UK taxpayers can benefit from the proposed investment.

This report offers neither explanation of why these multiple failures have happened, nor speculation as to who might be ultimately found to be responsible. However, there can be certainty on many matters; these failures have happened, they have been notified to HS2 Ltd in a series of responses to official consultations and they represent a huge and unprecedented failure of technical governance of a public project. Unless remedied, they will carry huge multi-billion pound costs, and consequences that go far beyond cost – for instance:

- failure to bring about step-change CO<sub>2</sub> reductions in line with the requirements of the 2008 Climate Change Act;
- failure to benefit regional economies and redress the North-South divide; and
- failure to grasp the once-in-two-centuries opportunity to transform the UK rail network to build a better-connected Britain.

Urgent action must be taken to address all the problems highlighted in this report, and to put the UK high speed rail project back on track so that it does deliver its fundamental objective of "hugely enhanced capacity and connectivity" between the UK's major conurbations.

HS2's failures also underline the crucial importance of adhering to due process. Whilst due process might appear at times to be a trivial and bureaucratic consideration, the failures identified in this report and its companion volumes *HS2 – High Speed to Failure* and *HS2 – High Speed to Almost Nowhere* demonstrate its crucial importance. Due process is vital to ensure both the proper and responsible investment of over £55 billion of public money, and the optimised development of the UK railway network. Without such due process, a technocratic elite within HS2 Ltd has been allowed to subvert the HS2's proper objective of "hugely enhanced capacity and connectivity" into an utterly futile mission, to build the fastest railway in the world.

# 1 Introduction

The HS2 project has been surrounded by controversy almost from its launch in January 2009. Its costs were first measured in double-digit billions of pounds, but are now threatening to rise into triple-digits; and the environmental impacts of building HS2's ultra-straight routes through sensitive undulating landscapes are clear.

The only possible justification for HS2's costs and environmental impacts can be the major gains that HS2 is predicted to deliver in rail network capacity and connectivity, and the transformational benefits that should flow as this increased capacity and connectivity revitalises regional economies.

This is the promise on which HS2 has been sold to public and politicians alike, and it is encapsulated in evidence given to the House of Commons HS2 Select Committee on 30<sup>th</sup> November 2015 by former HS2 Ltd Technical Director Andrew McNaughton:

**“The aim of the HS2 project is to deliver hugely enhanced capacity and connectivity between our major conurbations”**

This is a noble objective, but there is an inconvenient truth that HS2 Ltd, the Government and the wider transport establishment have so far failed to confront. HS2 has been designed without any of the necessary attributes – of correct routeing strategy, appropriate speed and full integration with the existing network – to achieve the promised enhancements in capacity and connectivity.

This truth is conclusively and exhaustively demonstrated in both *HS2 : High Speed to Failure* and *HS2 : High Speed to Almost Nowhere*. These documents make clear the extent of the misconceptions, the misplaced priorities and the unstructured thinking that are the root causes of HS2's design failure.

With no knowledge of the internal processes within HS2 Ltd, it is not possible to explain exactly how these mistakes have happened. However, the vast superiority of High Speed UK, designed to diametrically opposite principles, makes it clear that something very serious must have gone wrong in the development of HS2, and that the processes of check and review that should be integral to any major public project must have failed.

The public consultations that have accompanied the development of HS2 form a key element in this 'due process' of check and review. Whilst these consultations are primarily intended to allow the public and interested external organisations to express their views and to highlight concerns, they have a deeper purpose, to ensure that a public project remains true to its fundamental goal of serving the public interest.

Whatever the precise nature of the concern, there is a clear requirement that the consultation process should be open and accountable. In the case of the HS2 project, HS2 Ltd should either be able to provide a robust justification for whatever aspect of the HS2 design is

questioned, or appropriate changes must be made. This should apply equally for local concerns – which can usually be addressed through local adjustments to the design – as it should for the more far-reaching concerns expressed by HSUK, identifying fundamental flaws in the HS2 project’s basic design and rationale.

High Speed UK has fully engaged with the HS2 consultations, with detailed responses that have explained exactly how HS2 Ltd’s flawed routeing strategy, its ‘need for speed’ and its failure to integrate with the existing railway system will have a huge negative effect on every aspect of HS2’s performance, and on the performance of the wider UK rail network and transport system. These are all critical concerns, and it would be reasonable to expect at least one of the following outcomes:

- A formal response from HS2 Ltd, explaining how and why each concern was misplaced.
- Appropriate changes to the HS2 proposals to address the concerns raised.
- All necessary technical engagement between HS2 Ltd and HSUK.
- In the event of failure to resolve a point of technical disagreement, appropriate information to be provided to MPs to allow them make their own informed decision.

However, none of these outcomes has happened. HS2 Ltd’s failure to engage in any way with the critical concerns raised by HSUK can be interpreted as a fatal failure of the due process necessary to ensure that the huge multi-billion public investment in HS2 will deliver optimum results to best serve the public interest. Moreover, with no independent technical review built into the HS2 process, there is no other formal opportunity to alert the Government to the massive technical and procedural failings of the current HS2 proposals, and to allied failings in the wider strategic planning of transport in the UK.

The basic aim of this document is to establish an ‘audit trail’ of the evidence that has been submitted to the Government, either via HS2 Ltd or other bodies, to establish:

- the precise nature of the evidence that has been presented;
- the timing of this evidence, and therefore the opportunity that HS2 Ltd and the Government had to remedy any particular mistake or misconception.

This document examines the development of the HS2 project through the perspective of the engagement that High Speed UK (and its predecessor organisation High Speed North) has endeavoured to conduct with a variety of arms of Government, in particular HS2 Ltd. This engagement commenced with a face-to-face meeting with senior figures at HS2 Ltd in May 2009, and it continued with detailed responses to a series of public consultations and Parliamentary inquiries starting in 2011. The full text of all HSUK consultation responses is presented in the Appendices to this document.

Throughout this engagement, there has been a consistent theme to the HSUK input, highlighting the fundamental flaws of the HS2 design. These design flaws – in particular the

selection of intrusive and damaging rural routes, the adoption of extreme speed and the failure to integrate HS2 with the existing rail system, as previously noted – will prevent HS2 from ever delivering the step change increases in capacity and connectivity necessary for the economic benefits that have been promised.

Instead, a radically different strategy of full integration, as exemplified by the alternative High Speed UK scheme, is essential if the Government's UK high speed rail project is to make good on its promises.

The HSUK input has also identified the huge lost opportunity that the HS2 project represents. As the primary intervention in UK surface transport, it would be reasonable to expect that the HS2 project should be well coordinated with local public transport, with other interregional transport initiatives and with international aviation. This is plainly necessary to create the fully integrated transport network that is the core aspiration of all Governments' transport policy. However, it is clear from all the outputs of HS2 Ltd, that this project integration is not happening, or is at best hugely suboptimal.

The most glaring failure of integration lies in the almost complete lack of coordination between the major national transport projects currently in progress. HS2 might be the largest, in terms of projected expenditure, but it is only one project among several that must be properly coordinated if the massive proposed public investment in all these projects is to achieve worthwhile returns.

For HS2, the critical interactions are with HS3/Northern Powerhouse Rail, with emerging proposals for the 'Midlands Engine', and with developments in international aviation as represented by current initiatives to expand Heathrow Airport. Without either the specification or even the ambition to achieve the necessary coordination, HS2 can never bring about the step-change connectivity and capacity improvements for the UK regions, that constitute its core *raison d'être*.

HS2 Ltd's failure to design the railway network that the nation needs would in any event constitute probably the greatest failure of technical governance in modern times. But to sustain this failure over an 8-year period, in the face of the sustained and consistent advice to the contrary that is contained in every HSUK consultation response included in this document, elevates HS2 Ltd's failure to a level that is truly unprecedented.

With no inside information on the inner workings of HS2 Ltd, it would not be proper to accuse individuals of specific misdeeds or failures. What is certain, however, is that the failures have happened, and that HS2 Ltd and the Government have been repeatedly alerted to these failures. The most generous interpretation of these incontrovertible facts is that those reading the many HSUK consultation responses were unable to understand their critical import, and in consequence failed to take the necessary corrective actions. For this reason, we have chosen to entitle this report *HS2 : High Speed Trains, Slow Speed Brains*.

## **2 Rationale of Study**

### **2.1 An Audit Trail on the HS2 Consultation Process**

The basic aim of this document is to set out an 'audit trail' of consultation responses and other submissions to the Government, either via HS2 Ltd or other bodies, to establish:

- the precise nature of the evidence that has been presented;
- the timing of this evidence, and therefore the opportunity that HS2 Ltd and the Government had to remedy any particular mistake or misconception in the development of the HS2 project.

This document examines the development of the HS2 project through the perspective of the engagement that High Speed UK (and its predecessor organisation High Speed North) has endeavoured to conduct with a variety of arms of Government, in particular HS2 Ltd. This engagement commenced with a face-to-face meeting with senior figures at HS2 Ltd in May 2009, and it continued (in a largely one-sided fashion) with detailed responses to a series of public consultations and Parliamentary inquiries starting in 2011:

- May 2009 : 2M Group meeting with HS2 Ltd (Section 6, Appendix D);
- July 2011 : High Speed North response to HS2 Phase 1 consultation (Section 7, Appendix E);
- July 2013 : High Speed North response to HS2 Phase 1 Draft Environmental Statement consultation (Section 8, Appendix F);
- July 2013 : High Speed North response to Airports Commission's Call for Submissions (Section 9, Appendix G);
- January 2014 : High Speed UK response to HS2 Phase 2 consultation (Section 10, Appendix H);
- May 2014 : High Speed UK petition to House of Commons Select Committee considering HS2 Phase 1 Hybrid Bill (Section 11, Appendix I);
- September 2014 : High Speed UK evidence to House of Lords Economic Affairs Committee Inquiry into the Economics of HS2 (Section 12, Appendices J, K & L);
- February 2016 : High Speed UK evidence to House of Commons Public Administration & Constitutional Affairs Committee (PACAC) Inquiry into HS2 Ltd Community Engagement (Section 13, Appendix M);
- April 2016 : High Speed UK petition to House of Lords Select Committee considering HS2 Phase 1 Hybrid Bill (Section 14, Appendix N);
- July 2016 : High Speed UK letter to Sir Jeremy Heywood (Cabinet Secretary and Head of Civil Service) to inform his investigation into HS2's rising costs (Section 15, Appendix O);
- February 2017 : High Speed UK letter to Andrew Jones MP, Junior Transport Minister responsible for HS2 (Section 16, Appendix P);
- February 2018 : High Speed UK letter to Chris Grayling MP, Secretary of State for Transport (Section 17, Appendix Q);

- April 2018 : High Speed UK response to consultation on Transport for the North's *Strategic Transport Plan* (Section 18, Appendix R);

The full text of all High Speed North/High Speed UK consultation responses and other submissions to official transport bodies is presented in the Appendices to this document, as noted above.

## **2.2 An Examination of the HS2 Process**

The compilation of this report has also required a wider review of the HS2 process including the hybrid bill procedure adopted in the development of HS2's legislative powers. An overview of the HS2 process and the findings of this review are set out in Sections 3 and 4.

## **2.3 Changes to HS2 and High Speed UK schemes**

Over the 6 year period since the first HS2 consultation in 2011, both the HS2 project and the alternative High Speed UK/High Speed North schemes have changed substantially, and the responses must be read in the light of the schemes (both HS2 and HSUK<sup>1</sup>) as they existed at the time.

The principal changes are noted on Figures 2.1 and 2.3, and in Sections 2.5 and 2.8. These changes are also discussed in the detailed commentaries in Sections 6-18 of this study.

## **2.4 HS2 : A Brief Overview**

The HS2 proposals on which the Government has undertaken official consultations comprise the following elements:

1. A new line from Euston Station in London via Old Oak Common to the West Coast Main Line (WCML) at Handsacre near Lichfield (Phase 1);
2. A spur to Curzon Street station in central Birmingham (Phase 1);
3. A continuation of the HS2 main line from Lichfield to Crewe (Phase 2a);
4. A continuation of the HS2 main line from Crewe to the West Coast Main Line near Wigan (Phase 2b);
5. A spur to Manchester Piccadilly station (Phase 2b);
6. A new line from Birmingham via Toton to the East Coast Main Line (ECML) near York (Phase 2b);
7. A spur to the Midland Main Line (MML) to access Sheffield (Phase 2b);
8. A spur to Leeds (Phase 2b);

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<sup>1</sup> For simplicity of narrative, the abbreviation 'HSUK' is generally used in the following text to describe either the High Speed North proposals as they existed in July 2011, the High Speed UK proposals as they exist today (2017), or High Speed North/High Speed UK in a corporate sense.

9. New stations at Euston (London), Old Oak Common, Birmingham Interchange, Curzon Street (Birmingham), Crewe, Manchester Airport, Manchester Piccadilly, Toton (aka East Midlands Interchange), Leeds;
10. Connections to the existing network at Handsacre (WCML), Crewe (WCML), Bamfurlong (WCML), Alfreton (for Sheffield), Thurnscoe (for Sheffield) and Church Fenton (for York and ECML).

The items listed above – all illustrated in Figure 2.1 – collectively form the HS2 'Y'. Where practicable, HS2's new lines have been designed to operate at 360 km/h (225 MPH), with allowance for a future maximum speed of 400 km/h (250 MPH). On either the 360 km/h or 400 km/h criterion, HS2 would be the fastest railway in the world.

As yet, no detailed proposals have emerged for the works necessary to improve links between local communities and HS2's stations which are typically poorly integrated with local rail and other public transport networks.

## 2.5 HS2 : Major Changes since 2010 Project Launch

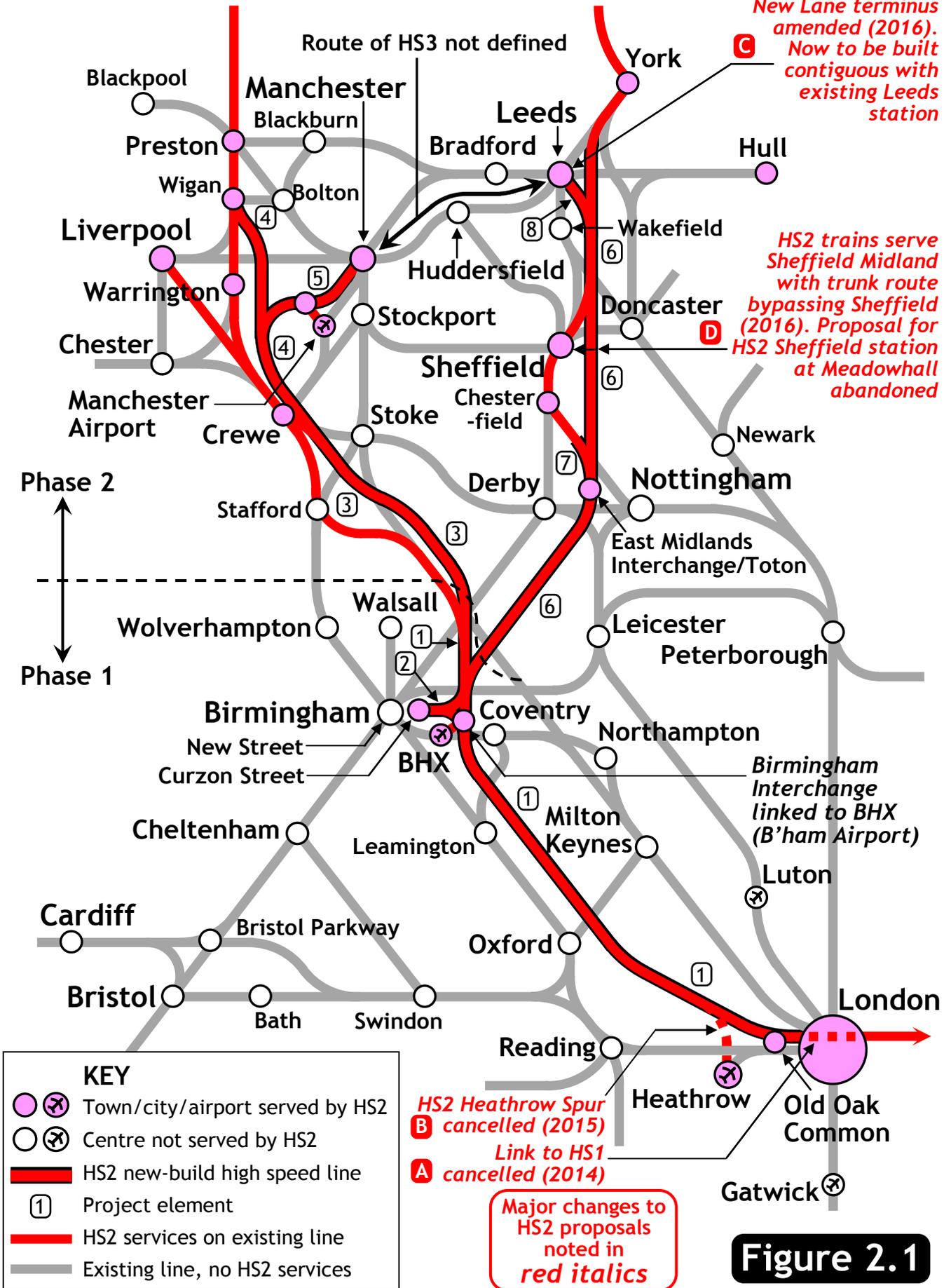
The HS2 project has changed substantially since the original launch of Phase 1 proposals in 2010, and of Phase 2 proposals in 2012. The principal changes are noted on Figure 2.1, and are summarised below:

- A. **March 2014:** HS2-HS1 link cancelled.
- B. **March 2015:** HS2 Heathrow spur cancelled.
- C. **February 2016:** HS2 terminus station in Leeds, originally proposed to be located at New Lane, moved circa 400m to north to be contiguous with existing Leeds City station.
- D. **July 2016:** HS2 station at Sheffield Meadowhall and HS2 route through the South Yorkshire conurbation abandoned. New proposal put forward for spur to serve existing Sheffield Midland station and a new route skirting the South Yorkshire conurbation and crossing the Don Valley at Mexborough.

# HIGH SPEED 2

## ROUTES & CITIES SERVED

**Figure 2.1**



**Figure 2.1**

## **2.6 Consideration of HS3 / Northern Powerhouse Rail**

The Northern Powerhouse initiative was launched in June 2014 by then-Chancellor George Osborne to redress the most obvious flaw of the HS2 'Y' ie its lack of any transpennine link between Northern cities. The advent of the Northern Powerhouse – which arose due to sustained political pressure from Northern communities – has given rise to further outline schemes for new 'HS3' transpennine high speed lines. However, the HS3 concept, now generally rebranded as 'Northern Powerhouse Rail', has so far not matured into any definitive scheme, and to date no official consultations have been undertaken.

Consequently, the concept of HS3/Northern Powerhouse Rail is not directly relevant to this study, other than as an illustration of the inadequacies of the original HS2 scheme, and as an exemplar of the HSUK input into the official HS2 consultations.

## **2.7 High Speed UK : A Brief Overview**

High Speed UK (HSUK) has been designed to a radically alternative philosophy to that which has driven the development of HS2. Whereas HS2 has been remitted as a stand-alone high speed line, with no stated requirement to perform as a network, HSUK has been designed from the outset as a fully integrated national network with the aim of directly interconnecting all of the UK's many regional centres.

In terms of its historical development, HSUK predates HS2, having been launched into the public domain in the summer of 2008 as 'High Speed North'. At the time, High Speed North was supported by the 2M Group of London and South-East Councils opposed to Heathrow expansion, on account of its efficient performance as a UK-wide network of high speed rail lines able to offer radically reduced journey times. This would give High Speed North the potential to attract passengers away from the short-haul flights currently dominating the longer distance intercity travel market (especially routes from London to Edinburgh, Glasgow and Aberdeen) from and thereby reduce pressure to expand Heathrow.

As can be seen in Figure 2.2 below, the High Speed North network as proposed in 2008 bore a strong resemblance to the layout of new high speed lines configured in 'spine and spur' format at the core of current High Speed UK proposals (see Figures 2.3 and 2.4).

In 2013 High Speed North was relaunched as High Speed UK to reflect its national scope and ambition to create an enhanced intercity network extending across the entire nation.

In terms of geographic coverage, HSUK's proposed interventions of new lines, supplemented with upgrades and restorations of existing routes, are broadly equivalent to those of HS2, extending northwards from Greater London and Heathrow Airport to the West and East Midlands, and to Merseyside, Greater Manchester, South Yorkshire and West Yorkshire. New stations will be provided at Brent Cross, Sheffield Victoria, Manchester Piccadilly and Bradford Central.

HSUK's new routes have been designed to operate at a maximum speed of 360 km/h, with a generally much lower specification applied for upgraded routes. Route design has been undertaken at 1:25,000 scale, with all straights, transitions and curves defined, and with complementary vertical alignments also prepared. HSUK's designs allow detailed comparative costings to be drawn with the HS2 proposals and putative HS3 proposals (showing HSUK to cost £21 billion less on a like-for-like comparison) and they also allow the development of a 'demonstrator timetable' of the accelerated intercity services that could operate across the fully integrated HSUK network.



**Figure 2.2**

## HIGH SPEED NORTH (2008)

**Figure 2.2 : High Speed North (2008)**

The HSUK timetable demonstrates the following:

- the improved journey times that can be achieved across the network;
- the opportunity for new intercity and airport services;
- the capacity requirements for this new network;
- the feasibility and benefits of full integration between new lines and existing network.

HSUK's route extending northwards from Yorkshire to the North-East and to Scotland is already fully defined to the same standards (1:25,000 scale horizontal alignment and complementary vertical alignment) as the design for its more southerly routes (from London to the Midlands and the North) on which the HSUK timetable is based.

It is intended to extend the HSUK design to the enhancement of routes from London and the West Midlands to South Wales and the West Country, to create a truly national high speed network.

More detail of the HSUK proposals, including regional integration strategies, complementary freight strategy and detailed mapping setting out all proposed new build, upgrade and restoration interventions necessary to comprise a fully integrated national network, can be found on [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk)

## **2.8 HSUK : Major Changes since 2011 Consultation Response**

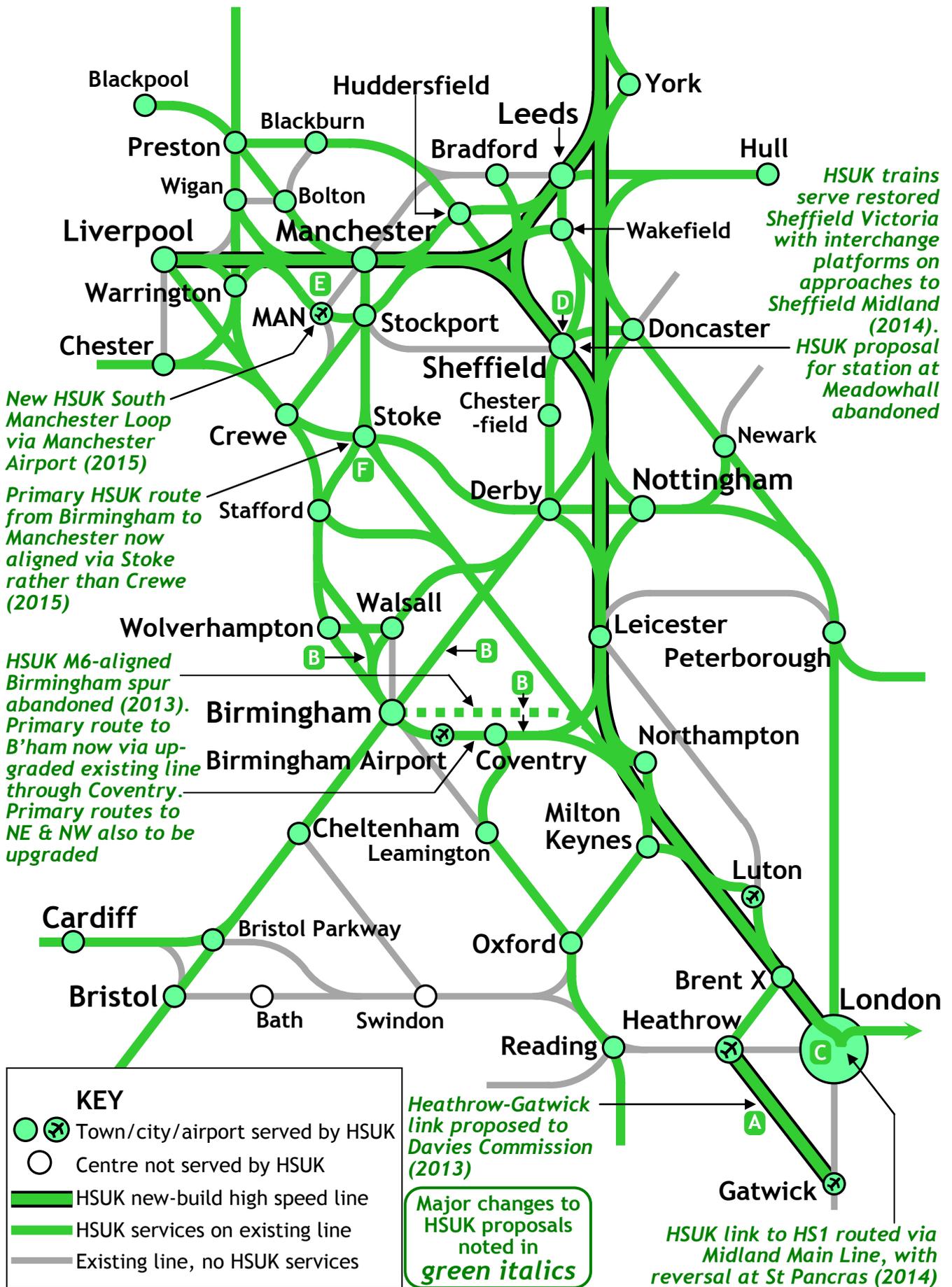
The HSUK scheme has changed substantially since 2011, when details were first submitted to the Government in the High Speed North response to official consultation on the HS2 Phase 1 proposals. The principal changes are noted on Figure 2.3, and are summarised below:

- July 2013:** Heathrow-Gatwick link introduced, in 2013 HSUK submission to Airports Commission (see Appendix G).
- 2013:** Dedicated HSUK spur to Birmingham following M6 deferred as primary means of accessing West Midlands. Instead existing Rugby-Coventry-Birmingham route to be 4-tracked. 4-tracking of Derby-Birmingham route and 'virtual 4-tracking' of Wolverhampton-Birmingham route (by means of new Soho-Tame Bridge link) also proposed as additional interventions to reduce platform congestion at Birmingham New Street, and thus avoid the need for a new central Birmingham station.
- 2014:** Dedicated tunnelled route linking HSUK to HS1 abandoned. Instead HSUK-HS1 link to be achieved along existing infrastructure, with HSUK continental services following Midland Main Line to St Pancras, and reversing there to continue along HS1.

- D. **2014:** Proposal for HSUK station at Sheffield Meadowhall, and dedicated high speed line routed via Meadowhall, abandoned in favour of new route via a more central station located on the site of the original Sheffield Victoria station. New interchange platforms on existing approaches to Sheffield Midland also proposed.
- E. **2015:** HSUK scheme for limited improvements to Manchester Airport rail access radically amended. Now Manchester Airport to be located on a through route comprising a 'South Manchester Loop' and also serving existing Stockport and Altrincham stations.
- F. **2015:** Major upgrades proposed around Stoke, including 4-tracking from Stone to Longport, to enable HSUK primary route (generally comprising existing main lines, upgraded as necessary) from Birmingham to Manchester to be routed via Stoke, to achieve Birmingham-Manchester journey time of under 1 hour, including intermediate stop at Stoke.

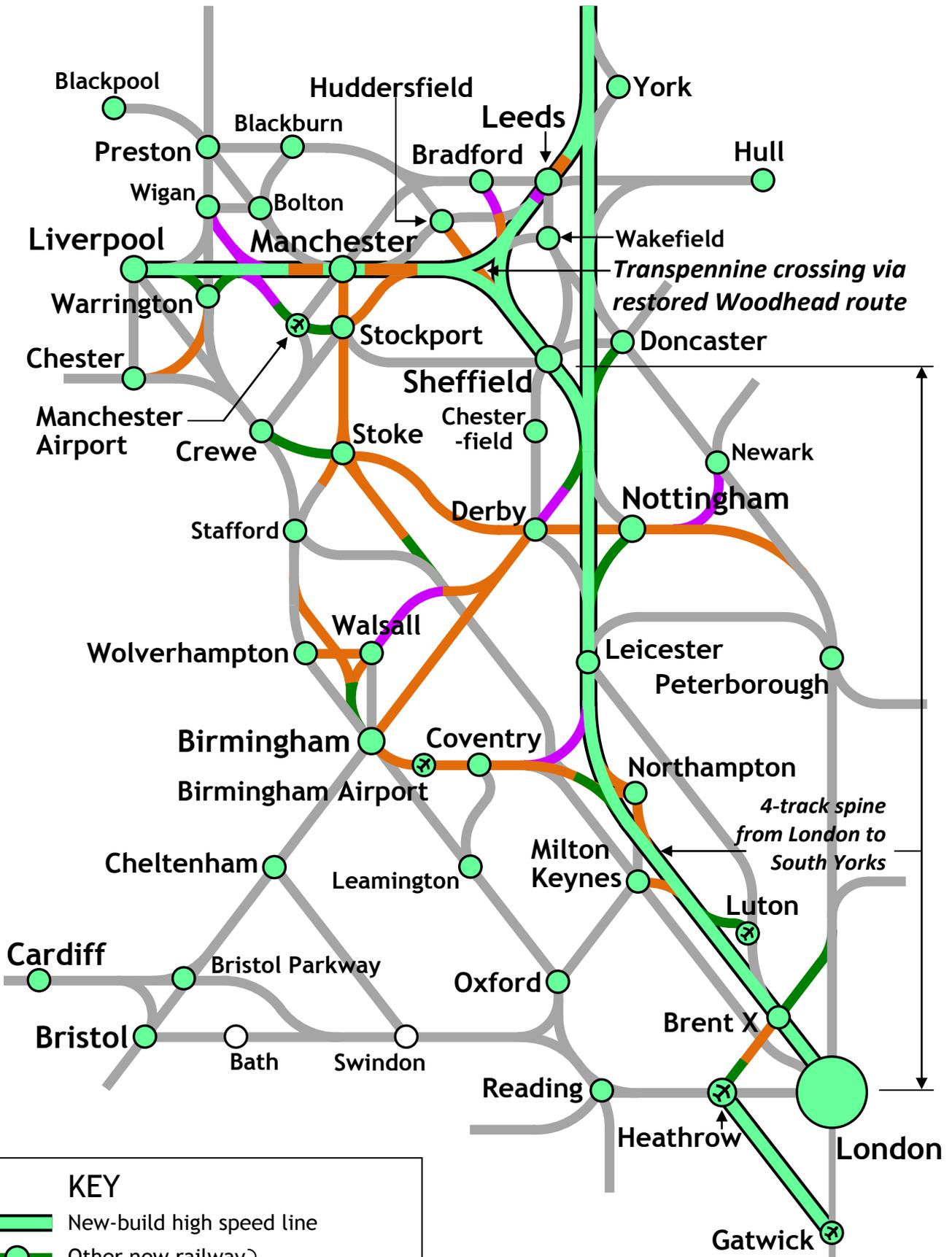
# HIGH SPEED UK ROUTES & CITIES SERVED

**Figure 2.3**



# HIGH SPEED UK PROPOSED INFRASTRUCTURE

**Figure 2.4**



**KEY**

- New-build high speed line
- Other new railway
- Upgraded route
- Restored route

} & city served by HSUK

**Figure 2.4**

## **3 Overview of the HS2 Process**

### **3.1 Genesis of HS2**

The HS2 project was launched in January 2009 by then-Secretary of State for Transport Lord Andrew Adonis. HS2 was announced as a new line from London to the West Midlands, with an ambition to extend to the major conurbations in the North of England, and ultimately to Scotland.

It is significant to note that the Parliamentary announcement of the HS2 project coincided with the formal announcement of the then-Government's intention to expand Heathrow Airport with a third runway and a sixth terminal. The expansion of the UK's primary aviation hub was already deeply controversial on account of both its major local environmental impacts and its wider implications for increased transport CO<sub>2</sub> emissions. But if undertaken in isolation, there was an additional danger that the expansion of Heathrow would have the effect of further stimulating the economy of London and the South-East, to the detriment of other UK regions.

The promise of new transport infrastructure that could improve links from the UK regions both to London and to Heathrow, and at the same time provide much-needed additional capacity for the UK rail network, was therefore highly attractive to politicians of all colours. This accounts for the broad political consensus between all major parties that has supported the HS2 project throughout its development.

### **3.2 Establishment of HS2 Ltd**

HS2 Ltd was established by the Government as a private company, limited by guarantee, with the purpose of developing the HS2 project and promoting legislation for its construction. Despite its 'private' status, necessary for the intended legislative strategy to pass a 'hybrid bill' to cover all aspects of its construction, HS2 Ltd is wholly owned by the Government, and, in terms of both its organisation, and ultimate responsibility for its activities, it can be regarded effectively as an 'extended arm' of Government.

Sir David Rowlands, a former Permanent Secretary at the Department for Transport, was appointed as Chairman of HS2 Ltd, and a remit for the HS2 project was swiftly established through correspondence with Transport Secretary Lord Adonis. The remit was published in the July 2009 HS2 Newsletter, and it is included in Appendix A.

### **3.3 Development of HS2 as a 'Single Option'**

Very early in the development of HS2, the decision was taken to develop a single option for consideration by public and politicians. The alternative, of consulting upon multiple route options was rejected, reportedly on account of the greater uncertainty and blight that would result.

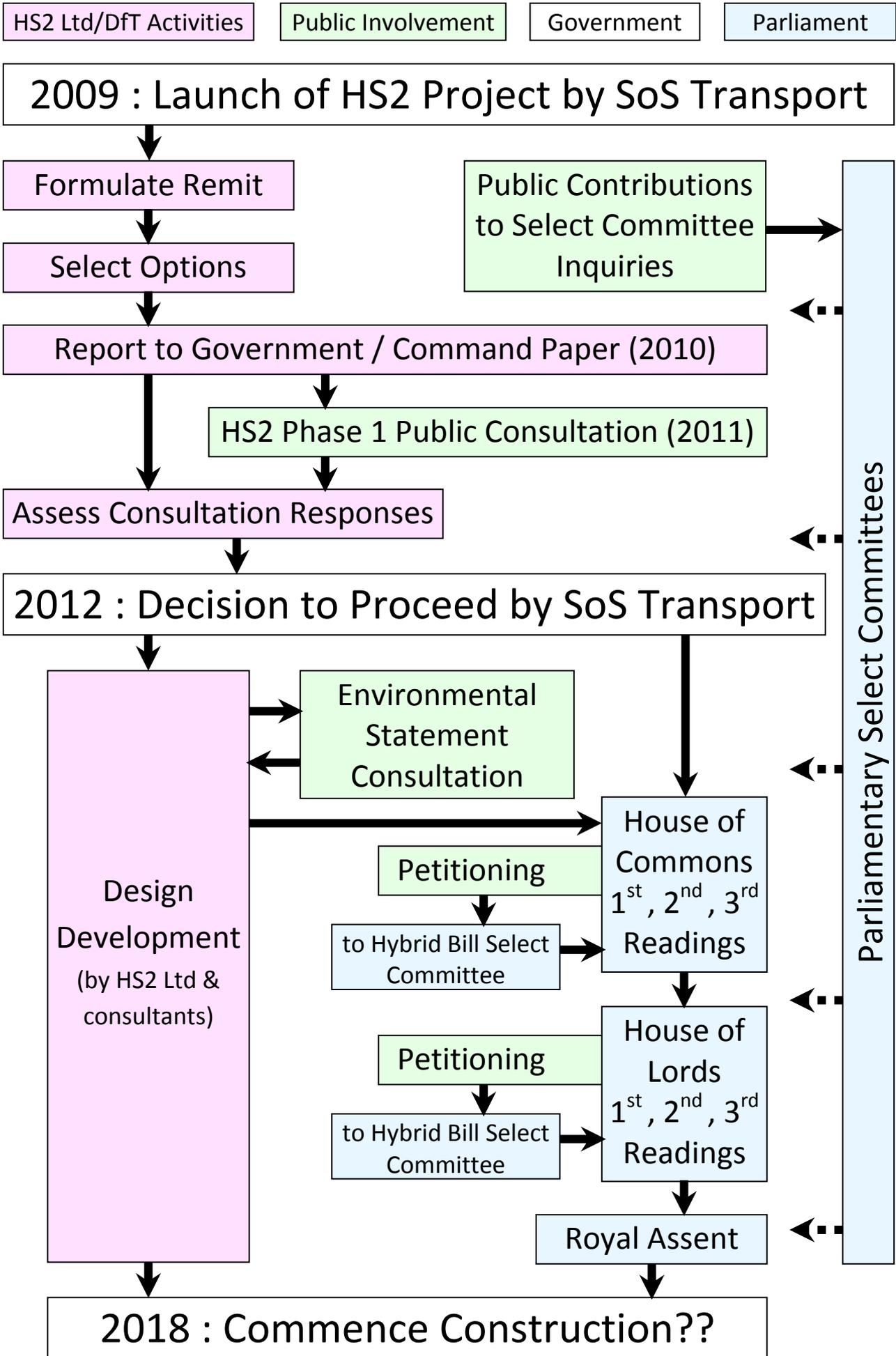


Figure 3.1 : Flow Chart describing Development of HS2 Phase 1

### **3.4 Public and Parliamentary Involvement in HS2 Process**

The HS2 project has developed through a structured process in which HS2 Ltd's option selection and design development activities have been complemented by cycles of public and parliamentary involvement. Public involvement has occurred principally through the consultation process, while parliamentary involvement has occurred both through the legislative process accompanying the passage of the HS2 Bill, and also through the scrutiny of several Select Committees.

The HS2 process is summarised in Figure 3.1. HS2 Ltd, public, parliamentary and governmental activities are all separately colour-coded.

### **3.5 Hybrid Bill Procedure**

The legislation necessary for the construction of HS2 has been developed as a 'hybrid bill'. This is the process, dating back to the 19<sup>th</sup> Century, that has historically been adopted for the construction of major railway works both by private railway companies and more recently by British Rail. It will give HS2 Ltd the necessary legal powers to acquire property by compulsory purchase, and also to construct the necessary physical works. Unlike most legislation which must be abandoned in the event of a change of Government, a hybrid bill can continue from one Parliament to the next.

In a hybrid bill, the passing of the legislation at the Second Reading in the House of Commons establishes the 'principle' of the Bill. In the case of Phase 1 of HS2, this principle has been narrowly defined as its route between defined station locations at Euston, Old Oak Common, Birmingham Interchange, Birmingham Curzon Street, and its junction with the West Coast Main Line near Lichfield.

There is a right of public petition to a Select Committee appointed to review a Hybrid Bill. However, this right is restricted to those who are deemed to have '*locus standi*' through being directly affected either by the physical presence of the new railway, or by the works necessary for its construction. This restriction has been strictly applied in the case of HS2, and as a result, those wishing to petition against HS2's wider environmental impacts, or its failure to serve West Midlands cities such as Coventry, or its ineffectiveness as a national railway network, have been denied any opportunity to make representation to the HS2 Select Committee.

### **3.6 HS2 Ltd Route Selection Process**

The process of route selection certainly has a crucial effect on the route itself, but it also has much wider implications, for instance:

- Which cities are served, and which cities are not served by HS2.
- Whether existing intercity services to bypassed cities will be reduced in frequency and speed.

- How the entire system will be configured, for instance as the HS2 'Y' or as the HSUK 'spine and spur'.
- Whether the overall system that is created will have the necessary connectivity and capacity to meet key performance requirements of regional economic benefit and reduced transport CO<sub>2</sub> emissions in line with 80% reduction target of 2008 Climate Change Act.

It is clearly vital that the route selection process is undertaken in an impartial and professional manner, with the fundamental objective of developing the national high speed network that is best able to achieve the HS2 project's fundamental aim of "hugely enhanced capacity and connectivity" between the UK's major conurbations.

### **3.7 Public Consultation**

For a project such as HS2 which is both intended to serve the public/national interest and also likely to impact seriously on the lives of those members of the public who are directly affected, there is a clear requirement for the public and other interested bodies to be involved in its development. This has happened principally through a series of public consultations that have been undertaken by HS2 Ltd.

Two major public consultations have been undertaken for Phase 1 of HS2, in 2011 and in 2013. The latter consultation concerned the development of an Environmental Statement to cover the various environmental impacts of HS2, as required by the 1999 Town & Country Planning Act.

For Phase 2 of HS2, only the general consultation has been undertaken, in 2014, with a supplementary consultation undertaken in 2017 to address proposals for a revised HS2 route in South Yorkshire (see Item 2.5). As yet, no consultation has been undertaken upon the Environmental Statement that will be required for HS2 Phase 2.

The purpose of a public consultation should be self-evident, but it is worth restating. It is intended to obtain the views of the public and other interested bodies upon the public project in question, and there must be a duty upon the project's promoters – in this case HS2 Ltd, and therefore the Government – to take proper account of all views. This might require no more than a minor adjustment to the detail, and this is all that would normally be anticipated in a well-regulated public project. However, any robust procedure must also allow for the possibility that a consultation response may reveal more fundamental design flaws that render the entire project unfit for purpose.

Above all, the HS2 consultation process must be accountable, and aligned with the project's fundamental aim of "hugely enhanced capacity and connectivity". HS2 Ltd should be able to answer all criticisms raised in consultation responses, and demonstrate that its own proposals represent the optimum solution, the best balance of connectivity and capacity benefits against the costs and environmental impacts, and in so doing best serve the public interest.

It should also be noted that with the right of petitioning under the Hybrid Bill process restricted to those directly affected by HS2 who can claim *locus standi* (see Item 3.5), the process of public consultation represents the principal opportunity for public involvement in the development of HS2.

Whilst parliamentary Select Committees (see Item 3.8) do on occasion invite public contributions to the Inquiries that they are undertaking, Select Committees work to their own agenda and timings, and cannot be regarded as any sort of substitute for the public involvement inherent in an official consultation.

### **3.8 Internal Civil Service Review**

A project such as HS2, developed primarily under the guidance of a single Government department, may be subject to wider civil service review. In 2016, Sir Jeremy Heywood, Cabinet Secretary and Head of the Civil Service, undertook a review into the HS2 project, with the aim of controlling costs and identifying potential savings.

### **3.9 Involvement of Parliamentary Select Committees**

Parliamentary Select Committees are constituted variously to oversee the work of Government departments and agencies, to examine topical issues affecting the country or individual regions, and to review and advise on the procedures, workings and rules of Parliament. There are over 80 Select Committees of the Houses of Commons and Lords. The Select Committees that have taken a specific interest in the HS2 project are as follows:

- Transport Select Committee (House of Commons)
- Public Accounts Committee (House of Commons)
- Treasury Select Committee (House of Commons)
- Economic Affairs Committee (House of Lords)
- Public Administration & Constitutional Affairs Committee aka PACAC (House of Commons)
- Environmental Audit Committee (House of Commons)

All of the above committees are primarily interested in their own specific fields in respect of HS2 ie Public Accounts, Treasury and Economic Affairs committees are concerned with the costs and economic effects of HS2, the Environmental Audit Committee is concerned with the environmental impacts of HS2, and the Public Administration & Constitutional Affairs Committee is concerned with questions of the proper conduct of the HS2 project.

All these committees have reported critically on HS2, and the House of Lords Economic Affairs Committee and the House of Commons Public Administration & Constitutional Affairs Committee have both conducted inquiries into HS2, with the public invited to make their own contribution. HSUK has made submissions to both these inquiries – see Sections 12 and 13, and Appendices J, K, L and M – which have detailed how multiple design failures on the part

of HS2 Ltd are the root cause of HS2's poor economic performance, and its disproportionate impacts upon local communities.

Notwithstanding the HSUK contributions, the committees' reports and their criticisms remained focussed within the committees' specific fields of interest, and did not address the more fundamental question of whether HS2 would function efficiently as a transport project.

The Select Committee that should take the greatest interest in the HS2 project and its specific transport attributes ie the gains in connectivity and capacity that it is intended to achieve, is of course the Transport Select Committee. However, since the inception of the HS2 project, the Transport Select Committee has never undertaken a structured investigation to determine whether HS2 will achieve its basic aim of "hugely enhanced capacity and connectivity" between the UK's major conurbations. Its last inquiry into HS2, to which public contributions were invited, took place in 2011.

## **4 Key Flaws in HS2 Process**

Review of the HS2 process described in the foregoing section reveals the following key flaws in the HS2 process.

### **4.1 Mismatch between HS2 Remit and HS2 Objectives**

The HS2 remit is primarily concerned with the design of a high speed line from London to the West Midlands. It makes no mention of the ultimate requirement for an efficient and optimised national railway network, with new high speed lines at its core, interlinking all of the UK's principal cities. Such a network is the only practicable means of creating the "hugely enhanced capacity and connectivity" that is the fundamental aim of the HS2 project.

The mismatch between the HS2 remit and the project's objectives is discussed in greater detail in Appendix A.

### **4.2 Flawed Route Selection Process**

The HS2 remit effectively specifies HS2's destructive route through the Chilterns Area of Outstanding Natural Beauty (AONB). M1-aligned route options have been dismissed with no serious technical examination, despite the acknowledged fact that the M1 offered the only route corridor to avoid the Chilterns AONB. This leaves the HS2 route selection process critically flawed.

Equally serious is the fact that the route selection was undertaken with no consideration of how the London-West Midlands Phase 1 of HS2 would function as the first stage of an efficient and optimised national network of high speed lines.

The flaws in HS2 Ltd's route selection process are set out in greater detail in Appendix B.

### **4.3 Consultation Responses Ignored**

This entire report has documented the multiple High Speed North and High Speed UK inputs to the various HS2 consultations, all of which explained in exhaustive detail the huge range of fundamental flaws in the HS2 proposals – and all of which were effectively ignored by HS2 Ltd, who failed to take any of the actions that might reasonably be expected, given the gravity of the stated concerns. There was:

- No formal response from HS2 Ltd, explaining how and why each HSUK concern was misplaced.
- No change made to the HS2 proposals to address any of the concerns raised.
- No technical engagement between HS2 Ltd and HSUK.
- No information provided to MPs to allow them to make their own informed decision, in the event of failure to resolve a point of technical disagreement.

It seems clear, from HS2 Ltd's failure to engage in any way with the critical concerns raised by HSUK, that project procedures lacked the necessary robustness and fitness for purpose. It is therefore reasonable to conclude that the entire consultation process has failed.

#### **4.4 Absence of Independent Technical Review**

Perhaps the most glaring omission in the entire HS2 process is the complete absence of effective independent technical review. Even when faced with widespread public criticism in the 2011 Phase 1 consultation, which focussed upon the twin issues of poor route selection and excessive design speed, HS2 Ltd was simply instructed to review its own work. Perhaps unsurprisingly, HS2 Ltd's report *Review of Route and Speed Selection*, published in January 2012, concluded that HS2 Ltd's route and speed selection was "robust and appropriate".

Independent technical review is vital in any project to ensure that the project is being competently managed, and remains true to its objectives. Whatever the experience and standing of those leading the technical development of a project, there is still a major risk of 'group think' in which false assumptions go unchecked, and there is no balanced consideration of all the technical parameters necessary to ensure that the project achieves its fundamental objectives. It is also possible that the need for new competences in developing fields goes unrecognised.

In the case of the HS2 project, the assumptions of design for future 400km/h operation and almost complete segregation from the existing rail network appear never to have been checked against the self-evident alternatives, of design for a lesser speed more compatible with following existing transport corridors, and full integration with the existing network. These two assumptions, coupled with an unachievable aspiration for direct access to Heathrow from regional cities, have effectively dictated the outcome of the route selection process. This in turn has driven the development of HS2 to the detriment both of its performance as a network, and its ability to meet its fundamental aim of "hugely enhanced capacity and connectivity" between the UK's major conurbations.

These failures are demonstrated in every aspect of HSUK's superior performance, and they have been repeatedly advised to HS2 Ltd and to Government in the series of detailed submissions that are catalogued in this report. They may be attributable in part to a failure to recognise that in the development of an intervention as large as HS2, existing competences in the traditional fields of civil engineering, signal engineering, railway operations, mechanical and electrical engineering and architecture, will not on their own be sufficient. A new competence of 'railway network engineering' will be required, in which all the traditional disciplines are combined to develop the efficient and optimised national network that is the true objective of the HS2 project.

A robust process of external technical review, managed by independent railway engineering experts, would undoubtedly have identified all of the failures of technical management outlined in the preceding paragraphs. Regrettably, in the absence of this necessary independent process, HS2 Ltd has simply been left to 'mark its own homework'.

It should be noted that at the outset of the HS2 project, a 'Strategic Challenge Panel' was established by HS2 Ltd. Although its members, including Greengauge 21 director Jim Steer and future HS2 Ltd chairman David Higgins, were nominally independent, the panel was managed by HS2 Ltd, and therefore had no effective independence. There is no indication that the Strategic Challenge Panel ever made an effective contribution in questioning, and altering any fundamental HS2 Ltd design decision.

It is appropriate to restate the fact that, regardless of any process of independent technical review, HS2 Ltd has been advised of the multiple failures of the HS2 project in repeated consultation responses by HSUK. The motives of those within HS2 Ltd, all professionals within their own disciplines, who have consistently ignored these responses can only be speculated upon.

#### **4.5 Failure to Undertake Network Performance Study**

Detailed review of HS2 Ltd's published outputs reveals no indication that HS2 Ltd has ever undertaken the necessary study to demonstrate how the entire UK rail network will perform, with HS2 in place. Such a study (which should include the development of a demonstrator timetable to confirm capacity requirements and achievable journey time reductions) is essential to enable HS2 Ltd to properly and professionally optimise their proposals, to deliver the greatest possible improvements in capacity and connectivity.

Without such a study, those leading the development of HS2 are in no position even to determine whether their proposals will have a beneficial effect upon the overall UK network. It seems simply to have been assumed that the building of new high speed lines must, almost by definition, bring about this desirable outcome.

The calamitous consequences of HS2 Ltd's apparent neglect of the issue of network performance are set out in *HS2 : High Speed to Almost Nowhere*. This study is effectively the network performance study that HS2 Ltd never troubled to undertake. Compiled by HSUK, *HS2 : High Speed to Almost Nowhere* compares HS2's and HSUK's performance across a network of 32 cities, large towns and airports within the 'zone of influence' of the HS2 'Y', and it concludes that HSUK delivers far superior connectivity and capacity for every one of the 32 centres under consideration.

The findings of *HS2 : High Speed to Almost Nowhere* and its companion volume *HS2 : High Speed to Failure* also validate the many concerns raised in all of the HSUK consultation responses documented in this report.

## 4.6 Hybrid Bill Process compromised by HS2 Ltd Design Failures

The work of the HS2 Select Committees, and the restriction of the right of petitioning to those directly affected, are both based upon the assumed logic that the HS2 proposals that have been approved thus far by Parliament represent the optimum scheme best able to meet the project's objectives. This being the case, it would be reasonable for the HS2 Select Committees only to concern themselves with local issues along HS2's line of route.

However, this also makes the assumption that MPs possess the competences necessary to judge that HS2 is such an optimised scheme, and that its route has been correctly selected. It is of course plainly not the case that a typical MP (or Lord) has these competences; instead, legislators are entirely reliant on the Government's advisors within HS2 Ltd and the DfT having the appropriate competences to manage the optimal development of HS2.

However, HS2's multiple design failures – as highlighted in *HS2 – High Speed to Failure*, in *HS2 – High Speed to Almost Nowhere* and also in this study – indicate strongly that these Government advisors do not possess the necessary technical expertise and competence in the crucial matter of developing an optimised national railway network.

These failures, which stem from HS2's inappropriate remit and flawed route selection process, the neglect of adverse consultation responses and the lack of any independent technical review (as discussed in preceding paragraphs), have together resulted in a hugely suboptimal proposal being taken forward in the legislative process. The HS2 route and stations which have been defined as the 'principle' of the HS2 Bill are also entirely inappropriate to the attainment of the fundamental aim of the HS2 project, of "hugely enhanced capacity and connectivity" between the UK's major conurbations.

This leaves the HS2 Hybrid Bill, and all its associated petitioning process, effectively compromised and lacking in any true legitimacy.

## 4.7 Unfair Restriction of Right to Petition against HS2 Bill

The right to petition against the HS2 Bill has been restricted to those deemed to have *locus standi* ie those who will be directly affected either by the presence of HS2, or by the works necessary to construct it. In the 19<sup>th</sup> Century, this might have been appropriate to a privately financed local railway scheme. But in the 21<sup>st</sup> Century, the ill-considered introduction of HS2 into the national railway network carries huge adverse implications that are nationwide in scope, and it would seem reasonable that the right to petition should be extended to all who are adversely affected, for instance:

- Residents of UK cities (such as Coventry) which are not served by HS2, and instead left reliant on reduced intercity services on existing main lines.
- Residents of UK cities whose economic performance will be blighted by the London-centricity of the HS2 'Y', and the lack of equivalent interregional connections.

- Residents of the UK concerned at HS2's spiralling costs, excessive environmental impacts and failure to achieve transport CO<sub>2</sub> emission reductions in line with the 80% reduction target of the 2008 Climate Change Act.

The restriction of *locus standi* to those in the immediate vicinity of HS2 betrays a worrying lack of understanding of the true extent of HS2's adverse effects, and a failure to comprehend the extent of public concerns that have been repeatedly expressed in successive official consultations on HS2.

#### **4.8 Cross-Party Consensus on HS2/Development of Single Option**

The cross-party consensus on HS2 has prevented rigorous parliamentary debate on HS2, which might have uncovered the technical faults of HS2. This problem is compounded by the lack of independent technical review and the development of HS2 as a single option; this has allowed cross-party support for the principle of building new high speed lines to morph seamlessly into support for the detail of the proposals developed by HS2 Ltd.

#### **4.9 Failure of 2016 'Heywood Review' to heed HSUK input**

In July 2016, HSUK wrote to Sir Jeremy Heywood (Cabinet Secretary and Head of the Civil Service) in connection with his ongoing review into the rising costs of the HS2 project. The HSUK letter alerted him to the huge costs associated with HS2 Ltd's multiple failures in the design of the HS2 project, and to the savings – estimated at £27 billion – that would result from necessary changes to the HS2 design. There is no indication that the 'Heywood Review' took any account of the information supplied by HSUK.

#### **4.10 Inactivity of Transport Select Committee**

Since its Inquiry into HS2, conducted in 2011, the Transport Select Committee has conducted no further review to determine:

- whether the emerging HS2 scheme would achieve its fundamental objective of "hugely enhanced capacity and connectivity" between the UK's major conurbations;
- whether HS2 was properly co-ordinated with other major projects such as the Northern Powerhouse, the Midlands Engine and the expansion of Heathrow Airport, to create the efficient and integrated national transport system that must be the core aim of Government transport policy.

The cross-party consensus on HS2 may well explain the apparent reluctance of the Transport Select Committee to investigate these crucial issues.

#### **4.11 Failure of Select Committees to consider Public Policy Issues**

No Select Committee, and indeed no other Parliamentary body, has undertaken the necessary 'public policy' overview, to check whether one aspect of public policy – the development of new high speed railways – might be in conflict with other aspects, for instance:

- attainment of transport CO<sub>2</sub> reductions in compliance with the 80% reduction target of the 2008 Climate Change Act, or
- redressing of the North-South Divide through the improvement of connectivity and capacity between the UK's major regional conurbations, or
- protecting communities and green spaces (especially Areas of Outstanding Natural Beauty) from inappropriate development, or
- achieving value for money for the UK taxpayer, or
- ensuring that most UK taxpayers can benefit from the proposed investment.

HS2 is in clear conflict with all of these important aspects of public policy, and it would appear that no component of the parliamentary process is capable of either investigating these issues, or taking appropriate action to remedy them.

## **5 High Speed North/High Speed UK Formal Engagement with HS2 Process**

This section catalogues and summarises a series of key engagements between High Speed North/High Speed UK and the HS2 process, commencing in 2009. For simplicity of narrative, the abbreviation 'HSUK' is used, regardless of whether the response was made by either High Speed North (before September 2013) or by High Speed UK (after September 2013).

### **5.1 Engagement between 2M Group of London & South-East Councils and HS2 Ltd (see Section 6)**

In May 2009, senior figures at HS2 Ltd were presented with the HSUK concept for a 'spine and spur' network of new high speed lines, interlinking all primary UK cities, and connected to Heathrow through the development of a 'Compass Point' network focussed upon Heathrow.

### **5.2 Official Consultation on Phase 1 Proposals for HS2 from London to the West Midlands (see Section 7)**

In July 2011, the HSUK response to the HS2 Phase 1 consultation identified the following key defects in HS2 Ltd's proposals:

- although new high speed lines were essential for improved capacity and connectivity between the UK's major conurbations,
- the HS2 'Y' was not the right way to deliver this improvement, because it lacked any transpennine connection,
- the proposed HS2 links to Heathrow and HS1 were not viable,
- HS2 Ltd's design principles – in particular stand-alone operation and design for the extreme speed of 400km/h – would fail to deliver the desired improvements in capacity and connectivity,
- its option selection process was fatally flawed; and
- a far superior route via the M1 corridor was available.
- HS2's deficiencies as a network and its flawed routeing would hugely increase its environmental impact, in terms of both CO<sub>2</sub> emissions and damage to sensitive landscapes, and would also greatly increase the need for compensation payments.

The HSUK response also presented:

- detailed mapping of a London-Birmingham high speed line following the M1 corridor, in order to demonstrate HS2 Ltd's baseless rejection of this route, and;
- the detailed 'Alan Brooke' study which identified HSUK's full integration as the key factor in its far superior performance in achieving CO<sub>2</sub> reductions.



The HSUK response highlighted (in Item 4.2.4) HS2 Ltd's utterly inadequate consideration of how HS2 might develop as a national network. It noted that HS2 Ltd had dismissed HSUK with no meaningful assessment, despite the fact that HSUK's 'spine and spur' configuration was far more efficient at interlinking the UK's principal conurbations than any of the options ('Inverse A', 'Reverse S' and 'Reverse E') favoured by HS2 Ltd. This is demonstrated in Figure 5.1, which shows HSUK's vastly superior performance (53 direct links out of a possible 55) compared with the 'Inverse A' (30 links out of 55) which – with the transpennine 'bar' removed and its connectivity considerably worsened – ultimately developed into the HS2 'Y-network'.

The HSUK response particularly questioned the logic offered by HS2 Ltd to dismiss HSUK. HSUK was dismissed on account of the 'failure' of its M1-aligned trunk route to pass through the West Midlands en route to destinations further north; yet HS2 Ltd never offered any rationale to demonstrate why this was an essential feature of a national high speed rail system. As the HSUK response observed: 'All the available evidence indicates strongly that an M1-aligned route in 'spine and spur' format offers a far more efficient and effective solution.'

A possible explanation for HS2 Ltd's inept consideration of national network is offered in Item 4.2.4 of the HSUK response – it was simply not in HS2 Ltd's remit, when they developed their route for Phase 1 of HS2. Yet all the options ('Inverse A', 'Reverse S' and 'Reverse E') that HS2 Ltd did consider are clearly based upon the chosen Phase 1 route, passing through the Chilterns AONB. By contrast, M1-aligned network configurations (such as HSUK) that did not conform with the HS2 Phase 1 route were rejected.

Regrettably, no-one at HS2 Ltd appears to have recognised the fundamental contradiction in basing their consideration of HS2 as a national network upon the Phase 1 stem that was developed with no consideration of national network.

HS2 Ltd's failure to give adequate consideration to HS2's development as an efficient and optimised national network, will hugely impair its performance in improving connectivity between the UK's regional cities, especially along the transpennine axis linking Liverpool, Manchester, Sheffield and Leeds. This theme is continued in Item 5.5 (HS2 Phase 2 Consultation) and Item 5.13 (Consultation on Transport for the North's *Strategic Transport Plan*).

### **5.3 Official Consultation on Draft Environmental Statement for Phase 1 of HS2 (see Section 8)**

In July 2013, the HSUK response to the consultation on the HS2 Phase 1 Draft Environmental Statement focussed on the following issues:

- The HS2 Draft Environmental Statement is required by the Town & Country Planning Act (1999) to review the alternatives that were considered in the development the project.
- This requirement is based upon the fundamental logic that the selected option now being taken forward to construction must represent the best balance of benefits against environmental damage.
- The HSUK response catalogued the false statements and assorted other flaws in the option selection process, that led to the rejection of the M1 corridor and to the adoption of HS2's much more damaging Chiltern-aligned route.
- The HSUK response explained the multiple inefficiencies underlying the HS2 proposals that stem from the unverified and mistaken assumptions of segregated operation, design for potential 400km/h operation and predication upon Heathrow. These inefficiencies are the root cause of HS2's inadequate environmental performance, offering no significant CO<sub>2</sub> emissions reductions across the transport sector and failing to contribute to the national target for an 80% reduction in CO<sub>2</sub> emissions set by the 2008 Climate Change Act.
- The HSUK response also explained how, through adopting strategies diametrically opposed to those underpinning HS2 ie fully integrated operation between high speed and classic networks, design for a lower maximum speed of 360km/h and focus upon existing intercity corridors, HSUK was capable of generating the road to rail modal shift necessary to deliver transport sector CO<sub>2</sub> emissions reductions broadly in line with 2008 Climate Change Act targets.

The Government has never explained how the HS2 project's 'carbon neutral' performance is compatible with the legally-binding target of the 2008 Climate Change Act for an 80% cut in CO<sub>2</sub> (and other greenhouse gas) emissions by 2050.

#### **5.4 A 'Call For Proposals' from the Government Airports Commission (see Section 9)**

In July 2013, HSUK's submission to the Airports Commission set out the HSUK vision for a transformed aviation hub for London and the South East:

- Through developing Heathrow's surface access to provide direct rail links to cities across mainland UK, it becomes practicable to establish a direct rail link between Heathrow and Gatwick, enabling the two airports operate as a multi-site hub.
- This will enable 'landside' access to both airports from most UK cities, and also enable 'airside' transfer of transit passengers, luggage and cargo.
- With Gatwick far more suited to physical expansion with a second runway (if required by increasing international air traffic), this will avoid any need to expand Heathrow.

None of the advantages outlined above are achievable with HS2, which has been designed without the capacity, the routeing strategy or the integration necessary to provide efficient direct links between Heathrow and UK regional cities.

Regrettably, the Airports Commission took no account of the HSUK input, calling for radical improvements to airports' surface access. Its final report, released in July 2015, made no recommendation for improved national rail links to either Heathrow or Gatwick, to transform access from the UK regions to the nation's hub airport.

## **5.5 Official Consultation on Phase 2 Proposals for the HS2 Project (see Section 10)**

In January 2014, the HSUK response to the HS2 Phase 2 consultation focussed particularly upon the inappropriate station 'solution' proposed for each of the major cities served by HS2.

- HS2 has been developed to an essentially London-centric agenda, with no thought for transpennine connections between Northern cities.
- This London-centric agenda is exemplified in the HS2 terminus stations proposed in both Manchester and Leeds; these are totally incompatible with any future transpennine high speed link running on a Liverpool-Manchester-Leeds-Hull axis.

Only 5 months after the closing of the HS2 Phase 2 consultation in January 2014, then-Chancellor George Osborne launched the 'Northern Powerhouse', with a suite of initiatives including 'HS3' proposals for a transpennine high speed line linking Manchester and Leeds. The HS3 scheme was swiftly fleshed out with a comprehensive specification for journey time improvements between all principal Northern cities, and from these cities to Manchester Airport, and 'Transport for the North' (TfN) was constituted to deliver the specified improvements.

It has long been suspected that the disjointed way in which HS2 and then HS3/Northern Powerhouse Rail have developed will result in a fragmented and uncoordinated railway network incapable of delivering the specified integration and connectivity across the North. This was confirmed in January 2018, with the publication of TfN's Draft Strategic Transport Plan; HSUK analysis demonstrates conclusively that Northern Powerhouse Rail's performance as a Northern railway network will be hugely hampered by its predication upon HS2's established proposals for routes and stations (in Manchester, Leeds and other locations).

These issues are covered in greater detail in the HSUK response to the consultation on the Transport for the North Draft Strategic Transport Plan (see Item 5.13), and in the HSUK report *The Northern Poorhouse – How the Transport Establishment failed the People of the North*, available on [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk).

## **5.6 HSUK Petition to House of Commons Select Committee considering HS2 Phase 1 Hybrid Bill (see Section 11)**

After the HS2 Phase 1 Bill passed its Second Reading in the House of Commons in April 2014, the Bill commenced its Committee stage. 6 Members of Parliament were appointed to form the 'HS2 Select Committee', and their remit was to examine the provisions of the Hybrid Bill and to hear petitions from members of the public.

In accordance with standard Parliamentary procedure for a hybrid bill covering a railway project, the HS2 Select Committee's remit was limited by the defined 'principles' of the Bill. In the case of HS2, the 'principles' were defined not as a high speed line linking London and the West Midlands and the first stage of a new national railway network (as per the original HS2 remit, see Appendix A), but as a railway passing between its station and junction points (i.e. Euston, Old Oak Common, Birmingham Interchange, the triangle junction at Water Orton, Birmingham Curzon Street and the WCML connection at Handsacre, as described in Item 2.4 and Figure 2.1).

This highly restrictive definition of 'principle' prevented the Select Committee from considering other routes, and moreover the right to petition was limited to those directly affected by the proposed works, who were deemed to have *locus standi*. The granting of *locus standi* was of course rigorously policed by HS2 Ltd's solicitor who was in constant attendance at all hearings of the HS2 Select Committee.

Against this background, it is entirely unsurprising that the HSUK petition, submitted by 2 railway engineers based in Yorkshire, and primarily concerned with HS2's performance as a national system, was denied *locus standi* and therefore not heard by the HS2 Select Committee.

However, it is a demonstration of how utterly broken and corrupt our Governmental system is, that when confronted with clear prima-facie evidence of the multi-billion pound failure of the HS2 project, both its promoters and the Parliamentarians overseeing the process chose to employ the arcane and inappropriate *locus standi* provisions to avoid having to consider these issues of crucial national interest.

## **5.7 House of Lords Select Committee on Economic Affairs : Inquiry into the Economic Case for HS2 (see Section 12)**

In September 2014, HSUK made a detailed submission to an Inquiry into the Economic Case for HS2, undertaken by the House of Lords Select Committee on Economic Affairs. In summary, the High Speed UK submission outlined how:

- Multiple failures in the design of HS2 have led to a dysfunctional proposal which is incapable of providing the capacity and connectivity necessary to deliver the predicted economic benefit.

- Instead, many aspects of HS2 – for instance its high cost, its unnecessary intrusion into unspoilt rural areas, its concentration of connectivity upon London and its failure to reduce transport sector CO<sub>2</sub> emissions in line with the requirements of the 2008 Climate Change Act – appear to run directly contrary to many aspects of public policy.
- All these negative issues can be avoided through designing to the correct criteria i.e. full integration with the existing rail system, and alignment with existing transport corridors, as exemplified in the High Speed UK scheme.

The High Speed UK submission was presented to the House of Lords Economic Affairs Committee on 8<sup>th</sup> December 2014, and is noted in Item 221 of the Committee's report, *The Economics of HS2*, published in March 2015. Relevant extracts of the Committee's report and of the Government's response, are included in Appendix K.

The Committee's report contrasted HSUK's advocacy of an M1-aligned route (noted in Item 221) with evidence (in Item 222) from Lord Adonis (former Secretary of State for Transport at the launch of HS2 in 2009, and current Chairman of the National Infrastructure Commission) stating that the idea of such a route was "...for the birds", in other words not practicable. However HSUK's detailed design of its 4-track route capable of 360km/h operation on a 'close parallel' alignment to the M1 demonstrates that a high speed line following the M1 is practicable, and achievable at much less cost than the proposed HS2 route through the Chilterns AONB..

For such a crucial issue, with literally billions of pounds of public money and the future integrity of the national rail network at stake, it is vital that Lord Adonis provides the evidence to substantiate his dismissal of the M1 corridor.

The Committee's report also recorded (in Item 223) statements by HS2 Director General David Prout, to the effect that the Government had assessed HSUK as part of its assessment of a 'Central Railway' proposal, and found it not "as simple as HSUK would have us believe". This is a highly puzzling statement, as HSUK has no detailed knowledge of the 'Central Railway' project, and has never advocated it either to the Government or HS2 Ltd.

It is again vital that David Prout clarifies how High Speed UK was assessed by HS2 Ltd or the Government (if at all), and how he came to conflate High Speed UK and the 'Central Railway' in his sworn evidence to the House of Lords Economic Affairs Committee. It must be emphasised once more that these two projects are entirely unconnected.

## **5.8 House of Commons Public Administration & Constitutional Affairs (PACAC) Select Committee Inquiry into Parliamentary & Health Service Ombudsman's Report on HS2 Ltd Community Engagement (see Section 13)**

In 2016, PACAC undertook an Inquiry following a report by the Parliamentary & Health Service Ombudsman which was highly critical of HS2 Ltd's engagement with communities directly affected by HS2. In summary, the High Speed UK submission outlined how:

- HS2's impact upon local communities is greatly increased by the selection of inappropriate rural routes, and its design for the extreme speed of 400km/h.
- HS2 Ltd has never provided reasonable technical justification for either its route selection or its design for future 400km/h operation.
- The HS2 route selection process was seriously flawed, with no meaningful consideration given to the alternative of an M1 corridor route which involves much reduced community disruption.
- The decision to adopt the 400km/h design standard was not taken with the sensitivity analysis necessary to determine that this speed represented the best balance of benefits against costs and adverse impacts.

## **5.9 HSUK Petition to House of Lords Select Committee considering HS2 Phase 1 Hybrid Bill (see Section 14)**

In 2016, the passage of the HS2 Phase 1 Bill through the House of Lords offered another opportunity to petition, this time to the House of Lords HS2 Select Committee.

Accordingly, HSUK presented a second petition, this time significantly developed from the first petition submitted in 2014.

Again, the HSUK petition was dismissed on account of *locus standi* not being granted to the HSUK petitioners (both resident in Yorkshire). Again, no account was taken of the substance of the HSUK petition, which very clearly spelt out the dire national consequences of HS2's failure to perform efficiently as a national network.

These issues are discussed in greater detail in Section 5.6.

## **5.10 'Heywood Review' into rising costs of HS2 (see Section 15)**

In July 2016, HSUK wrote to Sir Jeremy Heywood (Cabinet Secretary and Head of the Civil Service) in connection with his ongoing review of the HS2 project and its rising costs. The HSUK letter described how HS2's excessive costs were only a manifestation of a much deeper design failure on the part of HS2 Ltd. HS2 Ltd's self-appointed mission, to build the fastest railway in the world, was in direct conflict with the true objective of the project, to deliver "hugely enhanced capacity and connectivity" between the UK's major conurbations.

The HSUK letter identified the following headline cost savings:

- Improper selection of HS2 first phase route through Chilterns AONB, and neglect of superior route via M1 corridor – **£7 billion**;
- Failure to develop integrated reconstruction strategy for Euston Station, with diversion of commuter services to Crossrail – **£1 billion**;
- Failure to integrate HS2 with local public transport in other major cities – **£4 billion**;
- Development of efficient 'HS3' links between major cities of the Northern Powerhouse compromised by London-centric design of HS2 'solutions' for Sheffield, Manchester and Leeds – **£7 billion**;
- Rigid focus upon impracticable west-sided high speed route to Scotland and neglect of easier and more efficient east-sided route – **£11 billion**.

The HSUK letter informed Sir Jeremy Heywood that on the basis of a 'like for like' comparison between the HS2 'Y' and relevant elements of HS3, HSUK's detailed estimates showed potential overall cost savings of **£27 billion**. These savings would rise to £38 billion when routes to the North-East of England and Scotland were taken into account.

The HSUK letter suggested to Sir Jeremy Heywood that the scope of his investigation needed to be widened to encompass all aspects of HS2's development, and it concluded with an offer for HSUK to cooperate fully in this investigation. However, no substantive response was ever received from Sir Jeremy Heywood, and there is no indication that the 'Heywood Review' took any account of the information supplied by HSUK.

### **5.11 Letter to Andrew Jones MP, Junior Transport Minister responsible for HS2 (see Section 16)**

In February 2017, HSUK wrote to Andrew Jones MP who at the time was a Junior Transport Minister with responsibility for the HS2 project. The HSUK letter drew particular attention to HS2's incompatibility with future HS3/Northern Powerhouse transpennine links, and it also drew attention to HS2's wider failure as a national network. The HSUK letter also called for the entire HS2 project to be paused while an independent design review was undertaken.

The following documents were enclosed with the HSUK letter:

- HSUK Letter to Andrew Tyrie MP dated 20th January 2017;
- HSUK Brochure : *HSUK – Delivering the High Speed Network the Nation Needs*;
- HSUK Publication : *HS2 : High Speed to Failure – 22 Reasons why the Government's Experts have got it wrong*;
- HSUK Publication : *Draft Executive Summary of HS2 : High Speed to Almost Nowhere*, complete with *Draft Comparative Connectivity Charts* for 8 Yorkshire Cities and Towns.

The HSUK letter and its enclosed documents provided Andrew Jones with a wide-ranging explanation of the multiple inadequacies of the HS2 proposals, and it would be reasonable to expect a responsible Minister to have undertaken the necessary investigations to determine the veracity of the concerns expressed by HSUK. However, no response has ever been received from Andrew Jones, and there is no indication that he has taken any account of the information supplied by HSUK.

### **5.12 Letter to Chris Grayling MP, Secretary of State for Transport (see Section 17)**

On 2<sup>nd</sup> February 2018, HSUK representatives attended a Conservative Party fundraising event at Morley Town Hall in West Yorkshire. Their aim was to meet the guest of honour (Chris Grayling MP, Secretary of State for Transport), and to deliver to him a letter with several enclosures:

- HSUK Brochure : *HSUK – Delivering the High Speed Network the Nation Needs;*
- HSUK Publication : *HS2 : High Speed to Failure – 22 Reasons why the Government’s Experts have got it wrong;*
- HSUK Publication : *HS2 : High Speed to Almost Nowhere – Putting HS2 Ltd’s Promise of a Higher-Speed and Better-Connected Britain to the Test.*

The HSUK letter to Chris Grayling adopted a somewhat more theatrical tone, compared with the earlier letter to Andrew Jones (see Appendix P); it likened the Transport Secretary to an ‘Emperor with No Clothes’, promoting a railway scheme which everyone (except, apparently, himself and his close advisors) knows will not work.

However, the HSUK letter and its enclosed documents should still have left Chris Grayling in no doubt whatsoever as to the multiple inadequacies of the HS2 proposals, and (as with the HSUK letter to Andrew Jones MP, see Section 16 and Appendix P), it would be reasonable to expect a responsible Minister to have undertaken the necessary investigations to determine the veracity of the concerns expressed by HSUK. However no response has ever been received from Chris Grayling, and there is no indication that he has taken any account of the information supplied by HSUK.

### **5.13 Official Consultation on Transport for the North Strategic Transport Plan (see Section 18)**

Since the launch of the Northern Powerhouse initiative in 2015, Transport for the North (TfN) has been developing proposals for a system of new or upgraded railways interlinking the principal cities of the North, and connecting these cities to Manchester Airport. Central to this work has been the specification for a new transpennine rail route and for radically

reduced journey times, originally put forward by the 'One North' group<sup>2</sup> of northern city councils.

On 16 January 2018, Transport for the North released its *Draft Strategic Transport Plan* for public consultation. The highlight of this Plan was a scheme for a new transpennine railway, extending from Leeds via Bradford, Manchester and Manchester Airport to Liverpool; this would augment and partially incorporate the established HS2 routes in both Yorkshire and Greater Manchester.

It was immediately apparent that:

- TfN's plan would not be able to deliver the routeing and the reduced journey times demanded by the original 'One North' specification;
- Sheffield would be left bypassed by both HS2 and by Northern Powerhouse Rail;
- These failures were primarily attributable to TfN basing their new basing the new route upon HS2, rather than adhering to the 'One North' specification.

It would seem that TfN's transport experts have failed to recognise the clear dangers of basing their proposals – whose core rationale is to transform transpennine connectivity – upon HS2 – which was designed with no thought for transpennine connectivity.

The deficiencies and failures of the TfN Draft Strategic Transport Plan are identified in the HSUK response to the official consultation (see Appendix R) and in the supporting paper *The Northern Poorhouse – How the Transport Establishment failed the People of the North* (available on [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk)). In all cases, the vastly superior performance of High Speed UK demonstrates the full, catastrophic extent of TfN's failure.

## **5.14 Overview of High Speed North/High Speed UK Engagement with HS2 Project**

The High Speed North/High Speed UK responses to the official HS2 consultations, along with the other engagements summarised in this section, should have left HS2 Ltd and the Government in no doubt whatsoever as to the multiple inadequacies of the current HS2 proposals. Collectively, they demonstrate:

- HS2's technical failure – its inadequate design lacks the necessary integration and the correct routeing strategy and therefore HS2 cannot provide the "hugely enhanced capacity and connectivity" necessary to bring about the promised step-change economic benefits.
- HS2's public policy failure – HS2's 'carbon neutral' performance is incompatible with the 2008 Climate Change Act's legally-binding target of an 80% reduction by 2050, and its fundamental London-centricity will tend to exacerbate rather than remedy the North-South divide that currently afflicts the UK economy.

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<sup>2</sup> The 'One North' group comprised the City Councils of Liverpool, Manchester, Sheffield, Leeds and Newcastle.

- HS2's due process failure – any rational analysis of the process by which the HS2 route through the Chilterns was selected, and alternative routes via the M1 corridor dismissed from consideration, raises huge questions as to the proper conduct of the HS2 project.

The consequences of these failures are now becoming apparent with the publication in January 2018 of Transport for the North's *Strategic Transport Plan*. This sets out plans for a transformed railway network linking the key centres of the Northern Powerhouse (including a new transpennine main line linking Leeds, Bradford, Manchester, Manchester Airport and Liverpool), and with the HS2 'Y' it effectively represents the completed design for the Government's UK high speed rail project.

With High Speed UK employed as the 'Exemplar Alternative', it is now possible both to assess the performance of HS2 and Northern Powerhouse Rail as a national network. It is also possible to understand how much the performance of Northern Powerhouse Rail has been compromised by the requirement to conform with the established HS2 proposals.

All this raises the very obvious question, of how HS2 has come to be the preferred scheme. There is a self-evident obligation upon Government, and upon any official body such as HS2 Ltd, to be able to account for its decisions. If poorly performing proposals such as HS2 have been selected, and proposals far more capable of connecting the nation such as HSUK have been rejected, then the Government and HS2 Ltd must be able to explain why.

It is significant to note that when challenged by the House of Lords Economic Affairs Committee, key witnesses such Lord Adonis (former Secretary of State for Transport and current National Infrastructure Commission Chairman) and David Prout (former HS2 Director General) were unable to offer credible reasons for the rejection of HSUK.

It is equally troubling that neither Government, nor HS2 Ltd, nor any other official body charged with development of the UK's transport system has engaged in any way with any of the concerns raised by High Speed UK.

## 6 Prologue (May 2009) :

### Initial Engagement between 2M Group of London & South-East Councils and HS2 Ltd

Attendees at Meeting	Colin Elliff (originator of High Speed North) Cllr Edward Lister (Leader, Wandsworth Council) Steve Mayner (2M Group Co-ordinator) Andrew McNaughton (HS2 Ltd Chief Engineer) Alison Munro (HS2 Ltd Chief Executive)
Date	May 2009
Document Issued	<i>High Speed North : Joining Up Britain</i>
For full text of document see	Appendix D

In May 2009, shortly after the inception of the HS2 scheme, the 2M Group of London and South-East Councils secured a meeting with senior figures at HS2 Ltd.

The 2M Group had, since July 2008, been promoting the High Speed North scheme to offer an alternative to the then Government's proposals to expand Heathrow Airport, with a third runway and a sixth terminal. High Speed North comprised a UK-wide network of high speed lines, allied with development of the existing Heathrow Express system to form a 'Compass Point' network that would connect Heathrow to High Speed North. As can be seen from Figures 2.2 and 2.3, the High Speed North network as proposed in 2009 bore a strong resemblance to the layout of new high speed lines at the core of current High Speed UK proposals.

The High Speed North scheme was seen by the 2M Group as offering a means of accelerating intercity journeys within mainland UK; this could eliminate the demand for domestic 'feeder' flights from regional airports to Heathrow, and thereby reduce the pressure to expand. It also appeared that High Speed North met the fundamental aim of the then nascent HS2 project, to create a network of high speed lines that would initially link London, Heathrow and the West Midlands but ultimately extend to all major UK conurbations.

The purpose of the meeting was to explain the High Speed North scheme to HS2 Ltd, and to urge that HS2 was developed in such a way as to minimise the demand for domestic flights to Heathrow and thereby minimise the pressure to expand Heathrow Airport. At the meeting, the pamphlet included in Appendix D was issued to HS2 Ltd.

Given High Speed North's broad alignment with the ostensible aims of the HS2 project, it would seem reasonable to expect HS2 Ltd to have undertaken the necessary due diligence, and to have accorded these proposals proper detailed assessment. However, review of HS2 Ltd's *Report to Government* (March 2010) indicates clearly that High Speed North

received at best scant attention. Item 6.1.16 (discussing a postulated UK high speed rail network in 'Reverse E' configuration) states:

With a more central alignment of HS2, the 'Reverse E' would become more akin to the proposal put forward by the 2M group of London Councils (known as 'High Speed North'). As our remit was to consider the development of HS2 beyond the West Midlands, we have not investigated the 2M proposals in detail.

The essential rationale of HS2 Ltd's dismissal of High Speed North is based upon Item 2 of the HS2 remit (see Appendix A), which has been interpreted as a strict requirement that HS2 must pass through the West Midlands en route to destinations further north. On this logic, any proposal such as High Speed North/High Speed UK, whose spine route followed the M1 and therefore did not pass through the West Midlands, was deemed non-compliant and therefore dismissed from consideration.

This 'process' is described in greater detail in Appendix B. However, it is worth noting that none of the 'compliant' configurations (Inverse A, Reverse S or Reverse E) ostensibly considered by HS2 Ltd came close to HSUK's 'spine & spur' configuration in their ability to interlink the UK's many regional conurbations.

## 7 Official Consultation on Phase 1 Proposals for HS2 from London to the West Midlands

Responding Organisation	High Speed North #
Author of Response	Christopher Quayle**
Date	July 2011
For full text of response see	Appendix E

# For simplicity of narrative, the abbreviation 'HSUK' is generally used in the following text to describe either the High Speed North proposals as they existed in July 2011, the High Speed UK proposals as they exist today (2018), or High Speed North/High Speed UK in a corporate sense.

\*\* Christopher Quayle is a pseudonym adopted by Colin Elliff to avoid accusations of conflict of interest from his then railway industry employers.

In 2011, the Government invited public responses to its official consultation on its proposals for Phase 1 of HS2 from London to the West Midlands. The consultation was framed around the following questions:

1. Do you agree that there is a strong case for enhancing the capacity and performance of Britain's inter-city rail network to support economic growth over the coming decades?
2. Do you agree that a national high speed rail network from London to Birmingham, Leeds and Manchester (the Y network) would provide the best value for money solution (best balance of costs and benefits) for enhancing rail capacity and performance?
3. Do you agree with the Government's proposals for the phased roll-out of a national high speed rail network, and for links to Heathrow Airport and the High Speed 1 line to the Channel Tunnel?
4. Do you agree with the principles and specification used by HS2 Ltd to underpin its proposals for new high speed rail lines and the route selection process HS2 Ltd undertook?
5. Do you agree that the Government's proposed route, including the approach proposed for mitigating its impacts, is the best option for a new high speed rail line between London and the West Midlands?
6. Do you wish to comment on the Appraisal of Sustainability of the Government's proposed route between London and the West Midlands that has been published to inform this consultation?
7. Do you agree with the options set out to assist those whose properties lose a significant amount of value as a result of any new high speed line?

In summary, the HSUK response explained that:

- although new high speed lines were essential for improved capacity and connectivity between the UK's major conurbations, (Q1)
- the HS2 'Y' was not the right way to deliver this improvement, because it lacked any transpennine connection, (Q2)
- the proposed HS2 links to Heathrow and HS1 were not viable, (Q3)

- HS2 Ltd's design principles – in particular stand-alone operation and design for the extreme speed of 400km/h – would fail to deliver the desired improvements in capacity and connectivity, (Q4)
- its option selection process was fatally flawed (Q4); and
- a far superior route capable of construction with 4 tracks via the M1 corridor was available, (Q5)
- HS2's deficiencies as a network and its flawed routing would hugely increase its environmental impact, in terms of both CO<sub>2</sub> emissions and damage to sensitive landscapes, (Q6) and
- would also greatly increase the need for compensation payments. (Q7)

The following sections (7.1 to 7.7) set out the key points of the written response by HSUK. This response included outline mapping (at 1:50,000 scale) of the alternative High Speed North route from London to Birmingham, and the 'Alan Brooke Study', a detailed assessment of the comparative performance of HS2 and High Speed North in delivering transport sector CO<sub>2</sub> emission reductions in line with the 80% reduction target of the 2008 Climate Change Act.

The summarised responses below are referenced to the clause numbering in the HSUK response thus: **(1.1)**.

## **7.1 The Case for Enhancing the Capacity and Performance of Britain's Intercity Rail Network**

The HSUK response set out the following principles by which investment in new high speed lines could be justified:

- Enhancement of the national network to optimise capacity, performance and connectivity is the true priority – high speed is of relatively minor importance **(1.1)**.
- Full integration with existing intercity network is essential to allow all cities currently served by the present intercity network to enjoy high speed services **(1.2)**.
- Access for high speed services to existing city centre hubs is vital to optimise integration **(1.3)**.
- New high speed lines should be employed to address connectivity deficiencies in the existing network **(1.4)**.
- Achieving high speed rail access to Heathrow (and other regional airports) must not be at the expense of high speed rail's basic function as an intercity railway **(1.5)**.
- High speed rail must facilitate road-to-rail modal shift necessary to achieve transport sector CO<sub>2</sub> reductions in line with the 80% reduction target of the 2008 Climate Change Act **(1.6)**.

- This creates a huge requirement for additional capacity, and specifically a need for 4 tracks in any north-south spine route **(1.7)**.
- A new high speed line should follow existing transport corridors such as the M1, where its additional environmental impact will be small, and the major population centres can gain from the improved connectivity **(1.8)**.

## **7.2 The HS2 'Y' network – the best option for enhancing rail capacity and performance?**

The HSUK response explained how:

- The HS2 'Y' is primarily London-centric, lacking the necessary connectivity between regional cities necessary to improve interregional links and thus stimulate regional economies **(2.2)**.
- The HS2 'Y' particularly lacks any transpennine connection necessary to link Northern cities **(2.2)**.
- The poor connectivity offered by the HS2 'Y' leads directly to poor performance in reducing transport CO<sub>2</sub> emissions in line with the 80% reduction target of the 2008 Climate Change Act **(2.2)**.
- Higher costs will also result from the greater requirement for new-build high speed lines, running to east and west of the Pennines **(2.2)**.
- The HS2 'Y' will comprise an inefficient network, with most proposed routes only connecting a single pair of cities; this compromises train loadings and results in poorly-filled trains consuming valuable line capacity **(2.2)**.
- The HS2 'Y' cannot provide efficient direct connections from regional cities to Heathrow; instead it is necessary to route HS2 to allow the proposed shuttle connection at Old Oak Common **(2.2)**.
- This requirement to route HS2 close to Heathrow effectively dictates HS2's destructive route through the Chilterns AONB **(2.2)**.

All these problems can be avoided through HSUK's alternative 'spine and spur' configuration, with a 4-track spine route aligned with the M1 corridor **(2.3)**.

## **7.3 Phased Roll-out of National High Speed Network and Links to Heathrow & HS1**

The HSUK response explained how:

### **Phased Roll-out**

- HS2's route from London to the West Midlands lacks any viable intermediate connection to the existing network, therefore 'phased roll-out' seems impossible **(3.1)**.
- Much greater possibilities for phased roll-out are possible for the HSUK route following the M1 corridor **(3.1)**.

### **Links to Heathrow**

- The HS2 'Y' cannot provide efficient direct connections from Heathrow to regional cities **(3.2)**.
- As a result potential flows are insufficient to justify the major investment in tunnelled infrastructure necessary to bring an HS2 spur or loop to Heathrow **(3.2)**.
- The only viable HS2 link to Heathrow is via a shuttle connection at Old Oak Common **(3.2)**.
- Heathrow exerts a huge 'gravitational pull' on the routing of HS2, drawing it away from its optimum intercity alignment following the M1 corridor and instead dictating both its destructive route through the Chilterns and its entire national configuration as the inefficient 'Y' **(3.4)**.
- The alternative HSUK scheme, for an integrated 'Compass Point' network of routes from Heathrow linking to east, south, west and north, and connecting to an M1-aligned high speed line at Brent Cross, allows much more efficient and comprehensive links from Heathrow to all regional cities **(3.3)**.

*The difficulties described above, coupled with a lack of capacity on HS2's 2-track stem for dedicated direct regional services to Heathrow, ultimately led to the cancellation of the proposed HS2 Heathrow spur in March 2015. There is now no prospect of HS2 fulfilling one of its key political promises, to provide direct regional high speed services to Heathrow, This leaves High Speed UK as the only proposal offering comprehensive direct high speed services to Heathrow from most regional cities. This also demonstrates the futility of dedicated uniaxial high speed lines as a means of distributing airline passengers to their regional destinations, as was stated in the HSUK response.*

### **Links to HS1**

- The proposed HS2-HS1 link, comprising a 6km long single track tunnel from Old Oak Common to the North London Line in Camden, appeared to be both excessively expensive and operationally fragile **(3.5)**.
- HSUK's alternative route, approaching Euston from the north-west, appeared to offer a more viable and cost-effective connection to HS1 **(3.5)**.

*The difficulties described above, coupled with the extreme sensitivity of the urban environment in Camden, ultimately led to the cancellation of the proposed HS2-HS1 link in March 2014. By this time, costs had risen to £700M. As with the abandoned Heathrow spur (see above) there is now no prospect of HS2 fulfilling another of its key political promises, to provide direct services from UK regional cities to Paris, Brussels and other EU cities.*

*The difficulties of creating a direct link to HS1 have also caused the HSUK scheme to be amended, to fully exploit the advantages offered by HSUK's alternative M1 corridor route, which follows the Midland Main Line as it enters the Greater London conurbation. It is now proposed that HSUK services en route to HS1 will simply continue along the Midland Main Line to St Pancras, and after reversal there continue along HS1 to the Channel Tunnel. This will require no new construction outside the existing railway boundary, and alterations to existing track, signalling and electrification equipment are estimated to cost no more than £2M.*

## **7.4 HS2 Principles and Specification and Route Selection Process**

The HSUK response explained how HS2's overall performance as a UK rail network is compromised by HS2 Ltd's failure to adopt a 'UK-appropriate' model of operation, in particular:

- **HS2's segregated/exclusive operation (4.1.1).**  
HS2's segregation from (rather than integration with) the existing rail system can be seen in its separate stations in primary cities (eg Birmingham Curzon Street), its general lack of connection to the existing network, and its bypassing (and blighting) of key second-tier cities centres such as Coventry, Leicester and Stoke.
- **Speed (4.1.2).**  
HS2's design for the unprecedented speed of 400km/h will make it the fastest railway in the world. Such extreme speed delivers relatively small reductions in journey time, but it causes much higher engineering costs and requires much greater energy use (rising proportionate to the square of speed). Most significantly, specification for extreme speed makes it impossible for the high speed line to follow existing transport corridors such as the M1 and instead dictates environmentally damaging rural routes on which it is not practicable to optimise integration and connectivity.

The HSUK response raised the following concerns with the HS2 project remit:

- **General remit issues (4.2.1).**  
The HS2 project remit failed to specify the desired outcome of an enhanced and optimised national intercity network. Instead, it comprised an unfocussed set of localised requirements, many of which tended to predetermine the HS2 proposals and prevent fair consideration and assessment of alternatives.

*The deficiencies of the HS2 project remit – which sets out what is to be built, rather than what the project must achieve – are discussed in greater detail in Appendix A.*

- **Onward Development of HS2 beyond West Midlands (4.2.2).**  
Item 2 of the HS2 project remit (to consider options to develop HS2 beyond the West Midlands) has effectively dictated that all network configurations given

serious consideration by HS2 Ltd should pass through the West Midlands en route to destinations further north. This allowed HS2 Ltd to dismiss the M1-aligned High Speed North with no detailed investigation. This was despite the fact that its alternative 'spine & spur' configuration was far more effective at interlinking the UK's many conurbations than any of the configurations considered by HS2 Ltd.

*HS2 Ltd's flawed option selection procedure is discussed in greater detail in Appendix B.*

- **Proposed Crossrail/Heathrow/GWML Interchange (4.2.3).**

Item 5 of the HS2 project remit (to consider options for an interchange station "between HS2, the Great Western Main Line and CrossRail, with convenient access to Heathrow Airport") effectively specifies the proposed HS2 interchange at Old Oak Common. This in turn has the effect of predetermining HS2's rural route to the West Midlands and the entire 'Y' configuration of the HS2 national system.

These concerns lead inevitably towards a strong suspicion that the HS2 'solution' was predetermined from the very start of the HS2 project, when the remit was first formulated. This suspicion is compounded by multiple failures in the HS2 route selection process which are revealed by detailed review of HS2 Ltd's own reports and documentation:

- The HS2 Phase 1 route was selected with no consideration of how it might perform as part of an optimised national network **(4.2.4)**.
- All options for routes following the M1 corridor were rejected at the first stage of consideration, despite the acknowledged fact that the M1 corridor offered the only route that would avoid passing through the Chilterns AONB **(4.2.4)**.
- All the reasons employed to dismiss an M1-corridor route from consideration are uniformly false, spurious or unreasonable **(4.2.4)**.

The specific rationale employed by HS2 Ltd to dismiss any M1 corridor route is discussed below:

- **Route length (4.2.5):**

HS2 Ltd's assertion that an M1 corridor route would be excessively long is not reasonable. The High Speed North route from London to Birmingham following the M1 and M6 was only 7km – equivalent to 1.5 minutes at 300km/h – longer than the HS2 route.

*With the HSUK route from London to Birmingham now revised to follow the existing main line via Coventry, this discrepancy reduces to 4.3km/52 seconds.*

- **Impact on Communities / Requirement for Tunnelling (4.2.6):**

HS2 Ltd's assertion of a need for excessive lengths of tunnel for a high speed line following the M1 corridor is disproved by the route design undertaken (at

1:50,000 scale) for High Speed North. This shows 10km of tunnel required for an M1 corridor route, compared with 20km for HS2's Chiltern-aligned route.

*HSUK's more detailed route design (at 1:25,000 scale) now shows 12km of tunnel required for its M1 corridor route to Birmingham. Meanwhile, environmental concerns along HS2's highly intrusive line of route have caused HS2's tunnelling requirement to grow to 50km.*

- **Capability of M1 Corridor to accommodate high speed alignment (4.2.7):**  
HS2 Ltd's assertion that the M1 corridor could not accommodate a high speed line running parallel to the motorway is again disproved by the route design undertaken (at 1:50,000 scale) for High Speed North. This showed that a new railway designed for the maximum speed of 320km/h could follow the M1, with only minor deviation. Any 'islands of blighted land that might be created between motorway and high speed line will have a much lesser impact than that created by the huge earthworks required along HS2's inappropriate and intrusive line of route.

*HSUK's more detailed route design (at 1:25,000 scale) now shows that the M1 corridor can accommodate a high speed line designed for 360km/h maximum speed. HSUK's timetabling demonstrates that any small timing penalties sustained by an inability to match HS2's 'future-proofed' top speed of 400km/h are massively outweighed by the full integration that is possible along the M1 corridor, which allows the benefits of HSUK's reduced journey times and greater connectivity to be spread to all intermediate communities eg Luton, Milton Keynes, Northampton, Coventry and Leicester.*

*HS2 Ltd's false assertions with regard to the capability of the M1 corridor to accommodate a parallel high speed rail alignment are discussed in greater detail in Appendix C.*

- **Incompatibility with proposed high speed rail link to Heathrow (4.2.8):**  
HS2 Ltd's assertion that an M1 corridor high speed line was too far from Heathrow for any airport link to be "remotely feasible" appears to presuppose that HS2 Ltd's favoured models of airport access are economically viable, or meet the UK regions' need for direct rail access to the national aviation hub. Neither supposition is true. Long tunnelled spurs or loops to an 'on-airport' station will be hugely expensive, yet benefit relatively few – and the proposed 'shuttle' connection at Old Oak Common fails to provide the required direct link. HSUK's 'Compass Point' proposals make use of the existing Heathrow Express infrastructure, require relatively short lengths of new construction, but enable 360-degree connectivity for Heathrow, with high speed and local direct services radiating to most regional cities. This fully accords with regional aspirations for direct high speed links to Heathrow.

*All HS2 proposals for direct regional services to Heathrow are now abandoned. HS2's best offer for improved Heathrow access is by means of a change of trains at Old Oak Common, and a highly restrictive range of regional destinations. By contrast, the HSUK timetable shows Heathrow directly connected to most principal regional cities, and average journey times reduced by around 50%, compared with existing journeys, most of which require a highly inconvenient and congested Tube transfer between central London stations.*

The HSUK response also raised the following specific issues:

- **National Network Development (4.2.9):**

HS2 Ltd's studies underpinning the selection of its chosen route pay no heed to the true priority, to create an efficient national network capable of better connecting the UK's regional communities. The inappropriate remit effectively predetermines HS2's 'Y' configuration and prevents proper consideration of more efficient configurations such as the M1-aligned HSUK 'spine and spur' which is far more capable of connecting the nation, and thereby delivering much greater economic and environmental benefit.

- **Concerns re High Speed Rail Development to East Midlands (4.2.10)**

HS2's routeing strategy, for a direct route from London to the West Midlands, and for the East Midlands only to be served in subsequent phases, raises 2 specific concerns. It places the East Midlands in a clearly subsidiary relationship with the West Midlands, and it also tends to predetermine the HS2 'solution' for the East Midlands i.e. a parkway station located at Toton, remote from the centres of Derby and Nottingham and completely unable to serve Leicester.

## **7.5 HS2 – the best route from London to the West Midlands?**

The HSUK response explained how:

- The proposed HS2 Phase 1 route was neither the best route from London to the West Midlands, nor the route that would deliver greatest benefit to the national rail system **(5.1)**.
- Whilst HS2 Ltd had correctly chosen Euston Station as its London terminus, its destructive proposals to expand the station were unnecessary. If Euston's commuter flows could be diverted to Crossrail, there would be no need to physically expand the station **(5.2)**.
- The proposed HS2 route from London to the North Scarp of the Chilterns (at Aylesbury) would require a much greater length of tunnel (20km) and cause unnecessary environmental intrusion, compared with an M1-aligned route which would require 10km of tunnel to reach an equivalent position (at Luton) **(5.3)**.

*In subsequent design development, the HS2 tunnelled length (along the line of route from Euston to Aylesbury) has risen from 20km to 40km, while the HSUK tunnelled length (along the line of route from Euston to Luton) has risen from 10km to 11km.*

- The onward ultra-direct HS2 route to the West Midlands appears to be primarily justified by a desire for future operation of HS2 services at 400km/h and for gaining high speed rail access to Heathrow. In doing so, the opportunity offered by an M1-aligned route for a 4-track route north from London, and for radically improved intercity links to Luton, Milton Keynes, Northampton, Coventry and Leicester, would be lost **(5.4)**.

*With cancellation in March 2015 of proposals for an HS2 spur to a dedicated station at Heathrow, most of the primary logic for the proposed HS2 route through the Chilterns AONB has now disappeared. Yet since the cancellation of the Heathrow spur, there has been no review by HS2 Ltd or Government or the Transport Select Committee of the fundamental logic by which the proposed HS2 route was determined. There has also been no consideration of whether alternative proposals such as HSUK might better meet the twin priorities of a high speed rail route from London to the Midlands, the North and Scotland, and regional high speed rail access to Heathrow.*

- HS2's proposed terminus station at Birmingham Curzon Street, remote from the West Midlands' primary rail hub at Birmingham New Street, will fail to optimise HS2's connectivity within the West Midlands. It will also destroy the fundamental integrity of the national rail network which relies on a single hub at Birmingham New Street. These connectivity concerns dictate that HS2 is developed in a more integrated manner so that Birmingham New Street remains the primary hub of the regional and the national rail network **(5.5)**.
- HS2's proposed 'Birmingham Interchange' station is disconnected from existing rail services and is effectively a 'parkway' station primarily aimed at promoting out-of-town development. It seems likely only to promote greater car use on the M42 and on the M6 by passengers unable to access HS2 at Curzon Street. It seems likely also to damage intercity rail services to nearby Coventry. Far superior intercity rail access to both Birmingham Airport and the National Exhibition Centre, and also to Coventry and Leicester, could be achieved by 4-tracking the existing Coventry-Birmingham route, with north- and south-bound connections near Rugby to an M1-aligned national spine route **(5.6)**.

*The implications of HS2's selection of Birmingham Curzon Street and Birmingham Interchange stations, and their impacts on local initiatives to establish a 'Midlands Engine' to develop the Midlands economy, are set out in greater detail in Sections 4.9 and 4.10 of HS2 – High Speed to Almost Nowhere.*

## 7.6 Appraisal of Sustainability

The HSUK response expressed the following concerns:

- The Appraisal of Sustainability fails to recognise the basic requirement for any major public project such as HS2 to be designed and developed in such a way as to deliver CO<sub>2</sub> emission reductions broadly compatible with the 80% reduction target of the 2008 Climate Change Act **(6.1)**.
- HS2's broadly 'carbon neutral' performance (ie its intervention will not bring about significant CO<sub>2</sub> reductions across the entire transport sector) is fundamentally incompatible with this 80% target **(6.1)**.
- This problem stems from HS2's poor design, with the wrong operational model (segregated rather than integrated), the wrong routeing strategy (following intrusive rural routes rather than established transport corridors) and the wrong network configuration (the 'Y' rather than HSUK's 'spine and spur') **(6.1)**.

*The HSUK response included the 'Alan Brooke' study, a detailed assessment that compared the potential of HS2 and HSUK to deliver transport sector CO<sub>2</sub> reductions. This study essentially validated HS2's 'carbon neutral' performance, and demonstrated how HSUK's superior network coverage and integration could deliver around 600 million tonnes of CO<sub>2</sub> savings.*

- The Appraisal of Sustainability also fails to recognise the fact that the UK's 'unspoilt' rural landscapes represent a finite and irreplaceable resource that must be preserved, unless there is an overwhelming imperative to do otherwise **(6.1)**.
- With the nearby M1 corridor offering a clear alternative to the proposed HS2 rural route through the Chilterns AONB, there can be no justification for HS2's massive environmental intrusion **(6.1)**.

## 7.7 Compensation Options

The HSUK response stated that:

- HS2's route from London to the West Midlands, running through the Chilterns AONB and other sensitive areas, will cause massive intrusion and thereby require similarly massive compensation payments **(7.1)**.
- Expenditure on compensation would seem likely to be significantly lower for an M1/M6aligned route such as HSUK, given the much lower intrusion and environmental nuisance caused by such a route **(7.2)**.

## 8 Official Consultation on Draft Environmental Statement for Phase 1 of HS2

Responding Organisation	High Speed North #
Authors of Response	Christopher Quayle** and Quentin Macdonald
Date	July 2013
For full text of response see	Appendix F

# For simplicity of narrative, the abbreviation 'HSUK' is generally used in the following text to describe either the High Speed North proposals as they existed in July 2013, the High Speed UK proposals as they exist today (2018), or High Speed North/High Speed UK in a corporate sense.

\*\* Christopher Quayle is a pseudonym adopted by Colin Elliff to avoid accusations of conflict of interest from his then railway industry employers.

In 2013, the Government invited public comments upon the Draft Environmental Statement that had been prepared for Phase 1 of HS2 from London to the West Midlands. The Draft Environmental Statement comprised 124 pages of detailed documentation, and a clause-by-clause response was not practicable. Instead, the HSUK response focussed upon the following 12 key issues, all referenced to the page and clause numbering of the HS2 Phase 1 Draft Environmental Statement:

1. HS2 Remit (P17, Item 2.2.3)
2. The Need for High Speed Two (P17, Section 2.3)
3. Enhancing Capacity (P18, Section 2.4)
4. An Engine for Growth (P19, Section 2.5)
5. Controlling Greenhouse Gas Emissions (P20, Section 2.6)
6. Operational Interfaces (Table 4, P26, Item 3.3.12)
7. Scope of Assessment (for Draft Environmental Statement) (P54, Section 4.2)
8. Mitigation (P74, Section 6)
9. Regulatory Requirements (P84, Item 7.1.2)
10. Strategic Alternatives (P89, Item 7.3.1 et seq)
11. High Speed Alternatives to the Y Network (Figure 11, P92, Item 7.3.45 et seq)
12. Alternative specifications and routes (P94, Item 7.4 et seq)

In summary, the HSUK response explained that:

- An Environmental Impact Statement (EIS) is required under the Town & Country Planning Act (1999) in support of any major infrastructure project. Amongst many other requirements, an EIS must review the alternatives that were considered in the development the project.
- This requirement is based upon the fundamental logic that the selected option now being taken forward to construction must represent the best balance of benefits against environmental damage.

- The HSUK response catalogued the false statements and assorted other flaws in the option selection process, that led to the rejection of the M1 corridor and to the adoption of HS2's much more damaging Chiltern-aligned route.
- The HSUK response explained the multiple inefficiencies underlying the HS2 proposals, that stem from the unverified and mistaken assumptions of segregated operation, design for potential 400km/h operation and predication upon Heathrow. These inefficiencies are the root cause of HS2's inadequate environmental performance, offering no significant CO<sub>2</sub> emissions reductions across the transport sector and failing to contribute to the national targets set by the 2008 Climate Change Act.
- The HSUK response also explained how, through adopting strategies diametrically opposed to those underpinning HS2 ie fully integrated operation between high speed and classic networks, design for a lower maximum speed of 360km/h and focus upon existing intercity corridors, HSUK was capable of generating the road to rail modal shift necessary to deliver transport sector CO<sub>2</sub> emissions reductions broadly in line with 2008 Climate Change Act targets.

The HSUK response to the HS2 Phase 1 Draft Environmental Statement is summarised in the following paragraphs. The references to section numbering **(1.)** relate to the HSUK response.

## **8.1 HS2 Remit (1.)**

The HS2 remitted requirement, to consider "Options for a Heathrow Airport international interchange station on the GWML with an interchange with Crossrail" (in other words the proposed HS2 interchange at Old Oak Common, see Appendix A) has effectively predetermined HS2's intrusive rural route from London to the West Midlands. This has prevented fair consideration of alternative routes following the M1/M6 corridor, which could be constructed with vastly reduced environmental impact and at the same time achieve far greater connectivity improvements.

## **8.2 The Need for High Speed Two (2.)**

Whilst new, higher speed lines are the best option for a higher capacity rail network, HS2's concentration upon north-south London-centric routes will not create the necessary balanced, integrated and accelerated interurban network. This will fail to achieve widespread modal shift away from the dominant roads sector, and will thus fail to make any meaningful impact on the 91% of the total transport CO<sub>2</sub> emissions attributable to road transport.

### **8.3 Enhancing Capacity (3.)**

HS2 Ltd's excessive focus upon extreme speed along the high speed line that it is remitted to develop dictates expensive and environmentally damaging rural routes that cannot practicably be integrated into the existing rail network. Lack of integration with and connection to existing routes will prevent HS2 from bringing about enhanced capacity and connectivity across the wider rail network.

Far greater gains in capacity and connectivity, and far greater overall journey time reductions, and be achieved through the alternative HSUK strategy of full integration with, and physical connection to, the existing main line network, all is possible with an M1-aligned route.

*All this is confirmed by the findings of HS2 : High Speed to Almost Nowhere.*

### **8.4 An Engine for Growth (4.)**

HS2's fundamental London-centricity and lack of integration will prevent it from delivering either the promised environmental or economic benefits, especially to the UK regions. Instead, by concentrating connectivity in London, there will be a tendency to draw economic development away from the regions.

### **8.5 Controlling Greenhouse Gas Emissions (5.)**

HS2's lack of connectivity and integration prevents it from achieving significant road-to-rail modal shift, and therefore it fails to make any contribution to meeting the 80% CO<sub>2</sub> reduction target of the 2008 Climate Change Act. This leaves the entire HS2 project fundamentally in conflict with the Government's environmental policy.

Far greater CO<sub>2</sub> savings are possible with HSUK's much greater connectivity and integration (as was reported to Government in the HSUK response to the 2011 HS2 Phase 1 Consultation, see Item 1.6).

### **8.6 Operational Interfaces (6.)**

The lack of any connection for over 160km of new railway between London and the West Midlands is indicative of HS2's almost complete lack of integration.

### **8.7 Scope of Assessment (for Draft Environmental Statement) (7.)**

Given that the intervention of new high speed lines will have effects spreading across the entire country (for instance in improvements in capacity and connectivity enabling road-to-rail modal shift and therefore CO<sub>2</sub> reductions), the Draft Environmental Statement should have had a similar national scope.

## **8.8 Mitigation (8.)**

By far the most effective mitigation against HS2's excessive local impacts would be to select an alternative route following an existing transport corridor such as the M1, where the additional impact of building a new high speed line is small, and the communities affected (eg in Luton and Milton Keynes) will gain greatly from the improved connectivity.

## **8.9 Regulatory Requirements (9.)**

The HS2 Draft Environmental Statement cites (in Item 7.1.2) the overarching legal requirement of the 1999 Town & Country Planning Act that an Environmental Impact Statement should be prepared, and that this Statement must list the alternatives that were considered in the development of the scheme under consultation.

This clearly implies that any scheme advanced by the Government should represent the best balance of capacity and connectivity benefits against the financial cost and environmental impacts, and that the Government must be able to present a rational justification for its selection of the chosen scheme.

## **8.10 Strategic Alternatives (10.)**

The selection of the London-centric HS2 'Y-network', lacking any transpennine connectivity and failing to interconnect most regional communities, appears to fail any rational capacity/connectivity test.

## **8.11 High Speed Alternatives to the Y Network (11.)**

The 3 alternative configurations of a national high speed rail network, as presented in the Draft Environmental Statement, do not constitute a fair representation of the alternatives presented to HS2 Ltd in the development of HS2. The HSUK response emphasised that all 3 configurations offer greatly inferior interregional connectivity to that offered by High Speed North. **(11.1)**

High Speed North (and indeed any M1-aligned route) was rejected (in HS2 Ltd's *Report to Government* dated March 2010) on account of its 'failure' to pass through the West Midlands en route to destinations further north. No justification is ever presented for why HS2's route from London to the West Midlands via the Chilterns AONB (which is embodied in all 3 alternatives considered in the Draft Environmental Statement) is an essential element of any future national high speed rail network. **(11.2 & 11.3)**

## 8.12 Alternative specifications and routes (12.)

Generally, the Government's proposals appear to be based on completely false technical premises of:

- Segregation rather than integration **(12.1)**;
- Adoption of an excessive design speed **(12.2 & 12.3)**;
- Unfair assessment of routes following M1 corridor **(12.4 & 12.5)**;
- Undue predication of route upon Heathrow **(12.6 & 12.7)**;
- Failure to consider diversion of WCML commuter flows as strategy to avoid any need to expand Euston station **(12.8 & 12.9)**.

All these failures have resulted in a scheme with far greater environmental impact than would occur with a scheme developed to diametrically alternative principles of:

- Full integration between high speed line and existing railway system;
- Lesser design speed;
- Close alignment with M1 corridor;
- Achieving access to Heathrow by allied 'Compass Point' strategy;
- Integrated planning of London's transport.

These findings are conclusively established in *HS2 – High Speed to Failure* and *HS2 – High Speed to Almost Nowhere*.

## 9 A 'Call For Proposals' from the Government Airports Commission

Responding Organisation	High Speed North #
Authors of Response	Christopher Quayle** and Quentin Macdonald
Date	July 2013
For full text of response see	Appendix G

# For simplicity of narrative, the abbreviation 'HSUK' is generally used in the following text to describe either the High Speed North proposals as they existed in July 2013, the High Speed UK proposals as they exist today (2018), or High Speed North/High Speed UK in a corporate sense.  
\*\* Christopher Quayle is a pseudonym adopted by Colin Elliff to avoid accusations of conflict of interest from his then railway industry employers.

In 2012, the Government established the Airports Commission, chaired by Sir Howard Davies, to report upon options for developing new airport capacity in the South-East of England. In 2013, the Government issued a 'Call for Proposals', an invitation to the general public to contribute to the work of the Airports Commission. The HSUK input focussed upon the following key issues:

1. The Opportunity presented by the High Speed North Proposals
2. Importance of a Hub Airport to UK Economy
3. Adverse Consequences of Abandoning Heathrow
4. Alternative 'Systems' Approach to Hub Airport Development
5. On-site Expansion at Heathrow and Beyond
6. Heathrow / Gatwick Multi-Site Hub Operation

The HSUK input demonstrated that through developing Heathrow's surface access to provide direct rail links to cities across mainland UK, it becomes practicable to operate Heathrow and Gatwick as a multi-site hub, with a direct rail link between the two airports. This will enable 'landside' access to both airports from most UK cities, and also enable 'airside' transfer of transit passengers, luggage and cargo. With Gatwick far more suited to physical expansion with a second runway, this will avoid the need to expand Heathrow.

The HSUK response to the Airports Commission's 'Call for Proposals' is summarised in the following paragraphs, and referenced to the section numbering of the response **(2.)**.

### 9.1 Opportunity presented by the High Speed North Proposals (2.)

Heathrow's existing rail links are presently very poor, only connecting the airport to central London. Even with the planned addition of new rail links to the south (Airtrack) and to the west (Western Access), Heathrow will continue to be poorly linked to most of its regional hinterland, in particular the major cities of the Midlands, the North and Scotland.

Under HSUK proposals, the addition of a link to the north (the Northern Orbital Arm) and the full integration of all existing and planned rail routes to Heathrow will create a symmetrical 'Compass Point' network, and extend Heathrow's rail links to all main lines and

placing Heathrow no more than a single change of trains from most major UK population centres.

The connection of the Compass Point Network to High Speed UK at Brent Cross will also create the possibility for through high speed services to Heathrow from all principal regional cities.

Together, the two interventions of the Compass Point Network and HSUK will create a 'hub and spoke' system for Heathrow in which the spokes will comprise rail services, operating at hourly frequency and extending across most of mainland UK. This will hugely improve regional connectivity to Heathrow, and it will also allow most if not all domestic flights to Heathrow to be discontinued, and replaced with more valuable intercontinental flights to emerging economies.

## **9.2 Importance of a Hub Airport to UK Economy (3.)**

The presence of a hub airport in the UK results in a much larger range of international destinations than the country would be able to sustain without such a hub. It is therefore a matter of great concern that Heathrow lacks the capacity to add new routes to emerging markets, in particular India, China, Russia and Latin America and that, in the absence of this capacity, economic growth is likely to be diverted to other neighbouring countries with higher capacity airline hubs.

## **9.3 Adverse Consequences of Abandoning Heathrow (4.)**

Whilst the imperative for higher capacity might seem to compel the transfer of Heathrow's hub function to another airport (eg Stansted Airport or a new Thames Estuary airport), this transfer carries a wide range of adverse issues which dictate that Heathrow remains the best site for London and the UK's hub airport:

- Economic dislocation of transferring over 100,000 Heathrow-dependent jobs to another location.
- Loss of connectivity for international firms already located close to Heathrow.
- Financial cost of new airport construction.
- Environmental impact of new construction, especially expansion into adjacent communities.
- Extra distance from central London.
- Greater difficulty in accessing UK regions.
- Hence North-South Divide exacerbated through reduced international connectivity to UK regions.

## 9.4 Alternative 'Systems' Approach to Hub Airport Development (5.)

The HSUK response advocated an alternative systems-based approach to airport development which recognised surface access as a vital component of the airport 'system', with an importance equal to that of terminal capacity and runway capacity. With efficient surface access in place, offering good quality connectivity across all of the airport's hinterland (in the case of Heathrow, extending across all of mainland UK) the following benefits become possible:

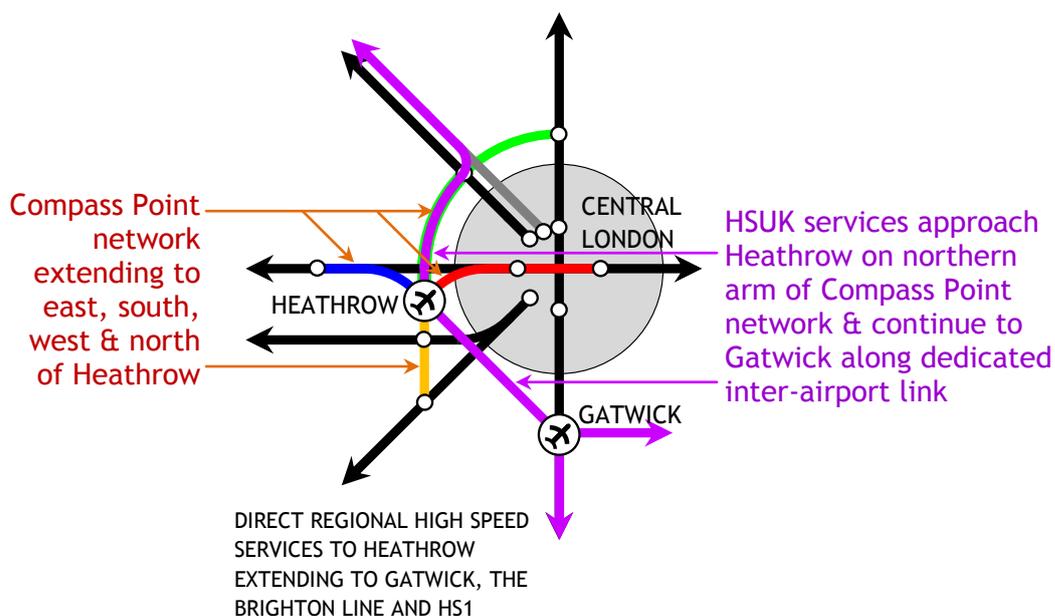
- Most domestic flights eliminated, and replaced more valuable long-distance flights.
- Improved links to Heathrow across all of mainland UK.
- Proximity to key transport corridors to north and west of London.
- Lower carbon footprint for journeys to airport.
- Reduced congestion on road network around Heathrow.

## 9.5 On-site Expansion at Heathrow (6.)

The HSUK response stated that there appeared to be no possibility of physically expanding Heathrow without huge controversy. It was therefore necessary to consider 'smarter' solutions such as multi-site hub operation.

## 9.6 Heathrow / Gatwick Multi-Site Hub Operation (7.)

The HSUK response stated that previous 'Heathwick' proposals to integrate Heathrow and Gatwick had failed on account of its isolation from and lack of integration with other railways, either existing or proposed. However, the viability of multi-site hub operation would be transformed by the HSUK initiative.



**Figure 9.1 : Heathrow-Gatwick link and Compass Point Network**

Multi-site hub operation would incorporate the following key features:

- Direct HSUK services to Heathrow from all primary UK cities would extend to Gatwick along new dedicated link. Thus both airports would enjoy **landside** connections across all of mainland UK.
- These trains could continue from Gatwick either to the South Coast or to HS1.
- A dedicated link 46km long could offer journey time of 14 minutes from Heathrow Terminal 5 to Gatwick.
- Shuttles operating along the dedicated link would transfer transit passengers, luggage and cargo between Heathrow and Gatwick. This would be an **airside** connection.
- Under these proposals, any extra runway required for London and the South-East could be constructed at Gatwick, with much reduced environmental impact.

## 10 Official Consultation on Phase 2 Proposals for the HS2 Project

Responding Organisation	High Speed UK
Authors of Response	Colin Elliff and Quentin Macdonald
Date	January 2014
For full text of response see	Appendix H

In 2013, the Government invited public responses to its official consultation on its proposals for Phase 2 of HS2, extending northwards from the West Midlands to Yorkshire and to the North-West. The consultation was framed around the following key issues:

1. The proposed western leg of HS2 between the West Midlands and the North-West.
2. Proposed HS2 stations at:
  - Manchester Piccadilly
  - Manchester Airport
3. Any additional stations on the western leg.
4. The proposed eastern leg of HS2 between the East Midlands and Yorkshire.
5. Proposed HS2 stations at:
  - Leeds New Lane
  - Sheffield Meadowhall
  - Toton/East Midlands Interchange
6. Any additional stations on the eastern leg.
7. Sustainability issues and route alternatives.
8. New services on existing rail network using capacity freed up by HS2.
9. Introduction of other utilities along the proposed Phase Two line of route.

The consultation also invited comment upon various technical aspects of HS2's design principles and design assumptions. The HSUK response focussed upon the following specific issues:

- A HS2 rail services will comprise long distance, city-to-city journeys;
- C Benefits will be extended to destinations further north by running trains off HS2 onto the existing rail network; and
- D HS2 must be well integrated with other transport networks to ensure door-to-door journey time savings are delivered.
- I The principles of sustainable development will be harnessed, where possible avoiding or otherwise minimising and mitigating sustainability impacts.
- Q The route will be designed for speeds up to 250mph (400kph), though on opening, a maximum train speed of 225mph (360kph) will be assumed.

The following sections (10.1 to 10.13) set out the key points of the written response by HSUK to the HS2 Phase 2 consultation. This response focussed particularly upon the inappropriate station 'solution' proposed for each of the major cities served by HS2. A particular concern was the development of HS2 to an essentially London-centric agenda, with no thought for transpennine connections between Northern cities.

This London-centric agenda is best exemplified in the HS2 terminus stations proposed in both Manchester and Leeds; these are totally incompatible with any future transpennine high speed link running on a Liverpool-Manchester-Leeds-Hull axis.

Only 5 months after the closing of the HS2 Phase 2 consultation in January 2014, then-Chancellor George Osborne launched the 'Northern Powerhouse', with a suite of initiatives including 'HS3' proposals for a transpennine high speed line linking Manchester and Leeds. The HS3 scheme was swiftly fleshed out with a comprehensive specification for journey time improvements between all principal Northern cities, and from these cities to Manchester Airport.

3 years on, there is still neither detail of HS3 proposals, nor indication of how HS2 and HS3 will be efficiently integrated. This integration is hugely hampered by the need to retrofit HS3 (now rebranded 'Northern Powerhouse Rail') routes onto HS2's established proposals for routes and stations (in Manchester, Leeds and other locations) that were developed with no thought for achieving improved links between Northern cities.

The HSUK response to the HS2 Phase 2 Consultation is summarised in the following paragraphs, and referenced to the section numbering of the response **(1.1)**.

## **10.1 Route of HS2 Western Leg**

The HSUK response stated that:

- The HS2 routeing strategy, that requires a 12km long tunnel between Manchester Airport and Manchester Piccadilly stations, is flawed **(1.1)**.
- The 3 proposed connections to the existing network are inadequate for integrated and resilient operation, and will prevent cities such as Stoke from being efficiently linked to HS2 **(1.2)**.
- The footnote describes how HSUK's east-sided approach to Manchester will require much less tunnelling than HS2's route.

## **10.2 Proposed HS2 Stations on Western Leg**

### **10.2.1 Proposed HS2 Station at Manchester Piccadilly**

The HSUK response stated that:

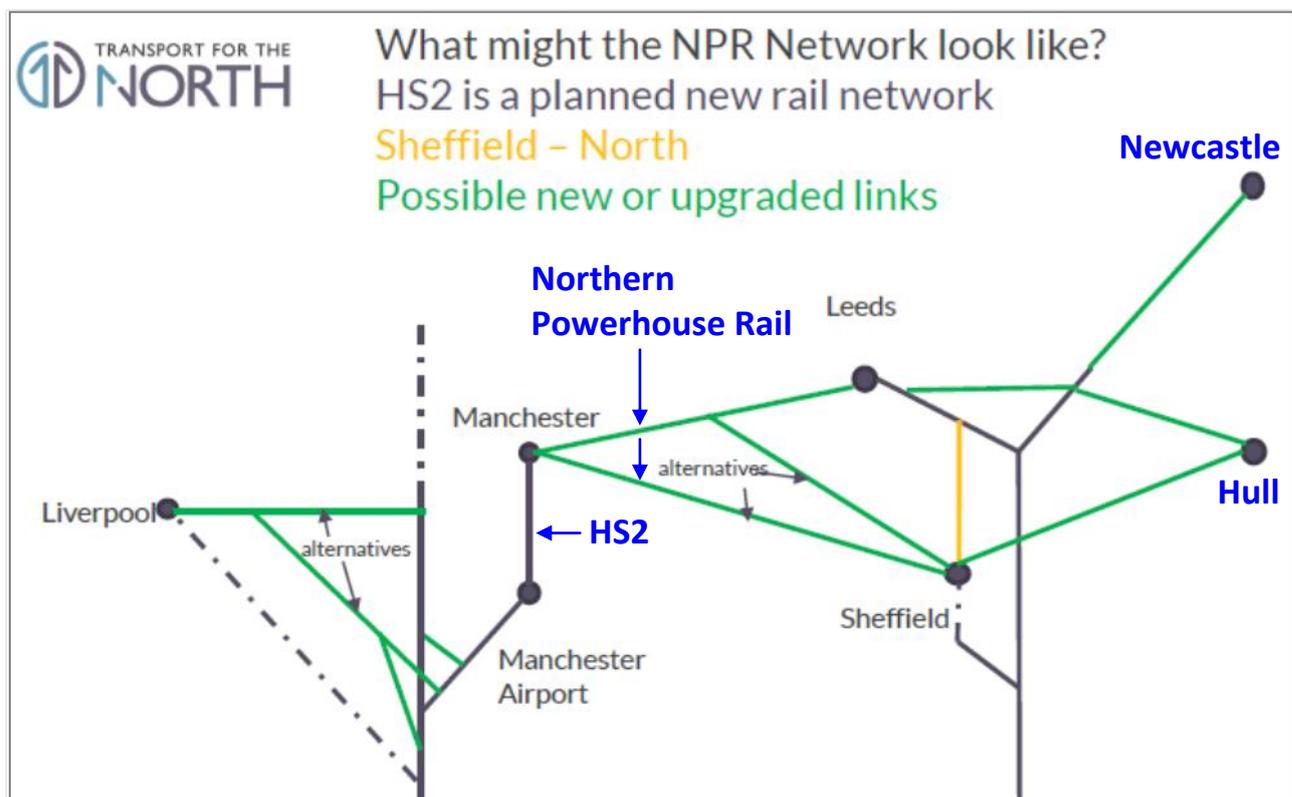
- Manchester Piccadilly station is the correct location for Manchester's high speed terminal **(2.1)**.

- However, its configuration as a terminus is totally inappropriate for future transpennine high speed flows from Liverpool to Hull. The 3 proposed connections to the existing network are inadequate for integrated and resilient operation, and will prevent cities such as Stoke from being efficiently linked to HS2 (2.2).

Schematic plans for Northern Powerhouse Rail (NPR) show NPR services from Leeds entering Manchester (presumably at Manchester Piccadilly) from the east and continuing south along the HS2 route via Manchester Airport, before striking west towards Liverpool.

This Leeds-Liverpool service would only be possible if trains were to enter the proposed HS2 terminus at Manchester Piccadilly, and then reverse there to continue to Liverpool. Such 'through' operation at terminus stations is highly inefficient with long platform occupancy and multiple pathing conflicts in the station throat. Furthermore, the current proposal for 4 HS2 platforms at Manchester Piccadilly would be completely unable to accommodate the planned 18 NPR trains per hour (6tph to Leeds, 6tph to Sheffield and 6tph to Liverpool via Manchester Airport), in addition to HS2 services.

**(2018 Update** – the Transport for the North Strategic Transport Plan, published January 2018, indicates a likely solution for a north-south cross-Manchester tunnel and underground platforms at Piccadilly, to connect the proposed Leeds-Bradford-Manchester high speed line to the onward route to Liverpool via Manchester Airport.



**Figure 10.1 : Northern Powerhouse/HS3 links retrofitted onto HS2 proposals**

Slide from Transport for the North presentation dated 21/2/17, captions added by CSE

- The footnote describes how HSUK will achieve east-west through running across Manchester, with tunnelled platforms below Manchester Piccadilly that will also be used by local services, creating far greater capacity than can be achieved with current 'Northern Hub' proposals.

### 10.2.2 Proposed HS2 Station at Manchester Airport

The HSUK response stated that:

- HS2's Manchester Airport station offers little value. It is remote from the airport and it will only connect Manchester Airport to Birmingham and London **(2.3)**.
- HS2's routing via Manchester Airport will cause nearby Stockport to be bypassed. Stockport's existing intercity service to London will be reduced from 3 trains per hour to a single train per hour. This will carry major adverse economic impacts **(2.4)**.
- The footnote describes how HSUK's full integration with the existing network coupled with a new link from the Stockport-Crewe line to Manchester Airport will enable Stockport to be served both by direct HSUK transpennine services to Manchester Airport, and also by HSUK services from London following an upgraded route via Stoke.

*Under current HSUK proposals, rail access to Manchester Airport will be transformed. The existing terminus station will be converted into a through station, with a new tunnelled route extending to the west, and running via Altrincham to rejoin HSUK to the west of Manchester. This will effectively create a new 'South Manchester bypass', serving Stockport, Manchester Airport and Altrincham. This will hugely increase rail capacity at Manchester Airport, and allow direct services from Manchester Airport to all major communities of the North.*

### 10.3 Other Stations on HS2 Western Leg

The HSUK response stated that:

- No extra stations should be located on HS2's proposed line of route. Any parkway station (eg for Stoke, bypassed by HS2) would be poorly located for the majority of the Potteries, and likely to cause significant local road congestion **(3.1)**.
- Rather than establish parkway stations, a far more effective solution is to design the high speed line with frequent connections to the existing network to allow existing city centre stations to be served **(3.2)**.
- Serving more cities with HS2 demands more capacity on HS2's 2-track stem between London and the West Midlands – but its full 18 train per hour capacity is already allocated, and there is no capacity for additional trains to serve Stoke, and lots of other bypassed cities **(3.4)**.

- The footnote describes how HSUK's 4-track spine route would have the capacity to serve all major cities (including Stoke) currently enjoying premium intercity services.

## 10.4 Route of HS2 Eastern Leg

The HSUK response stated that:

- With only a single link to the existing network, and 3 stations on the HS2 routes, most Yorkshire and East Midlands centres will be left bypassed **(4.1)**.
- Most of these bypassed centres will suffer reduced connectivity as services on existing main lines are reduced **(4.2)**.
- With insufficient capacity on HS2's 2-track stem, there is no prospect of these bypassed cities ever enjoying high speed services **(4.3)**.
- The footnote describes how HSUK's 4-track spine route would have the capacity to serve all major cities currently enjoying premium intercity services.

## 10.5 Proposed HS2 Stations on Eastern Leg

### 10.5.1 Proposed HS2 Station at Leeds

The HSUK response stated that:

- The proposed Leeds New Lane terminus is entirely unsuitable as HS2's station in Leeds for multiple reasons including its remoteness from the existing Leeds station and the city centre, and its incompatibility as a terminus with future transpennine high speed links **(5.1)**.
- The footnote describes how the alternative HSUK proposal to develop the existing Leeds City station and its approach routes as a fully integrated high speed and local station will avoid all of the critical problems associated with the HS2 New Lane terminus.

*HS2 Ltd's revised proposals, launched in 2016, for a Leeds HS2 terminus station located contiguous with the existing Leeds City station, address the concerns with the remoteness of the previous Leeds New Lane proposal. However the new proposal does nothing to remedy the dysfunctionalities associated with a terminus station, either for through transpennine operation or for through running to destinations north and west of Leeds, for instance Bradford, Skipton and Harrogate.*

*It should also be noted that it is currently planned to increase Virgin East Coast London-Harrogate services from a single daily train in each direction to a 2-hourly service throughout the day. The proposed configuration of HS2 in Leeds will make it impossible for such a service to be replicated with HS2.*

## 10.5.2 Proposed HS2 Station at Sheffield Meadowhall

The HSUK response stated that:

- Sheffield Meadowhall represented the best option for a high speed station serving all of the South Yorkshire conurbation **(5.3)**.
- Improved direct links to Sheffield city centre (approx 5.5km from Meadowhall) were essential **(5.4)**.

*Local political pressure has rightly rejected Meadowhall as an appropriate station for a UK primary city such as Sheffield, and this has caused both the HSUK and the HS2 schemes to be revised accordingly.*

*The HSUK proposals were revised in 2014, with the new route brought much closer to Sheffield city centre to serve a new station built on the site of the former Sheffield Victoria. New interchange platforms will be constructed on the approaches to Sheffield Midland to enable passengers from Barnsley and Rotherham to access high speed services from Sheffield to all other UK principal cities.*

*The HS2 proposals were revised in 2016, with Sheffield served at its existing Sheffield Midland station, and the through route diverted away from Meadowhall to a more circumferential route around the South Yorkshire conurbation. Whilst Sheffield Midland might be the most attractive location for a station, it comprises such a great diversion from the through HS2 route, that through routeing via Sheffield Midland carries a time penalty of around 22 minutes. This will have the effect of restricting the range of high speed services proposed for Sheffield; under current proposals, Sheffield will only have high speed services to London, Birmingham and Leeds.*

*HS2's through route skirting the South Yorkshire conurbation will also cause huge environmental problems with a large number of demolitions required in Mexborough.*

## 10.5.3 Proposed HS2 Station at Toton/East Midlands Interchange

The HSUK response stated that:

- The proposed HS2 East Midlands Interchange at Toton is entirely unsuitable as HS2's station serving Nottingham and Derby on account of its remoteness from either Nottingham (by 9km) or Derby (by 14km) and its general inaccessibility by public transport from most of the East Midlands conurbation. This leaves journeys by private car along congested roads as the only practicable option. **(5.5)**.
- The introduction of Toton will have hugely adverse effects upon the local and national rail network. Sheffield-Derby-Birmingham CrossCountry services will have to be diverted to serve Toton with around 25 minutes added to journey times. The existing local East Midlands network – which does not either serve or

pass through Toton – will have to be completely recast to serve Toton, and existing journey times eg Derby-Nottingham or Leicester Nottingham will increase considerably **(5.5)**.

- The footnote describes how High Speed UK would deliver high speed services to the existing central stations in Derby, Nottingham and Leicester, and directly connect these cities to all UK primary cities. This represents a vast improvement in intercity connectivity to the East Midlands.

*Subsequent timetable development demonstrates that HSUK will achieve much greater reductions in average intercity journey times to East Midlands cities, and also much greater improvements in connectivity:*

	<b>HIGH SPEED UK</b>				<b>HS2</b>			
	Average journey time reduction	Cities directly linked by HSUK services	Journeys made faster (out of 31)	Journeys made worse (out of 31)	Average journey time reduction	Cities directly linked by HS2 services	Journeys made faster (out of 30)	Journeys made worse (out of 30)
Derby	46%	27	30	0	2%	0	5	12
Leicester	61%	26	29	0	6%	0	5	12
Nottingham	55%	27	31	0	10%	0	9	1
<b>Average</b>	<b>54%</b>	<b>27</b>	<b>30</b>	<b>0</b>	<b>6%</b>	<b>0</b>	<b>6</b>	<b>8</b>

**Table 10.2 : High Speed UK and HS2 Connectivity to East Midlands cities**

## 10.6 Other Stations on HS2 Eastern Leg

The HSUK response stated that:

- The crucial issue is not whether additional stations should be provided, but whether the station solutions that are proposed will efficiently connect with local networks, whether the cities that will inevitably be bypassed by any high speed line can also gain proper benefit from the investment in new railways, and whether the new line has sufficient capacity to allow these benefits to be realised. In all cases, the HS2 proposals fail these tests **(6.1-6.5)**.

## 10.7 Sustainability issues and route alternatives

The HSUK response stated that:

- The sustainability of the Phase 1 and 2 HS2 proposals is compromised by the adoption of routings that do not follow existing corridors, and instead intrude upon unspoilt rural areas. No worthwhile justification has ever been offered to support the rejection of the M1 corridor, and this clearly implies that the HS2 proposals are in breach of legal requirements to develop proposals with minimised environmental impact **(7.1-7.3)**.

- The consultation document makes no mention of HS2's predicted 'carbon neutral' performance which is plainly at odds with the 80% CO<sub>2</sub> reduction target of the 2008 Climate Change Act. This failure is directly attributable to HS2 Ltd to develop an integrated high speed line proposal capable of delivering step-change gains in capacity and connectivity (7.4-7.5).

## **10.8 New services on existing rail network (8.1-8.7)**

The HSUK response stated that:

- The consultation document fails to address HS2 Ltd's own predictions of cuts in intercity services, given in Table 23, pp91-92, of *HS2 Regional Economic Impacts*.
- These cuts, which are an inevitable consequence of HS2 Ltd's failure to develop HS2 as a fully integrated railway, threaten the basic integrity of the UK intercity network.

## **10.9 Accommodation of Other Utilities (9.1-9.6)**

The HSUK response stated that:

- There is no problem with accommodating other utilities along the route of a high speed line, so long as this does not compromise its basic function as an intercity railway.
- This is already happening in HS2's clear predication upon airports such as Heathrow and Manchester. Airports can only generate relatively low passenger flows, and routeing of HS2 close to Heathrow and Manchester airports has resulted in HS2 being unable to serve major communities such as Luton, Milton Keynes, Northampton, Coventry, Leicester and Stockport.
- By contrast, HSUK's full integration allows step-change connectivity gains both for the airports served by HS2, and the major communities bypassed by HS2.

## **10.10 HSUK Comments re HS2 Design Principles & Design Assumptions**

### **10.10.1 HS2 Design Principle A**

#### ***HS2 rail services will comprise long distance, city-to-city journeys***

- HS2 Ltd has been highly selective in the city-to-city journeys that they have chosen to improve, effectively 'cherry-picking' the most profitable journeys from primary regional cities to London and Birmingham. Most other intercity journeys have been neglected, and many of these journeys will be made slower and less frequent by the intervention of HS2.
- HS2 Ltd has ignored the clear need for an inclusive and integrated national network. As a consequence, the intervention of HS2 will result in an overall reduction in journey time of less than 5%, and a fragmented national network.

- By contrast, the full integration of HSUK will improve the vast majority of intercity services, will make no services worse, and will achieve an overall journey time reduction of around 45%.

*The latest revision of the HSUK timetable (which includes comparative calculations of HS2 journey times) indicates that HS2 will achieve 9% average journey time reductions, considering 496 possible journeys between 32 key cities and airports within the general geographic scope of the HS2 'Y'. By contrast, HSUK will achieve 46% average journey time reductions.*

### 10.10.2 HS2 Design Principle C

***Benefits will be extended to destinations further north by running trains off HS2 onto the existing rail network***

- It is puzzling that this same principle of integration has not been extended to cities of the Midlands and the North that will be bypassed by HS2. This leads directly to the situation outlined above, whereby HS2 intervenes in only a small number of journeys and either fails to improve, or actually worsens the rest.

### 10.10.3 HS2 Design Principle D

***HS2 must be well integrated with other transport networks to ensure door-to-door journey time savings are delivered***

- It is plain that HS2 Ltd has failed to achieve any meaningful integration between its new high speed line and the existing railway system.

*HS2 Ltd's failure to integrate impacts directly on its failure to offer worthwhile door-to-door journey time savings. This is clearly demonstrated by the latest revision of the HSUK timetable which indicates that HS2 will achieve 9% average journey time reductions, considering 496 possible journeys between 32 key cities and airports within the general geographic scope of the HS2 'Y'. By contrast, HSUK will achieve 46% average journey time reductions.*

### 10.10.4 HS2 Design Principle I

***(HS2 will harness) the principles of sustainable development, where possible avoiding or otherwise minimising and mitigating sustainability impacts***

- HS2 displays no evidence of sustainable design. Its predicted 'carbon-neutral' performance (ie no significant reduction in transport CO<sub>2</sub> emissions over a 60 year period) is completely at odds with the requirements of the 2008 Climate Change Act. And with the Government unable to offer robust justification for HS2's intrusive rural alignments, generally clear of existing corridors, this intrusion represents needless destruction of a finite and irreplaceable resource.

### 10.10.5 HS2 Design Principle Q

***The route will be designed for speeds up to 250mph (400km/h), though on opening, a maximum train speed of 225mph (360km/h) will be assumed***

- HS2's extreme speeds offer relatively small journey time savings, compared with more conventional high speed such as 300km/h, but these speeds dictate much greater energy use.
- Adoption of extreme speed has the effect of drawing the high speed line away from existing corridors, where major population centres could benefit. Extreme speed effectively compels the intrusive rural alignment chosen for HS2, and dictates much greater construction cost and timescale to complete.
- There is no evidence that HS2 Ltd has ever undertaken the necessary sensitivity analysis to determine what speed would give the best balance of journey time reductions and connectivity gains for intermediate communities against cost and environmental impact.

## 11 HSUK Petition to House of Commons HS2 Select Committee considering HS2 Phase 1 Hybrid Bill

Responding Organisation	High Speed UK
Authors of Response	Colin Elliff and Quentin Macdonald
Date	May 2014
For full text of response see	Appendix I

After the HS2 Phase 1 Bill passed its Second Reading in the House of Commons in April 2014, the Bill commenced its Committee stage. 6 Members of Parliament were appointed to form the 'HS2 Select Committee', and their remit was to examine the provisions of the Hybrid Bill and to hear petitions from members of the public.

In accordance with standard Parliamentary procedure for a hybrid bill covering a railway project, the HS2 Select Committee's remit was limited by the defined 'principles' of the Bill. In the case of HS2, the 'principles' were defined not as a high speed line linking London and the West Midlands and the first stage of a new national railway network (as per the original HS2 remit, see Appendix A), but as a railway passing between its station and junction points (i.e. Euston, Old Oak Common, Birmingham Interchange, the triangle junction at Water Orton, Birmingham Curzon Street and the WCML connection at Handsacre, as described in Item 2.4 and Figure 2.1).

This highly restrictive definition of 'principle' prevented the Select Committee from considering other routes, and moreover the right to petition was limited to those directly affected by the proposed works, who were deemed to have *locus standi*. The granting of *locus standi* was of course rigorously policed by HS2 Ltd's solicitor who was in constant attendance at all hearings of the HS2 Select Committee.

Against this background, it is entirely unsurprising that the HSUK petition, submitted by 2 railway engineers based in Yorkshire, and primarily concerned with HS2's performance as a national system, was denied *locus standi* and therefore not heard by the HS2 Select Committee.

However, it is a demonstration of how utterly broken and corrupt our Governmental system is, that when confronted with clear prima-facie evidence of the multi-billion pound failure of the HS2 project, both its promoters and the Parliamentarians overseeing the process chose to employ the arcane and inappropriate *locus standi* provisions to avoid having to consider these issues of crucial national interest.

## 12 House of Lords Select Committee on Economic Affairs Inquiry into the Economic Case for HS2

Responding Organisation	High Speed UK
Authors of Response	Quentin Macdonald and Colin Elliff
Date	September 2014
For full text of response see	Appendix J

In 2014, the House of Lords Select Committee on Economic Affairs invited public contributions to its Inquiry into the economic case for HS2. The Inquiry was framed around the following key questions:

1. Is there an economic case for HS2?
2. Should the Department for Transport's Strategic Case for HS2 published in October 2013 have included any other factors in making an economic case for the project?
3. What are the likely economic benefits of HS2 to the Midlands, the North of England and to Scotland? Do they depend on complementary action by government and local authorities, for example by developing measures to attract investment and skilled workers?
4. Might some areas of the country suffer economic disadvantage from HS2?
5. Will London be the main economic beneficiary of HS2?
6. How might the expected benefits of HS2 to the national economy be realised?
7. How should HS2 be operated? Should it be a franchise in competition with the West and East Coast Main Lines?
8. Should travellers pay higher fares on HS2 than other lines?
9. Does the prospect of HS3 affect the economic case for HS2?

High Speed UK's submission addressed these questions, and also introduced the following supplementary issues which were considered relevant to the deliberations of the Select Committee:

10. Interaction between HS2 and Aviation Policy
11. Public Policy and Procedural Issues

In summary, the High Speed UK submission outlined how:

- Multiple failures in the design of HS2 have led to a dysfunctional proposal which is incapable of providing the capacity and connectivity necessary to deliver the predicted economic benefit.
- Instead, many aspects of HS2 – for instance its high cost, its unnecessary intrusion into unspoilt rural areas, its concentration of connectivity upon London and its failure to reduce transport sector CO<sub>2</sub> emissions in line with the requirements of the 2008 Climate Change Act – appear to run directly contrary to many aspects of public policy.

- All these negative issues can be avoided through designing to the correct criteria ie full integration with the existing rail system, and alignment with existing transport corridors, as exemplified in the High Speed UK scheme.

The High Speed UK submission was presented to the House of Lords Economic Affairs Committee on 8<sup>th</sup> December 2014, and is noted in Item 221 of the Committee's report, published in March 2015. The report is available on [www.xxxxxxxxxxxxxx](http://www.xxxxxxxxxxxxxx).

The Committee's report was critical of much of the rationale for HS2, and it posed several key questions for the Government to answer. The Committee's report and the Government's response are discussed in greater detail in Item 11.12.

The HSUK submission to the Inquiry of the House of Lords Economic Affairs Committee is summarised in the following paragraphs, and referenced to the section numbering **(1.)**.

### **12.1 Is there an economic case for HS2? (1.)**

The HSUK response stated that:

- The construction of new high(er) speed railways is an essential element in improving the connectivity and capacity of the national transport system, and thus delivering both economic growth and environmental benefits.
- However, the Government has not yet demonstrated that the specific HS2 proposals will deliver the necessary improvements in either connectivity or capacity.
- The failure to integrate HS2 with the existing railway system means that HS2 as proposed cannot provide the required improvements in connectivity, and therefore it cannot deliver the promised economic benefits.
- HS2's poor performance is clearly demonstrated by the far superior performance of the alternative HSUK proposals, considered on any criteria.

### **12.2 Should the Department for Transport's Strategic Case for HS2 published in October 2013 have included any other factors in making an economic case for the project? (2.)**

The HSUK response stated that:

- HS2 Ltd's calculation of benefit-cost ratio (BCR) appears to assume that the construction of a new high speed line must improve connectivity between the conurbations it links, with no account taken of HS2's many deficiencies, including its poorly connected and parkway stations, and its bypassing of secondary cities.
- There appears to have been no consideration of the ideal of a fully connected network, in which all of its major cities are interlinked with direct and frequent services. This is the ideal to which HSUK has been developed.

### **12.3 What are the likely economic benefits of HS2 to the Midlands, the North of England and to Scotland? Do they depend on complementary action by government and local authorities, for example by developing measures to attract investment and skilled workers? (3.)**

The HSUK response stated that:

- HS2 as currently designed is so isolated that it will only deliver economic benefit if local networks are reconfigured to improve connections to and integrate with HS2's disconnected stations.
- This will add huge costs to the HS2 project, and it risks distorting and disrupting local networks.
- Integration needs to be designed into a project from the start; it cannot be efficiently retrofitted. This is proved by the vastly superior performance of HSUK, which has been designed from the outset as a fully integrated national network.

### **12.4 Might some areas of the country suffer economic disadvantage from HS2? (4.)**

The HSUK response stated that:

- HS2 will cause the greatest economic disadvantage to the cities that it fails to serve (eg Coventry and Stoke) and instead leaves bypassed, and reliant on reduced intercity services on the existing main lines. This will lead inevitably to a '2-tier, 2-speed' Britain in which only the primary cities will receive direct benefit from HS2.
- These issues are compounded by lack of capacity on HS2's 2-track stem, which makes it impossible to provide high speed services to all regional cities.
- Cities outside the geographic scope of HS2 (eg Bristol and Cardiff) will suffer mostly through loss of Crosscountry connectivity caused by HS2's proposed terminus at Birmingham Curzon Street.
- These negative issues are entirely avoided by HSUK's construction with a 4-track spine, and by its full integration with the existing network, including Birmingham New Street.

### **12.5 Will London be the main economic beneficiary of HS2? (5.)**

The HSUK response stated that:

- The London-centricity of the HS2 'Y' will inevitably cause economic benefits (if any) to be concentrated in London.
- This appears to stem from a misunderstanding that faster links to London will deliver benefits to regional economies.

## **12.6 How might the expected benefits of HS2 to the national economy be realised? (6.)**

The HSUK response stated that:

- HS2 will only deliver worthwhile benefits if it is entirely reconfigured to be fully integrated with the existing railway system to form a balanced and symmetrical system interlinking all major cities. The London-centricity of the HS2 'Y' will inevitably cause economic benefits (if any) to be concentrated in London.

## **12.7 How should HS2 be operated? Should it be a franchise in competition with the West and East Coast Main Lines? (7.)**

The HSUK response stated that:

- It is vital that a franchise model is developed for high speed rail that promotes optimum functioning of the national rail network.
- There is a strong suspicion that HS2 has been designed to suit an assumed franchise model. This has led to the failure to properly integrate HS2 with the existing rail system, and the consequent failure to perform effectively as a national network.

## **12.8 Should travellers pay higher fares on HS2 than other lines? (8.)**

The HSUK response stated that:

- The network must be developed to present passengers with a genuine choice so that a premium might be paid for a high speed service, and a lower fare for a slower service.

## **12.9 Does the prospect of HS3 affect the economic case for HS2? (9.)**

The HSUK response stated that:

- Designing HS2 as a 'Y' with no consideration given to transpennine connectivity (as is now proposed with HS3) has led to a highly inefficient and London-centric system with high cost and low connectivity.
- It has also resulted in terminus stations in both Manchester and Leeds which are completely unsuitable for transpennine HS3 routes eg Liverpool-Manchester-Leeds-Hull.
- Belated introduction of HS3 cannot remedy the connectivity deficiencies of the HS2 'Y'.

## **12.10 Interaction between HS2 and Aviation Policy (10.)**

The HSUK response stated that:

- One of HS2's key aims has always been to improve regional rail links to Heathrow.

- This has exerted a huge 'gravitational pull' upon the alignment of HS2, drawing it away from established transport corridors, and dictating rural routes which carry excessive environmental impact and huge cost of tunnelled construction and other heavy engineering.
- This in turn dictates 2-track construction of the primary stem of HS2.
- With only 2 tracks, all of HS2's capacity is consumed by high speed services to London, and it cannot also offer direct regional services to Heathrow.
- HS2's economic benefits will be greatly reduced by its bypassing of major population centres (eg Luton, Milton Keynes, Northampton, Coventry and Leicester) which will be left with worsened intercity services.
- HS2's economic benefits will also be reduced by its inefficient 'Y' configuration, lacking effective interregional links.

To summarise the above, by predicating HS2's route upon Heathrow, it becomes impossible for HS2 to efficiently serve Heathrow.

All these problems can be avoided with HSUK's alternative strategy, of following the M1 corridor, and by connection to a 'Compass Point' network established around Heathrow. This offers the following key advantages:

- HSUK's 4-track spine route following the M1 has sufficient capacity to accommodate a limited number of direct services to Heathrow, in addition to London-bound services.
- The greater 'network efficiency' of the HSUK 'spine & spur' configuration, with multiple cities on a single line of route, allows all major cities of the Midlands, the North and Scotland to be served by just 4, allows all major cities of the Midlands, the North and Scotland to be served by just 4 hourly services.
- The infrastructure required for the Heathrow 'Compass Point' network is mostly already in place, so costs will be much lower than any HS2 scheme for dedicated airport access, while the number of users will be much higher.

With efficient national rail access to Heathrow established, it then becomes possible to consider extending these connections onwards to Gatwick. This will allow the possibility of developing Heathrow and Gatwick as a multi-site hub, with potential expansion to 4 runways achieved by constructing a second runway at Gatwick, rather than a third runway at Heathrow. This alternative strategy will be far less disruptive, costly and environmentally destructive than current proposals for expansion at Heathrow.

## **12.11 Public Policy and Procedural Issues (11.)**

The HSUK response emphasised that several aspects of the Government's HS2 proposals run contrary to several aspects of public policy including:

- CO<sub>2</sub> emissions to be reduced to conform with the 80% reduction target of the 2008 Climate Change Act;
- budgetary restraint (comparative estimates indicate a difference between HS2's and HSUK's construction costs of circa £20 billion);
- balanced regional development;
- protection of local communities and rural environments;
- presumption in favour of town centre development;
- integration of transport systems.

The superior performance of High Speed UK against all these criteria shows clearly that HS2's failure to comply on these crucial issues does not constitute necessary 'collateral damage' to enable a project vital to the national interest, but instead reflects deep flaws in the due process underpinning HS2 that have affected the selection of options, and the specification and design of the solution. A far-reaching and independent Inquiry is required to establish:

- the reasons why the HS2 proposals have progressed so far towards legislative powers without adequate technical or procedural scrutiny;
- how other apparently superior proposals have been dismissed, without just cause;
- a more appropriate way forwards for integrated high speed intercity transport in the UK.

## 12.12 House of Lords Economic Affairs Committee Report HoL 134 *The Economics of HS2 and Response from Government*

Produced by	House of Lords Economic Affairs Committee
Reference	HoL 134 & Cm9078 (Government response)
Date	March 2015 & July 2015
For full text see	Appendix K

In March 2015, the House of Lords Select Committee on Economic Affairs published their report *The Economics of HS2*. This was generally critical of much of the rationale for HS2, and it set the Government asset of challenges which it required the Government to meet before the HS2 Bill completes its passage through Parliament. The challenges and the Government's responses (published July 2015) are set out in Table 11.2 below.

It is highly concerning to note that several of the key challenges either go unanswered, or are not accorded a credible response. Other responses are essentially generic, not providing the level of information requested by the Economic Affairs Committee. Only a few responses appear to be acceptable.

<b>Assessment of Government response</b>
No response provided to challenge
Response not credible
Insufficient information provided
Acceptable response

**Table 12.1**

Challenge from HoL Economic Affairs Committee		Government Response
<b>National transport plan</b>	In the absence of a co-ordinated transport plan, how can the Government be sure that HS2 is the best way to achieve the project's objectives?	The Government's response essentially states that HS2 and HS3/Northern Powerhouse Rail are the National Transport Plan
<b>The cost of HS2</b>	What measures will be taken to limit the cost of constructing HS2?	The Government is determined to control costs.
	Is the funding envelope of £50 billion for the cost of construction an absolute limit or will this increase with inflation?	The Government is confident costs can be kept under control. Budget assumptions are conservative.
	How much cheaper would a new railway built for a lower maximum speed (for example, 320 km/h) be?	The Government's response does not address this question in any way.
	How will the Government ensure that HS2 stations are appropriately linked in to local transport networks? How will this be funded?	The Government's response does not address this question in any way.
<b>Who will pay for HS2?</b>	Should passengers benefiting from faster journeys on HS2 pay premium fares to reduce the high level of taxpayer subsidy of the project?	It is assumed that premium fares will not be necessary. However, assumed passenger flows are totally inconsistent with current rail use, and not credible.

**Table 12.2**

<b>Challenge from HoL Economic Affairs Committee</b>		<b>Government Response</b>
<b>Who will pay for HS2?</b>	How does the high level of taxpayer subsidy of HS2 fit with the Government's commitment to reduce the level of subsidy of the UK rail network?	The Government's assumption of improved rail services on existing lines is not consistent with HS2 Ltd's own predictions of service reductions on existing lines.
<b>Demand and capacity</b>	Will the Government either release the full data on overcrowding, down to the level of individual services, or ensure the data is reviewed independently, to provide the public with evidence there will be a growing problem on long-distance services?	The Government's response did not release the requested data, but cited generic rail use figures which indicate a strong case to build new lines to create extra capacity.
	Could incremental improvements to the existing rail network deliver the required capacity improvements?	The Government's response made the case that only the construction of new lines would create the required extra capacity.
	Could the use of flexible pricing policies, such as those used by low-cost airlines, assist with managing overcrowding on the busiest trains?	The Government's response stated that flexible pricing was not appropriate, since it would tend to price passengers off the railway.
<b>Alternative rail investment?</b>	Is HS2 the best way to address the problems which currently exist?	The Government's response justifies the building of new high speed lines against the alternative of route upgrades, but it offers no proof that HS2 is the best solution for a new-build high speed line.
<b>Effect on the UK economy</b>	Given that evidence from abroad suggests that large cities benefit the most from improving connectivity, how will HS2 rebalance Britain's economy?	The Government's response does not address these questions. It merely repeats predictions of economic growth and job creation based upon assumptions that HS2 will bring about step-change improvements in capacity and connectivity. <i>HS2 – High Speed to Almost Nowhere</i> shows these assumptions to be almost completely unfounded.
	Is High Speed 2 the best way to spend £50 billion to stimulate the UK economy?	
	Would local and regional infrastructure investment, as recommended by the Eddington Study of 2006, offer a more realistic proposition of a return on investment than HS2?	
<b>Prioritisation</b>	Should improving regional rail links in the north be prioritised ahead of building HS2 Phase One?	The Government's assertion that investment in HS2 would not detract from investment in regional rail links flies in the face of simple budgetary logic.
<b>Lack of evidence</b>	What effect will the findings of the research commissioned on values of time have on the cost-benefit analysis of HS2?	The Government believes that its appraisal techniques are world class. However, this belief must be set against the inconvenient truth, that HS2 fails to work efficiently as a national rail network and is very definitely not world class.

**Table 12.2** (continued)

Perhaps the most revealing of all the Government's responses is the first. In answer to the challenge as to how HS2 would fit into a national transport plan, the Government's response boils down to an almost facile answer: *HS2, along with HS3/Northern Powerhouse Rail is the national transport plan.*

However, detailed review of HS2 Ltd's documentation reveals no structured consideration of how HS2 might be developed as a national transport system. Instead, its first phase from London to the West Midlands was designed to a narrow remit (see Appendix A) which effectively predetermined the selected route through the Chilterns AONB; this then provided the stem from which all options for HS2's second phase were developed.

Any proposal such as HSUK which failed to conform with HS2's first phase was dismissed from consideration (see Appendix B). This was despite the fact that HSUK was far more efficient at interlinking the UK's principal cities – which surely must be the fundamental objective of any national transport plan.

### **12.13 House of Lords Economic Affairs Committee Consideration of High Speed UK in *The Economics of HS2***

On 8<sup>th</sup> December 2014, the House of Lords Economic Affairs Committee took evidence from Colin Elliff and Quentin Macdonald of High Speed UK. The Committee accorded HSUK a generally favourable reception, and the HSUK input to the Committee's deliberations as recorded in Item 221 of the published report *The Economics of HS2*. Items 222 and 223 set out the views of other contributors to the Committee's Inquiry:

#### **Extract from HoL 134 : *The Economics of HS2***

##### *Alternative proposals for a new railway High Speed UK*

221. High Speed UK (HSUK) submitted evidence to us outlining their proposal for a new four-track high-speed railway that would run along the M1 corridor from London to Scotland via Leeds with spurs from the "spine" to Birmingham, Manchester and Glasgow. The proponents of HSUK told us that it would deliver "10 times better" connectivity than HS2, improve 488 out of 528 journeys possible on the UK railway network and "double the capacity of HS2 on the core London 'stem'" for a lower capital cost than HS2.<sup>273</sup>

222. Steven Leigh of the Mid-Yorkshire Chamber of Commerce and Kings Bromley Stop HS2 Action Group both supported HSUK in evidence to us, arguing that it would benefit more towns and cities than HS2 proposals at a lower cost.<sup>274</sup> Lord Adonis, however, suggested that the proposed route up the M1 would be more controversial than HS2: "The idea that building next to existing transport corridors—which would also include having to significantly widen transport routes through major towns and cities—would be less controversial than building HS2 is for the birds." He argued that such a route would be more expensive than HS2.<sup>275</sup>

223. We asked the Government whether they had made an assessment of HSUK's proposals. Mr Prout told us that "The main elements of the central railway proposal were looked at in the 2013 alternative study for the East Coast Main Line." He argued that "the reinstatement of the central railway is by no means as simple as HSUK would have us believe."<sup>276</sup>

Lord Adonis's evidence in Item 222, that the idea of following existing transport corridors such as the M1 is "...for the birds", is frankly puzzling. The detailed route design undertaken by HSUK's qualified railway civil engineers proves definitively that the proposed HSUK route closely following the M1 is feasible, and achievable at minimal disruption to the adjacent communities.

It is vital that Lord Adonis – Secretary of State for Transport at the launch of the HS2 project, and between 2015 and 2017 the Chairman of the National Infrastructure Commission, with a clear interest in the development of HS2 – substantiates the evidence that he has given, with the apparent purpose of dismissing an alternative.

The evidence given by David Prout (a Department for Transport civil servant acting as Director General of HS2) is even more questionable. When asked by Committee Chairman Lord Hollick as to whether the Government had "made an assessment of HSUK's proposals", David Prout first professed to be unaware of High Speed UK, before confusing it with a proposal for a 'Central Railway' which had been assessed by the Government. He then inferred incorrectly that High Speed UK was in some way responsible for the 'Central Railway' proposal. In all this confused reply (the full text of which, also involving then Transport Secretary Patrick McLoughlin, is reproduced below), David Prout managed to imply that the Government had assessed High Speed UK.

This is definitively not the case. It must be restated that the 'Central Railway' is in no way connected with High Speed UK, and any assessment that the Government might have undertaken upon the 'Central Railway' can in no way be taken to be an assessment of High Speed UK.

### **Extract from Evidence Transcript dated 9<sup>th</sup> December 2014**

**The Chairman:** We received a presentation and a submission from High Speed UK – HSUK. Has that been properly evaluated and compared and contrasted with HS2?

**David Prout:** I do not know who HSUK are.

**Rt Hon Patrick McLoughlin MP:** They are the central railway.

**David Prout:** They are the central railway, are they? Yes, we have looked at the reinstatement of the central railway and it is by no means as simple as HSUK would have us believe.

**The Chairman:** That may or may not be the case, but have you had the opportunity to review and assess it in detail?

**David Prout:** The main elements of the central railway proposal were looked at in the 2013 alternative study for the East Coast Main Line.

Taken overall, it seems fair to conclude that the Government's input to the House of Lords Economic Affairs Committee's Inquiry was seriously flawed, with the result that the Committee has been misinformed as to the advantages of an alternative M1-aligned routing strategy for HS2.

## 12.14 HSUK Report on Construction Impacts at Motorway Interchanges

Responding Organisation	High Speed UK
Authors of Response	Colin Elliff and Quentin Macdonald
Date	January 2015
For full text of response see	Appendix L

During the HSUK presentation to the House of Lords Select Committee on Economic Affairs on 8<sup>th</sup> December 2014, one committee member challenged the HSUK routing strategy of following the M1. The committee member repeated the assertion often made by HS2 Ltd, that the presence of motorway junctions and service areas make it impracticable to route a high speed line alongside the M1.

The report included in Appendix L comprehensively rebuts the HS2 Ltd assertions. It examines every M1 junction and service area between Staples Corner (J1) and Loughborough (J20), and it confirms that most junctions and service areas are well clear of the proposed HSUK alignment, with only a small proportion posing any kind of problem. In all cases, the challenges appear to be manageable, with no 'showstoppers', and achievable at relatively low cost compared with the alternative, of the HS2 route via the Chilterns Area of Outstanding Natural Beauty.

### **13 House of Commons Public Administration & Constitutional Affairs Select Committee Inquiry into Parliamentary & Health Service Ombudsman’s Report on HS2 Ltd Community Engagement**

Responding Organisation	High Speed UK
Authors of Response	Colin Elliff and Quentin Macdonald
Date	February 2016
For full text of response see	Appendix M

In 2015, the Parliamentary and Health Service Ombudsman investigated a complaint by residents of a small hamlet in Warwickshire which lies in the path of HS2. The substance of the complaint, which was upheld by the Ombudsman, was that HS2 Ltd had failed to constructively engage with the residents in a manner that might have enabled the entire community to be relocated together, rather than be dispersed by the normal process of individual property acquisition by compulsory purchase. In January 2016, the House of Commons Public Administration and Constitutional Affairs Committee instituted an inquiry into the quality of HS2 Ltd’s community engagement.

High Speed UK contributed to this inquiry with the submission included in Appendix M. This highlighted the following facts:

- HS2’s impact upon local communities is greatly increased by the selection of inappropriate rural routes, and its design for the extreme speed of 400km/h.
- HS2 Ltd has never provided reasonable technical justification for either its route selection or its design for future 400km/h operation.
- Detailed review of HS2 Ltd documentation indicates clearly that the HS2 route selection process is seriously flawed, with no meaningful consideration given to the alternative of an M1 corridor route which involves much reduced community disruption.
- This review also indicates that the decision to adopt the 400km/h design standard was not taken with the sensitivity analysis necessary to determine that this speed represented the best balance of benefits against costs and adverse impacts.
- High Speed UK provides the necessary ‘exemplar alternative’ that conclusively demonstrates the much reduced community impact, and the much greater benefits of HSUK’s diametrically opposite design philosophy of following existing transport corridors, and full integration with, and connection to the existing rail network.

## 14 HSUK Petition to House of Lords HS2 Select Committee considering HS2 Phase 1 Hybrid Bill

Responding Organisation	High Speed UK
Authors of Response	Colin Elliff and Quentin Macdonald
Date	April 2016
For full text of response see	Appendix N

During the passage of the HS2 Phase 1 Bill through the House of Lords in 2016, a Select Committee of Lords was convened to give more detailed consideration to the Bill.

As in 2014 (see Section 11 and Appendix I), HSUK made a similar petition to the House of Lords Select Committee. With *locus standi* restrictions again applied, the HSUK petition was once more rejected.

For further commentary, see Section 11.

## 15 Heywood Review into Rising Costs of HS2 Project

Responding Organisation	Media House International / High Speed UK
Author of Response	Jack Irvine
Date	July 2016
For full text of letter see	Appendix O

In July 2016, HSUK wrote to Sir Jeremy Heywood (Cabinet Secretary and Head of the Civil Service) in connection with his ongoing review into the rising costs of the HS2 project. The HSUK letter described how HS2's excessive costs were only a manifestation of a much deeper design failure on the part of HS2 Ltd. HS2 Ltd's self-appointed mission, to build the fastest railway in the world, was in direct conflict with the true objective of the project, to deliver "hugely enhanced capacity and connectivity" between the UK's major conurbations.

The HSUK letter identified the following headline cost savings:

- Improper selection of HS2 first phase route through Chilterns AONB, and neglect of superior route via M1 corridor – **£7 billion**;
- Failure to develop integrated reconstruction strategy for Euston Station, with diversion of commuter services to Crossrail – **£1 billion**;
- Failure to integrate HS2 with local public transport in other major cities – **£4 billion**;
- Development of efficient 'HS3' links between major cities of the Northern Powerhouse compromised by London-centric design of HS2 'solutions' for Sheffield, Manchester and Leeds – **£7 billion**;
- Rigid focus upon impracticable west-sided high speed route to Scotland and neglect of easier and more efficient east-sided route – **£11 billion**.

The HSUK letter informed Sir Jeremy Heywood that on the basis of a 'like for like' comparison between the HS2 'Y' and relevant elements of HS3, HSUK's detailed estimates showed potential overall cost savings of **£27 billion**. These savings would rise to £38 billion when routes to the North-East of England and Scotland were taken into account.

The HSUK letter suggested to Sir Jeremy Heywood that the scope of his investigation needed to be widened to encompass all aspects of HS2's development, and it concluded with an offer for HSUK to cooperate fully in this investigation. However, no substantive response was ever received from Sir Jeremy Heywood, and there is no indication that the 'Heywood Review' took any account of the information supplied by HSUK.

## 16 Letter to Andrew Jones MP, Junior Transport Minister responsible for HS2

Responding Organisation	High Speed UK
Authors of Letter	Colin Elliff and Quentin Macdonald
Date	February 2017
For full text of letter see	Appendix P

In February 2017, HSUK wrote to Andrew Jones MP who at the time was a Junior Transport Minister with responsibility for the HS2 project. The HSUK letter drew particular attention to HS2's incompatibility with future HS3/Northern Powerhouse transpennine links, and it also drew attention to HS2's wider failure as a national network. The HSUK letter also called for the entire HS2 project to be paused while an independent design review was undertaken.

The following documents were enclosed with the HSUK letter:

- HSUK Letter to Andrew Tyrie MP dated 20th January 2017;
- HSUK Brochure : *HSUK – Delivering the High Speed Network the Nation Needs*;
- HSUK Publication : *HS2 : High Speed to Failure – 22 Reasons why the Government's Experts have got it wrong*;
- HSUK Publication : *Draft Executive Summary of HS2 : High Speed to Almost Nowhere*, complete with *Draft Comparative Connectivity Charts* for 8 Yorkshire Cities and Towns.

The HSUK letter and its enclosed documents should have left Andrew Jones in no doubt whatsoever as to the multiple inadequacies of the HS2 proposals, and it would be reasonable to expect a responsible Minister to have undertaken the necessary investigations to determine the veracity of the concerns expressed by HSUK. However, no response has ever been received from Andrew Jones, and there is no indication that he has taken any account of the information supplied by HSUK.

## 17 Letter to Chris Grayling MP, Secretary of State for Transport

Responding Organisation	High Speed UK
Authors of Letter	Colin Elliff and Quentin Macdonald
Date	February 2018
For full text of letter see	Appendix Q

On 2<sup>nd</sup> February 2018, HSUK representatives attended a Conservative Party fundraising event at Morley Town Hall in West Yorkshire. Their aim was to meet the guest of honour (Chris Grayling MP, Secretary of State for Transport), and to deliver to him a letter with several enclosures:

- HSUK Brochure : *HSUK – Delivering the High Speed Network the Nation Needs*;
- HSUK Publication : *HS2 : High Speed to Failure – 22 Reasons why the Government’s Experts have got it wrong*;
- HSUK Publication : *HS2 : High Speed to Almost Nowhere – Putting HS2 Ltd’s Promise of a Higher-Speed and Better-Connected Britain to the Test*.

The HSUK letter to Chris Grayling adopted a somewhat more theatrical tone, compared with the earlier letter to Andrew Jones (see Appendix P); it likened the Transport Secretary to an ‘Emperor with No Clothes’, promoting a railway scheme which everyone (except, apparently, himself and his close advisors) knows will not work.

However, the HSUK letter and its enclosed documents should still have left Chris Grayling in no doubt whatsoever as to the multiple inadequacies of the HS2 proposals, and it would be reasonable to expect a responsible Minister to have undertaken the necessary investigations to determine the veracity of the concerns expressed by HSUK. However (as with the HSUK letter to Andrew Jones MP, see Section 16 and Appendix P) no response has ever been received from Chris Grayling, and there is no indication that he has taken any account of the information supplied by HSUK.

## 18 Official Consultation on Transport for the North *Strategic Transport Plan*

Responding Organisation	High Speed UK
Author of Response	Colin Elliff
Date	April 2018
For full text of response see	Appendix R

Since the launch of the Northern Powerhouse initiative in 2015, Transport for the North (TfN) has been developing proposals for a system of new or upgraded railways interlinking the principal cities of the North, and connecting these cities to Manchester Airport. Central to this work has been the specification for a new transpennine rail route and for radically reduced journey times, originally put forward by the 'One North' group<sup>3</sup> of northern city councils.

On 16 January 2018, Transport for the North released its *Strategic Transport Plan* for public consultation. The highlight of this Plan was a scheme for a new transpennine railway, extending from Leeds via Bradford, Manchester and Manchester Airport to Liverpool; this would augment and partially incorporate the established HS2 routes in both Yorkshire and Greater Manchester.

It was immediately apparent that:

- TfN's plan would not be able to deliver the routeing and the reduced journey times demanded by the original 'One North' specification;
- Sheffield would be left bypassed by both HS2 and by Northern Powerhouse Rail;
- These failures were primarily attributable to TfN basing their new basing the new route upon HS2, rather than adhering to the 'One North' specification.

It would seem that TfN's transport experts have failed to recognise the clear dangers of basing their proposals – whose core rationale is to transform transpennine connectivity – upon HS2 – which was designed with no thought for transpennine connectivity.

The deficiencies and failures of the TfN Strategic Transport Plan are identified in the HSUK response to the official consultation (see Appendix R) and in the supporting paper *The Northern Poorhouse – How the Transport Establishment failed the People of the North* (available on [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk)). In all cases, the vastly superior performance of High Speed UK demonstrates the full, catastrophic extent of TfN's failure.

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<sup>3</sup> The 'One North' group comprised the City Councils of Liverpool, Manchester, Sheffield, Leeds and Newcastle.

## 19 Conclusions

Throughout the development of the HS2 project, its promoter HS2 Ltd has undertaken extensive, and presumably expensive consultation exercises to seek the views of the public. The organisation of such a consultation exercise naturally presupposes that the organiser (ie HS2 Ltd) will a) take notice of the public's views, and b) take appropriate action to address whatever concerns are raised. However, the experience of High Speed UK and of other organisations who have submitted responses to HS2 Ltd offers clear anecdotal evidence that HS2 Ltd has essentially ignored these submissions, with few if any changes made to address the many concerns raised.

The purpose of this document is to determine in a more structured and rigorous sense whether HS2 Ltd has taken proper account of public views. It has done so through the exemplar of the engagement that has taken place between High Speed UK (and its predecessor organisation High Speed North) and a variety of arms of Government, in particular HS2 Ltd. This engagement commenced with a face-to-face meeting with senior figures at HS2 Ltd in May 2009, and it continued with detailed responses to a series of public consultations and Parliamentary inquiries starting in 2011.

HSUK's 8-year engagement with the HS2 process has established a unique 'audit trail' of evidence that has been submitted either to HS2 Ltd, or to other arms of Government. This evidence identified HS2's comprehensive failure to meet its objective of "hugely enhanced capacity and connectivity" between the UK's major conurbations, and the excessive cost and environmental impact that would be the consequence of this failure. It also made the case for a UK high speed network fully integrated with the existing railway system, with Heathrow and other major airports, and with HS1.

Taken overall, the HSUK responses should have demonstrated clearly that the HS2 proposals were:

- utterly unfit for purpose as an intercity railway intended to deliver "hugely enhanced capacity and connectivity" between the UK's major conurbations;
- totally uncoordinated with other proposed major transport initiatives, including HS3/Northern Powerhouse Rail and London hub airport development;
- contradictory to most relevant aspects of public policy;
- quite possibly illegal in terms of their lack of compliance with the requirements of the 1999 Town & Country Planning Act, and with the emission reduction targets of the 2008 Climate Change Act;
- hugely suboptimal by virtue of the existence of the vastly superior HSUK alternative.

Yet rather than engage in any way with the concerns raised by HSUK, HS2 Ltd appears to have taken the easier option, of ignoring reasoned arguments and suppressing dissenting opinions. This reduces the consultation process to little more than a superficial rubber-

stamping exercise, and it makes a mockery the entire legislative process by which the HS2 Bill has passed through Parliament.

However, the most serious implication by far of HS2 Ltd's failure to undertake a responsible and professional public consultation is that it will sacrifice the once-in-two-centuries opportunity to develop an optimised national railway network. Instead it will leave the country permanently saddled with a dysfunctional and permanently London-centric railway system incapable of efficiently connecting the nation.

Although most of the issues outlined in the preceding paragraphs are the direct result of HS2's inadequate design, it remains the case that the parliamentary hybrid bill process has proved to be unable to recognise and deal with these issues. The result will be an utterly inadequate railway design, carrying excessive costs and environmental impacts, and unable to deliver the "hugely enhanced capacity and connectivity" that has been promised.

It is clear that a more suitable and responsive process, better geared to the development and delivery of appropriate and well-designed national infrastructure, is required.

The High Speed North/High Speed UK responses to the official HS2 consultations, along with the other engagements summarised in this document, should have left HS2 Ltd and the Government in no doubt whatsoever as to the multiple inadequacies of the current HS2 proposals. Together they demonstrate:

- HS2's technical failure – its inadequate design lacks the necessary integration and the correct routing strategy, through its inability to provide the "hugely enhanced capacity and connectivity" necessary to bring about the promised step-change economic benefits.
- HS2's public policy failure – HS2's 'carbon neutral' performance is incompatible with the 2008 Climate Change Act's legally-binding target of an 80% reduction by 2050, and its fundamental London-centricity will tend to exacerbate rather than remedy the North-South divide that currently afflicts the UK economy.
- HS2's due process failure – any rational analysis of the process by which the HS2 route through the Chilterns was selected, and alternative routes via the M1 corridor dismissed from consideration, raises huge questions as to the proper conduct of the HS2 project.

These failures afflict every aspect of HS2's performance as a national rail system intended to deliver "hugely enhanced capacity and connectivity" between the UK's major conurbations. As such, it is fair to deem HS2 comprehensively unfit for purpose.

Considered from a historical perspective, it is fair to represent HS2 as perhaps the greatest technical failure of a major public project in modern times. Yet HS2 Ltd possesses full legislative powers to construct its new lines, and is deaf to protests. It is up to Government to stop the madness before it is too late.

# **APPENDIX A**

EXTRACT FROM:

## **HS2 : HIGH SPEED TO FAILURE**

**22 REASONS WHY THE GOVERNMENT'S EXPERTS  
HAVE GOT IT WRONG**

**TEST 17 : HS2 FAILS THE REMIT TEST**

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DATE:

**OCTOBER 2016**

**Further commentary on this extract is given in  
Section 4.1 of this report.**

## 17. HS2 fails the Remit test

HS2 must operate in harmony with existing main lines, to create an integrated national network, if it is to deliver its primary objective, of “hugely enhanced capacity and connectivity” between the UK’s major conurbations.

However, HS2 Ltd’s project remit – see opposite – makes no attempt to specify either the ultimate goal of an improved national network, or to define how “hugely enhanced capacity and connectivity” might be measured. Instead, the remit appears to define:

- HS2’s route – via an interchange at Old Oak Common, the only possible outcome of Item 5, leading inevitably to its damaging route through the Chilterns AONB;
- HS2’s national configuration – i.e. a new high speed line from London to the West Midlands (Item 1), with further northward development from the West Midlands (Item 2) on both sides of the Pennines, to form the ‘Y’.

It is significant to note that the HS2 remit does not specify either the speed for which HS2 should be designed, or whether HS2 should be integrated with, or segregated from the existing rail network.

It is not a logical impossibility, that an optimised national rail network delivering “hugely enhanced capacity and connectivity” between the UK’s major conurbations might develop from the London to West Midlands high speed line specified in the HS2 project remit.

However, this fortuitous outcome has not happened for the HS2 project. This is proved by the conscious design of High Speed UK as a network, and its vastly superior performance in terms of capacity, connectivity and indeed any reasonable comparator.

High Speed UK’s superiority also underlines the huge financial and environmental costs that will accrue from the fundamental mismatch between HS2’s localised remit and its national objective of “hugely enhanced capacity and connectivity”. This mismatch exposes the folly of predicating HS2’s development upon a first phase designed to a narrow, corridor-specific remit, and it represents a monumental technical failure on the part of HS2 Ltd’s leadership.

## HS2 REMIT - KEY POINTS

1. **Build a high speed line from London to the West Midlands.**
2. **Consider development of HS2 further north.**
3. **Select a London terminal.**
4. **Consider intermediate parkway between London and the West Midlands.**
5. **Build an interchange station with GWML/ Heathrow/ Crossrail services.**
6. **Connect to HS1 and the existing network.**

## SUMMARY OF THE REMIT AND OBJECTIVES OF HIGH SPEED TWO

On 15 January 2009 the Secretary of State for Transport announced in 'Britain's Transport Infrastructure: High Speed Two', the setting up of a new company to look at a possible new railway line between London and the West Midlands.

HS2 was set up shortly after as a private company limited by guarantee. It is chaired by Sir David Rowlands, and Alison Munro was seconded from the Department of Transport as Chief Executive. The rest of the HS2 team comprises further secondees from the DfT and from Network Rail.

**HS2's remit is to develop proposals for a new railway line from London to the West Midlands taking account of environmental, social and economic assessments. It will also provide advice to Ministers on the potential development of a high speed line beyond the West Midlands on the level of broad corridors, considering in particular the potential to extend to Greater Manchester, West Yorkshire, the North-East and Scotland.**

**HS2 will make recommendations on options for a terminus station or stations serving London and possible options for an intermediate parkway station between London and the West Midlands. It will also provide a proposal for an interchange station between HS2, the Great Western Main Line and Crossrail with convenient access to Heathrow Airport. HS2 will also provide suggested means of linking to HS1 and the existing rail network.**

HS2 will produce a confidential report to Ministers by the end of 2009 that should be sufficiently developed to form the basis for public consultation in 2010 should Ministers decide to take the project forward. The advice will also include financing and construction proposals as

## 17. HS2 fails the Remit test (*continued*)

Perhaps the greatest fault of HS2's remit is that it specifies what is to be built i.e. a new high speed line, rather than how it must perform to deliver the project's objective, of "hugely enhanced capacity and connectivity" between the UK's major conurbations.

As noted previously, there is no fundamental reason why a high speed line built to a localised remit could not deliver that objective. However, a far more certain and reliable way forward is to specify the performance of the new high speed line, together with other associated infrastructure, to comprise the integrated system that will collectively achieve the project's objective.

High Speed UK was developed from its inception in 2008 (as High Speed North) with a controlling specification aimed at optimising its performance as a national network<sup>4</sup>. The latest iteration of this specification, which is set out in the table below, aligns closely with the 'Six Principles' of network design set out on pages 9-10.

### HIGH SPEED UK REMIT (2016)

Starting with the existing rail network and existing service patterns, use the opportunity offered by the intervention of new-build high speed railway lines, linking London and the primary cities of the East and West Midlands, the North-West, Yorkshire, the North-East and Scotland) to create an enhanced and fully integrated national rail network. This network should be capable of performing as follows:

1. Provide direct services of intercity quality between all principal cities / major conurbations in the regions listed above;
2. Provide enhanced service levels to intermediate secondary cities, with frequent links from high speed lines to the existing network, and upgrades to existing routes, where necessary;
3. Integrate all existing intercity routes extending to other parts of the network with the new high speed (or upgraded) lines;
4. Maintain or enhance existing service levels;

<sup>4</sup> The original HSN/HSUK specification was summarised in Colin Elliff's article *High Speed Rail : Where are the Engineers?* published in the October 2008 edition of the Journal of the Permanent Way Institution.

5. Operate all intercity routes at hourly or better frequency;
6. Optimise network capacity through maximised segregation between high speed intercity services and local/freight services;
7. Achieve major journey time reductions on all routes;
8. Achieve step-change transport CO<sub>2</sub> reductions through road to rail modal shift enabled by enhanced capacity & connectivity;
9. Offer 'easy transfer' between national (high speed) rail and local transport services (train, metro, tram, underground, buses and taxis) at existing city centre hub railway stations;
10. Develop proposals for a London terminus;
11. Optimise connections to London suburban rail services;
12. Offer direct services to Heathrow from all principal regional UK cities, and direct services to all major regional airports from within their own respective regions, with upgrades and/or new local connections to achieve this;
13. Provide a link to HS1 without using the already overcrowded North London Line;
14. Develop supplementary proposals for a dedicated national freight network, linked to the Channel Tunnel, largely independent of major intercity passenger routes and capable of carrying trains of UIC-C loading gauge (in order to carry HGV trailers by rail and to allow larger 'Continental Gauge' wagons to enter the UK);
15. Be a 'Good Neighbour' to local communities by following existing transport corridors i.e. motorways, trunk roads and railways where there is already significant noise pollution and avoiding, as far as possible, all environmentally sensitive areas;
16. Develop a new national intercity timetable to identify capacity constraints and demonstrate exactly what connectivity benefits the HSUK design can deliver
17. Design the new high speed line as a series of independent sections, each capable of being built as a separate stage to provide significant benefit to the local and national rail network. This would respond to local economic priorities, and not require high speed line construction to start in London.

# **APPENDIX B**

EXTRACT FROM:

## **HS2 : HIGH SPEED TO FAILURE**

### **22 REASONS WHY THE GOVERNMENT'S EXPERTS HAVE GOT IT WRONG**

**TEST 19 : HS2 FAILS THE OPTION SELECTION TEST**

**TEST 20 : HS2 FAILS THE IMPARTIAL ASSESSMENT TEST**

**Figure B1 : Supplementary diagram, contrasting  
connectivity performance of HSUK against 'network'  
options considered by HS2 Ltd**

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DATE:

**OCTOBER 2016**

**Further commentary on this extract is given in  
Section 4.2 of this report.**

## 19. HS2 fails the Option Selection test

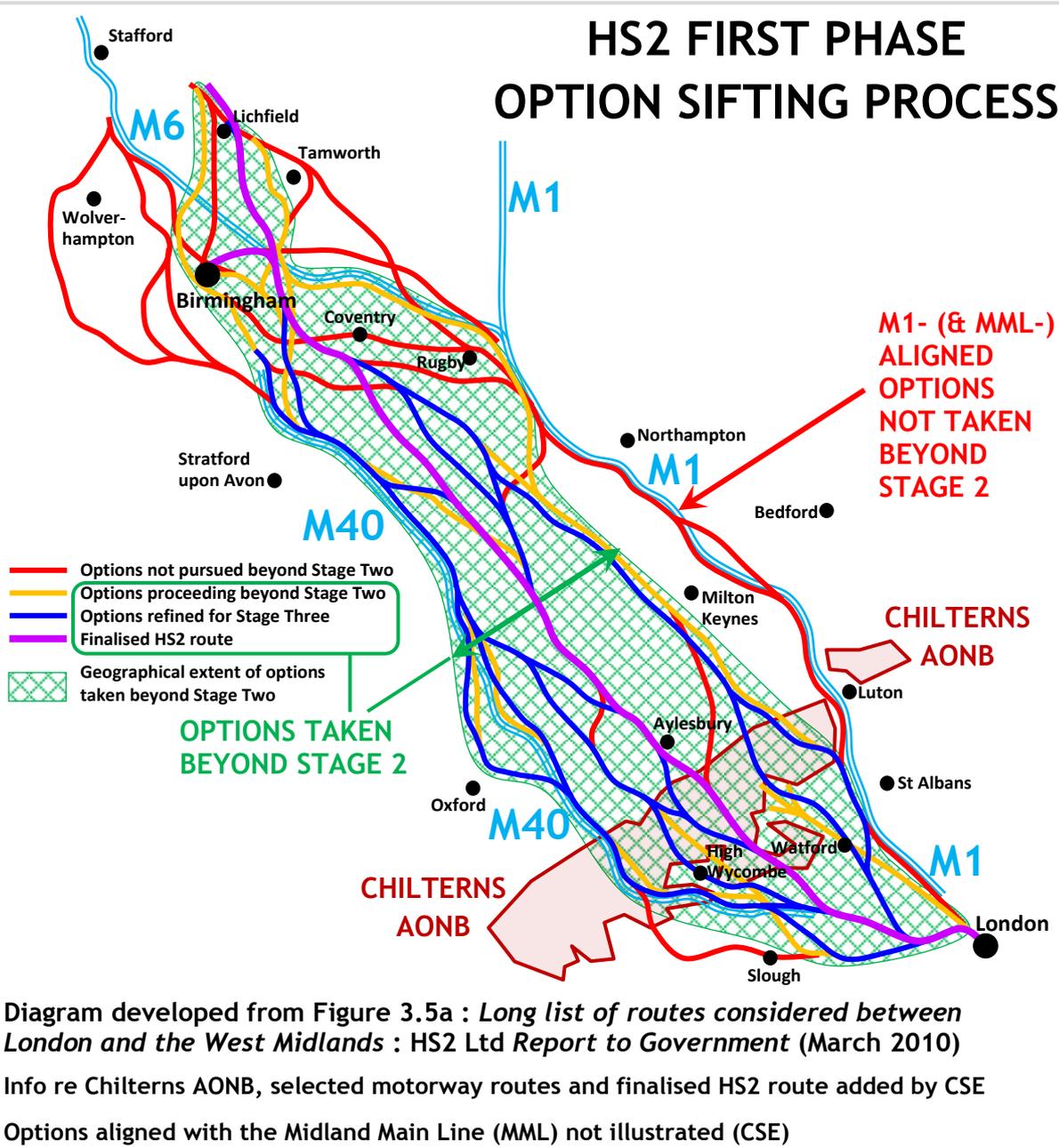
With a multiplicity of possible high speed routes from London to the West Midlands, a process was required to progressively narrow down options to arrive at the chosen HS2 route. HS2 Ltd adopted a sifting process by which a 'long list' of possible options was reduced to a 'short list' through a series of stages, with more detailed study being applied at each successive stage. This process is described in Section 3.5 of HS2 Ltd's *Report to Government* (March 2010).

Such a process should be aimed at developing the option that represents the best balance of capacity and connectivity benefits against financial costs and environmental impacts. Whilst there is no reason why HS2's highly damaging ultra-direct Chiltern route should not be developed for further consideration, it is equally important that other options are also examined in detail. This is necessary not only to ensure that the best route is selected, but also to maintain public confidence that the correct decision has been taken.

In the case of a high speed line between London and the West Midlands, HS2's controversial route through the Chilterns AONB can only be justified if the apparently less damaging alternative of the M1 corridor is not feasible. Since Roman times this corridor has been the primary route from London to the Midlands and the North, for Telford's Turnpike (the A5), the Grand Union Canal, the London & Birmingham Railway and the M1, and it would be reasonable to expect HS2 Ltd to have given detailed consideration to such a route. However, all options for a route following the M1 were dismissed very early in the process, despite the acknowledged fact that this was the only option that could avoid damaging the Chilterns AONB.

With no detailed technical analysis applied, the option of an M1 corridor route was instead rejected through a series of baseless assertions made in various HS2 Ltd reports. One glaring example was the statement that an M1-aligned route to Birmingham would be "insufficiently direct"; in fact, it is 4.3km longer, equivalent to 52 seconds at 300km/h. All of HS2 Ltd's assertions are shown to be either false or spurious (pages 45 & 46) by HSUK's detailed design work undertaken in support of its own M1-aligned proposals.

## HS2 FIRST PHASE OPTION SIFTING PROCESS



HS2 Ltd's dismissal of M1 corridor routes also seems highly suspect, in view of the much greater consideration given to a multiplicity of far less feasible routes generally following the M40 corridor.

Accordingly, it is fair to conclude that HS2 Ltd's option selection process has failed in its basic purpose. It has not developed the best possible option, best serving the national interest by delivering the required step-change improvements in connectivity and capacity for the least cost and the least environmental damage. This failure is proved by HSUK's comprehensively superior performance. Instead, the HS2 option selection process appears to have been subverted to the baser purpose, of justifying the flawed idea that the 'experts' at HS2 Ltd first thought of.

## 20. HS2 fails the Impartial Assessment test

Although it is clearly unacceptable for a route with the self-evident advantages of the M1 corridor to have been dismissed so early in HS2 Ltd's option sifting process, it is still instructive to examine the various reasons put forward to justify this rejection. HS2 Ltd's rationale is set out in the following 3 reports:

- HS2 Ltd *Report to Government* (March 2010) (RTG);
- DfT Command Paper *High Speed Rail* (March 2010) (CMD);
- HS2 Ltd *Review of Route & Speed Selection* (January 2012) (RRSS).

Every justification offered by HS2 Ltd to dismiss the M1 corridor is shown to be either false or spurious by the detailed design work undertaken in the development of High Speed UK. HS2 Ltd's rationale and HSUK's rebuttals are summarised in the table below.

Reasons offered by HS2 Ltd to dismiss high speed route via M1 corridor, with HSUK rebuttals in italics		Reference to HS2 report
1	The M1 corridor offers an insufficiently direct route from London to Birmingham. <i>The HSUK route from London to Birmingham via the M1 corridor and Coventry is 4.3km longer than the HS2 route, equivalent to 52 seconds extra at 300km/h.</i>	RTG Item 3.5.6, CMD Item 6.33, RRSS Items 3.1.16 & 3.1.22
2	A high speed line closely aligned with the M1 cannot sustain the desired 400km/h design speed specified for HS2. <i>The HSUK high speed line is designed for a maximum speed of 360km/h to enable it to closely follow the M1 and thus avoid the Chilterns AONB and other unspoilt areas.</i>	CMD Item 6.33
3	London-Birmingham journey times via M1 corridor compare poorly with the 49 mins timing via the preferred Chilterns route. <i>HSUK's journey time to Birmingham New St is 56 mins, but this gives access to entire West Mids conurbation - effectively faster than HS2's 49 mins to isolated Curzon St.</i>	RTG Item 3.5.6, CMD Item 6.33, RRSS Items 3.1.16 & 3.1.22
4	Any deviation from the alignment of the M1 would create unacceptable 'islands' of blighted land. <i>HSUK's route following the M1 will cause far less environmental damage than the HS2 route via the Chilterns AONB.</i>	CMD Item 6.33
5	Excessive lengths of tunnel are needed to avoid unacceptable demolition of property (if new line located on the surface). <i>HSUK's route to Birmingham following the M1 and the existing Rugby-Birmingham line requires 12km of tunnel. HS2's route via the Chilterns to Birmingham requires 50km.</i>	RTG Item 3.5.6, CMD Item 6.33, RRSS Item 3.1.16
6	An M1-aligned route would be too far from Heathrow to allow any regional high speed connection to the airport. <i>HSUK has the 4-track capacity to offer direct high speed services to Heathrow from all regional cities. HS2 lacks this capacity and its Heathrow spur is now cancelled.</i>	RTG Item 3.5.24, CMD Item 6.33, RRSS Item 3.1.15
7	Motorway junctions will block the route of an M1-aligned high speed line, with modifications too expensive and disruptive. <i>HSUK has undertaken a detailed study of all affected junctions. This demonstrates that all technical issues are relatively minor, and manageable at reasonable cost.</i>	RRSS Items 3.1.22 & 3.2.5

Table 20.1 : HS2 Ltd rationale to dismiss M1 corridor and HSUK rebuttals

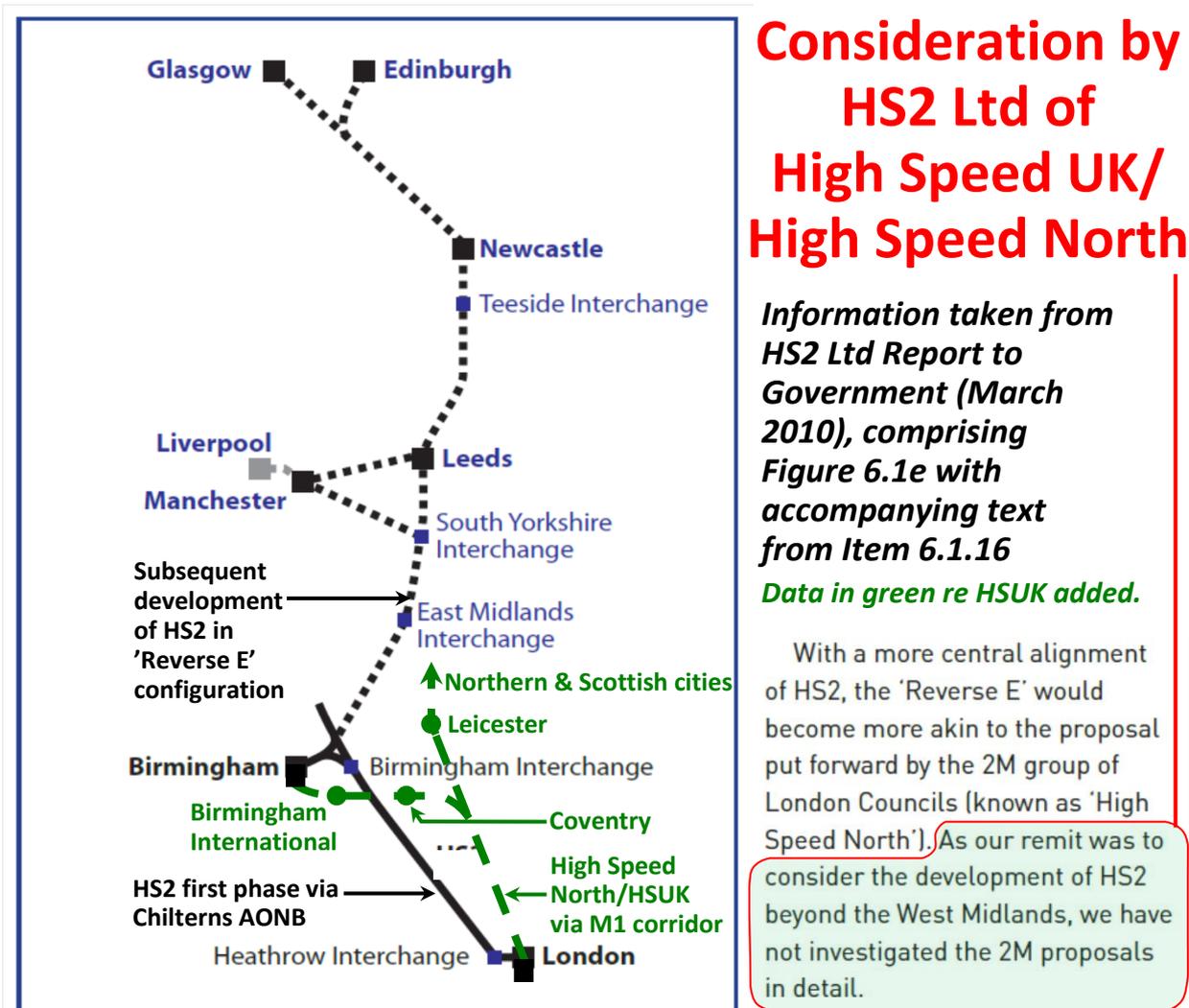


Figure 20.2 : Reference to High Speed North in HS2 Ltd Report to Government (March 2010)

HS2 Ltd's dismissal of High Speed UK (in its previous guise of High Speed North) raises particular concerns. Figure 20.2 shows the specific text from HS2 Ltd's Report to Government which details how HSUK/HSN was rejected on account of its 'failure' to pass through the West Midlands en route to conurbations further north. This was despite HSUK/HSN being personally presented in May 2009 to senior figures at HS2 Ltd, and its benefits as an intercity network, far outperforming HS2 (in whatever variant), being fully explained.

The text of Section 6.1 of HS2 Ltd's Report to Government (2010) makes it clear that HS2 Ltd never analysed HSUK/HSN in any detail. Instead, it was dismissed by a crude and inappropriate analogy with an entirely different proposal for a 'Reverse E' configuration. All of the configurations examined by HS2 Ltd (i.e. 'Inverse A', 'Reverse S' or 'Reverse E') were built upon HS2's London-West Midlands first phase – but none came close to HSUK/HSN in their ability to provide comprehensive interconnection between regional UK conurbations. **(See Figure B1 on following page).**



# **APPENDIX C**

EXTRACT FROM:

## **HS2 : HIGH SPEED TO FAILURE**

### **22 REASONS WHY THE GOVERNMENT'S EXPERTS HAVE GOT IT WRONG**

#### **TEST 22 : HS2 FAILS THE DEMOCRACY TEST**

AUTHOR:

**COLIN ELLIFF**

**CIVIL ENGINEERING PRINCIPAL, HIGH SPEED UK**

DATE:

**OCTOBER 2016**

**Further commentary on this extract is given in  
Section 4.3 of this report.**

## 22. HS2 fails the Democracy test

The development of HS2 at all stages has been accompanied by extensive official consultations, in which members of the public have been invited to comment upon HS2 Ltd's proposals.

These consultations are an essential democratic process, intended to ensure that a public project remains true to its fundamental goal of serving the public interest – and intended also to guard against the risk (for example) of a technocratic elite subverting a transport project's proper objective of "hugely enhanced capacity and connectivity" into an extremely questionable mission, to build the fastest railway in the world.

High Speed UK has fully engaged with the HS2 consultations, with detailed responses that have explained exactly how HS2 Ltd's 'need for speed' and flawed routing strategy will have a huge negative effect on every aspect of HS2's performance, and on the performance of the wider UK rail network and transport system. HSUK's responses – see Table 22.3 – are included in a separate Annex to this document.

HSUK's response to the questions of the 2011 HS2 consultation – see opposite – provides an excellent example of the input that HS2 Ltd and the Government have received and, apparently, completely ignored. In summary, the HSUK response explained that:

- although new high speed lines were essential for improved capacity and connectivity between the UK's major conurbations, (Q1)
- the HS2 'Y' was not the right way to deliver this improvement, because it lacked any transpennine connection, (Q2)
- the proposed HS2 links to Heathrow and HS1 were not viable, (Q3)
- HS2 Ltd's design principles – in particular stand-alone operation and design for the extreme speed of 400km/h – would fail to deliver the desired improvements in capacity and connectivity; its option selection process was fatally flawed (Q4); and
- a far superior route via the M1 corridor was available. (Q5)
- HS2's deficiencies as a network and its flawed routing would hugely increase its environmental impact, in terms of both CO<sub>2</sub> emissions and damage to sensitive landscapes, (Q6) and also greatly increase the need for compensation payments. (Q7)

# 2011 HS2 PHASE 1 CONSULTATION

	GUIDELINE QUESTIONS FOR PUBLIC RESPONSE	HIGH SPEED UK (HSN) RESPONSE
Q1	Do you agree that there is a strong case for enhancing the capacity & performance of Britain's inter-city rail network to support economic growth over the coming decades?	New high speed lines, fully integrated with the existing network, are essential for improved capacity and connectivity between the UK's major regional conurbations.
Q2	Do you agree that a national high speed rail network from London to Birmingham, Leeds and Manchester (the Y network) would provide the best value for money solution (best balance of costs and benefits) for enhancing rail capacity and performance?	The HS2 'Y' is not the right way to deliver this improvement. It lacks any transpennine connection and more generally it performs poorly in interlinking the UK's many conurbations. In both respects HSUK's spine & spur configuration far outperforms the HS2 'Y'.
Q3	Do you agree with the Government's proposals for the phased roll-out of a national high speed rail network, and for links to Heathrow Airport and the High Speed 1 line to the Channel Tunnel?	HS2's isolated route gives no opportunity for phased roll-out; whereas HSUK's M1-corridor route can be built in much smaller stages. Proposed HS2 links to Heathrow and HS1 are not viable.
Q4	Do you agree with the principles and specification used by HS2 Ltd to underpin its proposals for new high speed rail lines and the route selection process HS2 Ltd undertook?	HS2 Ltd's design principles, in particular stand-alone operation and design for the extreme speed of 400km/h, will fail to deliver the desired gains in capacity and connectivity, and its route selection process is fatally flawed.
Q5	Do you agree that the Government's proposed route, including the approach proposed for mitigating its impacts, is the best option for a new high speed rail line between London and the West Midlands?	HSUK's route via the M1 corridor offers a far superior route, requiring far less tunnel than HS2, causing much reduced environmental damage and costing much less to construct.
Q6	Do you wish to comment on the Appraisal of Sustainability of the Government's proposed route between London and the West Midlands that has been published to inform this consultation?	HS2's network deficiencies and its flawed routeing will hugely increase its environmental damage, in terms of both impact on the landscape and failure to reduce transport CO <sub>2</sub> emissions.
Q7	Do you agree with the options set out to assist those whose properties lose a significant amount of value as a result of any new high speed line?	Whilst compensation packages are essential, HS2's inappropriate route will greatly increase the sums to be paid in compensation.

Table 22.1 : Guideline questions for public response to July 2011 official consultation on HS2 Phase 1 proposals, with summarised responses taken from Christopher Quayle's submission on behalf of High Speed North (predecessor proposal to High Speed UK). For the full text of this response, see the separate Annex to this document.

<b>Issue raised in</b>  <b><i>HS2 :</i></b>  <b><i>High Speed to Failure</i></b>		<b>Official HS2 Consultation</b>		
		<b>HS2 Phase 1</b>	<b>Draft Env Statement</b>	<b>HS2 Phase 2</b>
		July 2011	July 2013	Jan 2014
		<b>Page/clause reference in HSUK response</b>		
<b>1</b>	Intercity Connectivity	p7/2.2	p4/10.2	p11/A.1-A.3
<b>2</b>	High Speed Line Capacity	p5/1.7	p2/3.1	throughout
<b>3</b>	Primary City Station Proposals	p4/1.3	N/A	p4/5.1-5.5
<b>4</b>	Network Performance	p9/2.3 p25/4.2.9	p3/6.2	P4/5.1 p6/5.5
<b>5</b>	Quantified Journey Time Reductions	N/A	p2/3.2	p11/A.1-A.3
<b>6</b>	London Airport Development	p11/3.3	N/A	N/A
<b>7</b>	Regional HS links to Heathrow	p10/3.2	p6/12.7	p10/9.3
<b>8</b>	HS2-HS1 Link	p13/3.5	N/A	N/A
<b>9</b>	Strategy for National Freight Network	N/A	N/A	N/A
<b>10</b>	Environmental Impact in Chilterns etc	p30/5.3-5.4	P6/12.6	p8/7.2
<b>11</b>	Euston Terminal Proposals	p28/5.2	p6/12.8	N/A
<b>12</b>	Midlands Connectivity	p15/4.1.1 p27/4.2.10	N/A	p6/5.5
<b>13</b>	Transpennine Connectivity	p7/2.2 p25/4.2.9	p4/10.2	p2/2.1-2.2 p4/5.1-5.2
<b>14</b>	High speed links to Scotland	p25/4.2.9	p4/11.1	N/A
<b>15</b>	HSUK & HS2/HS3 Construction Cost	throughout	p2/3.3	p12/Q.3
<b>16</b>	CO <sub>2</sub> reductions/Climate Change Act	p9/2.4 p35/6.1	p3/5.1 p3/5.2	p8/7.4
<b>17</b>	HS2 Remit	p17/4.2.1	p1/1.1	N/A
<b>18</b>	Adoption of 400km/h Design Speed	p16/4.1.2	p5/12.2	p12/Q.1
<b>19</b>	HS2 Ltd Option Sifting Process	p20/4.2.4	p5/11.3	N/A
<b>20</b>	HS2 Ltd reasons for dismissing HSUK	p18/4.2.2	p5/11.2	N/A
<b>21</b>	National high speed network design	p7/2.2	p4/10.2	p4/5.1 p6/5.5
<b>22</b>	Official HS2 Consultations 2011-2014	N/A	N/A	p8/7.6

Table 22.2 : Issues raised in *HS2 : High Speed to Failure* cross-referenced against High Speed North/High Speed UK responses to official HS2 consultations.

<i>Consultation</i>	<i>Date</i>	<i>Respondent</i>	<i>Author(s) of response</i>
HS2 Phase 1	2011	High Speed North	Christopher Quayle
Draft Environmental Statement	2013	High Speed North	Christopher Quayle & Quentin Macdonald
HS2 Phase 2	2014	High Speed UK	Colin Elliff & Quentin Macdonald

Table 22.3 : HSN/HSUK Responses to official HS2 Public Consultations.

# APPENDIX D

DOCUMENT TITLE:

***HIGH SPEED NORTH : JOINING UP BRITAIN***

ISSUED TO:

**CHIEF EXECUTIVE & CHIEF ENGINEER OF  
HS2 Ltd AT BRIEFING MEETING, MAY 2009**

DOCUMENT PREPARED BY:

**2M GROUP OF LONDON & SOUTH-EAST  
COUNCILS**

AUTHOR OF DOCUMENT:

**2M GROUP/COLIN ELLIFF**

DATE:

**MAY 2009**

**Detailed commentary on this submission is given in  
Section 6 of this report.**



# High Speed North

JOINING UP BRITAIN



JOINING UP BRITAIN

### About 2M

The 2M Group is an all-party alliance of local authorities concerned at the environmental impact of Heathrow expansion on their communities. The group, which took its name from the 2 million residents of the original 12 authorities, now represents 21 councils with a combined population of around 4.5 million people.

The full membership comprises the London Boroughs of Brent, Camden, Ealing, Greenwich, Hammersmith and Fulham, Harrow, Hillingdon, Hounslow, Islington, Kensington and Chelsea, Kingston, Lambeth, Lewisham, Merton, Richmond, Sutton, Southwark and Wandsworth, the boroughs of Slough, Windsor and Maidenhead and South Bucks District Council.

For more information visit  
[www.2MGroup.org.uk](http://www.2MGroup.org.uk)



Designed and produced by the Corporate Communications Unit, Wandsworth Council. TC.1750 (11.11)

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# Joining up Britain

"The 2M Group has been a passionate, and we hope, constructive, contributor to the debate on Heathrow expansion. Our concern throughout has not been simply to knock Heathrow but to speak up on behalf of our residents and protect their quality of life.

As part of this process we have inevitably come to consider where aviation fits in the broader context of national transport policy.

This pamphlet will, we hope, raise questions as to why alternatives to airport expansion are not being more vigorously pursued.

The airlines and airport operators have long been powerful advocates for their industry. Yet the need for equally influential rail 'champions' has never been greater.

Whatever the future holds for Heathrow can we really continue to ignore the potential of high speed rail to transform the way we travel both in the UK and in Europe?"

*Foreword by Edward Lister,  
Leader of Wandsworth Council on behalf of the 2M Group*

## HIGH SPEED NORTH



Tomorrow's  
high speed map  
of Europe

# A one sided debate

The debate over the UK Government's plans for expanding Heathrow has been conducted in a vacuum.

While the Department for Transport rushes to meet the aviation industry's demands for extra capacity, little priority is given to investment in other sectors.

This pamphlet looks at how a new high speed rail network, allied with radical improvements to Heathrow's own rail links, might offer a competitive alternative to domestic and European short-haul flights and contribute to a significant easing of congestion on our increasingly crowded roads.

## The North - South divide

Adding new runway capacity in the South East seems to be the main focus of Government transportation policies.

But this only encourages more people to fly to Heathrow from other parts of the country.

It also concentrates investment in an area where the economy is already overheated and adds to local road and rail congestion.

HIGH SPEED NORTH

Meanwhile the north of England and Scotland miss out on the regenerative effects of new transport infrastructure development.

## Train or plane?

The more UK cities that can be brought within a three-hour rail journey of London, the more likely it is that people will choose the train over the plane.

Experience in Europe confirms that flying loses its appeal when the same journey can be made by rail within this three-hour threshold.

With check-in delays at airports only likely to get worse and growing concerns about the environmental impact of air travel, it is likely that the 'tipping point' for many travellers could extend to four hours. This brings major cities such as Edinburgh and Glasgow, Amsterdam, Frankfurt and Lyon within high speed rail range of London.

With an integrated UK and European high-speed rail network this would open up many more attractive alternatives such as Manchester to Milan and Sheffield to Frankfurt.

JOINING UP BRITAIN

# High Speed North - a new route to the North

The main building block for any new UK high speed rail network must be a north-south route.

Most high speed proposals have centred on London - offering few connections between other cities.

These constraints could be overcome by building High Speed North - a single Anglo-Scottish spine route, with spur connections to outlying cities.

The spine would initially follow the MI from London and serve Leicester, Nottingham, Sheffield, Leeds, Newcastle, Edinburgh en route to Glasgow.

Spurs would reach out to major cities in the Midlands and the North including Birmingham, Manchester and Liverpool.

It would be a companion to High Speed One - the former Channel Tunnel rail link - which runs for just 108 kilometres between St Pancras International and Folkestone and remains the only stretch of high-speed track in the UK.

HIGH SPEED NORTH

# High Speed North - step-by-step

The M1 offers a direct corridor for the new line. The topography allows a straight and level alignment while the existing noise and pollution from the motorway has discouraged residential development alongside the route. This makes the M1 suitable for the parallel construction of a high speed line.

The full north-south line would be built in phases. The first section would run from London to Leicester with a branch to Birmingham; it would connect to both West Coast and Midland Main Lines.

The second phase would extend from Leicester along the M1/M18 corridor and connect to the East Coast Main Line in Yorkshire.

The third phase could extend from Sheffield to Leeds, and follow the disused Woodhead corridor to Manchester. This would require the former rail tunnel here to be re-opened for high speed track.

The final stages would extend to Liverpool along the M62 corridor and shadow the East Coast Main Line and M8 corridors to Edinburgh and Glasgow.

The end result - a UK high speed network bringing vast benefits in improved connectivity and capacity.



HIGH SPEED NORTH

# Heathrow, the heart of the network

The new rail infrastructure would not turn its back on Heathrow. On the contrary, with relatively modest development, the existing Heathrow Express system could be transformed into a regional network focused on the airport. Trains would radiate in all directions and would provide frequent connections to the new high speed line.

Heathrow would become a truly integrated transport hub. People in all parts of the country needing to fly from the airport would be able to reach it by main line train.

Currently Heathrow's only rail connection to the national network is the Heathrow Express to Paddington. Otherwise it's a bus to Woking or Reading or a Piccadilly Line tube to central London.

The current airport expansion plans offer only a hotch-potch of disparate terminating branch lines operating on different power systems - for example the proposed Airtrack link to Staines will use 'third rail' power and trains will not continue onto the overhead-electrified Heathrow Express.

This is far from the model of a modern transport hub that would improve local and regional services for people in west London and national services for air travellers flying from Heathrow.



HIGH SPEED NORTH

# The 'compass point' network

The proposed 'compass point' network would make the airport instantly more accessible on all sides. Indeed if, as the Department for Transport claims, seven out of ten foreign companies want to locate within one hour of Heathrow, the economic benefits accruing from this investment would reach many more centres of population as far afield as the Thames-side communities, the South Coast and Milton Keynes.

Up to 40 trains an hour could disperse Heathrow's incoming travellers in all directions to a wide range of Home Counties destinations and outer-suburban hubs for connection to main line services.

It would also allow new cross-London routes such as Reading to Cambridge or Luton to Portsmouth.

## The Heathrow compass points

**North** The northern arm would comprise an orbital route through Wembley, Cricklewood and Stevenage linking to all radial main lines to the North.

The key north London hub would be a new Cricklewood Interchange. This would provide an international connection to Europe via High Speed One avoiding the need for a stop at St Pancras International. It would also link to services on the new High Speed North, Midland Main Line and Thameslink.

**South** The southern arm would comprise the currently proposed Airtrack link to Staines and Woking. This would radically improve links to outer suburban areas.

**East** The current Heathrow Express line to the east would extend with Crossrail to the City and beyond, and link more effectively to the suburban rail network.

**West** The western arm would connect to Slough and Reading and provide onward connections to Wales and the West Country.

## HIGH SPEED NORTH



Developed  
Heathrow  
Express  
Network

# Birmingham to Barcelona?

The opening of St Pancras International at last provides a fitting gateway to Europe for UK rail travellers. The high speed connections advanced in this study would bring St Pancras and Europe within easy reach of many parts of the UK.

The continued expansion of high speed lines in countries such as France, Germany and Spain will create the opportunity for many new European rail services. This would bring cities such as Cologne, Frankfurt and Lyon within easy reach of the UK by rail.

The current Railteam initiative aims to make European rail travel simpler and more competitive by integrating the different countries' high speed systems.

With an extended cross-European high speed network it would be possible to buy a single ticket for a journey from Birmingham to Barcelona.

---

## Possible new routes to Europe:

Glasgow/Edinburgh - Paris • Liverpool/Manchester - Milan • Leeds/Sheffield - Amsterdam  
 Leeds/Sheffield - Frankfurt • Liverpool/Manchester - Amsterdam • Glasgow/Edinburgh - Frankfurt  
 Glasgow/Edinburgh - Geneva • Birmingham - Amsterdam • Birmingham - Barcelona • Liverpool/Manchester - Berlin  
 Leeds/Sheffield - Paris • Birmingham - Nice (& Côte d'Azur)

HIGH SPEED NORTH

JOINING UP BRITAIN

## A sustainable solution

For basic energy use high speed rail is several times more efficient than aviation.

In terms of carbon footprint, the comparison is even more compelling since electricity can be generated from renewable sources. Eurostar puts its carbon emissions at just 10 per cent of those from an aircraft.

With aviation reliant on increasingly expensive and scarce oil supplies, rail's basic energy demand makes this form of transportation sustainable well into the 22nd century.

The new lines proposed in this study in most cases follow existing transportation corridors such as motorways or railways, with very little effect on residential property. This contrasts with the wholesale destruction of communities envisaged by the third runway proposal at Heathrow.

## The costs

The UK Government favours airport expansion over rail investment not least because the development and construction costs fall to the private sector.

But the current consultation on Heathrow has highlighted concerns that the true economic and environmental costs of expansion have not been assessed.

The rail infrastructure investment outlined in this study has been estimated at around £30bn for the full programme which would last until 2030.

Whether we are building a new runway at Heathrow or not, the question is whether as a nation we can afford not to invest in an expanded rail network that will relieve the growing congestion on existing roads and public transport that makes it harder for people to move around, and for business to distribute materials and products.

In weighing those costs we should at the same time count the regenerative impact of rail investment in the regions and the benefits to the economy in the South East from a better connected, more accessible Heathrow.

HIGH SPEED NORTH

# **APPENDIX E**

SUBMISSION TO:

**OFFICIAL CONSULTATION ON PHASE 1 PROPOSALS  
FOR HS2 FROM LONDON TO THE WEST MIDLANDS**

RESPONDING ORGANISATION:

**HIGH SPEED NORTH**

AUTHOR OF RESPONSE:

**CHRISTOPHER QUAYLE**

DATE:

**JULY 2011**

**Detailed commentary on this submission is given in  
Section 7 of this report.**

Note: All references to 'Birmingham Fazeley Street' station replaced with 'Birmingham Curzon Street' in accordance with current parlance.

# RESPONSE TO GOVERNMENT'S HS2 PHASE 1 CONSULTATION

## Introduction

This response to the Government's Consultation on the HS2 proposals is made by Christopher Quayle.

This response principally references the following documents:

- *High Speed Rail and CO<sub>2</sub>*. By Alan Brooke, published May 2011. Paper copy of Executive Summary attached, full report enclosed in CD format.
- Route plans (1:50000 scale) of London to Birmingham and Leicester sections of *High Speed North*, prepared by the High Speed North Consortium. (For reasons of copyright and blight, these plans are not for onward dissemination beyond DfT, and must be treated as confidential.)
- HS2 Ltd July 2009 newsletter.
- HS2 Ltd Report to Government dated March 2010.
- HS2 Government Command Paper High Speed Rail dated March 2010.
- HS2 Consultation document.

The Alan Brooke study, in its consideration of projected CO<sub>2</sub> emissions from the transport sector, takes as 'exemplar schemes' both:

- the HS2 proposals for a Y-shaped system, extrapolated into a national network extending northwards either side of the Pennines, broadly as indicated in the various HS2 documentation.
- the High Speed North proposals for a 'spine and spur', broadly aligned with the national motorway network and interconnecting all principal conurbations of the Midlands, the North and Scotland. These proposals were published in July 2008 by the 2M Group of London and South-East Councils. A pamphlet outlining comparative benefits of High Speed North against the HS2 proposals is also attached.

Although the 'headline' comparisons of the Alan Brooke study address the specific issue of transport CO<sub>2</sub> emissions, development of these statistics is only possible through detailed consideration of more conventional issues of capacity, connectivity, operational efficiency, environmental intrusion and cost. Noting the generic nature of the source data (eg vehicle emission figures), and difficulties in making accurate predictions as to the true gravity of the anticipated environmental crisis, there are clear uncertainties as to the accuracy of the findings, in an absolute sense. However, in a comparative sense, with the same methodologies applied consistently to both proposals, the relative accuracy is far greater.

All of the comparisons thus generated appear fully coherent and consistent with the self-evident proposition, that a railway system a) covering more existing main line axes, b) capable of quicker implementation, c) better integrated with the classic network, and d) more operationally efficient, should show much greater potential to generate modal shift and hence reductions in overall transport CO<sub>2</sub> emissions.

This points to a highly concerning situation, whereby the official HS2 proposals – which are the product of several years of professional development - seem to underperform with respect to an alternative proposal, by an order of magnitude.

Notwithstanding these issues of comparative performance, it must be emphasised that this response to the HS2 consultation should not be taken to imply specific endorsement of the detail of the High Speed North scheme, but rather of the underlying operational principles and network configuration, to which it has been developed. It is also indicative of the fact that the Government's consideration of high speed rail development has not been as comprehensive as might reasonably be expected for an initiative of this magnitude.

Christopher Quayle

c/o Manor Farm,  
Church Lane,  
Nether Poppleton,  
York, YO26 6LF

28/7/11

## Part 1 of the consultation document

**1. This question is about the strategy and wider context (Chapter 1 of the main consultation document):** Do you agree that there is a strong case for enhancing the capacity and performance of Britain's inter-city rail network to support economic growth over the coming decades?

### 1.1 Primary Requirement for Capacity, Connectivity and Efficiency

I support the view that the enhancement of the intercity rail network's capacity, performance **and** connectivity is of great importance to the national economy. In the context of a consultation about high speed rail (HSR), I would comment that compared with capacity, performance and connectivity, speed (especially of the magnitude proposed by HS2) is of relatively minor importance in developing a viable rail network addressing contemporary transport, economic and environmental needs.

I believe strongly that the attainment of an enhanced intercity rail network constitutes the primary goal in the development of a high speed rail network. This enhancement must address in a fully balanced manner sometimes competing requirements for speed, capacity, performance and connectivity.

It is important to note the fact that the physical extent of any new high speed rail system will only reach the primary conurbations (ie Birmingham, Nottingham, Sheffield, Leeds, Manchester, Liverpool, Newcastle, Edinburgh and Glasgow), and that the 'second tier' centres (such as Luton, Milton Keynes, Northampton, Leicester, Coventry and Stoke, within the immediate scope of HS2) will remain reliant on the 'classic' network.

### 1.2 Imperative for Integration of High Speed and Classic Networks

This creates a clear imperative for full integration between classic and high speed networks, and demands the establishment of a bespoke 'UK-appropriate' model of high speed rail, tailored to suit Britain's unique geography, topography and demography.

I am concerned that the massive multi-billion cost of developing high speed rail will (notwithstanding the statements of various politicians and of prominent supporters of high speed rail) have adverse impacts upon necessary investment in the classic network. In the current straitened financial climate, these conflicts in investment priorities appear inevitable, and (as is often the way with high-profile and prestigious projects such as high speed rail) it seems likely that investment in the classic railway will suffer. Noting the fact that the journeys and ultimate destinations of the vast majority of rail passengers will remain on the classic railway, I would consider this situation to be unacceptable.

Accordingly, I believe that the best means of resolving these conflicts is to ensure optimum integration between high speed and classic railway. In this way, the construction of the new high speed line will bring maximum benefit to the local railway and reduce the pressure for new investment on these lines. If the new line can be

located close to the communities to which these local benefits will accrue, this should also have the effect of reducing opposition to construction.

Another means of resolving these conflicts of competing investment priorities is to minimise the cost of high speed rail construction through minimising route length, and to maximise financial returns through optimising operational efficiency and 'network value' of the entire railway system. Again, integration between high speed and classic networks is crucial.

### **1.3 Requirement for High Speed Access to Existing City Centre Hubs**

I consider that the principle of integration between high speed and classic systems can only practicably be achieved by ensuring that high speed rail services access the existing rail hubs of the major conurbations (such as Birmingham New Street, Manchester Piccadilly or Leeds City Stations). The establishment of separate high speed stations (eg Birmingham Curzon Street) or poorly-connected parkway stations (eg Birmingham 'Interchange') is unacceptable.

I would acknowledge that certain circumstances of topography and/or surrounding development might render city centre access impracticable, and instead compel development of a parkway station. This might be considered acceptable in the case of a station such as Sheffield Meadowhall, well connected to the existing local rail / wider public transport network, and centrally located to the wider conurbation that it is intended to serve.

### **1.4 Opportunities to Enhance Existing Intercity Rail Network**

Wherever practicable, high speed rail should be employed as a means of addressing defects in the existing somewhat London-centric rail network, and for developing a more balanced interregional network with a common high standard of connectivity (and speed) between all primary conurbations. This 'equivalence of connectivity' is vital in ensuring that the development of high speed rail delivers the intended economic benefits to the UK regions.

### **1.5 Conflicts Inherent in Achieving High Speed Access to Heathrow**

I also believe that there are major conflicts inherent in the requirement to create an enhanced intercity network, and in the additional requirement to achieve improved links to Heathrow Airport (and other regional airports). In terms of simple passenger flows, the 'intercity' component clearly dominates over the 'airport' component (ref Command Paper Item 7.12, Table 7.1), and this fact must be recognised in the development of high speed rail in the UK.

This is not to deny the need for improved rail access to Heathrow, and other airports; on the contrary, I support the principle of appropriate rail (or other public transport) access to all airports. However, this must be commensurate to the status of the airport (ie local, regional or national 'hub') and must address the 360-degree nature of any airport's surface access. In this context, it is clearly inappropriate to attempt to remedy Heathrow's inadequate surface access with a uniaxial high speed rail line of limited connectivity.

## **1.6 Alignment of HSR Strategy with Climate Change Objectives**

I would also comment that the rationale for development of high speed rail cannot simply be about economic growth. The Government's strategy for high speed rail should be part of a wider strategy to achieve 80% cuts in CO<sub>2</sub> emissions over the next 40 years, in line with the requirements of the 2008 Climate Change Act. HS2's predicted environmental performance (ref HS2 RtG Items 4.2.27-4.2.33), of no meaningful overall reduction in CO<sub>2</sub> emissions over the next 60 years, makes the proposals effectively unfit for purpose. The research embodied in the Alan Brooke study demonstrates that far more is possible, if the correct operational philosophy, routing strategy and network configuration are adopted.

## **1.7 Associated Requirement for Enhanced Rail Network Capacity**

I consider that within the transport sector, the majority of the required cuts in CO<sub>2</sub> emissions will come from modal shift, with high-emitting road and air traffic transferring to lower-emitting rail. Around one-third of existing road passenger-kilometres (and all domestic air journeys within mainland UK) are potentially convertible to intercity rail, and this would have the effect of approximately quadrupling rail traffic.

With the rail network already close to capacity on most main line axes, it is clear that quadrupled rail traffic demands (approximately) quadrupled capacity, and the only practicable means of achieving this step-change modal shift is to construct new railways, along all existing main line axes.

On particularly busy sections of the network (particularly the southern section from London to the Midlands) there appears to be a prima-facie case either for constructing the high speed line with 4 tracks from the outset, or with passive provision for future 4-tracking. The option of constructing a second northward route from London is worthy of consideration, but this strategy appears to add major additional cost, disruption and timescale; the 4-track option along a single core route seems vastly preferable.

## **1.8 Requirement to Follow Existing Transportation Corridors**

I believe that the environmental imperative, to effect step-change modal shift to rail in the shortest practicable timescale, dictates that the selected high speed rail routes must be capable of swift implementation, with the minimum of controversy. This requires that the high speed line's impact upon landscapes, upon property and upon communities is minimised, and that any adverse impacts are balanced by commensurate benefits. This might be characterised as 'addressing the localism agenda'.

The best means of resolving these issues appears to be through following existing transportation corridors, in particular motorways such as the M1 which are generally constructed to a sufficiently straight alignment to permit parallel railway construction. The environmental intrusion of the motorway – noise, atmospheric and visual – is already an established fact, and the marginal intrusion of the new high speed railway will be almost insignificant. Moreover, the presence and nuisance of the motorway

for over 50 years has discouraged adjacent residential development, and this creates the required clear corridor for high speed rail construction.

An associated advantage is that motorways generally follow corridors of relatively high population, with major communities that might directly benefit from the improved connectivity offered by the high speed line. I believe that, with the appropriate model of integration between high speed and classic networks, an M1-aligned high speed line could transform rail journey opportunities for the major centres along the M1 corridor ie Luton, Milton Keynes, Northampton, Leicester and Coventry. See Section 5.

By contrast, the communities along the Chiltern corridor chosen for HS2 lack the size and scale to gain any realistic benefit from the new high speed line, and the adverse impacts – upon communities, property and landscapes within ‘greenfield’ areas, and Areas of Outstanding Natural Beauty – are of an order of magnitude greater.

**2. This question is about the case for high speed rail (Chapter 2 of the main consultation document):** Do you agree that a national high speed rail network from London to Birmingham, Leeds and Manchester (the Y network) would provide the best value for money solution (best balance of costs and benefits) for enhancing rail capacity and performance?

### **2.1 Requirement for National High Speed Rail System**

I consider Birmingham, Leeds and Manchester to comprise a reasonable goal, for initial roll-out of high speed rail as part of a phased implementation of a national network. However, as noted previously, I would comment that the purpose of high speed rail should not simply be to link Birmingham, Leeds and Manchester to London; they should all be linked to each other. This principle should apply not just for Birmingham, Leeds and Manchester, but for all other major centres. A national system, linking to, and delivering equivalent connectivity between, the UK's principal conurbations, is considered essential.

### **2.2 Concerns re the Proposed HS2`Y` Network**

Accordingly, I have major concerns as to the suitability of the proposed `Y`. It does not appear to comprise the optimum configuration, and generally has much inferior performance to the alternative `spine and spur` format, for the following reasons:

- The `Y` is not configured to optimise interregional links, particularly on Transpennine axes but also (through the isolation of the proposed Birmingham Curzon Street terminus from Birmingham New Street) on CrossCountry routes. It is primarily London-centric and hence will tend to deliver greatest economic benefits there.
- Development of a `Y` (in the manner advocated by HS2) will effectively preclude (or at least greatly delay) development of equivalent Transpennine connectivity. This will have major adverse impacts on the Northern economy.
- The lack of a Transpennine dimension (and absence of coverage on other interregional axes) will greatly limit the ability of the new high speed rail system to drive modal shift, and thus achieve reductions in transport emissions. The Alan Brooke study indicates that failure to implement the necessary step-change increase in capacity on Transpennine axes in a timely manner could cost of the order of 92MT of CO<sub>2</sub> over a 40 year period.
- The `Y` requires greater route length than `spine and spur` (1092km vs 935km of new construction) but achieves fewer `conurbation-pair` connections (19 vs 45) . This is true both for the initial London-Birmingham-Manchester-Leeds system, and also for the ultimate system development to all 9 principal conurbations of the Midlands, the North and Scotland.
- The route length comparison – amounting to a 160km discrepancy, valued conservatively at £30M/km – equates to an extra cost of circa £5 billion for the full system of the `Y`. The `conurbation-pair` comparison might simplistically be taken to indicate benefit. Hence, with greater cost but less benefit, the benefit-cost ratio (BCR) of any `Y` system – HS2 or otherwise - would seem not to be optimised.
- The `Y` is also operationally inefficient. This arises from its multiple-bifurcating tree-like configuration, with most if not all cities located on separate spurs, and no major centres located at intermediate points on the

line of route. This effectively renders each provincial conurbation responsible for filling its own London-bound trains.

- By contrast, a spine and spur system (such as that advocated in the High Speed North proposals) allows several cities to be placed on a single line of route, and concentrates flows. This achieves higher load factors and requires fewer trains to operate to serve the same overall number of passengers – yet allows more frequent services and also interregional links.
- The Alan Brooke study has determined that HS2 would require to operate around 18 trains per hour to serve all principal Midlands, Northern and Scottish destinations, while High Speed North would only require 14 trains per hour to serve the same destinations.
- The suboptimal load factors implicit in the 'Y' compromise both economic and environmental performance. The Alan Brooke study indicates that the extra emissions implicit in the operation of more trains to serve the same number of passengers could cost of the order of 52MT of CO<sub>2</sub> over a 40 year period.
- The requirement to operate more trains has the effect of compromising line capacity, particularly on critical southern sections of any high speed rail system, between London and the Midlands. Current intercity flows from London to Midlands, Northern and Scottish destinations amount to around 18 trains per hour, and (as noted previously) this would continue with HS2 becoming the principal conduit for northward intercity services. But 18 trains per hour is also the maximum anticipated capacity of a 2-track line (allowing for anticipated development of signalling systems). This indicates that that HS2's proposed 2-track line does not have the capacity to accommodate anticipated increases in intercity rail traffic, with modal shift from higher-emitting air and road transport.
- There is a more immediate requirement for additional services on any northern-oriented high speed line, arising from the remitted 'direct' connection to Heathrow Airport. With HS2 likely to be operating at capacity from the outset with intercity services, it will not have the ability to accommodate additional airport services unless the new line can be routed sufficiently close to Heathrow to make possible either a 'shuttle' connection (via Heathrow Express) or a 'loop' connection (to a Heathrow Hub station on the northern perimeter).
- This requirement for proximity to Heathrow effectively dictates HS2's onward route through the Chilterns. The unavoidable environmental damage and intrusion both in the Chilterns, and in rural areas further north, is certain to cause continuing controversy, and seems likely to result in major delays in realisation of the UK high speed rail project. The Alan Brooke study estimates a circa 10 year delay in achieving modal shift could cost of the order of 110MT of CO<sub>2</sub> over a 40 year period.
- A further consequence of HS2's adoption of the 'Y' configuration is that it compels a southern approach to Manchester, along already congested routes which do not have the capacity to accommodate extra tracks which might accommodate double-decker 'Eurogauge' rolling stock, and future European services. The only option to achieve the required city centre access would seem to be a long tunnel below the South Manchester suburbs.

### **2.3 Preference for 'Spine & Spur' Network**

I believe that for all the foregoing reasons, the proposed 'Y' configuration of HS2 does not comprise the best solution, in either economic or environmental terms, for the new UK high speed rail network. This criticism applies both for the initial goal of connecting London, Birmingham, Leeds and Manchester, and for the further aspiration of a national network linking all principal conurbations. The alternative 'spine and spur' configuration has:

- Shorter route length, hence lesser cost.
- More city pairs connected, hence greater benefit.
- Greater ability to serve Heathrow through parallel development of a local 'Compass Point' network.
- More efficient operation, hence better economic and environmental performance.
- Lesser environmental impact through avoidance of sensitive areas such as the Chilterns.
- Overall vastly superior performance in terms of its ability to facilitate modal shift and hence reductions in CO<sub>2</sub> emissions.

### **2.4 Emissions Reduction Potential of Different Network Formats**

With respect to this final point, the findings of the Alan Brooke study should be noted. It envisages conditions of environmental (and/or fuel supply) crisis entirely consistent with those anticipated by the 2008 Climate Change Act, creating an overriding imperative to achieve a step-change reductions in the UK transport system's consumption of energy and emission of CO<sub>2</sub>.

In these conditions of semi-forced modal shift, a Y-shaped system such as HS2, primarily London-centric and lacking the necessary integration with the existing network, might deliver overall CO<sub>2</sub> emissions reductions of around 100MT over 40 years. Whereas a 'spine and spur' system such as High Speed North, configured as a comprehensive interregional network and fully integrated with the existing network, might deliver overall CO<sub>2</sub> emissions reductions of around 600MT .

**3. This question is about how to deliver the Government's proposed network (Chapter 3 of the main consultation document):** Do you agree with the Government's proposals for the phased roll-out of a national high speed rail network, and for links to Heathrow Airport and the High Speed 1 line to the Channel Tunnel?

### **3.1 Phased Roll-out of National High Speed Rail Network**

As has already been observed, the HS2 proposals are primarily London- and Birmingham-centric, and as such do not comprise the balanced and comprehensive network to which the Government should aspire. The much greater intercity connectivity embodied in the 'spine and spur' configuration of High Speed North is indicative of what is achievable if the creation of an enhanced intercity rail network is taken to be the governing priority.

I support the principle of phased roll-out of high speed rail, but would comment that the segregated/exclusive nature of HS2 – with no physical connection to the existing rail network between Old Oak Common and (probably) Water Orton – greatly restricts such opportunities. It will be necessary to construct the full length of the route from London to Birmingham, or to Lichfield (to connect to the West Coast Main Line) before any meaningful benefit can be gained. Much greater opportunities for phased roll-out appear to exist for a line constructed along the M1 corridor. See Item 5.

### **3.2 Viability of Proposed HS2 High Speed Rail Links to Heathrow**

I believe that the HS2 proposals for establishing high speed rail access to Heathrow do not comprise an appropriate model of airport access, failing to address the nationwide requirement for comprehensive access to the national hub airport.

- It is important to restate the fundamental rationale of high speed rail, as a means of efficiently addressing high-volume flows between major population centres. However desirable the prospect of a 'high speed link to Heathrow', the primary purpose of high speed rail cannot be as an airport delivery service, serving relatively small numbers of passengers relative to the much larger intercity/interconurbation flows.
- The relatively low flows of interlining passengers from any particular regional centre to Heathrow (of the order of 1000 per day from major conurbations such as Birmingham or Manchester) appear inadequate to justify dedicated services.
- Currently, Heathrow's rail network comprises only links to central London, making rail journeys to provincial cities difficult, congested and inconvenient. As the UK's national airport, Heathrow requires 360-degree connectivity along all axes, to north, east, south and west, with rail connections facilitated to as many destinations as practicable.
- However pressing the need for radical improvements to Heathrow's rail connectivity, it is clear that a uniaxial high speed railway is inappropriate as a primary means of resolving surface access issues at Heathrow. This will only connect to a limited number of provincial 'high speed' stations, themselves poorly connected to local public transport systems; as such, HS2 would seem to facilitate the journeys of relatively few airline passengers.
- The connection between HS2 and Heathrow services at Old Oak Common – as proposed for the initial phase of development – does not appear to comprise

an especially direct or convenient link that will attract many short-haul airline passengers making interlining connections.

- The proposed dedicated HS2 links to Heathrow (ie the tunnelled links to a 'Heathrow Hub' station located on the Great Western Main Line north of the airport, to be constructed in the second phase of development)
- The Government's own figures indicate that only 2000 passengers per day would use the high speed link to Heathrow; yet the proposed links entail an extra 20km of tunnelled railway and perhaps a further 10km of new distributor tunnels within the airport 'campus'.
- This appears to add up to £3 billion to the cost of the HS2 proposals. Under normal principles of marginal cost accounting, the cost of servicing this capital – perhaps £200M per annum – should be spread amongst the 'high speed' passengers requiring to access Heathrow – perhaps 750,000 per annum. This would impose an additional 'infrastructure tax' upon each return journey of £266, and as such would appear to be unsustainable.

### **3.3 Alternative Strategy for 'Compass Point' Rail Links to Heathrow**

I consider that the aspiration for improved rail access to Heathrow would be far better achieved by means of a regional 'Compass Point' network. This would be focussed upon Heathrow, utilising the existing Heathrow Express system of tunnels and underground stations within the airport, and linking south, west, north (and east) to all radial main lines at outer-suburban hubs such as Woking (SWML), Reading (GWML), Watford Junction (WCML), Cricklewood (MML) and Stevenage (ECML).

- Such a strategy would require far less new construction (and hence cost) than any dedicated high speed link, and would benefit a far greater proportion of travellers to the airport.
- Connection to the classic main line network would place most major mainland UK centres no more than a single change of trains from Heathrow. Although this might not deliver the ideal of direct services to Heathrow, it would still represent a massive improvement over the current situation, of cross-London transfers.
- Implementation of high speed rail, configured in the optimum 'spine and spur' format, would allow further improvements. The aggregation of several cities onto a single line of route, that is possible with 'spine and spur' (but not with either the 'Y' of HS2, or with the similarly bifurcating classic main line network) allows the operation of a limited number dedicated high speed services to all 9 principal conurbations of the Midlands, the North and Scotland. These trains - configured as 2x4-car UK-gauge multiple units capable of splitting at regional hubs – could provide commercially viable regional services at hourly frequencies, and effectively supersede all domestic interlining flights from Heathrow to mainland UK airports.
- Collectively, these two models of operation – changing at outer-suburban hub to classic main line service, and direct 'high speed' service to regional hub station – could transform Heathrow's surface connectivity to the UK regions, with rail becoming the primary 'spoke' feeders in the 'hub and spoke' operational model. This would add immense value to the airport operation at Heathrow, and free up runway space to address emerging markets in China, India and Latin America (inter alia).

- This would also bring about a huge improvement in the international connectivity of the UK regions, and would be a powerful boost for attracting inward investment.

There are clear concerns, that the necessary step-change improvements to Heathrow's surface connectivity might lead to greater pressure (at least in the short term, while supplies of aviation kerosene and other hydrocarbon fuels remain plentiful) for a third runway and sixth terminal, to which the Government is rightly opposed. But I believe that the principles of optimised rail-to-airport connectivity embodied in the Compass Point proposals can be extended to improve connectivity between London's airports and (for instance) enable Gatwick or Luton to be operated as Heathrow's third runway, and thus relieve pressure at Heathrow.

### **3.4 Influence of Heathrow on Routeing and Configuration of High Speed Rail Network**

I believe that the HS2 proposals for a 'national high speed rail network' are left fatally flawed by the degree to which the initial sections are predicated upon Heathrow Airport and thus neglect the more fundamental priorities of an optimised intercity railway.

- Heathrow appears to exert a massive 'gravitational pull' on the alignment of HS2, drawing it westwards from its ideal M1 alignment (along which the more efficient 'spine and spur' would naturally develop) and rendering unavoidable the proposed Chiltern alignment.
- With HS2 emerging from the Chilterns at Aylesbury, around 25km to the south-west of the M1 corridor, there appears to be no advantage in following the M1 corridor. Instead, Birmingham and the West Midlands comprise the logical next destination for HS2, before splitting to east and west of the Pennines. This effectively determines the 'Y' format of the HS2 proposals.
- With Heathrow effectively dictating HS2's Chiltern alignment, and the Chiltern routeing in turn dictating the 'Y' configuration of HS2, it can be seen that the inefficiencies and delays associated with the 'Y' (as described in Section 2 of this response) are primarily attributable to the perceived requirement to establish a high speed connection to Heathrow. This appears to introduce extra costs (compared with an M1-aligned 'spine and spur' high speed system) of around £8 billion, and around 300MT of extra CO<sub>2</sub> emissions over a 40 year period.
- The 300MT figure is derived from 92MT from incomplete coverage of the 'Y', 52MT from inefficient operation, 110MT from delayed implementation due to controversy in the Chilterns, and 43MT from failure to deliver improved connectivity to major communities along the M1 corridor.
- It should particularly be noted that a high speed railway that is routed via Heathrow and the Chilterns is not in a position to deliver significant benefits to the major communities along the M1/M6 corridor ie Luton, Milton Keynes, Northampton, Leicester and Coventry. This issue is discussed in greater detail in Section 5.

### **3.5 Proposals for HS1/HS2 link**

I support the aspiration for a direct connection to be created between HS1 and any northern-oriented high speed line. This is considered essential to facilitate future direct rail services from Continental Europe to the UK provinces. This would be part of a wider initiative to achieve improved connectivity to the outlying European regions through a pan-European surface transport system (high speed or otherwise), lower-CO<sub>2</sub> than the air transport that currently predominates, and without the dependency upon fossil fuels.

However, I am concerned that the HS2 routeing strategy, with a long tunnelled approach to its Euston terminus from the proposed CrossRail / Heathrow interchange at Old Oak Common, makes the achievement of such a link disproportionately difficult. It appears to compel the construction of a tunnel, extending 6km from Old Oak Common to the Kings Cross Railway Lands, which – presumably for budgetary reasons – will only comprise a single track.

I consider this proposal to be excessively expensive, and operationally fragile. It appears to be another consequence of HS2's flawed routeing strategy. A much simpler and shorter link can be created between an M1-oriented high speed line and HS2.

If the high speed line were oriented along the axis of the M1 (as per the High Speed North proposals), its natural approach to London would follow the Midland Main Line, and would require only a short tunnel under the Hampstead Ridge to emerge alongside the WCML at Primrose Hill (see Section 5). From near this point – or from many other possible 'portal positions' along a reengineered Euston Incline – a much shorter, and potentially twin-track tunnel could connect to HS1. A possibly superior option would be to upgrade the section of North London Line from Primrose Hill to Camden Road, with 4-tracking locally implemented through Camden Road Station to isolate existing North London Line passenger services from high speed operations.

## Part 2 of the consultation document

**4. This question is about the specification for the line between London and the West Midlands (Chapter 4 of the main consultation document):** Do you agree with the principles and specification used by HS2 Ltd to underpin its proposals for new high speed rail lines and the route selection process HS2 Ltd undertook?

### 4.1 HS2 Principles and Specification

I support the general principles of the Technical Specification for Interoperability (TSI), which underpin much of the technical specification proposed for the HS2 project. The TSI stipulates the size and length of trains (ie 400m long and wider-bodied 'Eurogauge' in cross-section) for which the new high speed rail infrastructure is to be built. Issues of train control and signalling are also covered in the TSI.

It is important to note that the TSI is primarily intended to harmonise infrastructure with rolling stock and control systems, to establish a common technical 'platform' from which it will become possible to operate pan-European high speed rail services comprising double-decker trains conforming to the 400m long, Eurogauge standard.

The TSI makes no controlling stipulation for the speed to which any new network (high speed or otherwise) might be designed or operated, or for the type of rolling stock that might operate along a particular line. The TSI also makes no specification of location or spacing of stations. These are considered to be local issues, to be locally determined to suit local conditions.

I believe that the specification (or model) adopted for high speed rail in the UK must conform fully to the principles established in the TSI. With all sections of new railway and new station infrastructure designed to accommodate 400m long trains of Eurogauge cross-section, this will allow full interoperability with European high speed intercity operations, and will open up the possibility of European services extending beyond London to the UK provinces.

But issues of operating speed, design speed, location and spacing of stations, are local issues which must be determined in such a way as to deliver the optimum outcome for the UK railway network. This is the 'bespoke model of UK high speed rail' (referred to earlier) that must address the transportation needs of a densely-populated and relatively small island, in which the major conurbations to be served by the new network can be as little as 50-60km apart. This appears to be a situation whereby capacity and connectivity are of far greater importance than speed.

I believe that the Government's HS2 proposals represent an idealised model of high speed rail, overly predicated upon minimising journey times between specific points, to the apparent exclusion of wider considerations of capacity and connectivity. This model is not appropriate either to the reality of UK railway operation or to wider transport needs. Concerns centre around the following aspects of the HS2 proposals:

- Segregated/exclusive operation
- Operational and design speed

#### **4.1.1 Segregated/exclusive operation:**

I am concerned that the Government has selected a largely segregated/ exclusive model of high speed rail operation, with little connection to the classic network, and a preference wherever possible to operate 400m long Eurogauge rolling stock. This might deliver significant benefits, in terms of optimised passenger/train capacity and timetable reliability, for running trains along the high speed line itself; but these benefits will be rendered largely meaningless if passengers cannot readily access high speed services from the classic local networks.

The disbenefits of segregation are manifest in the HS2 proposals for stations in Birmingham. The proposed 'central' terminal at Curzon Street is remote from New Street Station which is the hub of the local/regional network; any high speed passengers en route to most suburban or wider regional destinations will be faced with a walk of up to 1 kilometre (and up to 20 minutes) to transfer to local services. This loss of connectivity (compared with current West Midlands railway operations focussed upon New Street) would appear to negate any benefits of high speed operation.

Serious connectivity issues also exist with Birmingham's secondary station ie Birmingham 'Interchange', located on the trunk route near Birmingham Airport. Aside from the proposed shuttle link (to the NEC, Birmingham Airport and Birmingham International Station) 'Interchange' has no direct public transport links. Instead, it is primarily reliant on motorway links for its local connectivity. that might be achieved along a 'segregated' system such as HS2 are meaningless without full integration with the existing intercity rail network.

It seems clear that the HS2 proposals (if implemented) will lead to an effectively 'two-tier' railway, in which high speed services remain disconnected from the classic railway. This creates a major risk whereby the advent of high speed rail will actually blight centres which remain on the classic network, with residual intercity services reduced in frequency and speed as trunk services migrate to the high speed line.

This is demonstrated in HS2's own projections for residual WCML services, with both Coventry and Stoke seeing main line frequencies to London reduced to one train per hour. This seems unlikely to promote either modal shift or improved business performance on rail services to these centres, and the loss of connectivity implicit in these reduced frequencies seems certain to blight development prospects; in the case of Coventry, it is easy to foresee the nearby Birmingham Interchange station becoming the focus for new 'greenfield' development within the 'Meriden Gap'.

I consider that an alternative more holistic strategy, of full integration between high speed and classic networks, is essential to optimise both economic and environmental benefits accruing from new railway construction, and to keep associated development pressures concentrated upon city centre locations where public transport connectivity can be maximised.

### 4.1.2 Speed

I am concerned that a technology-driven desire to run 'the fastest railway in the world' appears to comprise the basic rationale behind HS2's specified 360/400kph operating/design speed. In the context of a small island such as Great Britain, there does not appear to be any transport need to run trains at such extreme speeds. It is particularly significant that the Government has never offered any reasoned justification, either business or environmental, for the 360/400kph speeds proposed for HS2.

Extreme speed (ie 360-400kph) adds significantly to the cost of construction, in demanding straighter alignments and hence heavier engineering. It also imports unnecessary levels of technical risk and energy use (and hence CO<sub>2</sub> emissions), and delivers no meaningful benefit to any journeys below 500-600km.

With energy use (and hence CO<sub>2</sub> emissions) rising with the square of speed, HS2's proposed 360kph entails 44% higher energy use than the more conventional 'high speed' of 300kph; at the aspired 400kph, energy use becomes 78% higher. On a London to Birmingham journey, 360kph might achieve a journey time faster by 5 minutes, and 400kph faster by 10 minutes. These journey time benefits cannot possibly be justified against the far higher energy use, and associated cost and CO<sub>2</sub> emissions.

I consider that a maximum speed of around 300/320kph, using fully proven technology, should apply for high speed rail operations in the UK. At these speeds, it is easily possible to meet the basic business specification for UK high speed rail ie a sub-3-hour timing from London to Glasgow.

Additionally, I would comment that the apparent necessity for 4-track construction on the critical section of route from London to the Midlands allows the application of differing speeds, to optimise environmental and economic benefits.

For instance, trains from London to the Midlands might operate at 240kph, giving London to Birmingham journey times in under 1 hour; trains from London to the North might operate at 280kph, giving London to Leeds and Manchester journey times in under 1½ hours; and for onward sections of route to Scotland, a speed of 320-kph might apply, to give a London to Glasgow (via Edinburgh) journey time of under 3 hours.

Extreme speed also tends to reinforce the exclusive/ segregated nature of high speed rail operation, to the general detriment of connectivity. This lack of connectivity will have the effect of greatly reducing if not eliminating any benefits accruing from increased speed. Extreme speed also prevents consideration of more appropriate corridors for development. It should be noted that inability to accommodate 400kph operation is one of the many spurious reasons offered by the Government, as to the unsuitability of the M1 corridor for high speed operation. See Item 4.2.7.

## **4.2 Route Selection Process**

I am concerned that the route selection process employed by HS2 has failed to give proper consideration to the potential of the M1 corridor as the optimum northward route for a high speed line from London. Furthermore, review of the various official documentation produced either by HS2 Ltd or by the Government indicates clearly an undue early determination upon the chosen Chiltern-aligned route that is proposed for HS2.

These outputs also indicate a similar lack of due process on other issues, such as the development of an optimised terminal strategy for London, consideration of options for access to Heathrow, and for the selection of an optimised configuration for a national network of high speed lines.

### **4.2.1 Remit Issues**

I believe that the core remit for HS2 was fundamentally flawed. This remit was set out in the July 2009 HS2 Newsletter (see attached) and comprises the following 6 essential items:

1. Formulate proposals for HSL from London to West Midlands,
2. Consider onward development of national network beyond the West Midlands,
3. Formulate proposals for London terminal,
4. Consider options for intermediate parkway station between London and West Midlands,
5. Provide proposals for 'an interchange station between HS2, the Great Western Main Line and CrossRail, with convenient access to Heathrow Airport',
6. Provide proposals for links to HS1 and to the existing rail network.

While most of the above items might be in themselves uncontroversial, it is important to note that they do not collectively comprise the balanced specification of requirements from which an optimised national network might emerge.

I have specific concerns with two aspects of the HS2 remit.

### **4.2.2 Item 2 : Onward Network Development beyond West Midlands**

This infers that the national network should comprise an onward development from the initial stage of HS2, from London to the West Midlands. This strongly implies an assumption on the part of the Government, that any national network must comprise a primary stem, from London to the West Midlands, before spreading to further destinations either side of the Pennines.

This would seem to indicate an initial presumption in favour of a 'Y' network configuration, and must cast doubt on whether due consideration could ever be accorded to alternative (and more efficient) formats.

This is confirmed in Items 6.1.11-16 of the HS2 Report to Government, which discuss options for developing a national high speed rail network. The three options<sup>5</sup> depicted in Figures 6.1c, 6.1d and 6.1e (Inverse A, Reverse S and Reverse E) all show an initial stem from London to the West Midlands. Moreover, specific comment is made in respect of the M1-aligned High Speed North proposals:

“With a more central alignment of HS2, the ‘Reverse E’ would become more akin to the proposal put forward by the 2M group of London Councils (known as ‘High Speed North’). As our remit was to consider the development of HS2 beyond the West Midlands, we have not investigated the 2M proposals in detail.”

It should particularly be noted that the High Speed North proposals submitted to the Government indicated clearly that the proposals comprised a comprehensive ‘spine and spur’ network, interlinking all principal conurbations of the Midlands, North and Scotland (as opposed to the primarily London-centric ‘Y’ of HS2) and required fewer route miles of new construction.

It should also be noted that no justification has ever been offered as to why any national high speed rail system must of necessity pass through the West Midlands en route to all communities further north ie the ‘Y’ format. All the available evidence indicates strongly that an M1-aligned route in ‘spine and spur’ format offers a far more efficient and effective solution.

It seems extraordinary to me, that the Government has failed even to investigate the High Speed North proposals, and the advantages that they purported to offer, apparently on the grounds that they failed to meet an arbitrary and never-justified requirement of a flawed development brief. This omission clearly indicates that the Government’s consideration of options for development has been insufficiently broad in its scope, and as such would appear to invalidate the entire HS2 process.

#### **4.2.3 Item 5 : Proposed CrossRail/Heathrow/GWML Interchange**

This relates to the proposed interchange station ‘between HS2, the Great Western Main Line and CrossRail, with convenient access to Heathrow Airport’. While I accept the requirement for a connection from the high speed line to Heathrow, and also for onward connectivity to London’s local rail network, it is plainly inappropriate to specify that these multi-purpose connections should be achieved a) at a single interchange station, or b) with CrossRail in particular, rather than any other element(s) of the suburban network. Taking all these requirements together, it is clear that Old Oak Common comprises the only feasible location at which the specification for the remitted ‘interchange station’ could be met.

With HS2 drawn westwards to Old Oak Common to achieve the remitted interchange, there was then no realistic alternative exit route from the Greater London area except for the proposed HS2 route following the Central Line corridor as far as Ruislip. And with a northward route deviated as far west as Ruislip, there was then no alternative to a route through the Chilterns. As noted previously (see Section 2), the route

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<sup>5</sup> The options considered by HS2 Ltd are illustrated in Figure xx in Appendix xx, and assessed against the HSUK alternative for their ability to interlink the UK’s primary conurbations.

through the Chilterns logically continues to Birmingham, and only then can any split to east and west of the Pennines be contemplated. This effectively determines the 'Y' configuration of HS2.

Thus it can be seen that an early determination upon an interchange station less than 10km from the proposed originating point at Euston Station has the effect of determining the configuration of the entire national high speed rail network. It is significant to note that nowhere in the official HS2 outputs are any justifications offered as to why the Old Oak Common proposal is the optimum means of interchange either with Heathrow Airport or with London's local rail network – or why a hybrid 2-terminal solution is more appropriate than the single terminal solution that has traditionally applied for any other intercity railway, high speed or classic.

I believe that these very different requirements (for airport interchange and suburban distribution) should have been considered separately, and in doing so generate far superior solutions in both respects (see Sections 3 and 5). Moreover, these essentially local issues should never have been allowed to exert such a dominant influence over national network development.

Taken collectively, the concerns outlined with respect to network development (Item 2) and interchange station (Item 5) lead inevitably to a conclusion that the Government had effectively determined the solution for UK high speed rail development, even before it began the due process.

#### **4.2.4 Short-Listing of Route Options**

It is instructive to review the route planning process set out in Section 3.5 of the HS2 Report to Government. The various routes are depicted in Figure 3.5a; Items 3.5.2 to 3.5.6 describe how the 'long list' of route options was reduced to a short list, and the criteria by which particular routes were progressively rejected. The criteria are set out as follows:

- Engineering and construction feasibility.
- Cost
- Environmental, social and spatial considerations
- Demand assessment, mainly focussed on journey time benefits

The accentuation upon journey time (ie speed) should be noted. It is also concerning that nowhere in this list of criteria is any mention made of the following aspects, which I would consider to be essential aspects of any balanced and integrated railway proposal:

- Capability to deliver local connectivity benefits to intermediate communities along London – West Midlands axis,
- Opportunities for integration with other railway development proposals,
- Alignment with development of an optimised national high speed rail network.

It should be emphasised that the M1 corridor has historically comprised the primary transport corridor from London to the Midlands, the North and Scotland, and it seems reasonable to infer that the same logic might apply for high speed rail (ie a London to Birmingham route deviating from an M1-aligned Anglo-Scottish spine in the Rugby area).

The major communities aligned with the M1 corridor (ie Luton, Milton Keynes, Northampton, Leicester and Coventry) are all of a size to benefit significantly from appropriate integrated development of high speed rail, and could (with associated development along the 'East-West' corridor) become major hubs in an expanded rail network compatible with wider climate change concerns. These local and national benefits are confirmed by the findings of the Alan Brooke study.

It is regrettable that the studies underpinning the HS2 proposals were not remitted to examine anything other than a 'high speed line from London to the West Midlands', effectively segregated from the existing network. Under this highly corridor-specific remit, no attention was paid to the possibility that an M1-aligned integrated high speed route might allow development of a more comprehensive and efficient national network, and also deliver major local benefit.

Instead, an M1-aligned route was rejected at the first stage of consideration, for the following reasons in detailed in Item 3.5.6 of the HS2 Report to Government:

- Greater route length.
- Greater impact on communities and/or requirement for tunnelling.

The fact that the M1 route (along with a route aligned with the Midland Main Line) was the only route to avoid the Chilterns Area of Outstanding Natural Beauty is acknowledged, but the benefits accruing would appear not to have been considered sufficient to outweigh the penalties associated with the extra route length and requirement for tunnelling.

Further reasons to reject an M1-aligned high speed route are offered in the Government Command Paper. These are listed as follows:

- Inability of motorway alignment to accommodate parallel high speed rail alignment, with 'islands of blighted land' created between tight curves of motorway (designed for 70MPH operation) and slacker curves of high speed railway.
- Incompatibility with any proposal to create a high speed rail link to Heathrow.

I have had the opportunity to review detailed route alignment diagrams prepared for the High Speed North proposals (see attached), and in the light of this review I would consider all of the reasons to reject an M1/M6 high speed route from London to the West Midlands to be uniformly spurious.

#### **4.2.5 Route Length**

An M1/M6 high speed route from London to the West Midlands is approximately 7km longer than the HS2 route. This excess exists in the 'rural' sections of route between

M25 and M42, and, at a running speed of 300kph, might cost 1.5 minutes in journey time relative to HS2.

It is also conceded that the exit route from London following the M1 is significantly more tortuous than that along the Central Line corridor. This might require speed restrictions of circa 200kph as far as the M25. This might cost another 2 minutes in journey time relative to HS2. However, in a comparative assessment, the additional journey time accruing from stopping at the Old Oak Common interchange must also be taken into account. This will add around 5 minutes to all HS2 journey times. On this basis, a London to Birmingham journey via the 'less direct' M1/M6 route would be faster than via HS2.

It should also be noted that an M1-aligned high speed line is just one element of a wider 'spine and spur' network that is in overall length around 160km shorter than the alternative Y-shaped system preferred by the Government.

#### **4.2.6 Impact on Communities / Requirement for Tunnelling**

My review of an M1/M6 route from London to Birmingham (and Leicester) indicates a generally clear corridor for construction alongside the motorway, with little if any impact on residential property. The presence of the Luton/Dunstable conurbation is noted, but this would only require a tunnel of the order of 4km long to pass well beneath urban settlement.

In other areas, around 3km of tunnelling would be required at Mill Hill, and 2km to pass under the Hampstead Ridge, between West Hampstead and Kilburn. This establishes a total tunnelled length of around 10km as against HS2's overall requirement for 20km between London and Birmingham.

The Government's rejection of an M1-aligned route on grounds of excessive tunnelling appears to stem from a belief (as indicated in certain commentary in the HS2 documentation) that such a route requires to be tunnelled for the full length from its London terminal (ie Euston) to north of the M25.

I find this belief puzzling, given the potential for a reserved, largely surface alignment along the M1 and Midland Main Line corridor, that has been identified in the development of the High Speed North proposals. There appears to be no logical explanation for HS2 Ltd to have dismissed the obvious potential of this surface corridor, and to have presumed instead that the full length of HS2's route within the urban area must be tunnelled, except for the potential time savings that might accrue with a route designed for optimum speed.

However, such time savings would be small, no greater than 5 minutes – and no greater than 2 minutes, if the route selected for HS2 is taken as a comparator. In either case these would not appear to be robust reasons, from either an economic, engineering or transportation standpoint, to determine a requirement for tunnelling, and thus dismiss consideration of the only feasible London to West Midlands high speed rail alignment that would avoid the Chilterns Area of Outstanding Natural Beauty.

#### **4.2.7 Capability of M1 Corridor to Accommodate High Speed Alignment**

The alignments prepared for the High Speed North scheme indicate clearly that a high speed line, designed for any realistic speed aspiration, can be established along the M1 corridor to a 'virtual hard shoulder' alignment, without major deviation. It should be noted that for most of its length between London and Rugby, the M1 conforms to a broadly straight alignment, with only one significant curve (near Watford Gap) that would cause significant deviation outside the immediate motorway corridor, and none that would cause unacceptable impact on residential property.

This is true even for a 400kph design speed, but I would in any case reject this speed for its unacceptable energy use, and general irrelevance (compared with parallel consideration of capacity and connectivity) to UK transport needs. At my preferred design speed of 320kph, the required deviations from the motorway alignment would be greatly reduced.

I am puzzled at the Government's stated concerns with respect to 'islands of blighted land' between motorway and high speed line. In the few instances where such islands (of significant size) would exist, this land is already effectively blighted, through its current proximity to the motorway, and would appear to offer considerable potential for compensatory development as nature reserves.

I also consider the Government's stated concern to reflect a high degree of double standards, given the landscape impacts that HS2 is certain to have in the Chilterns, and in the rural areas further north. It should be noted that the railway alignments (designed for 400kph) in these areas will require embankments and cuttings up to 22m high/deep, which – at an assumed gradient of 1:2.5 – will occupy a ground footprint around 120m wide. This would appear to be a far greater concern, than minor deviations between a railway and a motorway alignment along an already blighted corridor, that would probably have considerable value as linear nature reserves.

#### **4.2.8 Incompatibility with proposal for high speed rail link to Heathrow**

It is an undisputable fact, that an M1-aligned high speed rail route would not be compatible with any link to Heathrow configured in the format envisaged by the Government. However, I would make the point that even for a 'Chiltern' route such as HS2, the proposed models of airport access (ie in the initial phase, a 'shuttle' link from the Old Oak Common interchange, and in the second phase, a 'loop' connection to a 'Heathrow Hub' on the north side of the airport):

- do not offer a viable or cost-effective means of connecting the UK's national intercity network to the national hub airport.
- do not address Heathrow's wider needs for surface access.

I am concerned that the Government has fundamentally misunderstood Heathrow's requirements for surface access, in advancing a uniquely 'high speed' solution. As has already been clarified in Section 3, Heathrow's true need is for 360-degree, short and long distance connectivity to its entire UK hinterland, and high speed rail on its own is a clearly inappropriate solution. Although there is undoubted value in

achieving high speed rail access to Heathrow, I would not consider such a solution, that ignored the needs of the vast majority of travellers to Heathrow, to be acceptable.

I believe that the Government has considered far too narrow a range of rail access models for Heathrow, and in doing so, has not developed an adequate solution. The 'shuttle' model implicit in the Old Oak Common connection requires an inconvenient change of trains, that may well not be an acceptable alternative for interlining air travellers; and the 'loop' model implicit in the second phase 'Heathrow Hub' proposals can only be achieved at disproportionate expense – and still requires a change of trains, to access the airport terminals.

The Compass Point model, of limited network development to achieve interchange with the radial main line network at outer-suburban hubs, would have offered the required 360-degree connectivity; but it appears that (despite its self-evident advantages for wider regional connectivity) this was never considered.

In terms of high speed rail, a Compass Point model essentially comprises a spur, and if direct (high speed) trains to provincial destinations are specified, then this has the effect of contributing additional airport trains to an already overcrowded trunk route. This has proved to be an insuperable problem for the Government's HS2 proposals, which comprise the operationally inefficient 'Y' (along a Chiltern route that can only practicably ever comprise 2 tracks), and this has led to a requirement to orient the high speed line close to Heathrow. This will facilitate either a 'shuttle' or 'loop' connection, neither of which add to already-critical train flows.

However, for an M1-aligned high speed route configured in 'spine and spur' format, greater operational efficiency (ie fewer trains to serve the same number of passengers) is made possible through the capability to aggregate several provincial centres on a single line of route. This creates sufficient capacity to accommodate intercity *and* airport services to all principal regional destinations, and thus renders a spur solution viable.

It is conceded that there would be some journey time penalties inherent in the circumferential route from Cricklewood (the intersection point between the M1-aligned high speed route and the Compass Point network) to Heathrow. But this would be balanced by the time savings inherent in the direct access that would be achieved to the Heathrow Express platforms in the heart of the airport.

It is also worth noting that for most passengers en route to Heathrow, it is not journey time that matters, but connectivity. The current effective disconnection between Heathrow and the national rail network causes huge inconvenience and disruption, with major adverse impacts upon transport CO<sub>2</sub> emissions and national economic performance.

I would therefore conclude that the Government's rationale, for rejecting an M1-aligned high speed route on account of its incompatibility with its proposals for a high speed link to Heathrow, is entirely misplaced. I would further comment that this rejection seems indicative of a wider misunderstanding of both the surface access

requirements of a national hub airport, and also of fundamental considerations of operational efficiency in the high speed rail network that it is attempting to develop.

#### **4.2.9 Further Concerns re Development of National High Speed Network**

I am concerned that the Government has essentially done no more than undertake a corridor-specific transport study, and has given insufficient consideration to the development of an optimised and comprehensive national high speed network. This concern exists on several levels:

1. A false assumption that the proposed route from London to the West Midlands must comprise the core element of any further network development, effectively predetermining the 'Y'.
2. Consequent rejection of any proposal that does not conform to this model.
3. Undue concentration upon London-centric axes, to the detriment of interregional links.
4. Illogical and ill-informed proposed network configuration.

Concerns re points 1 & 2 are already documented in Item 4.2.2 of this response, and do not require further discussion.

However, it is appropriate to note that the 'Y' is essentially London-centric in nature, and is not configured to address interregional axes, in particular Transpennine or CrossCountry. This is implicitly acknowledged, even in the HS2 documentation; Item 4.31 of the Government's Command Paper dismisses any possibility of a Transpennine high speed route, and instead states that the needs for connectivity between Manchester and Leeds can be addressed through Network Rail's Northern Hub proposals.

I consider this rationale to be unacceptable, for the following reasons:

- It strongly implies a segregated two-tier transport system, whereby London-centric axes enjoy the step-change improvement of a greatly accelerated new high speed, high capacity railway, while interregional axes remain reliant on the classic system with only minor incremental enhancements.
- This will have the effect of further concentrating national rail connectivity (and hence economic activity) upon London, to the general detriment of the Northern regional economy.
- The Transpennine axis comprises more cities than just Manchester and Leeds. Liverpool, Sheffield, Nottingham and Newcastle are all valid stakeholders, as well as Edinburgh and Glasgow (which are currently very poorly connected to Manchester and Liverpool); together, these major conurbations comprise the necessary critical mass to justify high quality interregional high speed services of equivalent quality to those proposed along London-centric axes.
- This comprises the model of equivalent intercity connectivity that I believe to be vital for UK regional development.

Similar considerations apply along the CrossCountry axis, extending from the South Coast, Wales and the West Country to the North-West, Yorkshire, the North-East and Scotland. The major regional centres encompassed along this broad axis also indicate viable interregional services of 'high speed' quality, and it is concerning that

the Government has paid no heed to the needs of this vital transport corridor, which is focussed upon Birmingham New Street. Instead, the Government proposes a segregated 2-terminal solution for Birmingham (ie New Street and Curzon Street) which seems likely to greatly damage CrossCountry connectivity.

I am also concerned that the Government's assessment of various options for development of a national high speed rail network (Items 6.1.11-16 of the HS2 Report to Government) appears to be completely predicated upon the 'Y' and does not accord alternative configurations (such as 'spine and spur') equal consideration. This seems to be based upon a presumption that only the 'Y' can possibly deliver what appears to be the Government's overriding requirement – high speed rail access to Heathrow, prioritised over the need for interregional connectivity.

I consider this presumption to be entirely unfounded, and utterly discredited by the findings of the Alan Brooke study, which has conclusively established the massively superior efficiency and performance of the spine and spur configuration compared with the 'Y'. These comparisons can be seen at their starkest in the comparison between CO<sub>2</sub> emissions reduction potential over 40 years – 100MT for HS2 as against 600MT for High Speed North.

I am additionally disappointed at the apparent trivialisation in the network comparisons, with models that are based upon entirely unfeasible alignments. This is seen most obviously in the representation of east sided routes to Scotland; this rejects the obvious quasi-coastal route from Newcastle via Edinburgh to Glasgow and instead opts for a route which passes well south of Edinburgh before splitting in Upper Clydesdale for Glasgow and (with an acute-angled double-back) for Edinburgh.

Such a model would involve a completely impracticable high speed alignment along Upper Tweeddale, and as such, would seem to rob the entire comparison exercise of any credibility. It would appear that the rationale for this geographic illogicality was a stated preference from Transport Scotland, that the alignment of any Anglo-Scottish high speed route should not unduly favour Edinburgh over Glasgow. This is an understandable aspiration on the part of a regional agency, but it should have been treated as no more than that; it should certainly never have been accorded the status of a guiding principle of network design.

I am deeply concerned that so little professional attention appears to have been accorded to the vital issue of optimising the future national high speed rail system in the most economically and environmentally efficient manner.

#### **4.2.10 Concerns re HSR Development to East Midlands**

It is also reasonable to assert that in HS2's concentration upon the West Midlands (ie Item 1 of HS2 remit), the solution for the East Midlands (ie a parkway station well clear of both Leicester and Nottingham) is effectively predetermined. It also places the East Midlands in a subsidiary position with respect to the West Midlands, with high speed links only achieved in a second phase of development.

This situation would be avoided with an M1-aligned route, which would naturally split in the Rugby area for Birmingham, and for Leicester. Onward links along the West Coast and Midland Main Lines would ensure a much wider spread of benefits arising from the initial phase of development.

**5. This question is about the route for the line between London and the West Midlands (Chapter 5 and Annex B of the main consultation document):** Do you agree that the Government's proposed route, including the approach proposed for mitigating its impacts, is the best option for a new high speed rail line between London and the West Midlands?

### **5.1 Review of HS2 Route Proposals**

I do not believe that the Government has selected a high speed route from London to the West Midlands that is either the best solution along that specific corridor, or one that optimises the national intercity railway system. I have the following specific concerns with respect to the proposed HS2 route from London to the West Midlands:

### **5.2 London Terminal Solution**

I consider that Euston Station comprises the only practicable location for the central London terminal of any northern oriented high speed line. It possesses most of the necessary attributes ie:

- Sufficient ground plan (ie length and width) to accommodate multiple platforms 400m long,
- Viable 'exit route' to northward high speed corridors without major requirement for tunnelling,
- Central location with good road access, and capable of accommodating appropriate high quality architectural solution,
- Proximity to HS1, facilitating future HS2/HS1 link.

Euston's major drawback is its mediocre connectivity to the London Tube and local rail network, with only Northern (City), Northern (Charing Cross) and Victoria lines directly serving the station. This connectivity is not adequate for Euston's future role as London's 'Gateway to the North', and is greatly compromised by the peak hour congestion arising from the large number of commuter services that currently terminate at Euston.

I am concerned that the Government has chosen not to follow normal railway practice, of improving connectivity at existing main line terminals, and of developing strategies to divert terminating commuter flows (for which Kings Cross / St Pancras might be taken as the prime exemplar, with commuter services diverted to Thameslink and Moorgate). Instead, the Government has chosen to make no improvements to Euston's local connectivity (from which point the destructive proposals to expand the station on the west side become necessary), but instead to focus all improvements upon the proposed interchange station at Old Oak Common.

In its asymmetric, non-central location, Old Oak Common will be primarily reliant upon CrossRail for its local connectivity, and is in a largely rail-locked site to which it will be difficult (and therefore expensive) to provide the necessary road links. Together with Euston, it will give a hybrid London terminal solution in which every high speed rail journey will be lengthened by 5 minutes to accommodate the extra stop.

Although my generally belief is that connectivity should be prioritised over speed, with interchanges created wherever practicable, the Old Oak Common proposal does not appear to comprise a good exemplar of this principle. The hybrid nature of the Old Oak Common / Euston solution accesses only 4 local railways – CrossRail at OOC, and 3 Tube lines at Euston – and as such comprises a fragmented and ‘fragile’ solution, vulnerable to disruption.

I would favour an alternative London terminal strategy concentrated upon a single terminal at Euston, in which speed, connectivity and capacity can be optimised to provide more robust performance. The key elements of this strategy are as follows:

- Develop ‘Compass Point’ surface access solution for Heathrow, to divert all airport components of high speed rail flows away from central London.
- Divert Euston’s existing commuter flows to CrossRail, by means of a new connection from Willesden Junction to Old Oak Common; this will greatly reduce pressure on Euston’s Tube connections and remove any need to physically extend the station footprint. It will also offer vastly improved commuter journeys from the entire West Coast Main Line corridor, and will balance the currently highly asymmetric CrossRail proposals.
- Develop Euston as a primarily high speed / intercity station, with some regional flows to Milton Keynes and Northampton possibly retained. With buffer stops advanced circa 120m towards Euston Road, it is possible to accommodate all necessary 400m long ‘high speed’ platforms within existing station footprint.
- Augment Euston’s existing Tube links by means of new high capacity Light Rapid Transport system, extending in tunnel to Kings Cross / St Pancras (for Piccadilly, Circle/Metropolitan and Thameslink) and to Tottenham Court Road (for Central and CrossRail). The LRT link at Euston could be located approximately at mid-platform position, and would effect quick links to 7 out of 10 central London Tube lines, and both cross-London heavy rail links.

On a simple comparison of connectivity, the above proposals would enable effective direct access to 9 Tube/Metro lines (as against 4 for the HS2 proposals) with onward direct connections to 250 stations within the M25 ring (as against 81 for HS2).

Although the proposed developments at Euston would require extra tunnelled construction, this would be a small impact compared with the much greater HS2 requirement for tunnelling (to facilitate the Government’s proposed Chiltern route), for the vast construction implicit in the Old Oak Common proposals (similar to the Stratford ‘box’) and for the highly intrusive land take proposed at Euston.

### **5.3 Exit Route from Greater London, to North Scarp of Chilterns**

Again, I believe that the Government has selected the wrong route in this area. As discussed in Section 5, the Government’s proposals involve around 20km of tunnel, and major environmental impacts within the Chilterns Area of Outstanding Beauty, whereas the M1-aligned route put forward in the High Speed North proposals requires only 10km, with any associated environmental damage largely mitigated by its close parallel alignment to the motorway.

As noted previously, the HS2 route appears to be falsely predicated upon Heathrow, and certain to attract major controversy and delay through the justified objections of local residents and environmentalists.

#### **5.4 Onward Route to West Midlands**

I can see no justification for the Government's proposed direct route to the West Midlands, through the rural landscapes of Buckinghamshire, Northamptonshire and Warwickshire. Although I believe this route's capability for future 400kph operation to be unnecessary and destructive, such capability could be replicated along the M1 corridor, if required; and it is highly significant to note that any small time penalties associated with the slightly longer and more circuitous route are more than outweighed by the time advantage in eliminating the unnecessary stop at Old Oak Common.

Whatever speed specification is adopted, the fact remains that a route oriented along the M1 corridor is capable of implementation at much lower engineering cost and attendant controversy. The easier terrain along the M1 corridor requires less heavy engineering, a much lower requirement for landtake (noting the possibility of shared earthworks between motorway and high speed line) and generally only marginal additional intrusion beyond that already created by the motorway.

Possibly the greatest issue is that HS2's false predication upon Heathrow sets the route upon a course through sensitive environments with no major communities of a size and scale that might benefit from the introduction of the new line. As such, the high speed line can only represent a major intrusion upon landscape and communities alike, with no compensating benefits. Essentially, HS2 fails to address the 'localism' agenda.

I believe that an M1-aligned high speed route can deliver far greater local benefits to the much larger 'South-East Midlands' communities along this corridor. Luton, Milton Keynes, Northampton, Leicester and Coventry all comprise major cities between 200,000 and 400,000 in population, but (with the exception of Leicester) have poor rail connectivity on any axis except radial towards London. Moreover, despite being on a single motorway corridor, they are split between existing main line corridors (Midland and West Coast) and are thus internally disconnected.

An M1-aligned high speed line, constructed for 4 tracks to address likely overcapacity issues on a 2-track route, allows the possibility of a unified rail corridor to match the motorway, with spurs from the high speed line to create new links created between Luton and Milton Keynes, and between Northampton/Rugby/Coventry and Leicester. These links would be focussed upon the existing main line hubs (on either MML or WCML), with only Leicester comprising a unified high speed/classic hub, to secure northward connectivity for all South-East Midlands centres.

This improved connectivity should deliver major economic and environmental advantages, which should easily outweigh any small additional intrusion through new construction along the motorway corridor. This will also counter the blight issues

likely to afflict cities such as Coventry which under HS2 proposals will see intercity service frequencies cut, and journey times increased.

## **5.5 Birmingham Curzon Street Issues**

I am concerned that the Government's HS2 proposals for Birmingham, focussed upon the proposed Curzon Street terminus remote from the existing primary hub at New Street, neither offer the necessary integration with the existing local and regional railway network, nor make the necessary recognition of Birmingham's key position at the heart of the UK intercity network.

The connectivity issues at Curzon Street can be appreciated from a simple consideration of the local rail networks radiating from New Street and Moor Street stations (the latter of which would be effectively contiguous with the Curzon Street). The New Street network (comprising the historic Midland and London North-Western systems concentrated at a single station) gives direct access to 40 stations within the M42/M6 (Toll) ring, and to the wider regional network extending to the Potteries, the Welsh Marches and the Trent and Severn Valleys. The Moor Street network (comprising the historic Great Western network, much reduced by the Beeching cuts) gives direct access to only 16 stations within the M42/M6 (Toll) ring, with no significant regional network.

As such, it seems reasonable to query whether the HS2 proposals actually meet the Government's brief, for a high speed line from London to the *West Midlands*. From the perspective of achieving the ultimate goal of an enhanced and better-connected nationwide intercity railway, there are also major concerns. This aim becomes impracticable with two unintegrated stations ie New Street and the proposed Curzon Street in Birmingham, at the hub of the existing rail network. It is vital that this functionality is maintained in the new intercity network that will arise with the advent of high speed rail.

This leaves little alternative but to maintain Birmingham New Street's status as the primary intercity, regional and local hub of the West Midlands. There are clear issues with Birmingham New Street, in its short (ie less than 400m) and congested platforms; all clearly unsuitable for operation of 400m long Eurogauge rolling stock. The current Birmingham Gateway project will address the passenger congestion, and there are also major opportunities to rationalise train service patterns and occupancy of platforms. However, fundamental issues of platform length or train cross-section cannot practicably be resolved.

This compels the use of shorter 'classic-compatible' rolling stock on high speed services (which are in any case proposed for use on proposed HS2 services extending beyond the dedicated high speed network), and illustrates the point made earlier in this submission, that there can be conflicts in optimising speed, train performance, capacity and connectivity. In the case of Birmingham New Street, connectivity seems the overriding consideration, and issues of capacity and train performance can be addressed by a variety of strategies:

- Splitting of 400m long 'classic compatible' trains into portions serving both central Birmingham and outlying centres (eg Walsall/ Wolverhampton, or Trent

Valley stations). The act of splitting a train will undoubtedly compromise journey times, but can greatly improve total network connectivity in the greater number of destinations made accessible.

- Elimination of train operating patterns involving termination, reversal or 'standing' at New Street, to optimise platform occupancy.
- Resolution of capacity and train performance issues on routes approaching New Street, through segregating local and intercity traffic. This might be accomplished by 4-tracking on the Coventry-Birmingham corridor, and by the construction of a new connection from Soho Junction to Tame Bridge Parkway to effectively bypass the congested Stour Valley lines and thus create a much faster north-westwards exit route for intercity traffic from Birmingham New Street.

Taken together, a coordinated programme of initiatives in the Birmingham area seems capable of resolving all issues of capacity, connectivity and train performance, thus rendering Birmingham New Street (or Gateway) as a fit for purpose terminal capable of handling high speed/intercity traffic on all axes (ie CrossCountry and London-West Midlands-North West) plus regional and local traffic.

It is acknowledged that even with Birmingham New Street fully optimised as an intercity / high speed terminal, a residual requirement will remain for a limited terminating facility at Curzon Street, perhaps comprising 2 or 3 platforms, and capable of accommodating the 400m long Eurogauge rolling stock that cannot feasibly be handled at New Street. This will address the future possibility of through services from Europe to the West Midlands, and any issues of TSI compliance.

I therefore consider the HS2 proposals relating to central Birmingham to be inadequate, in their failure to meet the essential brief for a high speed rail line from London to the West Midlands (rather than just Birmingham), and effectively unfit for purpose as a component of the wider UK intercity rail network.

## **5.6 Birmingham 'Interchange' Issues**

It is necessary to give separate consideration to the proposed Birmingham 'Interchange' Station. This is intended to provide wider connectivity across the West Midlands area to HS2 than might be achieved at a central Birmingham terminal (especially one as poorly connected as the proposed Curzon Street) and also to enhance national connectivity to the National Exhibition Centre and to Birmingham Airport.

I am supportive of these aims, but believe that disproportionate emphasis is being placed upon achieving a high speed rail connection to what is essentially an 'out-of-town' development hotspot, coupled with a regional airport and leisure facility. This cannot be a primary justification for HS2's routeing strategy (as certain publicity material tends to indicate), since a trunk high speed line that is routed as proposed cannot practicably serve either Coventry or Leicester – both of which would appear to comprise far more important destinations for high speed rail.

There is also a clear danger the hub location of Birmingham 'Interchange' will fuel further development pressure in this area (ie the Green Belt of the Meriden Gap) and

consequently blight development prospects in nearby Coventry (whose intercity links will be greatly reduced under the HS2 proposals).

I am concerned that with no worthwhile public transport links to Birmingham 'Interchange', most travellers accessing the high speed rail network at this point will be using the private car to do so. Thus it seems reasonable to conclude that Birmingham 'Interchange' is essentially a poorly connected parkway station, which goes against contemporary principles of planning policy in promoting, rather than deterring car use.

I believe that if parkway stations are to be provided, they should be well connected to the public transport network. This does not appear to be achievable at the proposed Birmingham 'Interchange', but an alternative site at Water Orton, close to the M42 and at junction of the Birmingham-Nuneaton and Birmingham-Tamworth lines, and also of the Sutton Park line (giving access to both Walsall and Wolverhampton, and potentially Dudley) appears to offer far greater potential. A restored route from Coleshill to Hampton-in-Arden (the original Midland Railway) might also provide access to Birmingham International Airport and to the National Exhibition Centre.

Notwithstanding this possibility, I consider that a more appropriate means of improving rail access to Birmingham International Airport and to the National Exhibition Centre is to enhance the classic Coventry-Birmingham corridor, with 4-tracking where practicable, and to provide southward and northward connections to an M1-aligned high speed trunk route in the Rugby area.

This would also deliver major enhancements to the national rail connectivity of both Rugby and Coventry, and would overall comprise a more proportionate and balanced solution than high speed rail focussed exclusively upon Birmingham Airport and the NEC.

**6. This question is about the Appraisal of Sustainability (Chapter 5 of the main consultation document):** Do you wish to comment on the Appraisal of Sustainability of the Government's proposed route between London and the West Midlands that has been published to inform this consultation?

### **6.1 Concerns re Sustainability Issues**

Although I have no specific comment about the detail of the Appraisal of Sustainability, I am concerned that it, and the wider consultation document, do not properly address the following fundamental issues:

- The UK has committed itself, through the passing of the 2008 Climate Change Act, to cutting CO<sub>2</sub> emissions to 20% of current levels by 2050. Cuts of such magnitude can only be achieved through a programme of major Government-led interventions to achieve the necessary structural changes. As such, the HS2 prediction to be no better than 'carbon neutral' over a 60 year period is not sustainable.
- I believe that with a more appropriate operational model, routing strategy and network configuration, much greater environmental benefits, broadly compatible with the requirements of the Climate Change Act, are possible. See Alan Brooke study.
- Britain has a limited supply of 'unspoilt' rural landscapes, and these should be preserved unless there is an overwhelming imperative to do otherwise. For major transport proposals such as HS2, this demands that wherever practicable these should be aligned with existing transportation corridors (such as the M1) where the high speed line will only create marginal additional intrusion, there is generally a clear corridor alongside and public opposition will be minimised.
- Although I support the preservation of rural landscapes for its own sake, it is important to note that such landscapes comprise poor locations for the construction of new trunk railway routes, on account of the generally heavier engineering required (which will increase cost, construction nuisance and visual intrusion) and the increased opposition from both local residents and environmentalists. From this, major increases in costs, and delays in implementation, can be anticipated.

**7. This question is about blight and compensation (Annex A of the main consultation document):** Do you agree with the options set out to assist those whose properties lose a significant amount of value as a result of any new high speed line?

### **7.1 Concerns re Blight and Compensation**

I have no specific comment about the detail of any proposed compensation scheme for property owners/users affected by high speed rail, but would note that such compensation is likely to be a major contributor to overall construction costs along the corridor chosen for HS2.

It is appropriate to emphasise the point that a sensible policy of alignment with existing transportation corridors (in particular motorways where long-standing noise, atmospheric and visual intrusion has deterred adjacent development of residential housing) generally minimises both the number and the value of the affected properties. This then minimises the arising compensation costs, and allows more generous payouts to in the few cases where major compensation will be required.

Given the likelihood that many of the property acquisitions necessary for the proposed HS2 route through the Chilterns, and through the rural areas to the north, will be vigorously contested, it seems certain that blight and compensation will figure heavily in the Government's expenditure upon HS2.

I would anticipate that the compensation costs for an M1/M6-aligned high speed rail route from London to Birmingham should be an order of magnitude lower than what will apply for the proposed HS2 route.

Have you attached additional evidence to this response form? (Please select one answer only)

Yes.

Thank you for completing the response form. Please send it to:

Freepost RSLX-UCGZ-UKSS  
High Speed Rail Consultation  
PO Box 59528  
London  
SE21 9AX

The consultation closes on Friday 29 July 2011.

# **APPENDIX F**

SUBMISSION TO:

**OFFICIAL CONSULTATION ON DRAFT  
ENVIRONMENTAL STATEMENT FOR  
PHASE 1 OF HS2**

RESPONDING ORGANISATION:

**HIGH SPEED NORTH**

AUTHORS OF RESPONSE:

**CHRISTOPHER QUAYLE &  
QUENTIN MACDONALD**

DATE:

**JULY 2013**

**Detailed commentary on this submission is given in  
Section 8 of this report.**

Note: Clause and page numbering added for referencing purposes

## ***Response to Government Consultation re HS2 Draft Environmental Statement***

### ***Introduction***

This response is made by Quentin Macdonald and Christopher Quayle of Quaestus Poppleton Ltd, based at Manor Farm, Church Lane, Nether Poppleton, York, YO26 6LF.

We have maintained a continuing involvement with the HS2 project, since its inception in January 2009. In July 2011 we submitted detailed responses to the Government consultation on Phase 1 of HS2 (from London to the West Midlands). These responses set out our vision for a high speed line from London to the West *and* East Midlands, closely following the M1/M6, fully integrated with the existing rail network, and causing a fraction of the environmental damage inherent in the Government proposals. To date, the Government has offered no reasonable counter-rationale to the detailed arguments that we have put forward.

We strongly support the Government's aim, to construct new railways to enable a faster, higher-capacity and better-connected UK rail network. We also support the principles outlined by the HS2 Ltd Chief Executive in Appendix B of the Draft Environmental Statement. However, we believe that through a mixture of unfounded and false technical assumptions, and neglect of alternatives, the current proposals will not come close to meeting the Government's aspirations.

This leaves the HS2 proposals fundamentally inefficient, offering poor connectivity, unable to deliver either the necessary economic or environmental benefits (in terms of emissions reductions) and needlessly intrusive through following inappropriate rural alignments. We believe that HS2 must be fundamentally reconfigured to:

- Maximise connectivity (and thereby economic and emissions reductions benefits) through comprehensive interregional scope and full integration with existing network.
- Minimise environmental intrusion through, as far as practicable, following existing corridors and avoiding 'greenfield' alignments.

Our response to the 2011 HS2 Consultation promoted the ideal of an efficient and optimised high speed intercity rail network, and the arguments for a railway causing minimised environmental damage (in terms of both CO<sub>2</sub> emissions and landscape impact) are essentially the same; inevitably, there will be a degree of repetition.

The flawed HS2 approach to development of a UK high speed rail network is exemplified in the following sections:

#### **1. *Remit (P17, Item 2.2.3)***

**1.1** We are concerned that the remit, for HS2 to interchange with Heathrow/CrossRail services along the GWML (which can only effectively be satisfied at Old Oak Common), has effectively predetermined an intrusive rural alignment from London to the West Midlands, and has prevented fair consideration of an M1/M6 aligned route. This would have far lower inherent environmental impact, and would also serve the East Midlands with faster services and shorter city centre to city centre journey times.

## **2     *The Need for High Speed Two (P17, Section 2.3)***

**2.1**     We agree that new, higher speed lines are the best option for a higher capacity network. However, we are concerned that the HS2 proposals, in their concentration upon north-south London-centric routes, will not create the balanced, integrated and accelerated interurban network necessary to achieve widespread modal shift away from the dominant roads sector (with 91% of the total transport CO<sub>2</sub> emissions).

## **3     *Enhancing Capacity (P18, Section 2.4)***

**3.1**     We are also concerned at HS2's excessive focus upon extreme speed along the high speed line that they are remitted to develop, rather than upon accelerating and increasing the capacity and connectivity of the rail network as a whole. (We believe that this is a far more effective and appropriate strategy to reduce journey times.) Capacity is optimised not by maximising of speed, but by elimination of speed differentials; the high speed network should be configured to be the conduit for all express intercity passenger traffic along a particular corridor so that the existing main line can be dedicated to slower speed freight and local passenger traffic. This demands close alignment and interconnection between high speed line and classic line - possible with an M1-aligned high speed line, but not with the Chiltern-aligned HS2. With HS2, demand from bypassed centres such as Stoke, Coventry and Milton Keynes for express passenger services will continue to consume capacity on the West Coast Main Line.

**3.2**     We believe that the Government has vastly overestimated the value of each minute saved on an HS2 journey. With modern IT such as laptop computers and mobile phones, time spent on a rail journey does not equate to 'lost time' (as might be the case in an assessment of a road scheme, where drivers have to give all their attention to driving). And with rail already the fastest mode on most of the London-centric routes that will be served by HS2, greater speed will not deliver significant extra modal shift. Far greater modal shift (and economic benefit) will accrue from configuring high speed rail to accelerate the interregional journeys that HS2 has neglected, and to integrate fully with the existing network at existing network hubs.

**3.3**     We also believe that the Government has greatly underestimated the costs of engineering and operating HS2 for extreme speed. The required near-straight alignments make it difficult if not impossible to follow existing transport corridors (where environmental damage is minimised), and instead dictate rural alignments with much greater potential impacts. Here, clear of existing corridors and population centres, there are generally more sensitive areas such as SSSIs and Ancient Woodlands, and expensive tunnelling and/or other interventions are frequently required to mitigate the intrusion of the new line. Energy use (and therefore CO<sub>2</sub> emissions) also rises with the square of speed; this leaves 400kph operation with almost twice the CO<sub>2</sub> profile of 300kph operation.

## **4     *An Engine for Growth (P19, Section 2.5)***

**4.1**     We consider that HS2's fundamental London-centricity and lack of integration will prevent it from delivering either the promised environmental or economic benefits, especially to the UK regions. Instead, by concentrating connectivity in London, there will be a tendency to draw economic development away from the regions.

## **5      *Controlling Greenhouse Gas Emissions (P20, Section 2.6)***

**5.1**    The Draft Environmental Statement fails to mention HS2's overall environmental performance, which is predicted (in the 2010 Command Paper) to be broadly 'carbon-neutral' across the entire transport sector (i.e. no overall reduction). This appears to be in fundamental breach of the requirement of the 2008 Climate Change Act, for an 80% cut in CO<sub>2</sub> emissions by 2050. We believe that this deficiency is attributable not to high speed rail per se, but to HS2's basic lack of connectivity and integration. This renders the HS2 proposals unacceptable in a modern carbon-critical world.

**5.2**    Our studies (submitted with our responses to the 2011 HS2 Consultation) of a fully integrated high speed railway with national coverage indicate that it has huge potential to reduce CO<sub>2</sub> emissions across the transport sector.

## **6.      *Operational Interfaces (Table 4, P26, Item 3.3.12)***

**6.1**    Neglecting the non-operational connection at Calvert, it is significant to note that there are no interfaces, and no connections with the existing rail network, for a length of over 160km. This is indicative both of HS2's lack of integration, and lack of resilience, which will massively compromise its environmental performance.

**6.2**    By contrast, far more connections (and therefore far superior integration, resilience and environmental performance) are possible for a London-West Midlands high speed line routed along the M1/M6 corridor. Here, connections to the existing network can be located at a maximum spacing of 30km. This is demonstrated by our detailed (1:25000) mapping of the M1/M6 alternative.

## **7      *Scope of the Assessment(for the Environmental Impact Statement) (P54, Section 4.2)***

**7.1**    We believe that the UK rail network (both high speed and classic lines) effectively comprise a single system in which the ramifications of a single major intervention (such as a new inter-conurbation high speed line) will spread across the entire UK rail network. This must define the geographical scope of the Environmental Impact Assessment. This will enable the true effect on national CO<sub>2</sub> emissions to be assessed. Our research indicates that with high speed lines and classic lines fully integrated, and operating as a single system, far greater reductions in CO<sub>2</sub> emissions are possible than the 'carbon-neutral' performance so far predicted for HS2.

## **8.      *Mitigation (P74, Section 6)***

**8.1**    We believe that all necessary environmental mitigations must be employed to make the route acceptable to the communities which HS2 passes, and that generous compensation packages must be made available to alleviate losses that are suffered. However, it must be acknowledged that effective mitigation in sensitive areas (usually tunnelling) will greatly increase costs. Technical and operational risk would also seem to increase, for instance the difficulty of evacuating passengers from subterranean incidents in long tunnels.

**8.2** We consider that by far the best mitigation against the environmental impact of high speed lines is to follow existing transport corridors such as the M1. Typically, a busy motorway creates such environmental impact that a clear corridor generally exists alongside the road, and the additional impact of the high speed line is small compared with greenfield alignments. We are concerned that insufficient attention appears to have been given to use of existing transport corridors as the primary environmental mitigation.

## **9. *Regulatory Requirements* (P84, Item 7.1.2)**

**9.1** We note the regulatory requirement for an Environmental Impact Statement, stemming from the 1999 Town & Country Planning Act. This appears to require discussion of the primary alternatives considered by the Government in the development of the HS2 proposals, and from this we would make the logical inference, that the option selected should be the one that best balances the benefits of a new high speed line against its environmental impacts.

**9.2** We are deeply concerned that the Government has been presented (both by ourselves and by others, see subsequent paragraphs) with alternatives that both achieve greater benefits and have lesser environmental impacts. As such, the Government's selection of the current HS2 proposals seems illogical and perverse, and in apparent contravention of its own planning legislation (and also environmental legislation).

## **10. *Strategic Alternatives* (P89, Item 7.3.1 et seq)**

**10.1** We agree with the Government, that other modal alternatives such as new motorway construction, or further development of domestic air services, cannot match the economic or environmental advantages of new railways. We also believe that whilst on-line upgrades of existing rail routes may comprise the optimum strategy in certain local/regional cases, construction of new, higher speed lines must be the primary strategy to address national transport needs.

**10.2** However, we are concerned at the Government's adoption of the primarily London-centric 'Y network' that is proposed for HS2, and at the apparent rejection of routeings along interregional axes, most conspicuously Transpennine. Without comprehensive coverage, and without the necessary integration with the existing network, HS2 will bring direct benefit to around 12 city pairs. This is a small fraction of the total scope of the UK intercity network (which covers perhaps 10 primary and 20 second-tier cities within the envisaged geographical scope of HS2, hence circa 500 city pairs) and this must greatly restrict the modal shift, and hence environmental benefits, that HS2 can offer.

## **11. *High Speed Alternatives to the Y Network* (Figure 11, P92, Item 7.3.45 et seq)**

**11.1** We do not consider that the 3 alternative configurations depicted in Figure 11 represent an adequate consideration of options for development of a national high speed rail network. We have the following specific concerns:

- All appear to take the southern 'stem' of the first phase of HS2 (ie London-Old Oak Common-Birmingham Interchange) as a 'given', and only fan out to destinations either side of the Pennines north of Birmingham.

- No account is taken of the potential of the M1 corridor as the primary route to the North and to Scotland, running east of the Pennines, with the West Midlands placed on a spur.
- Any east-sided approach to Scotland should be more efficient (both economically and environmentally, and with a lower requirement for tunnelling) than the favoured west-sided approach, through the ability to place Newcastle, Edinburgh and Glasgow on a single line of route. However, the east-sided options are unduly penalised by the imposition of a ‘Carstairs split’ between Edinburgh and Glasgow services, that would demand an utterly impracticable high speed rail alignment following Tweeddale through Peeblesshire.

**11.2** We are aware that HS2 Ltd was presented with the ‘High Speed North’ proposals by the 2M Group of London & SE councils, early in 2009. This comprised a national network of high speed lines, primarily aligned with the M1 corridor, and offering comprehensive interregional coverage unmatched by any of the alternatives ostensibly considered by the Government. We note the commentary offered in the 2010 HS2 Ltd Report to Government (Item 6.1.16):

“With a more central alignment of HS2, the ‘Reverse E’ would become more akin to the proposal put forward by the 2M group of London Councils (known as ‘High Speed North’). As our remit was to consider the development of HS2 beyond the West Midlands, we have not investigated the 2M proposals in detail.”

**11.3** We would comment that the rationale offered by HS2 Ltd for the rejection of the High Speed North proposals appears to be highly perverse, ignoring the multiple economic and environmental (i.e. CO<sub>2</sub>) benefits of a comprehensive interregional high speed network, and the much reduced intrusion of a system largely aligned with existing transport corridors. We see no logic for the forced routing of all lines from London to the North via a poorly-connected parkway station on the fringes of Birmingham, at which most trains would probably not stop.

## **12. *Alternative specifications and routes* (P94, Item 7.4 et seq)**

### **Segregation or Integration??**

**12.1** We are deeply concerned at the apparent presumption - without any supporting rationale - on the part of the Government (and their advisors within HS2 Ltd) that the new high speed railway comprising HS2 must be effectively segregated from the existing rail network. This vastly limits the communities that can derive benefit from HS2, and it also limits the potential environmental benefits. We have consistently argued for a high speed rail system fully integrated with the existing network, and request that the Government puts forward their own reasoning for their preference for a segregated system.

### **Alternative Design Speeds (P94, Item 7.4.2 et seq)**

**12.2** As previously noted, we are concerned that the Government’s assessment has placed undue value upon individual minutes saved by HS2. This has been given as one of the primary reasons behind selecting routes that pass through the Chilterns AONB, and rejecting routes following less intrusive motorway corridors. We do not believe that such small time savings can possibly justify the level of environmental damage that is certain to result despite the best efforts to mitigate.

**12.3** We believe that the Government has placed undue emphasis on establishing a high speed line between London and the West Midlands, and has failed to consider the economic and environmental benefits that would accrue from a route (following the M1 corridor) that could also serve the East Midlands (ie Luton, Milton Keynes, Northampton, Leicester, Derby and Nottingham).

#### **Alternative Corridors (P95, Item 7.4.6 et seq)**

**12.4** We note that none of the Routes 1-6 considered by the Government reflect the obvious option for a motorway-aligned high speed line (as advanced by ourselves in the 2011 Consultation). Route 5 appears to be the closest match, but the advantages of a motorway alignment are greatly compromised by a requirement to be routed via both Birmingham Interchange (necessitating a rural alignment south of Coventry) and Old Oak Common (necessitating over 30km of tunnel from the M25 to central London).

**12.5** We see no fundamental necessity for either of these terminals, and consider that while they may have some relevance to the favoured options generally oriented via the Chilterns, they have been unreasonably imposed on an alternative and superior route to the West Midlands that would cause much reduced environmental impact. This is confirmed by our mapping of our proposed M1/M6 alignment, which clearly demonstrates the feasibility of the route, requiring circa 10km of tunnel as opposed to the 43km required by HS2 (this does not include the extra 30km of tunnel required to complete the planned loop into Heathrow).

#### **Connection to Heathrow Airport (P103, Item 7.4.58 et seq)**

**12.6** We would comment that none of the options considered for high speed rail access to Heathrow are either viable or practicable. All require major lengths of tunnelling, costing billions of pounds, to serve the needs of the relatively few passengers on HS2 who would actually require to access Heathrow. Moreover, all the options illustrated require the high speed line to come close to Heathrow, thereby dictating a Chiltern alignment (and all the associated environmental intrusion) and effectively precluding a much less intrusive M1 alignment (which appears to have much greater efficiency as an intercity network).

**12.7** We are concerned that the Government appear not to have given any consideration to the alternative 'Compass Point' scheme advanced by the 2M Group of London & SE councils, or to other conventional rail strategies for improving surface access to Heathrow. These would generally comprise a comprehensive system of regional routes to east, south, west and north, based upon the existing Heathrow Express infrastructure and accessing the central terminal areas (rather than HS2's remote hub). With fast northward connections established to access an M1-aligned high speed line at Brent Cross, the necessity for the close approach of the high speed line to Heathrow, and the consequent routing through the Chilterns and sensitive rural areas beyond, would be eliminated.

#### **Alternative Stations - London Terminus (P99, Item 7.4.27 et seq)**

**12.8** We support the selection of Euston as HS2's London terminal, but are concerned both at proposals to expand the station into surrounding residential property, and at the absence of proposals to improve onward connectivity to local transport networks. These issues stem from a failure to develop a strategy to fully integrate high speed rail with the existing network. The need to expand the station would not exist if the obvious step were

taken, to divert local commuter flows away from Euston (where transfer to Tube is necessary) onto CrossRail, by means of a short connecting line between WCML and GWML at Old Oak Common. And with commuter flows diverted, there would be much less pressure on the Tube transfer at Euston.

**12.9** However, major enhancements to Euston's Tube links, and to links to adjacent hubs such as Kings Cross / St Pancras (and to HS1) are considered essential to improve connectivity and environmental performance. Measures to diversify flows away from the central London terminal - such as links from a terminal at Brent Cross on an M1-aligned high speed line to both Heathrow and to St Pancras - also appear to be highly desirable. We have proposed all of these enhancements to the Government, and still await a substantive response.

### **13. Conclusion**

**13.1** We are deeply concerned that the current HS2 proposals comprise an inappropriate intervention in UK transport, carrying excessive environmental impacts and failing to address the fundamental need to reduce greenhouse gas emissions in transport, that do not meet the Government's own legal requirements for environmental mitigation and climate change.

**13.2** We believe that far greater benefits, both environmental and economic, can be achieved, but this will require a radically different strategy and philosophy, based around core principles of connectivity, rather than extreme high speed and segregated operation. We are keen to work with Government to develop alternative and superior proposals which (unlike HS2) will meet the national need for an efficient and optimised rail network at acceptable environmental impact, and which (unlike HS2) must play a leading role in the reduction of transport CO<sub>2</sub> emissions, in line with the requirements of the 2008 Climate Change Act.

Quentin Macdonald

Christopher Quayle

Manor Farm  
Church Lane  
Nether Poppleton  
York YO26 6LD

31/10/2016 update : Clause and page numbering added for referencing purposes.

# **APPENDIX G**

SUBMISSION TO:

**GOVERNMENT AIRPORTS COMMISSION chaired by  
SIR HOWARD DAVIES**

**(in response to a 'CALL FOR PROPOSALS')**

RESPONDING ORGANISATION:

**HIGH SPEED NORTH**

AUTHORS OF RESPONSE:

**CHRISTOPHER QUAYLE &  
QUENTIN MACDONALD**

DATE:

**JULY 2013**

**Detailed commentary on this submission is given in  
Section 9 of this report**

# Response to Airports Commission Call for Proposals

## 1. *Opening Statement*

This response is made by Quentin Macdonald and Christopher Quayle of Quaestus (Poppleton) Ltd., based at Manor Farm, Church Lane, Nether Poppleton, York, YO26 6LF.

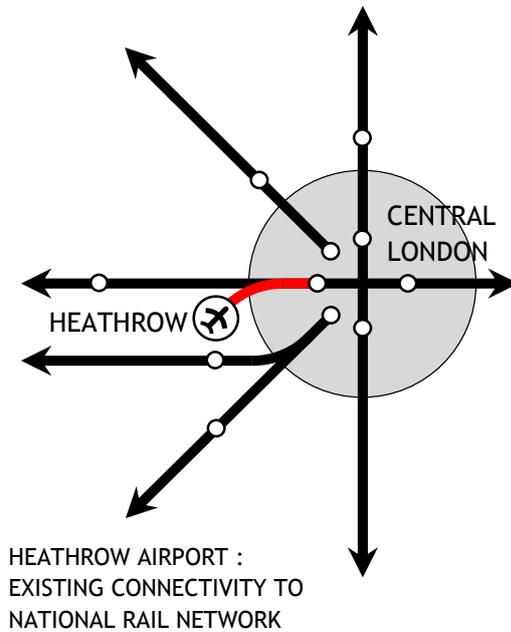
We are both career railwaymen, working in the allied fields of railway signal & telecommunications engineering (QM) and railway civil engineering (CQ). We have considerable experience in the development of railways and railway systems including high speed rail networks and airport access schemes. Clearly we do not have detailed knowledge of the development of airports but we believe that this consultation is about more than that. Of course as air travellers we are only too well aware that some airports offer a far better traveller experience than others with the reasons often not hard for a professional engineer to see. We hope that our knowledge of the UK rail network and our work over the last few years to create High Speed North, a serious and practical alternative to HS2, will be of interest to the Davies Commission.

We recognise that the Davies Commission may well be surprised that anyone should, at this late stage, be working on an alternative to HS2 when so much effort has already been spent on HS2. Please be in no doubt that our proposals are being taken seriously by a number of MPs, to the extent that we are giving a Parliamentary Presentation of our proposals to an invited audience at 14:00 on Tuesday 3<sup>rd</sup> September 2013 in the Grimond Room in Portcullis House. Nearer the time, we will be formally inviting the Davies Commission to send a representative to our presentation. Whilst it will primarily focus on the national rail network there will be much to say about better rail connections for Heathrow.

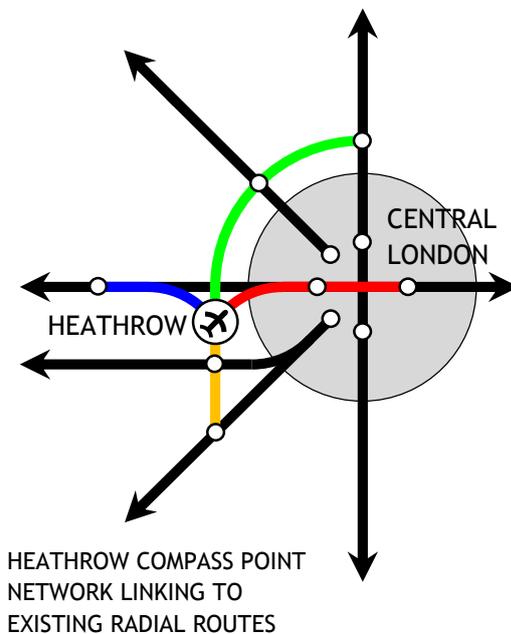
At the present time, our proposals for an interregional network of high speed lines have the working title High Speed North. However when we present on the 3<sup>rd</sup> September we will be using a different brand name. We hope that no confusion will arise and apologise in advance if it does. We ask the Davies Commission to note that all of our proposals have been mapped at 1:25,000 and every critical point from London to Birmingham, to Leicester and Nottingham, to Sheffield and Leeds, to Manchester and Liverpool, to Darlington and Newcastle and to Edinburgh and Glasgow has been carefully looked at on the ground. **We know that it is feasible to build the network we have proposed.**

## 2. *The Opportunity presented by the High Speed North Proposals*

The problems of access to Heathrow will be well understood by the Davies Commission and the lack of national rail access to what is the UK's international hub airport is shown in the diagram below. It can be summarised as; "Excellent if you want to go to Paddington, Not Bad if you enjoy riding on the underground as a hobby and Non-Existent if you want to get anywhere else quickly". In short the rail access to Heathrow is poor. To be fair, we do recognise that Crossrail will change matters in the coming years, but only in an easterly direction.

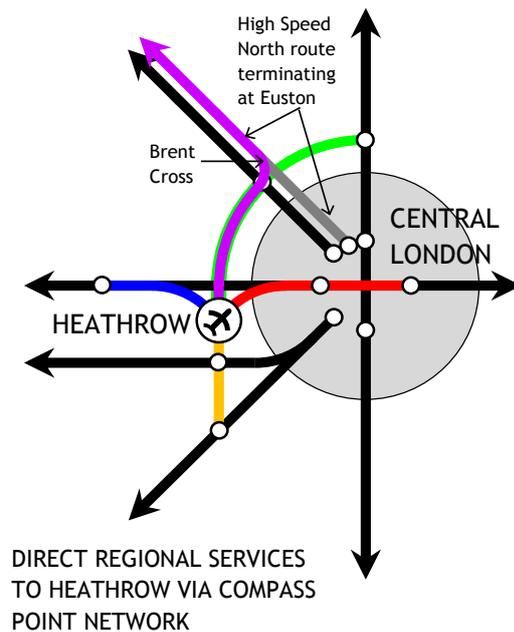


In the diagram below we have added a link, shown in green, which will facilitate connections to the north. The green link, when coupled with the ‘Western Link’ (blue) and southern ‘Airtrack’ (yellow) extensions of the existing eastern facing Heathrow Express infrastructure (red) completes the ‘Compass Point’ connections from Heathrow into the existing national rail network. These ideas are not new of course and indeed Quentin well remembers working on a proposal for a southern facing rail connection some 40 years ago! The basic idea for linking into the existing rail network is shown below:



To those basic ‘Compass Point’ connections shown above, we then add our proposal for High Speed North services shown in the diagram next below which will allow direct ‘head on’ running of fast services into Heathrow from all the major cities and conurbations north of Milton Keynes. The route of the High Speed North services to Heathrow will be as shown

in purple. We believe that it is this feature of our High Speed North proposals which will allow most if not all of the domestic flights into Heathrow to be discontinued.



These links effectively become the rail ‘spokes’ to the intercontinental airline hub at Heathrow, and should have the effect of transforming the international connectivity of the UK regions.

### **3. Importance of a Hub Airport to UK Economy**

Before coming to the final part of our High Speed North proposal we would like to take the opportunity to comment on various aspects of the vexed question of the ideal location of the UK’s international hub airport. We understand that the fundamental purpose of the Davies Commission is to identify a potential site and to set the strategy for the development of an international hub airport located in the London & South-East region. We believe that good connectivity to our trading partners around the world is vital for UK prosperity, and that the presence of a hub airport in the UK adds greatly to this; attracting flights to a range of destinations that this country could not, on its own, sustain.

It is therefore a matter of great concern that Heathrow lacks the capacity to add new routes to emerging markets, in particular India, China, Russia and Latin America and that, in the absence of this capacity, economic growth is likely to be diverted to other neighbouring countries with higher capacity airline hubs.

### **4. Adverse Consequences of Abandoning Heathrow**

All the discussion above presumes a continuing role for Heathrow. However, we would question the somewhat simplistic logic, implicit in much of the public debate surrounding the work of the Davies Commission, that a new 4-runway hub airport, either at Stansted or in some Thames Estuary location, is the only viable solution to the lack of capacity at Heathrow. This relocation strategy gives rise to the following major concerns:

- Huge economic dislocation seems certain to result from the transfer of hub activities at Heathrow to another facility on the far side of London. At least 140,000 jobs, probably more, (both at the airport and in supporting industries) would be displaced,

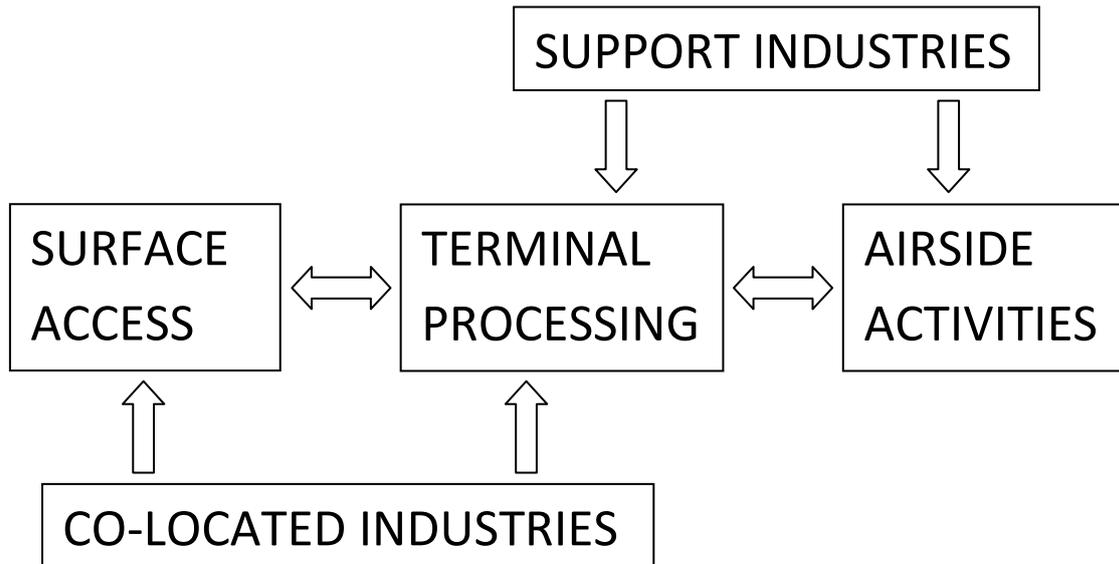
and major local unemployment would seem certain to result, with the majority of workers either unwilling or unable to relocate.

- Many ‘co-located’ multinational companies who have set up their UK headquarters in the Thames Valley, i.e. close to Heathrow, would lose this crucial international connectivity, and it is quite likely that a significant proportion of these co-located firms would choose to relocate not to East London, but to the Continent.
- The establishment of a new hub airport, and all of its dedicated supporting infrastructure, is projected to carry huge multi-billion financial costs. Much of this cost seems certain to be public expenditure, rather than private expenditure.
- A new 4-runway hub airport plus supporting infrastructure, whether constructed onshore or offshore, seems certain to carry huge environmental impacts with the high likelihood of major public opposition. That kind of opposition would appear to fly in the face of contemporary environmental best practice (which generally calls for ‘smart’, low-intervention solutions) and principles of ‘localism’.
- Any feasible site for a new hub airport will be considerably further from central London than Heathrow, probably resulting in longer journey times.
- London’s hub airport is by default the UK’s hub airport; and the current poor rail links between Heathrow (and hence to the rest of the world) and the UK regions is a significant contributor to the North-South Divide that afflicts the UK economy.
- Any eastward move of London’s hub airport, either to Stansted or to a Thames Estuary site will tend to make the relocated airport less accessible to the UK regions. Such a new airport will be on the wrong side of the mass of the London conurbation requiring far more people to pass through or round London exacerbating the disparity between the economies of London and the South-East, and the UK regions.

Although various proposals have emerged for M25-aligned high speed rail lines to connect putative Thames Estuary airports to HS2 and/or other northward-oriented high speed lines, we do not consider such proposals to be attractive. The problem is that they are likely to have very high infrastructure costs and would need to carry travellers from all over west and south western England, south and north Wales, the home counties to the west of London, the west and east Midlands, the north west and north east of England, and Scotland. The result is likely to be a road traffic jam and the rail equivalent. Going east seems to us to be the equivalent of a suicide note.

### **5. *Alternative ‘Systems’ Approach to Hub Airport Development***

We therefore believe that the mind set of those proposing to abandon Heathrow in favour of a more easterly-located site comprising 4 or more runways, is fundamentally misguided, carrying far more negatives than positives. This has come about through placing excessive focus upon achieving runway capacity on one site as the primary goal. Insufficient attention has been paid to the other aspects of the system that comprises an airport i.e. surface access, and co-located industries. This system might be characterised in Figure 1.



We believe that good quality surface access is as important to the efficient functioning of an airport as its terminal processing and airside activities. An efficient surface access system offers a hub airport such as Heathrow the following advantages:

- **Elimination of most if not all of the domestic short-haul routes.** With appropriate connections to a new high speed rail system bringing most UK cities within 3 hours or less of Heathrow, domestic flights often operating at poor frequencies from regional airports can be eliminated in favour of hourly train services to a much wider range of regional cities. Runway slots can, instead, be dedicated to higher-value international flights to emerging markets.
- **Spreading of Heathrow’s effective hinterland across all of mainland UK.** Heathrow’s poor connections to its UK hinterland (either by surface public transport or domestic air routes) have led to most English regions being better connected to international/intercontinental aviation at nearby European hubs, in particular Amsterdam/Schiphol. Efficient rail ‘spoke’ connections to its mainland UK hinterland will allow Heathrow to gain much greater market share from the UK regions.
- **Heathrow’s Connectivity.** It must be emphasised that Heathrow has real potential for advantageous connectivity to the UK hinterland to north and west of London. This is entirely due to Heathrow’s favourable westerly location, very close to the Great Western Main Line and relatively close to a north-west oriented high speed line along the M1 axis. Such connectivity is impossible to replicate for a new London hub airport located either at Stansted or in the Thames Estuary.
- **Significantly lower carbon footprint of airport access.** The proposed 360-degree range of rail destinations to and from Heathrow for both airline travellers and airport workers should result in a major shift of journeys from cars to public transport. It is clear that major savings in transport CO<sub>2</sub> emissions are possible as a direct consequence of improved rail surface access when compared with current higher CO<sub>2</sub> modes of airport access

- ***Current Surface Access Issues at Heathrow*** On most primary axes (i.e. south, west and north), road transport is dominant in surface access to Heathrow. This has been greatly facilitated by the development of the motorway network, with Heathrow located close to both M4 and M25. As previously noted, Heathrow's surface access by rail is poor, with direct links to central London only by using Heathrow Express or the Piccadilly Line. On all other axes (i.e. south, west and north) Heathrow is effectively disconnected from the national rail network. This has greatly contributed to the endemic congestion on the road network surrounding Heathrow.

These deficiencies persist, despite several main lines (eg Waterloo-Reading, Great Western Main Line, and Chiltern Line) passing close to the airport. Although it is a matter of deep regret, even national shame, that these links have never been established, it is reasonable to assert that such links are eminently achievable, requiring short lengths of new railway at relatively modest cost. By contrast, the new build requirement for rail links to and from a Thames Estuary airport to access routes to the north and west of London would carry costs of one or two orders of magnitude greater.

## ***6. On-site Expansion at Heathrow and Beyond***

It is of course Heathrow's present lack of runway capacity that is driving the current quest for an alternative, larger aviation hub for London and the South-East. There are no easy, low-impact solutions for on-site expansion at Heathrow. This is clearly evidenced by the massive public opposition to previous proposals for a third runway, and sixth terminal, at Heathrow. Even greater opposition can be anticipated, if expansion to a 4-runway facility were ever to be attempted.

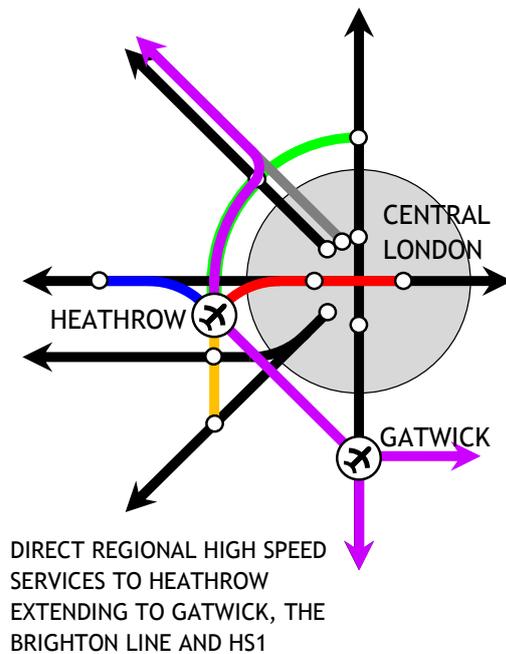
We would comment that there appears to be no realistic prospect of expanding Heathrow on its existing site without bulldozing significant numbers of domestic properties at a time when there is a major shortage of housing stock in the southeast generally. This is certain to provoke an intense and continuing outcry that is likely to cripple any such Heathrow expansion project and the government which proposes it. We believe that smarter solutions are available whereby the benefits of 4 runway operation can be achieved through multi-site hub operation.

## ***7. Heathrow / Gatwick Multi-Site Hub Operation***

We are aware of previous 'Heathwick' proposals to integrate operations at Heathrow and Gatwick. This entailed a dedicated rail link between the two airports, operating essentially in isolation from other railways, to transfer passengers between the two airports. The 'Heathwick' concept has so far attracted little support among the aviation industry, and the idea appears to have generally been dropped.

We believe that the crucial fault of the 'Heathwick' concept so far, was its isolation from other railway systems. This made its ability to transfer passengers between the two airports its only purpose and nothing else. It thus offered little other benefit which combined with its significant costs of implementation, will have resulted in a low Benefit Cost Ratio.

The diagram below gives our idea for the full exploitation of a new dedicated Heathrow Gatwick link directly connected at Heathrow to our proposal for a northward link to the national rail network and High Speed North.



We believe that the through connection proposed, transforms the prospects for a southward high speed rail connection to Gatwick and beyond. A flavour of our proposals in more detail is given in Annex A (Drawing ACD 7) and Annex B (ACD 11). Such a route would the following results:

- Direct rail connections to Heathrow from all primary UK cities (as previously described) now extending to Gatwick. These services would be land side services.
- A running time from passing Brent Cross to stopping at LHR 1/2/3 of 15 min (distance 27km and maximum speed 160km/h);
- An LHR 1/2/3 arrival time to LHR 5 departure time of 8 minutes (LHR 1/2/3 dwell of 3 min + LHR 1/2/3 to LHR 5 transit of 2 min over 1.5km + LHR 5 dwell of 3 min);
- A running time of 14 min from LHR 5 to LGW (distance 46 km, maximum speed 225 km/h);
- An overall Brent Cross to LGW timing of 37 min including two 3 minute stops at Heathrow;
- In addition a dedicated shuttle service transferring transit passengers, luggage and cargo between LHR 1/2/3, LHR 5 and LGW (and vice versa) in 15 minutes. We propose that this would be an air side service to integrate the two airports allowing passengers and their checked in luggage to transfer seamlessly between the two airports without going through immigration;
- Onward connections to the South Coast, thus effectively tying in southern communities to the national high speed rail network formed by High Speed North;
- By transferring a significant element of Gatwick's European holiday traffic to Stansted and/or Luton, the existing runway pair at Gatwick would effectively become Heathrow's third runway. Gatwick already has clearly developed plans for a second operational runway by 2019 to the south of the existing 'one at a time' pair, and this would effectively become the fourth Heathwick runway.

There would of course be some environmental impact inherent in the new Heathrow to Gatwick high speed rail link. However, as noted above, we have prepared detailed 1:25,000 alignments for this route, and we are convinced that it can be achieved without too much environmental damage. However more detailed work will be required to confirm that assertion and we recognise that we may have to resort to the mitigation of additional tunnelling.

Beyond that position, there is the prospect of connecting the LHR to LGW link to the Redhill to Ashford line which lies only 7km to the north of Gatwick. This in turn gives access to eastern Kent and HS1. There is enormous scope in this proposal; in short, the world is your oyster!

## **8. Conclusion**

Taken overall, we believe that our proposals

- to establish 'Compass Point' rail links from Heathrow to the national intercity rail network;
- to connect to our proposed High Speed North national high speed rail services into the 'Compass Point' thus providing direct high speed services from Heathrow to all primary UK regional cities;
- to extend these links southwards from Heathrow by means of a dedicated high speed rail route to Gatwick and beyond and to facilitate multi-site hub operation between the two airports;

will establish a virtual 4-runway hub airport for the UK, fully connected to its UK hinterland, at a fraction of the cost - both financial and environmental - of any of its rivals. It will demand collaborative working between competing airports (along with many other stakeholders) but this should be to the mutual advantage of all.

We know from the work of others that the east facing and west facing and parts of the south facing spokes of the 'Compass Point' are perfectly feasible. To establish the same degree of credibility for the Gatwick link and the north facing link we have mapped our proposals at a scale of 1:25,000 which gives us complete confidence to say that such routes are buildable and affordable. This is the same mapping scale that we have used for the whole of our High Speed North proposal from London right up to Edinburgh and Glasgow.

We believe that our proposals comprise a sensible, 'smart' and sustainable solution to achieve the desired expanded aviation hub in the London and South-East region. We restate our invitation to the Davies Commission, to attend the High Speed North Parliamentary Presentation in Portcullis House on September 3<sup>rd</sup>. After that, we hope that the Davies Commission will be encouraged enough to want to question us in detail about our proposals.

Sincerely,

Quentin Macdonald and Colin Elliff





# **APPENDIX H**

SUBMISSION TO:

**OFFICIAL CONSULTATION ON PHASE 2 PROPOSALS  
FOR THE HS2 PROJECT**

RESPONDING ORGANISATION:

**HIGH SPEED UK**

AUTHORS OF RESPONSE:

**COLIN ELLIFF &  
QUENTIN MACDONALD**

DATE:

**JANUARY 2014**

**Detailed commentary on this submission is given in  
Section 10 of this report.**

Note: Clause and page numbering added for referencing purposes

# Draft Response to Government Consultation on Phase 2 Proposals for the HS2 Project

## Preamble

This response is made by Colin Elliff and Quentin Macdonald of High Speed UK.

It is informed by the following documentation:

- The Government's HS2 Phase 2 Consultation document, published July 2013.
- Other HS2 documentation, specifically *HS2 Regional Economic Impacts*, published September 2013 (generally referred to as the 'KPMG report'). This details (in Table 23) proposed HS2 services and reduced intercity services on the existing main lines. We have taken this data in preference to the ill-defined localised predictions made in Section 10 of the Consultation document, ***which do not address the issue of residual non-high speed intercity services to cities bypassed by HS2.***
- The alternative High Speed UK proposals, which will shortly be fully released into the public domain. Outline information is provided in the *High Speed UK Challenge*, which is included in Appendix A of this response.

The High Speed UK proposals have been developed to principles radically different from those underlying the HS2 proposals and appear to offer superior outcomes for UK intercity rail transport, both locally and nationally. Accordingly, we will be expanding our response to cover the HS2 Design Principles outlined in Appendix C. Where appropriate, commentary (in footnotes) is made on the comparative performance of High Speed UK.

Where relevant, we will also be expanding our response to cover aspects of Phase 1 of HS2 which influence the performance and coverage of Phase 2 of HS2.

We will also be raising our continuing concern, that the current HS2 proposals do not make any provision for improvements in east-west Transpennine connectivity commensurate with those proposed for north-south connectivity in HS2's proposed 'Y' network.

31/10/2016 update : Clause and page numbering added for referencing purposes.

07/04/2017 update : Further revision of clause numbering

# Draft Response to Government Consultation on Phase 2 Proposals for the HS2 Project

## Detailed Response to Consultation questions

*1. Do you agree or disagree with the Government's proposed route between the West Midlands and Manchester as described in Chapter 7? This includes the proposed route alignment, the location of tunnels, ventilation shafts, cuttings, viaducts and depots as well as how the high speed line will connect to the West Coast Main Line.*

- 1.1 We have no specific comment on the detail of the 'Western Arm' in respect of its local impacts. However, we are concerned at the proposed 12km long tunnel between the proposed Manchester Airport and Manchester Piccadilly stations, on account of both cost and safety (in particular the need to evacuate passengers in the event of an emergency). Although we would not dispute the need for a tunnel between Airport and Piccadilly stations, we would query the basic routing strategy<sup>6</sup> that has made this tunnel necessary (see also response to Q3).
- 1.2 From the perspective of HS2's performance as the premier national intercity rail system, we must query the small number of connections (3No, at Lichfield, Crewe and Golborne) to the existing rail network. This will leave the line vulnerable to disruption, and will prevent intermediate centres (such as Stoke being efficiently connected to HS2).

*2a) Do you agree or disagree with the Government's proposals for a Manchester station at Manchester Piccadilly as described in Chapter 7 (sections 7.8.1 - 7.8.7)?*

- 2.1 We believe that Piccadilly is the best site for HS2's terminal in Manchester. However, we are concerned at its configuration as a terminus station. Along with similar proposals in Leeds, this will effectively prevent any future development of high speed Transpennine services, for instance Liverpool-Manchester-Leeds-Newcastle or Liverpool-Manchester-Leeds-Hull. It will also preclude other options for through running, for instance diverted WCML services.
- 2.2 We believe that terminus stations are rarely if ever appropriate for inland cities, and for Manchester Piccadilly, a through-running facility<sup>7</sup> (probably in conjunction with terminating platforms as per the HS2 proposals) is essential.

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<sup>6</sup> *The proposed High Speed UK east-sided approach to Manchester is generally achievable on the surface along existing corridors, with little or no need for land take; its Transpennine and cross-Manchester tunnels are both less than 5km long.*

<sup>7</sup> *High Speed UK's proposals will permit through running at Manchester, by means of underground platforms located below Fairfield Street, adjacent to the existing station. This has parallels in similar facilities in Europe, for instance at Berlin Hauptbahnhof. The proposed cross-Manchester tunnel will permit high speed 'Transpennine' services originating in Liverpool to run via Manchester and Leeds to Newcastle, extending to Edinburgh and Glasgow, WCML-oriented high speed services via Stoke to continue to Bolton and Preston, and will also permit through running of regional services. This will greatly supplement central Manchester rail capacity, far beyond what can be achieved under current 'Northern Hub' proposals.*

2b) *Do you agree or disagree with the Government's proposals for an additional station near Manchester Airport as described in Chapter 7 (sections 7.6.1 - 7.6.6)?*

- 2.3 Although we have no objection to high speed rail lines serving airports, we would comment that little value would seem to accrue from the proposed HS2 station near Manchester Airport. The station is remote from the existing airport terminals and the nearest destination connected (other than central Manchester, to which the airport is already well connected) is at Birmingham ie outside the natural hinterland of Manchester Airport.
- 2.4 More importantly, development of high speed rail connectivity to airports must not be at the expense of surrounding urban centres. In the case of the proposed HS2 station near Manchester Airport, this creates a new southern 'axis of approach' to Manchester which bypasses Stockport. As a result, Stockport will see its intercity service to London reduced from 3 trains per hour to 1 train per hour which (through more stops) will effectively be downgraded from intercity to regional status. This loss of connectivity will have huge adverse economic impacts<sup>8</sup> upon Stockport, which will remain disconnected from the airport.

3. *Do you think that there should be any additional stations on the western leg between the West Midlands and Manchester?*

- 3.1 We believe that intermediate stations on the line of route of new high speed lines are generally not appropriate unless the city region served comprises in the region of 300,000 to 400,000 population; and even then, a bypassing alignment may still be necessary on account of the costs and disruption involved in achieving city centre access for a 'through' route.
- 3.2 This might indicate a 'parkway' station for bypassed cities such as Stoke; however, this will be inconveniently located for the majority of the population of the Potteries conurbation, will be relatively inaccessible by local public transport, and will (through the general need to access by private car) have major local congestion and environmental impacts.
- 3.3 We believe that the benefits of high speed rail must extend to bypassed communities such as Stoke and Stockport, and for this it is necessary for the new high speed line to be fully integrated with the existing network. In this

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<sup>8</sup> *These negative issues are avoided with the alternative High Speed UK proposals. The dedicated high speed line will approach Manchester from the east (via Guide Bridge), while the existing intercity route from London via Stoke and Stockport will be enhanced with high speed running as far as Brinklow (near Nuneaton) where trains will join the existing Trent Valley route. A short connecting line will be constructed from Handsforth (on the Stockport-Crewe line) to directly link Stockport with Manchester Airport. This will allow Transpennine services to directly access the airport without the need for time-consuming reversal and conflicting moves at Manchester Piccadilly. This will also maintain and enhance the integrity of the existing intercity hub at Stockport, and give Stockport airport links of quality to match those of central Manchester.*

way, a high speed train from London would follow the high speed line as far as Nuneaton (on the spur towards Birmingham) and continue along the Trent Valley line to Stoke, with around 15 minute acceleration over current journey times.

- 3.4 This of course demands sufficient capacity on the London-Midlands stem to accommodate the full range of intercity services, to both primary and second-tier centres; however, the 18 train per hour of HS2's London-West Midlands stem (ie the Phase 1 proposals) has only 2 tracks<sup>9</sup>, and therefore lacks the capacity to provide an inclusive intercity rail service accessing all centres currently served by the intercity network.

*4. Do you agree or disagree with the Government's proposed route between West Midlands and Leeds as described in Chapter 8? This includes the proposed route alignment, the location of tunnels, ventilation shafts, cuttings, viaducts and depots as well as how the high speed line will connect to the East Coast Main Line.*

- 4.1 We have no specific comment on the detail of the 'Eastern Arm' in respect of its local impacts. However, we are concerned that it has been designed as a completely 'stand alone' with no connection at all to the existing network, other than the East Coast Main Line connection at Church Fenton. With stations only at Leeds, Meadowhall and Toton, all other West Yorkshire, South Yorkshire and East Midlands centres will be left bypassed.
- 4.2 With reduced services on the existing main lines (as premium traffic between primary centres is diverted to the high speed line) bypassed centres such as Wakefield, Doncaster, Chesterfield and Derby, and remote centres such as Bradford and Huddersfield, will all suffer reduced connectivity. This connectivity loss clearly indicates adverse economic impacts.
- 4.3 Regrettably, with limited capacity on the 2-track London-West Midlands stem of HS2, it does not seem possible to avoid a divisive 2-tier railway system, whereby primary cities will enjoy frequent and accelerated services, while second-tier centres will see reduced and decelerated services on the existing main lines.
- 4.4 We believe that a more inclusive and higher capacity high speed rail solution is required, in which all cities currently enjoying intercity rail services will see enhanced services with the advent of high speed rail.

*5a) Do you agree or disagree with the Government's proposals for a Leeds station at Leeds New Lane as described in Chapter 8 (sections 8.8.1 - 8.8.5)?*

- 5.1 We consider the proposed HS2 New Lane station to be entirely unsuitable as Leeds' high speed rail terminal. It is:
- remote from the existing regional hub at Leeds City station, thereby requiring travellers to Pennine centres (such as Bradford, Huddersfield

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<sup>9</sup> All these negative issues are avoided under the High Speed UK scheme, whose M1-aligned route comprises 4 tracks from London to the Midlands.

and Halifax and many others) to make a long walk before they can change to local services.

- remote from the existing city centre (all located to the north of Leeds City station)the existing).
- incompatible in its terminus configuration with future ambitions for high speed Transpennine services. There is no realistic prospect of running efficient accelerated Transpennine services (eg Liverpool-Manchester-Leeds-Newcastle or Liverpool-Manchester-Leeds-Hull if they have to reverse at the terminus stations proposed for both Leeds and Manchester. This is essentially ‘hard-wiring’ the current London-centricity of HS2, which seems certain to concentrate connectivity, and consequent economic gains, upon London and the South-East.
- regressive in terms of national network function. For efficient performance of the national rail network, a single interchange point between local, regional and intercity services is essential. A 2-station solution as proposed by HS2 will destroy network integrity, and is therefore unacceptable. This same point applies also for Sheffield/Meadowhall, Nottingham/Toton and New St/Curzon St in Birmingham.

5.2 If Leeds and the wider West Yorkshire conurbation are to benefit from high speed rail, it is essential that a holistic and integrated strategy is developed for Leeds, that will enable high speed rail traffic to use the existing Leeds City station, at the hub of the regional network<sup>10</sup>. This strategy would involve both elimination of the congestion that currently afflicts the station, plus diversion where practicable of intercity flows (to Bradford, Huddersfield, Halifax etc) away from Leeds.

*5b) Do you agree or disagree with the Government’s proposals for a South Yorkshire station to be located at Sheffield Meadowhall as described in Chapter 8 (sections 8.5.1 - 8.5.8)?*

5.3 We believe that a station at Meadowhall comprises the best high speed station location for South Yorkshire. If the new platforms can be located acceptably close to the existing platforms (on both Barnsley and Rotherham lines, or suitable travelator or similar connections provided) then such a facility could provide good links to the entire Don Valley conurbation.

5.4 However, it is important that good connectivity to the existing Sheffield Midland station (located much closer to the city centre) is maintained. The opportunity should be taken to provide express tram links to the city centre (note that the current tram route from Meadowhall is circuitous, and the

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<sup>10</sup> Such a strategy, involving local initiatives to complement the new high speed line, has been developed as part of the High Speed UK proposals. This includes the development of new and restored through routes (eg Bradford CrossRail and restoration of Spen Valley route) to allow a new London-South Yorkshire-Bradford-Airedale axis, clear of Leeds, and the construction of new local chord lines to reduce the need to terminate trains at Leeds City Station, and thereby reduce congestion.

heavy rail link to Sheffield Midland would still leave travellers some distance from the city centre). Redundant trackbeds along the existing Midland Main Line corridor would seem to offer a valuable alignment for an express tram link.

5c) *Do you agree or disagree with the Government's proposals for an East Midlands station to be located at Toton as described in Chapter 8 (sections 8.3.1 - 8.3.6)?*

5.5 We consider the proposed HS2 East Midlands Interchange at Toton to be entirely unsuitable as either Derby's or Nottingham's high speed rail terminal<sup>11</sup>.

- It is remote (by 9km!!) from the existing regional hubs at Nottingham and Derby stations. It will be necessary to provide appropriate local transport systems to access the city centres of Nottingham and Derby and (given likely speeds achieved by tramways) it seems likely that journey times from London to the centres of both cities will probably be slower than existing. This would appear to negate any benefits to Nottingham and Derby accruing from HS2.
- No local rail services currently pass through Toton, and any provision of such services will involve the diversion of existing services and lengthening of journey times. Of particular concern is the proposed diversion (as stated in Table 23 of the KPMG report) of existing Birmingham-Derby-Sheffield-Leeds-Scotland CrossCountry services via Toton, with extra stops added; this is likely to add 20-30 minutes to journey times.
- Toton's location at the extreme south-west corner of the Nottingham conurbation will make the proposed East Midlands Interchange difficult to access from most parts of the urban masses of Nottingham and Derby. Although some local transport enhancements might be provided (for instance a Nottingham-Derby tram along the A52 corridor), the majority of travellers will access East Midlands Interchange by private car along highly congested local roads.
- Toton is regressive in terms of national network function. For efficient performance of the national rail network, a single interchange point between local, regional and intercity services is essential. A 2-station solution for Nottingham, as proposed by HS2 (ie high speed HS2 services at Toton, residual intercity services at Nottingham Midland), will destroy network integrity, and is therefore unacceptable. This same point applies also for Sheffield/Meadowhall, Leeds City/New Lane and New St/Curzon St in Birmingham.

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<sup>11</sup> *High Speed UK would serve Nottingham and Derby at their existing city centre stations, and enable direct hourly intercity services to all other primary UK regional centres. This is not achievable on either the existing network, or under HS2 proposals.*

6. Do you think that there should be any additional stations on the eastern leg between the West Midlands and Leeds?

- 6.1 We believe that the Eastern Arm should have only have stations along the line of route at the primary conurbations ie serving East Midlands, South Yorkshire and West Yorkshire; there are no smaller intermediate centres that would justify extra stations.
- 6.2 However, we believe that rather than focus on the possible provision of additional stations (most if not all of which would be inappropriate parkway stations), the more important issues are the quality of the station solutions on offer, and the needs of the intermediate second-tier communities that will inevitably be bypassed by the dedicated high speed line and left with reduced service levels (and reduced connectivity) on the residual classic network<sup>12</sup>.
- 6.3 Currently, HS2 is proposed to bypass Leicester, Derby, Chesterfield, Doncaster and Wakefield (amongst others) and according to the projections listed in Table 23 of the KPMG report, all will see significant reductions in service levels. From this reduced connectivity, it is reasonable to infer adverse economic impacts. (On the basis of the projected train services on high speed and existing networks, and the poor interconnectivity between high speed and local services, we cannot see how the economic gains predicted in the KPMG report could possibly come about).
- 6.4 We believe that the benefits of high speed rail must extend to bypassed communities such as Leicester, Derby, Chesterfield, Doncaster and Wakefield (amongst others), and for this it is necessary for the new high speed line to be fully integrated with the existing network. In this way, a high speed train from London might diverge from the high speed line near Trent Junction, and continue along the existing line to Derby, Chesterfield and Sheffield Midland, before rejoining the high speed line to Leeds. This would of course be supplementary to fast services from London to Sheffield and Leeds.
- 6.5 This of course demands sufficient capacity on the London-Midlands stem to accommodate the full range of intercity services, to both primary and second-tier centres; however, the 2 tracks of HS2's London-West Midlands stem (ie the Phase 1 proposals) can only accommodate 18 trains per hour. Hence HS2 lacks the capacity to provide an inclusive intercity rail service for all stakeholder cities on current intercity network.

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<sup>12</sup> All these negative issues are avoided under the High Speed UK scheme, whose M1-aligned route comprises 4 tracks from London to the Midlands, and it has proved possible to develop an integrated service pattern that will serve the needs of both primary and second-tier centres ie all cities that are stakeholders in the existing intercity rail network and still achieve journey time savings between primary centres greater than those achievable under HS2.

*7. Please let us know your comments on the Appraisal of Sustainability (as reported in the Sustainability Statement) of the Government's proposed Phase Two route, including the alternatives to the proposed route as described in Chapter 9.*

- 7.1 We are concerned at the generally high environmental impact of the rural routeings, generally clear of existing transportation corridors that have been chosen for both Phases 1 and 2 of HS2. No proper consideration appears to have been given to routes aligned with the M1 corridor. Here the new railway would have reduced environmental impact, and would also bring much-increased benefit - both economic and environmental, in terms of CO<sub>2</sub> emission reductions arising from modal shift - to the major 'second-tier' communities along the M1 corridor (eg Luton, Milton Keynes, Northampton and Leicester, all of which will be bypassed by HS2).
- 7.2 We have reviewed HS2 documentation as far back as the March 2010 Report to Government, and we are greatly concerned to note that no worthwhile justification is offered to support the rejection of the M1 corridor in favour of the current Chiltern-aligned proposals.
- 7.3 This would seem to imply that the current HS2 proposals are in breach of legal requirements to develop solutions with minimised environmental impact. As such, the HS2 proposals would appear to be at risk of major delay through litigation from protestors, as well as more direct action.
- 7.4 We are also concerned at the absence in the current consultation document of any reference to HS2's predicted 'carbon neutral' environmental performance ie no overall reductions in transport CO<sub>2</sub> emissions over a 60 year period. This is plainly at odds with the requirements of the 2008 Climate Change Act (for 80% cuts over a 40 year period), and we believe that this issue - a fundamental disconnect between different aspects of public policy - should have been highlighted in the current consultation.
- 7.5 We would comment that this poor performance is not attributable to trains running at high speed per se, but instead arises directly from HS2's failure to integrate with the existing rail network. With no integration, it cannot achieve the step-change increase in capacity and connectivity on local journeys, and thus enable the road-to-rail modal shift that will deliver emissions reductions in line with the requirements of the 2008 Climate Change Act.
- 7.6 We would also comment that all of these issues were raised in our responses (submitted by Quentin Macdonald and Christopher Quayle of Quaestus Poppleton Ltd, Manor Farm, Poppleton, York YO26 6LF) to the 2011 HS2 Phase 1 Consultation.

*8. Please let us know your comments on how the capacity that would be freed up on the existing rail network by the introduction of the proposed Phase Two route could be used as described in Chapter 10?*

- 8.1 We are concerned that in all of the 'improvements' to the existing network listed in Chapter 10, we can find no acknowledgement of the severe cuts that are proposed for intercity services on classic lines (eg Coventry and Stockport

to London intercity service reduced from 3 trains per hour to 1 train per hour).

- 8.2 These cuts (documented in both the 2010 Report to Government and the 2013 KPMG report) are the natural consequence of ‘siphoning off’ primary Birmingham and Manchester to London traffic to the high speed line. This leaves smaller intermediate second-tier centres such as Coventry and Stockport unable to support the current high frequency services which must - if the anticipated capacity gains on the classic main lines are to be realised - be reduced in either speed, or frequency, or most probably both.
- 8.3 This threatens the basic integrity of the UK intercity network; and if this integrity is to be lost, then the projected ‘improvements’ to more localised networks will be of little value.
- 8.4 We believe that capacity (and resilience) will be maximised if full integration can be achieved between existing and high speed systems. This would seem to demand frequent interconnection and close alignment between the two systems.
- 8.5 However, the HS2 proposals only provide 4 connections in total (at Lichfield, Crewe, Golborne and Church Fenton), and the new HS2 services (as listed in Table 23 of the KPMG report) will only operate between the primary cities (ie Leeds, Manchester, Sheffield & Nottingham to Birmingham and London. Most intermediate second-tier communities (eg Stockport, Stoke, Wolverhampton, Coventry, Leicester, Derby, Doncaster, Wakefield) will be bypassed, and left reliant on ‘classic’ line services which (as shown in Table 23 of the KPMG report) will generally be reduced, both in frequency and speed.
- 8.6 Hence we believe that the projected capacity gains projected for HS2 are illusory. Any ‘gains’ will come about through the diversion of express intercity traffic between primary centres to the high speed line; but this will be at the price of reducing service levels to major intermediate centres. This loss of connectivity seems certain to carry serious adverse economic impacts.
- 8.7 Although with more frequent interconnection, it might be possible to operate high speed services to more intermediate centres, such trains would be difficult to justify in economic terms, and capacity does not exist on the 2-track stem of HS2<sup>13</sup>, between London and the West Midlands (where all 18 train paths per hour are already allocated for traffic from the primary cities).

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<sup>13</sup> *By contrast, with the more efficient ‘spine and spur’ configuration of High Speed UK, the more frequent interconnection between high speed and existing network, and the proposed 4-track stem from London to the Midlands, it becomes possible to provide high speed services to all second-tier centres without compromising capacity or achievable point-to-point journey times on critical sections of the network.*

9. Please let us know your comments on the introduction of other utilities along the proposed Phase Two line of route as described in Chapter 11?

- 9.1 We welcome any supplementary uses of the new railway corridors created by HS2, so long as they do not adversely affect the core intercity railway use for which the high speed line is constructed.
- 9.2 We believe that the core purpose of high speed rail is to enhance high-volume city-to-city connections; in other words, high speed rail is primarily an intercity railway. But in seeking to address relatively low volume flows to airports, HS2 is then unable to perform to optimum efficiency as an intercity railway. This can be seen clearly in HS2's attempts to serve both Heathrow and Manchester airports.
- 9.3 In the case of Heathrow Airport, HS2 is drawn away from the ideal M1 corridor - where many intermediate communities (such as Luton, Milton Keynes, Northampton and Leicester<sup>14</sup>) might derive major benefit from the new railway - onto intrusive rural alignments where communities are too small to benefit, and hence intense local opposition is inevitable.
- 9.4 In the case of Manchester Airport, HS2 will draw intercity flows away from Stockport, causing serious adverse economic impacts - as documented in Section 2b) of this response.
- 9.5 In summary, we believe that in subverting HS2's true purpose as an intercity railway, into an airport delivery service, the Government has introduced massive and wholly unnecessary inefficiencies into HS2<sup>15</sup>.
- 9.6 We also believe that it is important to ensure that the new lines are used to maximum effect as intercity railway lines. The 'Y' or 'tree' formation of HS2 inevitably implies higher usage of its 2-track stem from London to the West Midlands, than on 2-track sections further north. With most HS2 traffic destined for London, if the stem is operating at its 18tph capacity, then the sections further north will be working well below their capacity<sup>16</sup>.

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<sup>14</sup> Provisional timetabling undertaken for High Speed UK indicates that with the necessary integration between classic railway and an M1-aligned high speed railway, communities along the M1 corridor could see huge reductions in average journey times, as follows:

Community	Average journey time reduction
Luton	46%
Milton Keynes	36%
Northampton	45%
Leicester	49%

<sup>15</sup> High Speed UK's strategy of full integration between high speed and classic networks allows much superior airport access to Heathrow, Manchester and Birmingham airports, without compromising HSUK's fundamental role as an intercity railway.

<sup>16</sup> These problems are avoided with the more balanced 'spine and spur' configuration of High Speed UK, with 4-track stem and frequent connections to the existing network allowing traffic to both leave and join the high speed line.

## Comments re HS2 Design Principles and Design Assumptions

We are concerned that many of the concerns that we have raised in the foregoing paragraphs reflect fundamental flaws in the design process adopted by the Government in their development of the HS2 proposals. We have reviewed the design principles and design assumptions noted in Annex A to the Consultation document (and listed in Appendix C of this response, numbered sequentially), and we would comment that the principles have often not been adhered to in the detailed proposals, and the assumptions are either left unjustified, or are contradictory.

Our detailed comments are as follows:

*A.. HS2 rail services will comprise long distance, city-to-city journeys;*

- A.1 HS2 have been highly selective in the city-to-city journeys that they have chosen to serve, effectively ‘cherry-picking’ the most profitable journeys from primary regional cities to London and Birmingham. Considering HS2’s geographical scope, extending from London and Heathrow to the Midlands, the North and Scotland, 10 primary cities (500,000 plus), one hub airport and circa 22 second-tier cities (200,000 plus) comprise the ‘stakeholder communities’ of the present intercity network.
- A.2 All possible journeys between these 33 communities amount to 528 ‘city pair’ connections, and in any development of the national intercity network, the effects on all these 528 journeys must be taken into account. But HS2 as designed will only enhance around 44 journeys<sup>17</sup>, mostly between ‘high speed’ stations remote from the existing network.
- A.3 This leaves most of the remaining intercity journeys without enhancement from HS2. The situation is then exacerbated by the proposed intercity service reductions on the existing main line network; overall, it is estimated that at least 135 intercity journeys will be made slower and less frequent through the HS2 initiative. This goes against all principles of inclusivity, and would seem to hugely limit the potential economic and environmental benefits. The overall reduction in intercity journey times resulting from the HS2 initiative will be less than 5%.

*C.. Benefits will be extended to destinations further north by running trains off HS2 onto the existing rail network;*

- C.1 We are puzzled that this same principle of integration has not been extended to cities of the Midlands and the North that will be bypassed by HS2. This leads directly to the situation outlined above, whereby HS2 intervenes in only a small number of journeys and either fails to improve, or actually worsens the rest.

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<sup>17</sup> By contrast, the full integration of High Speed UK with the existing network will allow around almost 500 of the 528 journeys to be enhanced, and an overall reduction of around 40% in intercity journey times can be achieved.

*D.. HS2 must be well integrated with other transport networks to ensure door-to-door journey time savings are delivered.*

D.1 With the disconnection between high speed stations and existing city centre hubs, and the bypassing of most intermediate ‘second-tier’ centres, it is plain that the necessary integration will not be provided between HS2 and classic networks<sup>18</sup>.

*I.. Harnessing the principles of sustainable development, where possible avoiding or otherwise minimising and mitigating sustainability impacts.*

I.1 We can see little evidence of sustainable design practice in the high-level outputs of HS2. Its predicted ‘carbon-neutral’ performance (ie no significant reduction in transport CO<sub>2</sub> emissions over a 60 year period) is in stark contravention of the requirements of the 2008 Climate Change Act. And with the Government unable to offer robust justification for HS2’s rural alignments, generally clear of existing corridors, this intrusion represents needless destruction of a finite and irreplaceable resource<sup>19</sup>.

*Q..The route will be designed for speeds up to 250mph (400kph), though on opening, a maximum train speed of 225mph (360kph) will be assumed.*

Q.1 We can see no worthwhile justification for the unprecedented speed of 400kph for which HS2 will be designed. The time savings that 400kph will offer, over more ‘conventional’ high speed (eg 320kph or 360kph), are relatively small; however, each increment constitutes a step change increase in energy use. But more importantly, the adoption of this design speed prevents fair consideration of an M1-aligned route, and instead essentially dictates the intrusive rural alignment chosen for HS2.

Q.2 This in turn has the effect of diverting HS2 away from M1-corridor communities such as Luton, Milton Keynes, Northampton and Leicester - where it could deliver major benefit - to sensitive rural areas where the local population can gain no benefit from HS2.

Q.3 This has major consequential effects upon cost of the project, and timescale to complete.

Q.4 We believe that the Government should have undertaken a detailed sensitivity analysis to determine the optimum speed for which HS2 was to be

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<sup>18</sup> Failure to integrate HS2 with the existing network is the primary factor in the poor connectivity that it provides. This is demonstrated clearly in the superior performance of the fully-integrated High Speed UK.

<sup>19</sup> Environmental issues are greatly reduced with the High Speed UK proposals. There is much greater adherence to existing transportation corridors (possible through reduced design speed, see below) and closer alignment with existing rail routes permits much greater integration, much greater improvement in short-range intercity journeys, and hence much greater modal shift. This in turn enables much greater reduction in transport CO<sub>2</sub> emissions.

designed. This would have taken account of the complex interaction between:

- a) economic gains arising from reduced journey times,
- b) higher energy use implied in higher speed running,
- c) the inability, at extreme speeds such as 400kph, both to follow existing transport corridors and also to integrate with the existing network to access communities along these corridors,
- d) the distortional effects of selective introduction of greatly reduced 'high speed' journey times to certain destinations (eg central Birmingham) whilst worsening journey times to adjacent established centres (eg Coventry) on the present intercity network.<sup>20</sup>

Q.5 We can see no evidence that such a process was undertaken; instead, there seems to have been a macho desire to design the fastest railway in the world, and the assumption in favour of 400kph operation was never verified against alternative 'high' speeds in accordance with normal technical/scientific practice<sup>21</sup>.

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<sup>20</sup> *HS2 will have the effect of reversing the existing geographical relationship between Coventry and Birmingham. Whereas Coventry is currently 21 minutes closer to London (1h24m vs 1h03m) as befitting its more south-easterly location, with the introduction of HS2, Birmingham will be 19 minutes closer (0h49m vs circa 1h08m, allowing for extra stops on reduced services to Coventry). This effect – known as 'perverse geography' – would seem certain to give rise to major adverse economic impacts.*

<sup>21</sup> *High Speed UK has been designed for the lower speed of 360kph, with an anticipated operating speed of between 280-320kph. This permits the route to follow existing intercity corridors, most notably the M1, and consequently closer alignment with existing population centres. The benefits of high speed rail are spread to a much greater population, and, with appropriate integration between high speed and classic networks, it becomes possible to accelerate nearly all intercity journeys. This delivers much greater economic benefits through reduced journey times, and much greater environmental benefits through the modal shift and consequent CO<sub>2</sub> reductions that will accrue.*

## Appendix A : Consultation Questions

This consultation is seeking your views on the following questions:

1. Do you agree or disagree with the Government's proposed route between the West Midlands and Manchester as described in Chapter 7? This includes the proposed route alignment, the location of tunnels, ventilation shafts, cuttings, viaducts and depots as well as how the high speed line will connect to the West Coast Main Line.
2. Do you agree or disagree with the Government's proposals for:
  - a. A Manchester station at Manchester Piccadilly as described in Chapter 7 (sections 7.8.1 - 7.8.7)?
  - b. An additional station near Manchester Airport as described in Chapter 7 (sections 7.6.1 - 7.6.6)?
3. Do you think that there should be any additional stations on the western leg between the West Midlands and Manchester?
4. Do you agree or disagree with the Government's proposed route between West Midlands and Leeds as described in Chapter 8? This includes the proposed route alignment, the location of tunnels, ventilation shafts, cuttings, viaducts and depots as well as how the high speed line will connect to the East Coast Main Line.
5. Do you agree or disagree with the Government's proposals for:
  - a. A Leeds station at Leeds New Lane as described in Chapter 8 (sections 8.8.1 - 8.8.5)?
  - b. A South Yorkshire station to be located at Sheffield Meadowhall as described in Chapter 8 (sections 8.5.1 - 8.5.8)?
  - c. An East Midlands station to be located at Toton as described in Chapter 8 (sections 8.3.1 - 8.3.6)?
6. Do you think that there should be any additional stations on the eastern leg between the West Midlands and Leeds?
7. Please let us know your comments on the Appraisal of Sustainability (as reported in the Sustainability Statement) of the Government's proposed Phase Two route, including the alternatives to the proposed route as described in Chapter 9.
8. Please let us know your comments on how the capacity that would be freed up on the existing rail network by the introduction of the proposed Phase Two route could be used as described in Chapter 10?
9. Please let us know your comments on the introduction of other utilities along the proposed Phase Two line of route as described in Chapter 11?

## Appendix B : Guiding Design Principles

*(sequential numbering added to cross-reference to HSUK commentary)*

HS2 Ltd's fundamental guiding principles are set out in a number of their reports with the main technical, operational requirements and sustainability criteria set out in their Technical Appendices. The main guiding principles which HS2 Ltd created initially for Phase One but have been retained throughout their work to ensure a consistent approach include the following:

### Design

- A. HS2 rail services will comprise long distance, city-to-city journeys;
- B. HS2 will be used by high speed trains only;
- C. benefits will be extended to destinations further north by running trains off HS2 onto the existing rail network; and
- D. HS2 must be well integrated with other transport networks to ensure door-to-door journey time savings are delivered.

The main driving factors in the design of HS2 were:

- E. Providing a safe and secure network for passengers; those who operate and maintain the network; and third parties who may otherwise come into contact with it;
- F. Ensuring compliance with the EU Directive and Technical Specifications for Interoperability to benefit from standard, proven, competitively sourced high speed rail equipment, systems and trains;
- G. Providing internationally recognised levels of availability, reliability and speed with a high level of capacity;
- H. Ensuring that high speed trains can run onto the existing network; and
- I. Harnessing the principles of sustainable development, where possible avoiding or otherwise minimising and mitigating sustainability impacts.

### Key design assumptions

The key design assumptions that HS2 Ltd used for the development of Phase Two were:

- J. HS2 will be a two track railway (one northbound and one southbound track);
- K. Up to 18 trains per hour could run in each direction on the opening of the full Y network;
- L. A mixed fleet of high speed trains will be used, known as 'captive trains', and specially designed 'classic compatible' trains which could run on both HS2 and the existing rail network;

- M. Trains of up to 2 x 200m long will run on HS2 and will have up to 1,100 seats. Stations will therefore need to be designed to cope with high volumes of people;
- N. Specific structure specifications will be used across the design, such as the use of grade separated junctions;
- O. There will be a separation of maintenance activity from train operations, and the automation of inspection and mechanisation of maintenance activities as far as possible; and
- P. Line of route design work will seek to follow existing transport corridors where practicable.

## Speed

- Q. The route will be designed for speeds up to 250mph (400kph), though on opening, a maximum train speed of 225mph (360kph) will be assumed.

## Tunnels

- R. Tunnels designed for HS2 will allow speeds of up to 250mph (400kph). Long tunnels, greater than 0.625 miles (1km) will require cross-passages which provide emergency exits. Intervention shafts which provide pressure relief, ventilation and access for emergency services will be required every 1.3-1.9 miles (2-3km).

# **APPENDIX I**

PETITION TO:

**HOUSE OF COMMONS HS2 SELECT COMMITTEE  
CONSIDERING HYBRID BILL FOR PHASE 1 OF THE  
HS2 PROJECT**

RESPONDING ORGANISATION:

**HIGH SPEED UK**

AUTHORS OF RESPONSE:

**COLIN ELLIFF &  
QUENTIN MACDONALD**

DATE:

**MAY 2014**

**Detailed commentary on this submission is given in  
Section 11 of this report.**

## PETITION COVER SHEET

**THIS SHEET MUST BE COMPLETED IN FULL AND ATTACHED TO  
THE FRONT OF YOUR PETITION**

<p>Contact details of first petitioner:</p> <p>Name: Colin Stuart Elliff</p> <p>Address: 20 Hartley Road, Harrogate, North Yorkshire.</p> <p>Post code: HG2 9DQ</p> <p>Daytime telephone: 01423 569600</p> <p>Mobile: 07570 812158</p> <p>e-mail address: colin.elliff@hotmail.co.uk</p>	<p>Contact details of second petitioner:</p> <p>Name: Quentin John Angus Macdonald</p> <p>Address: Manor Farm, Church Lane, Nether Poppleton, York.</p> <p>Post code: YO26 6LF</p> <p>Daytime telephone: 01904 339944</p> <p>Mobile: 07771 995504</p> <p>e-mail address: quentin.macdonald@quaestuspoppleton.co.uk</p>
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We prefer to be contacted (a) directly  (b) via our agent  (please tick)

We understand:

1. that a copy of this petition, including any contact details which we have included but without our signatures, will be placed on the parliamentary website and a hard copy will be made available to anyone who asks for it.
2. that a copy of this petition together with this sheet will be:
  - a. kept in the Private Bill Office and subsequently kept as a record of Parliament in the House of Lords Record Office (where it can be accessed by the public under the Freedom of Information Act 2000);
  - b. will be made available to the Parliamentary Agent responsible for the bill once my petition has been deposited in the Private Bill Office.
3. that the personal information supplied above and on the petition may be kept in a database by either or both Private Bill Offices. These databases may be used to store summaries of e-mails and/or conversations for the purpose of keeping track of procedural advice/information given to the parties or received from them. This information will only be shared between the Private Bill Offices unless prior permission has been obtained from the petitioner/agent concerned.

We agree to obey and observe the orders and practice of the House of Commons and any rules prescribed by the Speaker in relation to the proceedings on this petition.

Signature of petitioners:

HIGH SPEED RAIL (LONDON - WEST MIDLANDS) BILL

Against - on Merits - [By Counsel], &c.

To the Honourable the Commons of the United Kingdom of Great Britain and Northern Ireland in Parliament assembled.

THE HUMBLE PETITION of Colin Stuart Elliff and Quentin John Angus Macdonald

SHEWETH as follows:-

- 1 A Bill (hereinafter referred to as "the bill") has been introduced and is now pending in your honourable House intituled "A bill to make provision for a railway between Euston in London and a junction with the West Coast Main Line at Handsacre in Staffordshire, with a spur from Old Oak Common in the London Borough of Hammersmith and Fulham to a junction with the Channel Tunnel Rail Link at York Way in the London Borough of Islington and a spur from Water Orton in Warwickshire to Curzon Street in Birmingham; and for connected purposes".
- 2 The Bill is presented by Mr Secretary McLoughlin.
- 3 Objection is made to the entire bill, and to the definition of its 'Principles' as set out in the Draft Directions to the HS2 Hybrid Bill Committee. It must be stressed that these objections are not against the principle of a high speed line from London to the West Midlands, but instead to the detail of the route (as effectively defined by intermediate and destination stations listed as comprising the bill's 'Principles') which then predetermines the configuration of further phases of UK high speed rail development.

It is acknowledged that these objections go beyond the normal scope of petitioning against a Hybrid Bill, but your Petitioners' reasons for so objecting are set out in greater detail in Item 6.

- 4 Your Petitioners are

:

Colin Elliff BSc CEng MICE of  
20 Hartley Road, Harrogate, North Yorkshire

and

Quentin Macdonald BSc (Eng) CEng MIET FIRSE of  
Manor Farm, Church Lane, Nether Poppleton, York.

Your Petitioners are experienced railway engineers who have considerable experience in the development of UK high speed rail schemes. Your Petitioners have submitted responses to the various Government Consultations on HS2, as follows:

- July 2011 HS2 Phase 1 (London-West Midlands)
- July 2013 HS2 Phase 1 (Draft Environmental Statement)
- January 2014 HS2 Phase 2 (West Midlands-Manchester/Leeds)

Due to conflict of interest issues pertaining to his then railway industry employment, consultation responses prepared in 2011 & 2013 on behalf of your Petitioner Colin Elliff were submitted under the alias of 'Christopher Quayle'.

These Consultation responses consistently set out the advantages of an alternative suite of high speed rail proposals (namely High Speed North, and latterly retitled High Speed UK), developed to radically different principles of full integration, and adherence to existing transport corridors. These responses also set out HS2's many deficiencies. Taken overall, those studying the consultation responses should have been left in no doubt that an alternative to HS2 was available, that:

- Satisfied all the key requirements for HS2;
- Was considerably cheaper to build;
- Performed considerably better than HS2 on a huge range of criteria, including connectivity, capacity and reduced transport CO<sub>2</sub> emissions.

Despite raising these issues:

- Your Petitioners have never received any counter-rationale that might allay their concerns.
- No attempt was made by the Government or their advisors (at DfT or HS2 Ltd) to engage with your Petitioners in the investigation of these concerns.
- No change has been made to the HS2 proposals in respect of these concerns.
- No information has been provided to Parliament as to the substance of these concerns, so that Parliament might debate these matters.

5 Your Petitioners believe that they are 'directly and specially affected' by the proposals set out in the bill, for the following reasons:

- HS2 fails to achieve significant reductions in transport CO<sub>2</sub> emissions. This is in clear contravention of the spirit (if not the letter) of the 2008 Climate Change Act. This will affect every UK citizen.
- The excessive focus upon London and general lack of connectivity of HS2's proposed 'Y' network is an inevitable direct consequence of the proposals set out in the Bill. This will have an adverse economic

effect upon the region in which the Petitioners and their families live, (along with most other UK regions).

- The lack of capacity on HS2's 2-track London to West Midlands section (as covered by the Bill). This is insufficient to allow high speed services to all Midlands, Northern and Scottish destinations currently served by the intercity network, and the result will inevitably be a 2-tier, 2-speed Britain. Again, this will have adverse impacts on the economy of the region in which your Petitioners and their families live.
- The Government's failure to engage with alternative and apparently superior alternatives to HS2. In terms of extra cost and reduced benefit, this will again affect every UK citizen; however, more specifically, the Government's perverse and continued refusal to engage with apparently superior alternatives has had a direct and adverse impact upon the professional standings of your Petitioners.

Your Petitioners would submit that they possess a unique perspective upon and knowledge of the issues surrounding the development of an optimised high speed rail network for the UK. This is entirely in line with Government policy, and it seems vital that the Committee, and the wider Government, engages fully with this knowledge.

6. Objection is made to the detailed provisions of the entire bill, on the grounds that:

- The railway infrastructure detailed therein (and summarised as its 'Principle' in the Draft Directions to the HS2 Hybrid Bill Committee) only comprises the first phase of a planned national high speed 'network'.
- Passing of the current bill (relating to a railway between London and the West Midlands on a specific route) will have the effect of predetermining further legislation concerning the routing, configuration, functionality and performance of any national high speed network.
- The current bill is predicated upon false and unverified assumptions, together with a variety of failures in due process. These have resulted in proposals that are hugely sub-optimal and as such will fail to best serve the public interest. These issues are described in Item 7. Your Petitioners' attempts to draw these issues to the attention of the Government through the Consultation process have been constantly frustrated, as noted in Item 4.

Your Petitioners believe that the disjointed and deficient approach described above will prevent Parliament from applying the timely and holistic consideration necessary to ensure that high speed rail can be developed in a manner best serving the public interest.

The public interest might best be defined by the following public policy requirements:

- Reduction of CO<sub>2</sub> emissions in line with existing Parliamentary legislation (the 2008 Climate Change Act);
- Minimising public expenditure;
- Ensuring balanced regional development;
- Protection of local communities and rural environments;
- Integration of transport systems to maximise journey opportunities and economic benefit, and encourage modal shift from road to rail.

Your Petitioners therefore recommend that the 'Principle' of the Bill, as set out in the Draft Directions:

*the provision of a high speed railway between Euston in London and a junction with the West Coast Main Line at Handsacre in Staffordshire, with a spur from Water Orton in Warwickshire to Curzon Street in Birmingham and intermediate stations at Old Oak Common and Birmingham Interchange,*

must be amended so that the HS2 Hybrid Bill Committee can undertake the necessary examinations to ensure that the vital considerations of national interest set out above are not compromised.

Your Petitioners recommend that the following issues of principle are considered:

- The question of whether the new line should be integrated with and frequently connected to the existing railway network; or whether it should be segregated from the existing network (as with HS2).
- The maximum speed for which the line should be designed, consistent with the requirement to follow existing transport corridors where environmental damage is minimised and connectivity is maximised.
- The provision of sufficient capacity on the high speed line to enable all major 'stakeholder' communities served by the existing intercity network to be served by the new high speed line.
- The optimum routeing of the high speed line to allow all 'stakeholder' communities to be served.
- The optimum routeing of the high speed line to allow (with further sections also built) the formation of an optimised national network in which all major regional communities are efficiently interlinked for minimised length of new build (and therefore cost).
- The optimum means of interchange with local public transport networks.
- The development of an optimised strategy for integrated national rail development in which road to rail modal shift is maximised with consequent reductions in transport CO<sub>2</sub> emissions.
- Noting the fact that the HS2-HS1 link has been deleted from the HS2 bill primarily on account of being difficult, costly and 'suboptimal', whether this desirable link might be more easily achieved with a differently-aligned approach of the high speed line to central London.

Your Petitioners observe that these eminently sensible considerations appear to have been largely disregarded in the development so far of HS2.

Additionally, your Petitioners observe that the 'Principle' of the bill, as set out in the Draft Directions, does not accurately summarise the content of the Parliamentary debate that took place on 28<sup>th</sup>/29<sup>th</sup> April. This mostly concerned the issue of whether a high speed rail line from London to the West Midlands should be built to serve the national interest. There was little or no debate as to whether the precise proposals, as set out in the Bill and defined in the 'Principles', were the proposals that would best serve the public interest as the first phase of a national network.

7 Your Petitioners object to the bill on account of the following primary concerns. However, this list is not exhaustive, and space does not permit the listing of all concerns at this specific juncture:

- **Segregation of HS2 from existing network**

HS2 has been designed to be virtually segregated from the existing rail network. Within the London to West Midlands scope of the bill, this largely limits the connectivity that HS2 can provide to stations on the new build railway, and it hugely restricts the potential economic benefits. Far greater benefits – both economic and environmental – appear to be achievable with integrated operation between the new high speed railway and the existing network. The Government appears never to have seriously considered the alternative of integration, with full and frequent connection between the high speed line and the existing network. The Government has also never demonstrated why their preferred segregated model of operation is the best way forward.

- **Extreme speed assumed in the design of HS2**

HS2 has been designed to be the fastest railway in the world, with 360km/h operation planned and allowance made for future 400km/h operation. This is represented as 'future-proofing'. However, designing for extreme speed has the effect of drawing the line away from existing corridors (where major populations exist that might benefit from the introduction of high speed rail) into unspoilt rural areas where populations are too small to merit the provision of local stations, and there are no other compensatory benefits to mitigate the intrusion. This has the effect of reinforcing HS2's lack of integration. There are also major issues with higher maintenance costs, increased energy use, and higher CO<sub>2</sub> emissions. The Government appears never to have undertaken the necessary 'sensitivity analysis' to establish the optimum operational speed (ie the speed that achieves the best balance of benefits against adverse impacts). Nor has the Government ever demonstrated why a design speed of 400km/h (for operation at 360km/h, potentially rising to 400km/h) represents the best option.

- **Old Oak Common**

The proposed HS2 interchange at Old Oak Common is planned to achieve the twin function of interchange with Heathrow and CrossRail services. However, the requirement (written into the HS2 core remit) that these two separate functions are performed at a single station has the effect of predetermining HS2's route through the Chilterns, and prevents fair consideration of the alternative M1 corridor route. The Government appears never to have considered alternative strategies to building a station at Old Oak Common, for achieving high speed rail access to Heathrow, or interchange with London's local rail network.
- **Selection of HS2 Chiltern Route and Rejection of the M1 Corridor**

The Government's selection of their favoured route through the Chilterns (as described in the bill) is predicated upon rejection of the far less environmentally-damaging alternative of a route following the M1 and M6 motorways. The reasons advanced by the Government for their rejection of the M1 corridor were variously false or spurious. Taken overall they did not represent the necessary balanced consideration of alternative options essential to ensure the outcome best serving the public interest (either for a London to Birmingham high speed line, or for future stages in the development of a national high speed network).
- **2 tracks or 4 tracks??**

HS2's route through the Chilterns is planned to comprise only 2 tracks. This is generally accepted as having the capacity to accommodate 18 trains per hour in each direction. This is insufficient to provide intercity services to all the cities of the Midlands, the North and Scotland served by the existing intercity network, and with many cities bypassed and left reliant on reduced services on the existing network, the result will be a 2-speed, 2-tier Britain. On HS2's chosen route, the necessary 4 tracks do not appear to be achievable, on account of either unacceptable additional intrusion on surface sections, or the doubled cost on tunnelled sections.
- **Selection of the 'Y'**

The 'Y' configuration adopted by HS2 fits naturally with HS2's west-sided route through the Chilterns from London to Birmingham, and further aspirations for development towards Yorkshire and the North-West. But with no Trans-Pennine high speed route offered, the 'Y' essentially comprises a conduit focussed upon London, and seems most likely to have the effect of concentrating economic activity in the South-East of England, and of exacerbating the North-South Divide. The 'Y' is also inherently inefficient, in that it requires the operation of many trains, mostly poorly-filled, to accommodate

all possible journeys between regional cities. The Government has not given serious consideration to alternative, more efficient network formats (such as the 'spine and spur' of High Speed UK) which allow for greater and properly balanced interregional connectivity.

- **Birmingham Curzon Street**

The selection of Birmingham Curzon Street as HS2's terminus in Birmingham appears to have been driven partly by the desire to run supersized trains that are too long and too large in cross-section to fit into New Street Station, and partly by a perception that New Street is already full (which is not the case). But any intercity railway solution that does not achieve interchange with the local and regional services that concentrate at New Street, and does not allow through running, implies a massive loss of connectivity between high speed and local services within the West Midlands conurbation, and across the national intercity network. The Government appears not to have given serious consideration to operating smaller UK-sized trains and undertaking the necessary works to enhance capacity at New Street, in order to maintain the integrity of the local and national rail network.

- **HS2's 'Carbon Neutral' Performance**

Documentation released by the Government in support of the HS2 proposals sets out HS2's predicted 'carbon neutral' performance ie no significant reduction of transport sector CO<sub>2</sub> emissions. It is reasonable to expect that all major Government-led (and taxpayer-funded) interventions should play their part in maximising reductions of national CO<sub>2</sub> emissions. HS2's predicted 'carbon neutral' performance is therefore in clear contravention of the spirit (if not the letter) of the 2008 Climate Change Act. HS2's inadequate performance stems from its failure to achieve significant road to rail modal shift, and this in turn is attributable both to its lack of integration with the existing network, and also its inefficient 'Y' configuration, primarily focussed upon getting to London more quickly.

All these concerns have been raised by your Petitioners in their many responses to the Government's HS2 Consultations. Regrettably, the Government has failed to take necessary account of these concerns, and has failed to bring these concerns before Parliament for their consideration. As such, the process underpinning HS2 appears to be deficient.

Concerns relating to HS2's excessive environmental impact (ie its unnecessary Chiltern routeing and its inadequate 'carbon neutral' performance) were raised in your Petitioners' response to the Consultation on HS2's Draft Environmental Impact Statement (July 2013). In that Government has a duty (under the Town & Country Planning Act) to ensure

the best possible balance between a scheme's benefits and its environmental impacts, the Chiltern-aligned segregated HS2 was shown to be clearly suboptimal with respect to an M1-aligned integrated alternative; and as such, it would appear to be illegal.

It should be noted that all these adverse issues are avoided with the alternative 'High Speed UK' proposals developed by your Petitioners.

- 8 For the foregoing and connected reasons your Petitioners respectfully submit that the bill must be radically amended so that it reflects best practice for integrated transport, and all the other public policy issues described in Item 6, and thus comprises a fit-for-purpose intervention in UK intercity transport compatible with further development of an optimised national high speed rail network. It is however beyond the skills and experience of the Petitioners to suggest the necessary amendments to the bill, and as such, the bill as it stands should not be allowed to pass into law.
  
- 9 For the foregoing and connected reasons your Petitioners respectfully submit that the Government should conduct a far-reaching Inquiry to establish:
  - the reasons why the HS2 proposals have progressed so far towards legislative powers without adequate technical scrutiny;
  - how other apparently superior proposals have been dismissed, without just cause;
  - a more appropriate way forward for integrated high speed intercity transport in the UK.

YOUR PETITIONERS therefore humbly pray your Honourable House that the bill may not be allowed to pass into law as it now stands and that they may be heard by their Counsel, Agents and witnesses in support of the allegations of this Petition against so much of the bill as affects the property, rights and interests of your Petitioners and in support of such other clauses and provisions as may be necessary or expedient for their protection, or that such other relief may be given to your Petitioners in the premises as your Honourable House shall deem meet.

AND your Petitioners will ever pray, &c.

(Colin Elliff)

(Quentin Macdonald)

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IN PARLIAMENT

HOUSE OF COMMONS

SESSION 2013-14

HIGH SPEED RAIL (LONDON – WEST MIDLANDS) BILL

PETITION OF COLIN ELLIFF AND QUENTIN MACDONALD

Against the Bill – On Merits – By Counsel &c

Colin Elliff: 20 Hartley Road, Harrogate, Yorkshire, HG2 9DQ : 07570 812158

Quentin Macdonald: Manor Farm, Church Lane, Nether Poppleton, York

# **APPENDIX J**

SUBMISSION TO:

**House of Lords SELECT COMMITTEE ON ECONOMIC AFFAIRS**

**Inquiry into the Economic Case for HS2**

RESPONDING ORGANISATION:

**HIGH SPEED UK**

AUTHORS OF RESPONSE:

**QUENTIN MACDONALD &  
COLIN ELLIFF**

DATE:

**SEPTEMBER 2014**

**Detailed commentary on this submission is given in  
Section 12 of this report**

# House of Lords SELECT COMMITTEE ON ECONOMIC AFFAIRS

## Inquiry into the Economic Case for HS2

Submission by Quentin Macdonald and Colin Elliff of High Speed UK

### *Introduction*

This response is made by Quentin Macdonald and Colin Elliff of High Speed UK, based at Manor Farm, Church Lane, Nether Poppleton, York, YO26 6LF. We are both career railway engineers, having respectively over 50 and 30 years' experience in the industry. We are deeply concerned at the huge deficiencies of the HS2 proposals, from multiple viewpoints including cost, connectivity, operational performance and environmental impact.

These concerns have led us to develop High Speed UK as an alternative to HS2. Our proposals are mapped and designed at 1:25,000 scale, covering almost 1,000km of new railway, to the extent of straights, curves and transitions being defined. A draft timetable has also been developed which demonstrates HSUK's vastly superior performance in almost every conceivable respect. Further details of the High Speed UK proposals can be found on our website [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk).

Our work in developing High Speed UK dates from as far back as 2006. This has given us a unique perspective from which to make informed comment upon the Government's HS2 proposals, and we will be pleased to contribute to the Select Committee's Inquiry.

Our response follows the guideline questions set by the Select Committee, with paragraphs numbered accordingly. We have also included concluding statements in respect of aviation policy (Section 10) and public policy and procedural issues (Section 11).

### **1. *Is there an economic case for HS2?***

It is crucial to distinguish between the principle of high speed rail development, and the actuality of the Government's HS2 proposals. With HS2 presented to Parliament as the single 'do something' option, support for the principle of high speed rail development has seamlessly developed into support for the specifics of HS2. We believe that the Government must do more than simply demonstrate that there is an economic case for HS2; we believe that Government must demonstrate that their HS2 proposals represent the best possible use of circa £50 billion of public money.

We are fully supportive of the Government's aim, to improve the connectivity and capacity of the national transport system to deliver economic growth. We believe that the intervention of new, higher speed railways is by far the best strategy to achieve this goal. A better-connected and higher capacity rail system is vital not only to stimulate economic activity, but also to enable step-change modal shift from road and air to rail that is essential for reductions in transport CO<sub>2</sub> emissions in compliance with the 2008 Climate Change Act.

However, we are concerned that HS2 as proposed by the Government will not deliver the basic connectivity necessary to realise the predicted economic gains. The majority of HS2's stations are remote from existing stations (often requiring a walking transfer) and there is minimal connection between HS2 and the existing main lines (currently, only 4 connections are proposed).

This lack of connectivity places huge limitations on the performance of HS2 as a national transport system. It can provide direct benefit to relatively few intercity journeys, and most of the population will remain reliant on the existing rail network where intercity services are proposed to

be reduced<sup>22</sup>. Without the necessary integration, HS2 cannot deliver the forecast economic benefits. HS2's lack of connectivity is also the root cause of its failure to achieve significant reductions in transport CO<sub>2</sub> emissions<sup>23</sup>.

The case for full integration between high speed and existing networks is fully proved by High Speed UK's vastly superior performance. Across its full national scope, High Speed UK directly serves all existing regional hub stations (eg Birmingham New Street, Manchester Piccadilly and Leeds City), is connected to the existing network at over 50 locations, and through these links extends to all secondary cities served by the existing network (most of which will be bypassed by HS2).

Our assessment of national connectivity across 33 key centres - with 528 possible journeys - shows 488 of the 528 journeys significantly improved, and journey times on average reduced by 40%. HS2 cannot match this, improving circa 44 journeys but making over 150 worse than at present. Additionally, our calculations show HSUK cheaper to construct (as a national system) by circa £20 billion, with a potential for 600 million tonnes of CO<sub>2</sub> savings over a 40 year period, whereas HS2 will achieve no significant savings.

***2. Should the Strategic Case for HS2 published in October 2013 by the Department for Transport and analysis from HS2 Ltd have taken account of any other factors in making an economic case for the project? Is the expected range of the benefit cost ratio persuasive?***

There has been much adverse comment on HS2's claimed BCR of circa 2.0, and whilst we would not comment further on this matter, it seems clear that since economic benefit and patronage are dependent upon improved connectivity, High Speed UK's much greater and more widespread connectivity and significantly lower construction costs must result in a far superior BCR.

We are concerned that the analysis undertaken by the DfT and HS2 Ltd makes no structured assessment of how the intervention of high speed rail might optimise connectivity - and therefore economic and environmental benefit. It appears to have been assumed that the building of a new high speed line will automatically improve connectivity - and no account is taken of the adverse effects either of disconnected terminus stations (eg in Birmingham and Leeds) or of the bypassing of secondary cities (eg Milton Keynes, Coventry, Stoke, Leicester, Derby, Doncaster and Wakefield). As such, we believe that HS2 will achieve no overall connectivity benefits and hence the projected benefit cost ratios seem highly suspect.

There is also no sense of what might constitute an ideal intercity network in which connectivity is optimised. In the case of High Speed UK, we have developed our national network with the guiding principle that all primary cities and the national hub airport at Heathrow should be directly interlinked with intercity quality trains operating at hourly or better frequencies and accessing the existing regional hub station.

HSUK meets this standard across 15 key UK centres - London, Heathrow, Milton Keynes, Birmingham, Leicester, Nottingham, Derby, Sheffield, Manchester, Liverpool, Leeds, Darlington (for Teesside), Newcastle, Edinburgh and Glasgow. For all other principal UK centres that are currently connected to the intercity network, HSUK still offers major benefits in terms of improved journey times and greater availability of direct journeys, with no requirement to change trains.

***3. What are the likely economic benefits of HS2 to the Midlands, to the North of England and to Scotland? Do they also depend on complementary action by***

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<sup>22</sup> Table 23, pp91-92, *HS2 Regional Economic Impacts*, DfT 2013

<sup>23</sup> Table 2.5, p53, *High Speed Rail*, DfT Command Paper, 2010

### ***governments, local authorities and Local Enterprise Partnerships, for example measures to attract investment and skilled workers?***

As HS2 currently stands, its isolation from the existing rail network means that it cannot deliver the improvements in connectivity essential to deliver economic growth to any region in the UK. There appears to have been an assumption that others – eg local passenger transport authorities and Network Rail, will implement the necessary developments to local transport networks (both road and rail) to integrate local communities with HS2. This will have the effect of greatly increasing costs, and of introducing major distortions and dysfunctionalities into local networks (for instance, to serve the planned ‘East Midlands Interchange’ at Toton which is intended to supersede Leicester, Nottingham and Derby as the region’s primary intercity hub, but which is located on a freight-only line currently enjoying no regular passenger service).

From our perspective, experienced in railway engineering and operations, we would comment that it is not possible to retrofit integration onto the fundamentally segregated HS2. Integration can only be achieved if it is planned into the system from the start. In the case of the East Midlands, High Speed UK’s alternative strategy of full integration will make Leicester, Nottingham and Derby’s centrally-located stations key hubs in an enhanced national network. Journey times and availability of direct services will be hugely improved, offering far greater benefits for the region than HS2 possibly can at their disconnected ‘East Midlands Interchange’. Similar examples can be provided for any other UK regional centre.

#### ***4. Might some parts of the UK suffer economic disadvantage from HS2?***

There is a clear priority, dictated by simple distribution of population, for developing high speed rail in a northward direction from London, rather than westward. As such, major cities such as Bristol and Cardiff might appear to be disadvantaged. However, these cities and their surrounding regions will suffer far greater direct disadvantage through HS2’s proposed terminal ‘solution’ at Birmingham.

Here, it is proposed to operate high speed interregional services from the new Curzon Street terminus station to Northern and Scottish cities, while trains from Cardiff and Bristol will continue to arrive at the existing New Street station. Passengers wishing to make a through journey using high speed services will be forced to make a walking transfer between the two stations. This is hugely regressive, and threatens the basic integrity of the national rail network (for which New Street is effectively the hub).

By contrast, under the integrated High Speed UK proposals, Birmingham New Street will remain the intercity/high speed hub for the West Midlands, with high speed cross country services extending from the high speed trunk route in the East Midlands via Derby and Birmingham New Street to Cardiff, Bristol, and other south-western centres.

HS2 has been designed to bypass many major regional centres including Coventry, Stoke, Leicester and Derby. With these cities also likely to see reductions in intercity services on the existing main lines<sup>24</sup>, it seems clear that they will be positively disadvantaged by the advent of HS2. Any benefits achieved by HS2 would appear to be highly localised around the new high speed stations, and there is a likelihood of ‘zero sum gain’ by which the economic gains around the new stations are matched by losses in the disconnected surrounding cities.

Although it would be possible for more connections to be provided between HS2 and the existing network, to enable these bypassed cities to be served, the 2-track stem of HS2 does not have the capacity to accommodate services to all regional cities currently served by the intercity network. This will lead inevitably to a 2-tier, 2-speed Britain in which HS2 will serve only the ‘primary’

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<sup>24</sup> Table 23, pp91-92, *HS2 Regional Economic Impacts*, DfT 2013

cities, while most 'secondary' cities will remain reliant on the existing network on which intercity services are projected to be reduced.

Again, these issues are avoided by HSUK's full integration with the existing network, and its adoption of a 4-track route following the M1 corridor via the Luton gap, thus totally avoiding the Chilterns AONB. This allows enhanced intercity services to access all cities currently served by the national intercity network, and avoids the environmental damage associated with HS2's proposed route through the Chiltern AONB.

It is a matter of huge concern that the economic and transport analysis underpinning the HS2 proposals appears to have neglected these fundamental issues of lost connectivity. HS2 will also create new asymmetries between cities that will be served by HS2, and cities that will be bypassed, and this concerning issue has also been neglected.

### ***5. Is London likely to be a main economic beneficiary of HS2?***

With the HS2 'Y' network largely focussed upon London, it seems inevitable that any economic gains will be concentrated there. Hence HS2 seems more likely to reinforce the North-South Divide, rather than to redress it. It is also of great concern, that the Government has recently decided to omit any link to HS1 from the HS2 Bill; this will serve to continue the current isolation of regional economies from Continental markets.

These deficiencies have arisen from an apparent misunderstanding that faster links to London are all that is required to stimulate the regional economies (notwithstanding the belated 'HS3' initiative). The truth of the matter is that links between the regions are in greatest need of improvement, along with better connections to international aviation (particularly to Heathrow) and future direct rail links to the Continent via HS1. High Speed UK has been designed to meet all of these requirements, including a direct link to HS1 that can be achieved on existing infrastructure.

### ***6. How might the expected benefits of HS2 to the national economy be realised?***

The economic benefits of HS2 will only be realised if it is entirely reconfigured to achieve the integration with the existing network that is necessary to improve connectivity in a balanced and symmetrical manner across the country. High Speed UK offers an exemplar of what can be achieved, with the correct design philosophy. Without this quality of connectivity, HS2 cannot benefit the national economy.

### ***7. How should HS2 be operated? As a franchise in competition with West and East Coast Main Lines?***

Much of HS2's suboptimal performance gives rise to a suspicion that it has been configured as an isolated and disconnected 'system' to conform with an assumed franchise model. But this has resulted in a proposed infrastructure mega-project that cannot function as an inclusive national intercity network.

It is vital that a franchise model is developed for high speed rail that harmonises fully with optimum functioning of the national rail network.

### ***8. Should travellers expect to pay higher fares on HS2 than on other lines?***

We see no reason why travellers should not pay an appropriate premium for improved train services. But we see it as more important that high speed rail is developed in such a way that travellers are presented with a genuine choice - either to pay a higher fare for a higher-speed journey, or a lower fare for a slower journey along the existing lines. But under HS2, this choice will rarely exist.

For instance, cities such as Coventry and Stoke will be bypassed by HS2, and will be left reliant on slower and less frequent intercity services on the existing network. Unless travellers make a circuitous journey to the nearest high speed station (either Birmingham Interchange or Crewe Hub), they will be unable to access the high speed network - and in making these diversions, they will lose most if not all of the projected time savings.

These choices will exist under the fully-integrated High Speed UK.

### **9. Does the prospect of HS3 affect the economic case for HS2?**

The recently-announced HS3 initiative (which we understand to be a projected high speed link between Manchester and Leeds, extending westwards towards Liverpool and north- and eastwards towards Newcastle and Hull) stands in stark contrast to Government's attitude at the time that the HS2 project was launched, in 2009/10. At that time, any prospect of a trans-Pennine link was rejected in favour of developing the existing trans-Pennine routes as part of the Northern Hub initiative<sup>25</sup>.

As a consequence of this rejection, HS2 has been developed as the highly London-centric 'Y', with no account taken of the need for commensurate connectivity improvements across the Pennines. In particular, terminus stations are proposed at both Leeds and Manchester, that are wholly incompatible with any future high speed trans-Pennine link, which must logically comprise a through route from Liverpool to Newcastle/Hull, without reversal at either Manchester or Leeds.

It must be stressed that there is no inherent merit in the 'Y' of HS2. This constitutes a highly inefficient solution, in that it requires long arms to extend northwards to either side of the Pennines with separate spurs to access each major city, yet offers very little in the way of interregional connectivity (most importantly, no trans-Pennine link to connect the primary northern communities of Liverpool, Manchester, Leeds and Sheffield). By contrast, High Speed UK, configured in alternative 'spine and spur' formation, achieves much greater connectivity for shorter route length and therefore cost.

We have undertaken rigorous comparison between High Speed UK on the one hand, and HS2 plus HS3 on the other. These comparisons cover the following issues:

- Cost
- Connectivity
- Journey time reductions
- Network capacity
- Operational efficiency
- CO<sub>2</sub> reductions through modal shift, primarily from road to rail
- Environmental impact, including property demolitions

In all cases, the fully integrated and holistically planned High Speed UK vastly outperforms HS2 + HS3. This demonstrates clearly that HS2 should have been planned from the start as an integrated national network. Failure to do so has rendered the current HS2 proposals unfit for purpose - and, in terms of the Inquiry of the Select Committee, ineffective as a means of generating national economic growth. The Government's 'HS3' initiative is welcome as an acknowledgement of the importance of trans-Pennine links, but it cannot remedy the fundamental deficiencies of HS2.

It must be emphasised that almost at the inception of HS2 in 2009, the Government's advisors at HS2 Ltd were advised of the alternative High Speed UK concept (then entitled High Speed North). This message has been consistently repeated, in the form of consultation responses and other

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<sup>25</sup> Item 4.31, p74, *High Speed Rail*, DfT Command Paper, 2010

engagement. Yet the Government has persistently refused to engage with the High Speed UK alternative, and continues to ignore it as it presses ahead with the hugely suboptimal HS2.

### **10. Interaction between HS2 and Aviation Policy**

One of HS2's primary aims has always been to improve rail links to Heathrow. This has been a response to widely-shared concerns at the adverse economic impact of the very poor rail links to Heathrow from most regional cities (generally involving a Tube journey upon arrival at Kings Cross / St Pancras / Euston).

We share these concerns, and we believe that high speed rail must be developed in such a way as to provide radically improved links from the UK regions to international aviation. But we are concerned that the requirement to achieve a 'high speed' connection to Heathrow has had a hugely adverse effect upon HS2's performance as an intercity railway, capable of improving national connectivity and providing much needed extra capacity.

The requirement for HS2 to serve Heathrow has exerted a huge 'gravitational pull' upon the alignment of HS2, drawing it away from established intercity corridors and instead into the more environmentally sensitive Chilterns and rural areas of Buckinghamshire and Northamptonshire. In addition to the major local environmental impacts, the following adverse effects also apply:

- Major communities along the M1/M6 corridor (eg Luton, Milton Keynes, Northampton, Coventry and Leicester) bypassed by HS2, and left with worsened intercity connections.
- No practicable option but to configure the proposed national high speed 'network' as the 'Y' of HS2; as previously noted, this is a highly inefficient format, offering poor interregional connectivity and requiring excessive length of new construction (when compared with the alternative 'spine and spur' High Speed UK).
- A controversial and heavily-tunnelled route costing many billions of pounds more, and taking longer to build than the more favourable M1 corridor route.
- No practicable opportunity to establish the necessary 4-track route from London to the Midlands via the Chilterns; as a consequence, the 2-track HS2 cannot provide high speed services to all cities currently connected to the intercity network.
- The 2-track HS2 also lacks the capacity to offer a significant number of direct regional services to Heathrow; under current projections for HS2 services<sup>26</sup>, most regional city centre hub stations will not have direct services to Heathrow.
- A high speed trunk route with minimal opportunity for connection to the existing network, hence highly vulnerable to disruption.

All the adverse effects listed above are an inevitable consequence of the Government's specification (set out in the core remit for the HS2 project) of an interchange station at Old Oak Common. With Old Oak Common treated as a non-negotiable from the very start, this effectively compels an exit route from London along the Central Line corridor via Ruislip; there is then no alternative but to pass through the Chiltern AONB on the onward route to the north. It also prevents fair and balanced consideration of alternative routes, most specifically the M1 corridor adopted by High Speed UK.

In all of the outputs of the HS2 project, there appears to have been no recognition of the clear fact that however desirable the outcome of improved regional connections to Heathrow might be, they

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<sup>26</sup> Table 23, pp91-92, *HS2 Regional Economic Impacts*, DfT 2013 lists 2 direct regional services per hour from Heathrow. These are intended to operate from a new high speed terminus at Heathrow (for which no proposals have yet been put forward by the Government) and will serve Manchester Piccadilly, and Birmingham Interchange/East Midlands Interchange/Meadowhall/Leeds New Lane (thus failing to serve the regional hubs at Birmingham New Street, Nottingham Midland, Leeds City Station, and thereby failing to achieve wider access to the respective conurbations). For all other journeys, a change at Old Oak Common will be necessary.

have had the undesirable effect of fatally compromising HS2's efficiency as a national intercity network - which must remain its core purpose. And with HS2 unable to optimise national intercity connectivity, it cannot constitute an effective intervention capable of generating economic growth, or driving necessary major reductions in CO<sub>2</sub> emissions.

All this has been explained to Government at length, in a series of consultation responses.

High Speed UK has adopted a radically different strategy to resolve the separate aims of a) improving UK intercity connectivity and b) improving regional access to the UK's hub airport.

High Speed UK will be developed primarily as an intercity network, following the M1 corridor on its exit route from London. This is not only the least damaging route, it is also the most geographically favourable; it can directly serve major population centres at Luton, Milton Keynes and Northampton, and it offers the 'line of best fit' to the primary conurbations in the East and West Midlands, Yorkshire and the North West. This is an established historical fact also, as is demonstrated not only in the route of the M1, but also in that of the London and Birmingham Railway (now the West Coast Main Line), the Grand Union Canal and the Roman Watling Street.

Rail access to Heathrow will be improved through the development of the existing Heathrow Express system - currently a terminating line that only links Heathrow to Central London - into a through 'Compass Point' system, extending to the east, south, west and north. The southern and western arms of 'Compass Point' effectively encompass existing initiatives to improve rail access to Heathrow, but they will be complemented by a new northern 'orbital' arm that will extend around the Greater London conurbation and connect to all the northern main lines<sup>27</sup>.

The proposed Compass Point system would function primarily as a regional system, intersecting with all main lines radiating from London, at Woking (SWML), Reading (GWML), Ruislip (Chiltern), Watford Junction (WCML), Brent Cross (MML) and Stevenage (ECML). This will allow passengers from Heathrow to connect to main line intercity services, and will effectively place most regional centres a single change of trains from the national aviation hub at Heathrow.

Compass Point will also intersect with High Speed UK at Brent Cross. This will allow high speed services from the UK regions to follow the circumferential route of the Northern Orbital Arm (mostly along existing lines) to directly access the Central Terminal Area and Terminal 5 at Heathrow. The fundamental routing efficiency of High Speed UK - whereby several cities are located on a single line of route - allows all primary regional centres to be served with just 4 separate trains. This has two highly beneficial effects; firstly, the trains will be well filled, and secondly, relatively few 'paths' on the high speed line will be consumed by airport services.

High Speed UK thus offers an unprecedented opportunity, for the regional hinterlands of the UK to be efficiently connected to the national hub airport by hourly direct trains. This is effectively optimised 'hub and spoke' aviation - but with the spokes comprising frequent and comprehensive train services, rather than feeder flights operating at irregular frequency and offering patchy national coverage.

There is no reason why regional airport services should terminate at Heathrow. Gatwick is located only 45km from Heathrow, around 15 minutes by high speed train. Gatwick offers a ready-made third runway for Heathrow, and detailed plans exist for a second runway there. Collectively, a connected Heathrow and Gatwick could comprise the 4-runway London hub airport for which the aviation industry is pressing - but with high quality connectivity to the rest of the UK that will deliver widespread economic benefit.

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<sup>27</sup> The concept of the Compass Point network was originally advanced in the paper *Rails Around London – In Search of the Railway M25* by Colin Elliff, published by the Institution of Civil Engineers May 2001.

All this is included in the High Speed UK plans, with detailed alignments developed at 1:25000 scale for the direct link between Heathrow and Gatwick. 45km of new high speed railway on a heavily-tunnelled route through the sensitive commuter belt might conservatively be estimated at £4.5 billion construction cost (@£100M/km) but that is cheap compared with the double-digit billion costs associated with new airports in the Thames Estuary, or an expanded Heathrow. The dedicated route between Heathrow and Gatwick would of course also permit 'airside' shuttles to operate, transferring transit passengers, luggage and cargo.

This question of improved surface access is vital both for the success of a London hub airport, and for the wider UK economy. But it seems hardly to have entered the considerations of the Davies Commission, which seems focussed exclusively on the issue of runway capacity, to the exclusion of wider connectivity. We have of course responded to the Davies Commission, but as yet we have had no indication as to whether they have given our proposals any serious consideration.

### ***11. Public Policy and Procedural Issues***

Amongst the many technical deficiencies of the Government's HS2 proposals, it is clear that these proposals run contrary to several aspects of public policy including:

- CO<sub>2</sub> emissions to be reduced to comply with of 2008 Climate Change Act;
- budgetary restraint (comparative estimates indicate a difference between HS2's and HSUK's construction costs of circa £20 billion);
- balanced regional development;
- protection of local communities and rural environments;
- presumption in favour of town centre development;
- integration of transport systems.

The superior performance of High Speed UK against all these criteria shows clearly that HS2's failure to comply on these crucial issues does not constitute necessary 'collateral damage' to enable a project vital to the national interest, but instead reflects deep flaws in the due process underpinning HS2 that have affected the selection of options, and the specification and design of the solution.

We consider it essential that the Government conducts a far-reaching and independent Inquiry to establish:

- the reasons why the HS2 proposals have progressed so far towards legislative powers without adequate technical or procedural scrutiny;
- how other apparently superior proposals have been dismissed, without just cause;
- a more appropriate way forwards for integrated high speed intercity transport in the UK.

# **APPENDIX K**

EXTRACT FROM PARLIAMENTARY SELECT COMMITTEE REPORT:

## **House of Lords SELECT COMMITTEE ON ECONOMIC AFFAIRS**

### **The Economics of HS2 (HoL 134)**

Extracts taken from:

- Sections 221 – 230, pages 70-71
- Chapter 9, pages 130-131

EXTRACT FROM GOVERNMENT RESPONSE TO HoL 134:

### **The Economics of HS2 : Government Response (Cm 9078)**

Extract taken from:

- Section 2, page 9

**Detailed commentary on these documents is given in Section 12.12 of this report**

# Extract from HoL Report (HoL 134, pp70-71)

## *Alternative proposals for a new railway*

### *High Speed UK*

221. High Speed UK (HSUK) submitted evidence to us outlining their proposal for a new four-track high-speed railway that would run along the M1 corridor from London to Scotland via Leeds with spurs from the “spine” to Birmingham, Manchester and Glasgow. The proponents of HSUK told us that it would deliver “10 times better” connectivity than HS2, improve 488 out of 528 journeys possible on the UK railway network and “double the capacity of HS2 on the core London ‘stem’” for a lower capital cost than HS2.<sup>273</sup>
222. Steven Leigh of the Mid-Yorkshire Chamber of Commerce and Kings Bromley Stop HS2 Action Group both supported HSUK in evidence to us, arguing that it would benefit more towns and cities than HS2 proposals at a lower cost.<sup>274</sup> Lord Adonis, however, suggested that the proposed route up the M1 would be more controversial than HS2: “The idea that building next to existing transport corridors—which would also include having to significantly widen transport routes through major towns and cities—would be less controversial than building HS2 is for the birds.” He argued that such a route would be more expensive than HS2.<sup>275</sup>
223. We asked the Government whether they had made an assessment of HSUK’s proposals. Mr Prout told us that “The main elements of the central railway proposal were looked at in the 2013 alternative study for the East Coast Main Line.” He argued that “the reinstatement of the central railway is by no means as simple as HSUK would have us believe.”<sup>276</sup>

### *A new conventional speed railway*

224. In Chapter 2 we considered the suggestion that the maximum speed of 400 kilometres per hour (250 mph) added significantly to the cost of HS2. In addition to cost benefits, some witnesses suggested that building for a lower maximum speed would have enabled different design choices that would have greater benefits than HS2.
225. Chiltern Ridges Action Group said that “If such speed constraints were dropped, alternatives, such as [51M], could provide the required capacity inflicting far less damage on our environment and at far less cost to the taxpayer.”<sup>277</sup> Chris Belk, a private individual, said that “speed priority dominance has been replaced by the need for increased capacity and the generally accepted need to shrink the ‘N/S Divide’—but the opportunity to reroute Phase One to remove the cost and damage legacy of speed optimisation at all costs has so far been ignored.”<sup>278</sup>

226. Mr Prout told us that the maximum speed of HS2 had not been the reason for the route chosen: “the alignment that we have chosen is to minimise the environmental impact of the railway ... I do not accept the premise that you would necessarily have a different alignment.”<sup>279</sup>
227. The *Strategic Case* stated that there is a choice when building a new railway between classic rail, or high speed rail:
- “A conventional speed line would cost 9% less than a high speed line, but would deliver far fewer benefits in terms of journey time savings. A conventional speed line would have impacts on local communities, as would high speed rail. Overall, the journey time benefits from high speed outweigh the additional costs when compared to a conventional line by a factor of more than five to one.”<sup>280</sup>
228. The benefits referred to were calculated using assigned values of time for each type of traveller. We consider this in detail in Chapter 8.

### **Have the Government considered all the options?**

#### *Government’s consideration of the alternatives*

229. We asked witnesses whether the Government had properly considered all of the alternatives proposed to meet the objective of providing more capacity on the UK rail network. Professor Overman criticised what he perceived as the Government’s failure to provide a full assessment of the different options which could achieve the objective of providing additional capacity:

“I felt that if I was a Member of Parliament being asked to think about alternatives, having someone say to me, ‘We have these two alternatives for dealing with congestion, one of them has a benefit-cost ratio of 2.3 for every pound you spend. Here is this other one that has a benefit-cost ratio of 3.1 but we feel this one would be far too disruptive and here is my back-of-the-envelope calculation that gives you some feeling for why that is’, is not a satisfactory position to put decision-makers in when they are asking about things.”<sup>281</sup>

230. Mr Prout responded to this criticism and told us that the Department had “done a huge amount of work on alternatives.” He cited four reports produced by Atkins and Network Rail between 2010 and 2013 which were “really substantial, thick reports on alternatives, dealing with road and rail alternatives”. He said that these reports:

“have BCRs attached to them, assessments of the amount of capacity that you would generate, assessments of the kind of disruption that would be generated by the construction of these alternatives. You do not get the same level of cost estimation as you do on a much more mature scheme like HS2, where we know much more about it, but we deal with that by optimism bias and so on.”<sup>282</sup>

# Extract from HoL Report (HoL 134, pp130-131)

120 THE ECONOMICS OF HIGH SPEED 2

## **CHAPTER 9: THE QUESTIONS FOR GOVERNMENT**

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On the basis of our report, we ask the Government following the 2015 General Election to address the questions below. The Government must answer these questions before the High Speed Rail Bill completes its passage through Parliament.

### **National transport plan**

- In the absence of a co-ordinated transport plan, how can the Government be sure that HS2 is the best way to achieve the project's objectives?

### **The cost of HS2**

- What measures will be taken to limit the cost of constructing HS2?
- Is the funding envelope of £50 billion for the cost of construction an absolute limit or will this increase with inflation?
- How much cheaper would a new railway built for a lower maximum speed (for example, 320 kilometres per hour as in France) be?
- How will the Government ensure that HS2 stations are appropriately linked in to local transport networks? How will this be funded?

### **Who will pay for HS2**

- Should passengers benefiting from faster journeys on HS2 pay premium fares to reduce the high level of taxpayer subsidy of the project?
- How does the high level of taxpayer subsidy of HS2 fit with the Government's commitment to reduce the level of subsidy of the UK rail network?

### **Demand and capacity**

- Will the Government either release the full data on overcrowding, down to the level of individual services, or ensure the data is reviewed independently, to provide the public with evidence there will be a growing problem on long-distance services?

### **Lack of consideration of alternative rail investment**

- Could incremental improvements to the existing rail network deliver the required capacity improvements?
- Could the use of flexible pricing policies, such as those used by low-cost airlines, assist with managing overcrowding on the busiest trains?
- Is HS2 the best way to address the problems which currently exist?

### **Effect on the UK economy**

- Given that evidence from abroad suggests that large cities benefit the most from improving connectivity, how will HS2 rebalance Britain's economy?

- Is High Speed 2 the best way to spend £50 billion to stimulate the UK economy?
- Would local and regional infrastructure investment, as recommended by the Eddington Study of 2006, offer a more realistic proposition of a return on investment than HS2?

#### Prioritisation

- Should improving regional rail links in the north be prioritised ahead of building HS2 Phase One?

#### Lack of evidence

- What effect will the findings of the research commissioned on values of time have on the cost-benefit analysis of HS2?

## Extract from Government Response (Cm9078, p9)

### 2. Government Response

#### National Transport Plan

*The Committee states that: "An investment decision on the scale of HS2 should have been made with reference to a co-ordinated transport plan for passenger and freight traffic across all modes of transport. Such a plan could have given full consideration to how all areas of Great Britain and all transport users would be affected by the project".*

- 2.1 The Government has set out how HS2 fits within wider transport policy. The Strategic Case for HS2<sup>13</sup>, published in 2013, set out in detail how HS2 fits with investment in the existing rail network and the wider Government strategic aims of supporting growth and addressing the productivity gap between the north and south of the country.
- 2.2 The Northern Transport Strategy<sup>14</sup>, published earlier this year sets out transport's role in creating a Northern Powerhouse, of which HS2 is key.

# **APPENDIX L**

DOCUMENT TITLE:

## ***CONSTRUCTION IMPACTS AT MOTORWAY INTERCHANGES***

ISSUED TO:

**House of Lords SELECT COMMITTEE ON ECONOMIC  
AFFAIRS Inquiry into the Economic Case for HS2 –**

DOCUMENT PREPARED BY:

**HIGH SPEED UK**

AUTHORS OF RESPONSE:

**COLIN ELLIFF &  
QUENTIN MACDONALD**

DATE:

**JANUARY 2015**

**Detailed commentary on this submission is given in  
Section 12.14 of this report.**

# **HIGH SPEED UK : CONSTRUCTION IMPACTS ON MOTORWAY INTERCHANGES**

## **Introduction**

Massive road traffic disruption and associated major construction difficulties at motorway interchanges have always been cited as one of the key arguments against any proposed high speed rail route aligned along the M1 corridor. Whilst no study has ever been published to substantiate this claim, it has gained general acceptance as a primary reason for rejecting the M1 corridor in favour of the selected route for HS2 through the Chilterns.

Development of detailed horizontal and vertical alignment designs for the M1-aligned High Speed UK proposals now allows the assertion of insuperable difficulties at interchanges to be rigorously tested. This paper reviews the proposed HSUK alignments at all of the 21 M1 interchanges between London and Lutterworth, to determine the nature and extent of the asserted difficulties.

## **Information Considered**

1:25,000 scale plans have been developed to cover the full extent (circa 1000km) of proposed HSUK new build route, from London to Liverpool and Glasgow. This has allowed both horizontal and vertical alignments to be designed for the proposed high speed line. Extracts from this mapping are presented below, in the case studies relating to each interchange.

## **Technical Challenges presented at Motorway Interchanges**

The M1 was constructed along the primary national transport corridor, followed by Romans (Watling Street), canal builders (Grand Union Canal) and railway builders (London & Birmingham Railway, now West Coast Main Line) alike. In terms of the topography encountered en route, it is by far the most favourable route between London and the Midlands (this contrasts sharply with the Chiltern-aligned M40, constructed in much more difficult terrain). Consequently, it was possible to build the M1 to a relatively straight alignment, with few serious curves in either the horizontal or vertical sense.

The route of the M1 runs close to major communities, in particular Watford, Luton, Milton Keynes and Northampton, and although it has stimulated major growth at all these locations, it has also had the side-effect of creating such environmental intrusion (both noise and air pollution) that a clear corridor has generally been established alongside the motorway with no residential development. Given the usually straight motorway alignment, this corridor would appear to be ideal for the construction of a new high speed railway. The only major exception to this rule is at Luton, where the alignment of the motorway is tortuous, squeezed between Luton to the east and Dunstable to the west. Here, a tunnel is the only option for new railway construction.

This then leaves motorway interchanges as the primary obstacle to any high speed railway closely aligned with the M1. The easiest strategy is simply to align the new railway clear of the interchange, but this tends often to compromise the 'minimum intrusion' ethic of close adherence to the motorway, and also tends to threaten adjacent communities.

Hence the strategy generally adopted in the design of HSUK is for the new railway to follow the vertical alignment of the motorway, and thus similarly pass either above or below the interchange roundabout. In this case there is no direct conflict with the motorway, only with the slip roads. It is of course necessary to consider how the proposed works will be constructed, with either viaduct spans needing to be installed above the interchange roundabout, or short tunnels to be installed through the embankment fill below the roundabout (dependent upon local topography).

Motorway service areas generally comprise a lesser obstacle. Unlike an interchange, they cannot be considered critical infrastructure, and it is generally possible to rebuild and remodel around the route of the new high speed line without causing undue disruption and inconvenience to motorway users.

## **Results of Study**

The study found no 'showstopper' obstacles to construction of a high speed line along the M1 corridor at any of the 26 locations considered in this study.

The most serious problems would appear to exist at the remodelled M1/M6 interchange at Junction 19, which has been designed, and is now being constructed, without any specific consideration of the need for a high speed railway following the M1 corridor. However, the general principle, of the motorway facilitating a parallel alignment for a high speed line, is still applicable. A detailed study will be necessary, and would seem likely to demonstrate that such a strategy remains viable, requiring only the realignment of certain slip roads, and possible small compromises on railway curvature and permissible speed. Alternatively, it should be possible either to pass below the interchange in tunnel, or to divert around it on the west side.

In other cases, the most serious issues exist where the interchange roundabout is located above the motorway. Here it is necessary to tunnel below the roundabout using thrust boring, or other established technique, to construct a passage for the new railway, whilst keeping the road above open for traffic, albeit with speed restrictions, at most if not all times. It may also be necessary to temporarily realign the slip roads.

Where the motorway and high speed line pass over the interchange roundabout, the problems are

generally less severe, with it being possible to construct the necessary viaduct either by craning bridge beams into place during short night-time closures, or alternatively 'launching' the superstructure from the abutments at either end across the newly-constructed piers.

The assessed outcomes of the study are tabulated below:

Junction/ <b>Services</b>	New Railway OVER, UNDER, CLEAR of or AVOIDS interchange?	SMALL, MEDIUM or LARGE challenge?
J1	OVER/UNDER on existing railway alignment	SMALL
J2	CLEAR	N/A
J3	J3 does not exist	N/A
<b>London Gateway</b>	<i>CLEAR</i>	N/A
J4	AVOID by tunnelling below	SMALL
J5	UNDER	LARGE
J6	OVER	MEDIUM
J6a	OVER	LARGE
J7	CLEAR (but link to MML crosses motorway)	LARGE
J8	UNDER	LARGE
J9	OVER	MEDIUM
J10	CLEAR	N/A
J11	AVOID by tunnelling below	N/A
<b>Toddington</b>	<i>CLEAR</i>	N/A
J12	CLEAR	SMALL
J13	CLEAR	SMALL
J14	UNDER	LARGE
<b>Newport Pagnell</b>	<i>Service area to be remodelled</i>	MEDIUM
J15	UNDER	LARGE
J15A	CLEAR	N/A
<b>Northampton</b>	<i>CLEAR</i>	N/A
J16	UNDER	LARGE
<b>Watford Gap</b>	<i>CLEAR</i>	N/A
J17	OVER	SMALL
J18	OVER	MEDIUM
J19	OVER/UNDER – <i>to be determined</i>	LARGE
J20	CLEAR	N/A

## Conclusion

This study has demonstrated that although the routeing of a high speed railway through existing motorway interchanges will inevitably pose significant challenges, they are always manageable and achievable. As set out in the case studies on the following pages, any local community impacts are generally compensated by the major connectivity gains that will be experienced all along the M1 corridor.

When contrasted with the apparently far greater challenges of constructing the proposed HS2 route through highly sensitive and unspoilt countryside, with around 50km of tunnel between London and Birmingham, the challenges of routeing of a high speed railway through existing motorway interchanges seem very small. Thus the concerns expressed by many as to the difficulties of establishing a high speed railway alongside the M1 appear at the least to be disproportionate, and it would seem reasonable to question both the provenance and the motivation of these concerns.

<p><b>J20</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 20 : M1 interchange with A4303</b>  <b>HSUK chainage : 134.7km</b></p> <p>Junction 20 is located in the valley of the River Swift to the east of Lutterworth. Here the M1 both dips sharply into the valley, and also swings locally to the east. This has the effect of eliminating any conflict with the much straighter alignment of HSUK, which crosses over the A4303 significantly to the west.</p> <p>Indeed, at this location the alignment of HSUK adheres much more closely to that of the former Great Central Railway, just to the west.</p> <p><b>Disruption Impact : <i>Minimal impact on A4303, with a single night-time road closure required to install bridge girders.</i></b>  <b>Community Impact : <i>Negligible</i></b>  <b>Community Benefit : <i>Significant, arising from new local services to Lutterworth along Leicester-Rugby-Coventry-Birmingham axis</i></b></p>
<p><b>J19</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 19 : M1 interchange with M6/A14</b>  <b>HSUK chainage : 129.3km</b></p> <p>The M1/M6 interchange is currently under reconstruction, and insufficient information is available to determine a definitive alignment here. However, it would appear that the north-south route of the M1 through the interchange will create a clear path for an adjacent railway, passing above the new east-west dual carriageway road linking the A14/M6. (Neither this road nor the new east-to-north slip roads are shown on the map, see left).</p> <p>The challenge appears to be of similar magnitude to that of threading HS1 through the approach spans of the Dartford Bridge. Only relatively minor impact on slip roads is anticipated, along with the possibility of minor compromises on railway alignment and hence achievable speed.</p> <p><b>Disruption Impact : <i>Significant</i></b>  <b>Community Impact : <i>Minimal</i></b>  <b>Community Benefit : <i>N/A</i></b></p>
<p><b>J18</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 18 : M1 interchange with A5/A428</b>  <b>HSUK chainage : 123.1km</b></p> <p>Junction 18 aka the 'Crick interchange' comprises the historic northern termination point of the first section of the M1, when opened in 1958. With Daventry International Rail Freight Terminal and other logistics centres located close by, it remains a highly important M1 interchange for which any closures will have significant impact.</p> <p>With the interchange located in a dip at the foot of the Cotswolds escarpment, HSUK's more onerous vertical alignment will naturally pass on a viaduct well above the interchange roundabout and the foot of the slip roads. Given the disruption sensitivities of the surrounding logistics businesses, it may be most appropriate to 'launch' the viaduct superstructure into place rather than erect by crane.</p> <p><b>Disruption Impact : <i>Minor impact on operation of interchange, largely confined to imposition of speed restrictions.</i></b>  <b>Community Impact : <i>Minimal</i></b>  <b>Community Benefit : <i>Minor</i></b></p>

<p><b>J17</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 17 : M1 interchange with M45</b>  <b>HSUK chainage : 120.4km</b></p> <p>Junction 17 is the divergence point of the M45 from the M1. With the opening of the 'Midlands Link' section of the M6 from Birmingham to the M1, the M45 has been relegated to a link of relatively minor strategic importance.</p> <p>HSUK will pass approx 100m to the west of the interchange, where the merging M45 is located significantly below ground level, to pass below the M1. This presents no significant obstacle to the vertical alignment of HSUK, which is significantly 'humped' to pass over the M45 – but will require the nearby A5 to be realigned to pass over HSUK.</p> <p><b>Disruption Impact : <i>Minor impact on M45 for installation of bridge girders.</i></b>  <b>Community Impact : <i>Minimal</i></b>  <b>Community Benefit : <i>N/A</i></b></p>
<p><b>S5</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>S5 : Watford Gap services</b>  <b>HSUK chainage : 118.0km</b></p> <p>At the location of Watford Gap services, HSUK has deviated approximately 600m from the line of the M1, and instead is following the A5 more closely. Hence HSUK should have no adverse effect upon Watford Gap services.</p> <p><b>Disruption Impact : <i>Minimal in general, Watford Gap services unaffected.</i></b>  <b>Community Impact : <i>Minimal</i></b>  <b>Community Benefit : <i>N/A</i></b></p>
<p><b>J16</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 16 : M1 interchange with A45/A4500</b>  <b>HSUK chainage : 106.0km</b></p> <p>Junction 16 is the northern access from the M1 to Northampton (210,000 population). As such it is one of the M1's more critical interchanges, and disruption during construction must be kept to an absolute minimum.</p> <p>HSUK will closely follow the vertical alignment of the M1, and it will similarly pass under the roundabout of the interchange. A thrust boring technique appears most appropriate, with precast concrete multi-cell boxes jacked through the earth fill embankments. Road plating will be required to minimise disturbance to the road surface. The west side slip roads will run close to the jacking works and will require protection.</p> <p><b>Disruption Impact : <i>Minor impact on operation of interchange, largely confined to imposition of speed restrictions.</i></b>  <b>Community Impact : <i>Minor</i></b>  <b>Community Benefit : <i>Significant, arising from HSUK's transformation of intercity links to Northampton</i></b></p>

<p><b>J15a /S4</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 15A : M1 interchange with A43 S4 : Northampton Services (fka Rothersthorpe)</b> <b>HSUK chainage : 100.5km</b></p> <p>Junction 15A was established in 1991, many years after the original opening of the M1, to provide an interchange with the upgraded A43 Northampton-Oxford road and an onward link to the South Coast at Southampton via the A34. Junction 15A surrounds the Northampton Service Area, and thus occupies a much greater plan area than a typical motorway interchange.</p> <p>Fortuitously, Junction 15A is located at a significant 'elbow' in the alignment of the M1, and the natural routeing of HSUK runs clear of the enlarged interchange, with only minor 'reverse curving' required.</p> <p><b>Disruption Impact : None</b> <b>Community Impact : Minimal</b> <b>Community Benefit : Significant, arising from HSUK's transformation of intercity links to Northampton</b></p>
<p><b>J15</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 15 : M1 interchange with A45/A508</b> <b>HSUK chainage : 96.3km</b></p> <p>Junction 15 is the primary access from the M1 to Northampton (210,000 population). As such it is one of the M1's more critical interchanges, and disruption during construction must be kept to an absolute minimum.</p> <p>HSUK will closely follow the vertical alignment of the M1, hence it will pass under the roundabout of the interchange. A thrust boring technique appears most appropriate, with precast concrete multi-cell boxes jacked through the earth fill embankments. Road plating will be required to minimise disturbance to the road surface. The west side slip roads will be temporarily diverted clear of the jacking works.</p> <p><b>Disruption Impact : Minor impact on operation of interchange, largely confined to imposition of speed restrictions.</b> <b>Community Impact : Minor</b> <b>Community Benefit : Significant, arising from HSUK's transformation of intercity links to Northampton</b></p>
<p><b>S3</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>S3 : Newport Pagnell Services</b> <b>HSUK chainage : 81.0km</b></p> <p>Newport Pagnell service area is located on the fringes of the Milton Keynes conurbation.</p> <p>The designed alignment of HSUK passes through the existing west side buildings and cuts across the slip roads. This will provide an opportunity to renew the 50+ year old facilities at Milton Keynes, and will require the relocation of the slip roads further north. It will also be necessary to relocate the motorway maintenance depot..</p> <p><b>Disruption Impact : Significant, requiring relocation of slip roads, reconstruction of main building and motorway overbridge and relocation of maintenance depot.</b> <b>Community Impact : Minor</b> <b>Community Benefit : Significant, arising from HSUK's transformation of intercity links to Milton Keynes</b></p>

<p><b>J14</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 14 : M1 interchange with A509</b>  <b>HSUK chainage : 76.7km</b></p> <p>Junction 14 is the primary access from the M1 to Milton Keynes (250,000 population). As such it is one of the M1's more critical interchanges, and disruption during construction must be kept to an absolute minimum.</p> <p>HSUK will closely follow the vertical alignment of the M1, and it will similarly pass under the roundabout of the interchange. A thrust boring technique appears most appropriate, with precast concrete multi-cell boxes jacked through the earth fill embankments. Road plating will be required to minimise disturbance to the road surface.</p> <p><b>Disruption Impact : <i>Minor impact on operation of interchange, largely confined to imposition of speed restrictions.</i></b></p> <p><b>Community Impact : <i>Minor</i></b></p> <p><b>Community Benefit : <i>Significant, arising from HSUK's transformation of intercity links to Milton Keynes</i></b></p>
<p><b>J13</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 13 : M1 interchange with A421/A507</b>  <b>HSUK chainage : 69.0km</b></p> <p>Junction 13 has recently been rebuilt to accommodate a major upgrade of the A421 MK-Bedford road. This has in turn necessitated an amendment of earlier HSUK alignments, to run to the rear of the interchange. HSUK vertical alignment is dictated by proximity of Bedford-Bletchley line (East-West rail) and will require diversion of Bedford Road to adjacent A4012 crossing of M1.</p> <p><b>Disruption Impact : <i>No impact on interchange, subject to diversion of Bedford Road clear of HSUK and the link to the East-West route</i></b></p> <p><b>Community Impact : <i>Minor</i></b></p> <p><b>Community Benefit : <i>Significant, arising from HSUK's transformation of intercity links to nearby Milton Keynes and Luton</i></b></p>
<p><b>J12</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 12 : M1 interchange with A5120</b>  <b>HSUK chainage : 59.0km</b></p> <p>Junction 12, just north of Toddington Services, is situated within a major blip in the otherwise relatively straight alignment of the M1. This has necessitated bridged crossings to north and south to accommodate the much straighter HSUK. The interchange's recent major reconstruction has significantly increased its physical 'footprint', but is still clear of the proposed HSUK alignment and the junction with the HSUK spur to the Midland Main Line to access Luton.</p> <p>Temporary local diversions of the A5120 will be required to allow construction of a new bridge over HSUK and the diverging Luton spur. This may require some alterations to the junction with the east side slip road.</p> <p><b>Disruption Impact : <i>Minor impact on interchange and on A5120</i></b></p> <p><b>Community Impact : <i>Minor</i></b></p> <p><b>Community Benefit : <i>Significant, arising from proximity to new intercity links delivered by HSUK to Luton and surrounding areas</i></b></p>

S2	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>S2 : Toddington Services</b>  <b>HSUK chainage : 57.5km</b></p> <p>Toddington service area is located just south of Junction 12.</p> <p>The designed alignment of HSUK passes significantly to the west of the service area, while the 'Luton spur' to the Midland Main Line passes just to the east. No significant disruption is anticipated.</p> <p><b>Disruption Impact : <i>Minimal</i></b>  <b>Community Impact : <i>Minimal</i></b>  <b>Community Benefit : <i>Significant, arising from HSUK's transformation of intercity links to Luton and surrounding areas</i></b></p>
J11	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 11 : M1 interchange with A505</b>  <b>HSUK chainage : 51.0km</b></p> <p>Junction 11 is located within the Luton/Dunstable conurbation which lies in a major gap in the Chiltern Hills. The surrounding urban development and the tortuous alignment of the M1 (in both vertical and horizontal senses) make Luton the one location where a close parallel alignment between high speed line and motorway cannot practicably be achieved. Instead, a 4.5km long tunnel is proposed, for HSUK to pass under the built-up area.</p> <p>Tunnelling under Luton will eliminate all HSUK's permanent impacts. Normal mitigations to control settlement arising from tunnelling below urban areas will be required.</p> <p><b>Disruption Impact : <i>No impact on motorway</i></b>  <b>Community Impact : <i>Minor, arising from potential settlement effects of tunnelling</i></b>  <b>Community Benefit : <i>Major, arising from proximity to new intercity links delivered by HSUK to Luton and surrounding areas</i></b></p>
J10	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 10 : M1 interchange with M1 branch to Junction 10A &amp; A1081 to Luton airport</b>  <b>HSUK chainage : 45.6km</b></p> <p>Junction 10 is located at a significant 'elbow' in the alignment of the M1, and the natural alignment of HSUK in accommodating this change of direction takes the new railway well clear of the motorway junction.</p> <p>However, there will be some impacts on the adjacent community of Slip End, especially the hamlet of Pepperstock to the south-east of the village. Here, the local topography dictates that the line will be located well below existing ground level, and it is proposed to construct a short length of 'green tunnel'.</p> <p><b>Disruption Impact : <i>No impact on motorway</i></b>  <b>Community Impact : <i>Significant, mostly mitigated by 'green tunnel'</i></b>  <b>Community Benefit : <i>Significant, arising from proximity to new intercity links delivered by HSUK to Luton and surrounding areas</i></b></p>

<p><b>J9</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 9 : M1 interchange with A5/A518</b>  <b>HSUK chainage : 42.0km</b></p> <p>The A5/A518 runs transverse to the alignment of the M1 in a dry Chiltern valley. The M1 drops steeply into the valley on either side, and the interchange itself comprises an overpass, with 'trumpet' slip roads to access the motorway.</p> <p>The more exacting gradient and vertical curvature requirements applicable to a high speed line mean that HSUK must pass on a viaduct above the valley at a significantly greater height than the motorway, and will pass above the A5/A518 and the west side slip roads, with no need for permanent realignment. Piers will be constructed clear of existing roads, and the viaduct spans will be installed either by launching, or by craning into position during short night-time blockages.</p> <p><b>Disruption Impact : Low</b>  <b>Community Impact : Minor</b>  <b>Community Benefit : Significant, arising from proximity to new intercity links delivered by HSUK to Luton and surrounding areas</b></p>
<p><b>J8</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 8 : M1 interchange with A414</b>  <b>HSUK chainage : 34.9km</b></p> <p>Junction 8 is the primary access from the M1 to Hemel Hempstead. As such it is one of the M1's more critical interchanges, and disruption during construction must be kept to an absolute minimum.</p> <p>HSUK will closely follow the vertical alignment of the M1, and it will similarly pass under the roundabout of the interchange. A thrust boring technique appears most appropriate, with precast concrete multi-cell boxes jacked through the earth fill embankments. Road plating will be required to minimise disturbance to the road surface. The west side slip roads will run close to the jacking works and will require protection.</p> <p><b>Disruption Impact : Minor impact on operation of interchange, largely confined to imposition of speed restrictions and diversion of slip roads.</b>  <b>Community Impact : Minor</b>  <b>Community Benefit : Commuter services to London improved through diversion to CrossRail. Better links to HSUK network at Milton Keynes</b></p>
<p><b>J7</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 7 : M1 interchange with A414</b>  <b>HSUK chainage : 33.0km</b></p> <p>Junction 7 is the former limited access interchange to the M10, now reclassified as the A414.</p> <p>Owing to tight curvatures on the M1, the HSUK trunk route is located at least 200m clear of the interchange roads, and thus would have no disruptive effect.</p> <p>However, a subsidiary route is also planned to follow the route of the A414, to join the Midland Main Line near Radlett, and thus provide HSUK with effective 4-track capability towards London (ie 2 tracks of dedicated high speed line and 2 tracks of Midland Main Line fast lines). This route requires the construction of a major viaduct across the M1, just south of the interchange; this will demand specialist launching techniques and perhaps a 24-hour closure of the motorway.</p> <p><b>Disruption Impact : Significant, but of limited duration</b>  <b>Community Impact : Minimal</b>  <b>Community Benefit : N/A</b></p>

<p><b>J6A</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 6A : M1 interchange with M25 HSUK chainage : 120.4km</b></p> <p>Junction 6A is the interchange between the M1 and the M25 and as such is one of the primary nodes of the national motorway network. Hence disruption during construction must be kept to an absolute minimum.</p> <p>HSUK's proposed alignment to the west of the M1 passes over two slip roads and the M25 itself. All are located at a level substantially below that of HSUK, and sufficient land exists between the roadways to construct the necessary viaduct piers. This will pose significant access challenges in delivering the necessary materials, but this can be mitigated by establishing temporary access bridges. The best option to install the viaduct superstructure would appear to be by 'launching' from the south side abutment.</p> <p><b>Disruption Impact : <i>Minor on operation of interchange from construction of viaduct piers and launching of superstructure</i></b>  <b>Community Impact : <i>None</i></b>  <b>Community Benefit : <i>N/A</i></b></p>
<p><b>J6</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 6 : M1 interchange with A405 HSUK chainage : 28.6km</b></p> <p>Junction 6 comprises an overpass junction, with the slip roads arranged in 'trumpet' format. With the M1/M25 Junction 6A immediately to the north not offering 'interior' connections (ie from south to east and west), this function is instead performed by Junction 6 on the M1, and the adjacent Junction 21A on the M25.</p> <p>The slip roads are of course level with the motorway, and this necessitates placing HSUK one level higher on a viaduct. Sufficient accessible land exists for the construction of viaduct piers.</p> <p><b>Disruption Impact : <i>Minor impact on operation of interchange, largely confined to imposition of speed restrictions.</i></b>  <b>Community Impact : <i>Minor</i></b>  <b>Community Benefit : <i>Minor</i></b></p>
<p><b>J5</b></p>	<p style="text-align: center;"><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p>	<p><b>Junction 5 : M1 interchange with A41/A4008 HSUK chainage : 24.5km</b></p> <p>Junction 5 is the primary access from the M1 to Watford, accessing both the A41 Watford Bypass and also the A4008 linking to central Watford. As such it is one of the M1's more critical interchanges, and disruption during construction must be kept to an absolute minimum.</p> <p>In this location, HSUK is closely aligned with the A41 in horizontal terms, but substantially below its vertical alignment. This enables it to pass well below the roundabout of the interchange. A thrust boring technique appears most appropriate, with precast concrete multi-cell boxes jacked through the earth fill embankments. Road plating may be required to minimise disturbance to the road surface.</p> <p><b>Disruption Impact : <i>Minor impact on operation of interchange, largely confined to imposition of speed restrictions.</i></b>  <b>Community Impact : <i>Minor</i></b>  <b>Community Benefit : <i>Minor</i></b></p>

<p><b>J4</b></p>	<div style="background-color: black; color: white; padding: 10px; text-align: center;"> <p><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p> </div>	<p><b>Junction 4 : M1 interchange with A41</b>  <b>HSUK chainage : 18.5km</b></p> <p>Junction 4 is a limited access interchange allowing M1 traffic to access the A41. Junction 4 is located on the crest of a hill overlooking Edgware</p> <p>In this locality, the M1 is steeply graded to match the topography. This necessitates a tunnelled routing for HSUK. Hence the high speed line will pass below the interchange with, aside from normal precautions against settlement, no disruption caused.</p> <p><b>Disruption Impact : <i>Minor impact on operation of motorway, arising from tunnelling settlement and construction of ground retention works on approach earthworks.</i></b></p> <p><b>Community Impact : <i>Minimal</i></b>  <b>Community Benefit : <i>None, aside from proximity to proposed HSUK interchange at Brent Cross</i></b></p>
<p><b>J3</b></p>	<p><b>(this junction does not exist)</b></p>	
<p><b>S1</b></p>	<p><b>(London Gateway services are more than 1km from the proposed route of High Speed UK)</b></p>	<p><b>London Gateway Services (fka Scratchwood)</b>  <b>HSUK chainage : N/A</b></p> <p>London Gateway services are more than 1km from the proposed route of High Speed UK, hence no impact is anticipated.</p> <p><b>Disruption Impact : <i>None</i></b>  <b>Community Impact : <i>None</i></b>  <b>Community Benefit : <i>Significant, arising from HSUK's proposed Brent Cross Interchange on the nearby Cricklewood railway lands</i></b></p>
<p><b>J2</b></p>	<div style="background-color: black; color: white; padding: 10px; text-align: center;"> <p><b>Ordnance Survey map extract with HSUK route superimposed redacted due to potential blight and copyright issues</b></p> </div>	<p><b>Junction 2 : M1 interchange with A1</b>  <b>HSUK chainage : 12.4km</b></p> <p>Junction 2 is a limited access interchange diverging to the east to connect the M1 to the A1. This interchange is located close on the east side of the Midland Main Line (MML). As HSUK is located on the west side of the MML, no impact on Junction 2 is anticipated.</p> <p><b>Disruption Impact : <i>None</i></b>  <b>Community Impact : <i>None</i></b>  <b>Community Benefit : <i>Major, arising from HSUK's proposed Brent Cross Interchange on the nearby Cricklewood railway lands</i></b></p>

J1

**Ordnance Survey map  
extract with HSUK route  
superimposed redacted  
due to potential blight  
and copyright issues**

**Junction 1 : M1 interchange with A406  
North Circular Road (Staples Corner)  
HSUK chainage : 8.9km**

Junction 1 comprises the M1's termination at the A406 North Circular Road. This is a multi-level interchange, in which the through North Circular passes over the Midland Main Line while the slip roads pass beneath.

HSUK avoids any significant disruption to Staples Corner by following the existing Midland Main Line alignment in both horizontal and vertical senses.

**Disruption Impact : *Minimal***  
**Community Impact : *Minimal***  
**Community Benefit : *Major, arising from  
HSUK's proposed Brent Cross  
Interchange on the adjacent Cricklewood  
railway lands***

# **APPENDIX M**

SUBMISSION TO:

**House of Commons SELECT COMMITTEE ON PUBLIC  
ADMINISTRATION & CONSTITUTIONAL AFFAIRS**

**Inquiry into Parliamentary & Health Service Ombudsman  
Report concerning HS2 Ltd community engagement**

RESPONDING ORGANISATION:

**HIGH SPEED UK**

AUTHORS OF RESPONSE:

**COLIN ELLIFF &  
QUENTIN MACDONALD**

DATE:

**FEBRUARY 2016**

**Detailed commentary on this submission is given in  
Section 13 of this report**

**House of Commons**  
**PUBLIC ADMINISTRATION AND CONSTITUTIONAL AFFAIRS COMMITTEE**  
**Inquiry into the Parliamentary & Health Service Ombudsman's Report**  
**"Report of the results of an investigation into a complaint about High Speed 2 Ltd (HS2 Ltd)"**  
***Submission by Colin Elliff and Quentin Macdonald of High Speed UK***

***Executive Summary***

- A. This submission is made by Colin Elliff and Quentin Macdonald of High Speed UK, based at Manor Farm, Church Lane, Nether Poppleton, York, YO26 6LF. We are both career railway engineers, having respectively over 30 and 50 years' experience in the industry.
- B. We do not have the precise details of the complaints from the residents of the 'Hamlet', which are the subject the Ombudsman's report, and our properties are not in any way affected by the HS2 proposals. Notwithstanding this, we wish to draw the Committee's attention to much wider technical deficiencies in HS2 Ltd's conduct of the HS2 project which we believe to be the root cause of the resident's complaints.
- C. In our view, HS2 Ltd. has erroneously decided to construct a new, extremely high speed line, (faster than any other in the world) which is completely segregated from the existing rail network. The result is that HS2 cannot deliver improved rail connectivity or sufficient additional new capacity or enhanced performance of the existing rail network. This is failure writ large and it will have ramifications which go far beyond the geographical scope and remit of the Ombudsman's report.
- D. The result of these failures will be a dysfunctional national rail 'network' which will totally fail to deliver the promised national economic and environmental benefits, and which, locally, will have excessive and disproportionate impacts on the communities through which it passes.
- E. The resentment of the communities affected by HS2 has been made far worse by HS2 Ltd's persistent refusal to provide rational and comprehensible technical justification for its proposals.
- F. Inevitably, this leads directly to complaints from affected residents and businesses.
- G. Any justification for HS2 appears to stem from HS2 Ltd.'s core assertions that it comprises the only practicable proposal for a new-build UK high speed railway. This is simply not true. High Speed UK stands as a fully designed, entirely practicable, environmentally friendly and cheaper alternative to HS2. [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk)
- H. Furthermore, HS2 Ltd claims that the extreme speed proposed for HS2 (a world record 400km/h [250 mph]) is both fundamental to the business case for HS2 and is also necessary to 'future-proof' the new infrastructure simply does stand up to any rational analysis.
- I. The High Speed UK scheme has been developed to a point where its benefits over HS2 can be clearly demonstrated. HSUK has comprehensively superior performance compared with HS2. It offers many, many more journey time reductions across the UK than HS2, is far cheaper and has a Benefit Cost Ratio twice that of HS2. It does far less environmental damage than HS2, including avoiding the Chilterns AONB entirely and also offers significant reductions in CO<sub>2</sub> emissions. The best that HS2 can claim is to be carbon neutral.

- J. HSUK has also identified an 'audit trail' which shows that on there have been failures of due process which have led directly to the development of the badly conceived HS2 scheme and the rejection of the far superior alternative, High Speed UK.
- K. HSUK has repeatedly attempted to engage with HS2 Ltd and the Government, to demonstrate that there is a far better scheme available which offers far greater connectivity and much more capacity for a significantly reduced cost and far less environmental impact.
- L. To date, neither HS2 Ltd nor the Government has been willing to study the HSUK scheme and evaluate its benefits when compared with HSUK.
- M. HSUK therefore asks the committee to invite us to give a 45 minute presentation on the benefits of the HSUK scheme.

**End of Executive Summary**

## Introduction

1. This response is made by Quentin Macdonald and Colin Elliff of High Speed UK, based at Manor Farm, Church Lane, Nether Poppleton, York, YO26 6LF. We are both career railway engineers, having respectively over 50 and 30 years' experience in the industry. We are deeply concerned at the huge deficiencies of the HS2 proposals, from a number of viewpoints particularly capital and operating cost, connectivity gain (or lack of it), operational performance and environmental impact. These concerns have led us to develop High Speed UK which is a complete alternative to HS2.
2. High Speed UK (HSUK) comprises a suite of proposals for:
  - New-build high speed lines extending from London to Glasgow, and across the Pennines to Manchester and Liverpool.
  - Complementary upgrades to existing routes, particularly in the Midlands.
  - Full integration between new and existing/upgraded lines to form a hugely enhanced national rail network in which all principal cities of the Midlands, North and Scotland will be fully interconnected, and also directly connected to Heathrow.

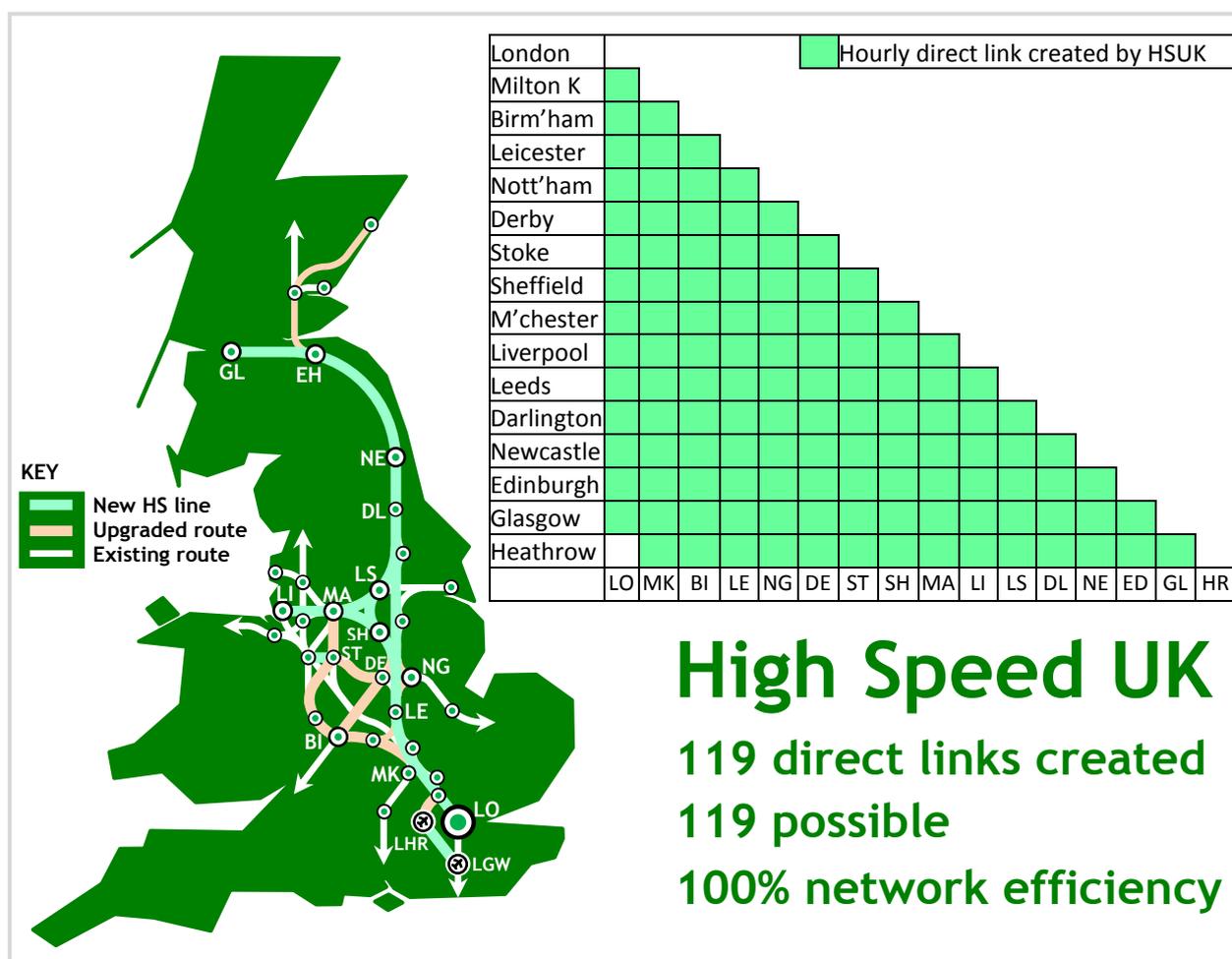


Figure A1.1 : High Speed UK National Network and Connectivity

3. HSUK's routes, and performance as a network, are shown in the diagram above, and should be contrasted with Figure A1.2 (see Appendix, Section A1) which defines the

performance of HS2 and HS3. For further appreciation of the HSUK and HS2 proposals, see the 'Britain at Night' diagrams in Annex B.

4. As a network, HSUK outperforms HS2 by several orders of magnitude. More detailed descriptions of High Speed UK and comparisons with HS2 are given in Appendix Section 4, with further supporting information in Sections A1-12.
5. The central theme of this submission is that HS2's excessive and disproportionate impacts upon the residents of the 'Hamlet', that have been highlighted in the Ombudsman's report, are a direct consequence of HS2 Ltd's failure to design HS2 as a balanced and integrated national network, best serving the transport needs of the nation.
6. The extent of HS2 Ltd's failures, and the far more favourable outcomes that are possible through a radically different technical approach, are illustrated by High Speed UK's vastly superior performance as a national network, and much lower environmental impact.
7. HS2 Ltd's failures are thoroughly documented in the report *HS2 : High Speed to Failure* (compiled by Colin Elliff) which is included as an Appendix to this submission.

### ***Conflicts between local communities and national infrastructure projects***

8. There is a natural tension in the development of any national infrastructure project, between the interests of the nation which should benefit from the project and the interests of local communities (such as the 'Hamlet', the concerns of whose residents are the subject of the Ombudsman's report) which will suffer its impacts, yet gain little or nothing in the way of benefits from the proposal.
9. It seems inevitable that this tension will at times give rise to complaints from local residents who believe that the project's promoters have not properly taken their interests into account.
10. In terms of transport infrastructure such as new high speed railways, these tensions can best be minimised through the simple expedient of following existing 'corridors', particularly those of long-established motorways such as the M1. In these cases:
  - the motorway's noise pollution and other adverse effects are already so high that a new parallel high speed line would have little or no additional impacts;
  - these existing nuisances have deterred residential development adjacent to the motorway, leaving a generally clear corridor for construction of a parallel high speed line;
  - the M1's generally straight alignment, with few significant curves, is suitable for a high speed line on a 'close parallel' alignment, with few major deviations;
  - if appropriately integrated with the existing network, a new high speed line can bring huge connectivity benefits to the major communities (such as Luton, Milton Keynes, Northampton, Coventry and Leicester) that are located along the M1 corridor. Any local intrusion that does occur can therefore be mitigated against local connectivity benefits.

## ***Viability of M1 Corridor***

11. The viability of the M1 corridor has subsequently been fully validated by the detailed design work undertaken by High Speed UK. This work includes:
  - Design of horizontal alignments (ie straights, transitions and circular curves) at 1:25,000 scale (examples are shown in Annex A);
  - Development of complementary vertical alignments;
  - On the basis of these alignments, development of integrated national timetable providing high quality high speed intercity services to all M1 corridor communities, and offering >45% journey time reductions across the entire national network.
  - On the basis of these alignments, development of detailed comparative cost estimates which show HSUK to cost of the order of 33% less to construct than HS2.
12. It would therefore seem reasonable to expect HS2 Ltd to have thoroughly investigated the feasibility of the M1 corridor, before selecting its favoured intrusive rural alignment which will cause major adverse impacts upon the communities along its line of route, including the 'Hamlet'.
13. However, extensive review of HS2 Ltd documentation (see Appendix, Section 9) indicates that all possible HS2 route options aligned via the M1 corridor were dismissed very early in the option sifting process, before any detailed technical consideration was applied. This was despite the M1 corridor comprising the only practicable route to avoid the Chilterns AONB.
14. Moreover, this review indicates (see Appendix, Section 7) that none of the assertions offered to dismiss the M1 corridor stand up to serious technical examination.
15. Given that HS2 Ltd accorded an M1-aligned route no detailed technical consideration, it is valid to query the technical basis of these assertions.

## ***Issues with HS2 Ltd's Design for future 400km/h operation***

16. We believe that the volume and intensity of residents' complaints are greatly exacerbated by HS2's design for the unprecedented speed of 400km/h (250MPH).
17. It must be noted that HS2 is planned initially to operate at 360km/h; 400km/h represents no more than an aspiration for future high speed running, which most likely will never be realised. Current trends indicate that high speed rail operators in other much larger countries are drawing away from 'extreme speed' operation; the new high speed line between Beijing and Shanghai has been designed for 380km/h, but will only operate at 300km/h.
18. Design for future 400km/h operation dictates near straight alignments, in both the horizontal and vertical sense. This makes it impossible to follow existing transport corridors (such as the M1), where the line's environmental and property impacts can be minimised; instead, it compels intrusive 'direttissima' rural alignments where impacts are much greater.

19. Design for 400km/h also makes it impracticable to introduce the necessary deviations to avoid small communities (such as the ‘Hamlet’ cited in the Ombudsman’s report) that lie in the path of the new line.
20. Our experience in designing high speed lines demonstrates clearly that for a design speed of 400km/h, and the necessary radius of curvature of circa 7900m, it is very difficult even to avoid the major urban communities and sensitive features along the line of route; and with alignments thus dictated, it is often not possible to avoid the relatively minor communities such as the ‘Hamlet’.
21. However, these issues greatly diminish as the requirement for extreme speed reduces. A railway designed for ‘conventional’ high speed of 300km/h (186MPH, as per HS1) requires a minimum radius of 4350m. A railway designed for the current UK maximum speed of 200km/h (125MPH) requires a minimum radius of 1800m.
22. At these reduced radii of curvature, it becomes progressively easier to accommodate the local changes in alignment that would allow HS2 to pass clear of communities such as the ‘Hamlet’.
23. Design for reduced speed also makes it possible to follow existing transport corridors much more closely. This is amply illustrated by the detailed route design so far undertaken for the alternative High Speed UK proposals. This demonstrates conclusively that the M1 corridor can accommodate a parallel 4-track high speed line, designed with a minimum radius of 5700m for a maximum speed of 360km/h (225MPH).
24. Given likely future operating speeds (as discussed in foregoing paragraphs), 360km/h would appear to represent all the high speed that the UK could possibly require. At this speed, it is possible to achieve a London-Glasgow journey time of 2h25m, well within the headline business case requirement for a 3 hour journey time between the 2 cities. (It should also be noted that even at a lesser maximum speed of 300km/h, a London-Glasgow journey time of 2h45m can still be achieved.)
25. Operating at 360km/h maximum speed, but at much lesser speeds as dictated by local circumstances, HSUK can offer >45% average journey time reductions across the entire intercity network. This is amply demonstrated by the timetable developed by HSUK.
26. HSUK’s route design also comprehensively discredits all of the reasons offered by HS2 Ltd to dismiss the M1 corridor (see Appendix, Section 7).
27. All the development work undertaken for HSUK demonstrates unequivocally that in a densely populated country with an existing intensively-operated rail network, design for extreme speed to benefit a few highly selective journeys is actually counter-productive to the more fundamental requirement for an efficient, balanced and fully integrated national rail network addressing the transport needs of the vast majority of the population.
28. Given these competing influences, it would therefore seem reasonable to expect HS2 Ltd to have provided thorough technical justification for adopting its 400km/h design standard. This consideration should include structured consideration of the ‘pros and

cons' of a range of speeds, rising in progressive increments (eg 200/240/280/320/360/400/440km/h), all with the aim of identifying the optimum speed giving the best balance of benefits against costs and impacts.

29. However, our review of HS2 Ltd's technical documentation (see Appendix, Section 6.2) indicates clearly that no such structured process ever took place.
  - HS2 Ltd was never remitted to design HS2 for a maximum speed of 400km/h.
  - The decision to adopt 400km/h as a design standard appears to have been taken in an arbitrary manner.
  - HS2 Ltd appears only to have considered the benefits of high speed ie reduced journey time and the associated economic benefits.
  - There appears to have been little or no balanced considerations of the associated drawbacks eg increased energy use and CO<sub>2</sub> emissions, increased maintenance costs, increased cost of structures and the increased costs and intrusion arising from forcing the new line away from established transport corridors. A full list of the drawbacks of extreme speed is given in Appendix Section 6.2.
  - Of particular concern is HS2 Ltd's apparent failure to recognise that its specification for the extreme speed of 400km/h works against the interests of a fully integrated national network, and also dictates the intrusive rural alignments that have led to the excessive impacts upon the 'Hamlet', and many other communities.

### ***HS2 Ltd's Failure to Provide Reasonable Technical Justification***

30. A further factor that appears to have aggravated relations between HS2 Ltd and the residents of the 'Hamlet' has been HS2 Ltd's persistent failure to provide rational and comprehensible explanations for how HS2's route has been selected, or why it is necessary to build HS2 as the fastest railway in the world.
31. We believe that if HS2 Ltd had managed to present a compelling case why destruction of their community was vital for the national interest, the residents of the 'Hamlet' would probably have been far more amenable to accepting HS2's proposals.
32. We have not had sight of any reports provided by HS2 Ltd to residents of the 'Hamlet', to justify the routing decisions that have determined HS2's route through their community. However we would comment that if the rationale presented was of the standard offered by HS2 Ltd to justify their wider proposals, it is not surprising that the residents remain firmly opposed to HS2, to the extent of calling for the intervention of the Ombudsman.
33. All justifications for HS2 that we have so far seen appear to stem from two core assertions:
  - HS2 comprises the only practicable proposal for a new-build UK high speed railway;

- HS2's extreme design speed of 400km/h is both fundamental to its business case and necessary to 'future-proof' the new infrastructure against further technological developments.
34. Both these assertions are thoroughly discredited by the existence of High Speed UK, offering greater and more widespread journey time reductions for lesser maximum speed, and lesser environmental impact.
35. Moreover, it would seem to follow logically, that if our own High Speed UK proposals do outperform HS2 as comprehensively as our analysis suggests, there can be no reasonable justification for HS2 Ltd to offer to the residents of the 'Hamlet'.

### ***Issues with the Process by which HS2 has developed***

36. We believe that HS2 Ltd's misguided selection of its Chiltern-aligned rural route (and associated dismissal of the M1 corridor) and its arbitrary adoption of its 400km/h design standard are part of a much wider failure of due process that has compromised all stages of HS2's development including:
- Remit formulation;
  - Option selection;
  - Design focus on issues of 'line', rather than 'network';
  - Public consultation.

### ***HS2 Remit Formulation (for further details see Appendix Section 5)***

37. HS2's remit, in particular its effective specification of the proposed Old Oak Common interchange, predetermined its rural route and prevented fair consideration of the M1 corridor. Although this did not necessarily predetermine the part of HS2's route that affects the 'Hamlet', it set HS2 upon an inappropriate broad 'corridor' that would, in whatever final designed alignment, adversely affect far more similar communities, than would be affected by an M1-aligned route.

### ***HS2 Option Selection (for further details see Appendix Section 9)***

38. As previously noted, the option selection process failed to give fair and balanced consideration to M1-aligned alternatives, which were dismissed unduly early in the sifting process. Again, this has the effect of imposing HS2 upon sensitive locations such as the 'Hamlet'.

### ***HS2 Design Focus (for further details see Appendix Section 6)***

39. At all times, HS2 Ltd's focus has been upon developing a superfast and stand-alone high speed line, rather than upon developing an integrated national network that will effectively connect the nation.
40. This has led to a narrowly-focussed mindset in which the achievement of minimised journey times between a few arbitrarily selected points has assumed far more importance than the achievement of improved journey times and enhanced

connectivity and capacity on the many hundreds of journeys that comprise the national rail network.

41. This mindset, coupled with unrealistically high monetary value placed on each minute 'saved' on a journey and a technocrat-driven desire to build the fastest railway in the world, has led directly to the arbitrary adoption of HS2's 400km/h design standard.
42. A rational analysis of HS2's performance as a network based upon direct links established between principal UK centres (see Appendix, Section A1) amply demonstrates HS2's complete inadequacy in this respect.
43. It is particularly important to note that HS2's first stage from London to the West Midlands was designed with no consideration at all of a national network (see Appendix, Section 10.4 and Executive Summary). Some scant consideration was given to a variety of options for subsequent stages, but all these options were predetermined by HS2's Chiltern-aligned London-West Midlands first stage. On this basis, any configuration of national network based upon an M1-aligned spine was dismissed from consideration.
44. HS2 Ltd's only apparent concession to 'network design' has been to outsource to Local Transport Authorities and to Network Rail the task of designing local connections to HS2's generally isolated stations.
45. Our experience in designing the alternative High Speed UK proposals shows clearly the folly of such a disjointed design approach. Far superior network performance - in terms of both achieved journey time reductions and direct high speed connections between regional cities - can be achieved by a fully integrated approach to network design, and by aligning new high speed lines with existing transport corridors such as the M1, and by serving the major population centres located along these corridors.
46. This naturally eliminates any requirement for HS2's intrusive rural alignments, and its extreme impacts upon communities such as the 'Hamlet'.
47. Under HSUK's alternative approach, it is not necessary to design for such extreme speed as has been the case with HS2, and it is much easier to avoid undue impacts on any communities that might lie in the path of new HSUK infrastructure.

### ***Official HS2 Consultations (for further details see Appendix Section 11)***

48. High Speed UK, either in its current name or as 'High Speed North', has engaged fully with the official consultations undertaken by HS2 Ltd, and has submitted responses in:
  - July 2011 - Phase 1 consultation (as High Speed North);
  - July 2013 - Phase 1 Draft Environmental Statement (as High Speed North);
  - January 2014 - Phase 2 consultation (as High Speed UK);
49. These responses explained at considerable length that the HS2 proposals are entirely inappropriate to the transport needs of the UK, for an efficient, balanced and integrated national network. The responses also put forward the alternative High Speed UK proposals as an 'exemplar' to illustrate how an alternative design approach could deliver much superior outcomes.

50. As well as highlighting HS2's undue and unnecessary impact on local communities such as the 'Hamlet', the HSUK responses also drew attention to HS2's completely inadequate performance with regard to CO<sub>2</sub> emissions. By its own estimates, HS2 will have a broadly 'carbon neutral' effect across the transport sector. This is at a time when the UK is legally committed by its own 2008 Climate Change Act to cutting emissions across all sectors to 20% of current levels.
51. HS2's failure to conform with contemporary environmental legislation can be attributed to its failure as a network, to achieve widespread connectivity and capacity improvements across the entire rail network and thus enable step-change road to rail modal shift and corresponding reductions in transport CO<sub>2</sub> emissions. It therefore seems legitimate to enquire, if HS2 - the primary intervention in UK surface transport for the next half century - fails to achieve meaningful CO<sub>2</sub> reductions, then which other project will deliver?
52. Given the totality of HSUK's consultation responses, which have shown HS2 to be completely unfit for purpose as an intercity railway system, it would seem reasonable to expect at least one of the following outcomes:
  - Full engagement between HS2 Ltd and HSUK to resolve the many issues raised;
  - A detailed rebuttal of HSUK's many concerns;
  - Appropriate changes to HS2 Ltd's own proposals;
  - Proper reporting to Parliament of unresolved technical issues.
53. None of the above has happened, in which case it seems fair to conclude that the entire consultation process has failed in its basic purpose of moderating official proposals by engagement with the public.

### ***Importance of 'Due Process'***

54. Due process might seem to some to be a somewhat fussy and tardy impediment to expeditious development of vital national infrastructure, but a measured technical approach, whereby remits are verified as being appropriate, options are selected to ensure the optimum balanced outcome and public consultation responses are properly heeded, is essential to ensure that costly mistakes do not happen.
55. The many due process failures in the development of HS2 outlined in the preceding paragraphs all carry huge costs that will reverberate for generations to come:
  - HS2's excessive cost, measured in double-digit billions of pounds.
  - HS2's failure to achieve CO<sub>2</sub> emissions reductions in line with the requirements of the 2008 Climate Change Act
  - A missed 'once in a century' opportunity to transform the national rail network into a balanced and symmetrical system that will efficiently connect the nation.
56. It is difficult to avoid the conclusion that all of the processes underpinning HS2 have failed to deliver the optimised national rail network that must surely be the goal of the UK high speed line initiative. Instead, it would appear that the entire process

has, either by accident or by design, been perverted to the baser cause of validating the flawed idea that the 'experts' at HS2 Ltd first thought of.

57. All this has had the unintended consequence of putting vital national infrastructure in the wrong place where it will cost more and perform less effectively in the national interest; and in so doing, it also causes excessive and disproportionate impacts upon the communities (such as the 'Hamlet') through which it passes.

### ***Conclusion***

58. We believe that the failings in HS2 Ltd's community relations with the residents of the 'Hamlet', that have been exposed in the Ombudsman's report, are indicative of a much wider 'due process' failure that compromises the entire development of the HS2 project.
59. The failures of HS2 are amply illustrated by the existence of the alternative High Speed UK design, which delivers all of the outputs required by politicians, and much more besides, and is achievable at much reduced cost and environmental impact - and of course avoids HS2's intrusion upon the residents of the 'Hamlet', and many other communities also.
60. We consider that the failures that we have identified in this submission are so widespread and systemic that it will be necessary for the Government to set up a Public Inquiry whose terms of reference would include but not be limited to:
- Establishing whether the claims made by HSUK in this paper about the deficiencies of HS2 and the superiority of HSUK are justified;
  - Establishing the reasons why the HS2 proposals have progressed so far towards legislative powers without adequate technical or procedural scrutiny;
  - Establishing how other apparently superior proposals have been dismissed, without justification;
  - Then, if the HSUK claims are shown to be justified, recommending a way to proceed to deliver to the UK the properly integrated High Speed rail system that it needs and deserves.
61. We will of course be pleased to co-operate fully with this Inquiry.
62. **END OF MAIN TEXT OF SUBMISSION**
63. **APPENDIX CONTINUES AFTER ANNEX A AND ANNEX B**

# APPENDIX

TO HIGH SPEED UK SUBMISSION TO  
HOUSE OF COMMONS  
PUBLIC ADMINISTRATION &  
CONSTITUTIONAL AFFAIRS COMMITTEE

# HS2

## UNDER THE MICROSCOPE

(Submitted to PACAC as ‘HS2 : High Speed to Failure’,  
retitled to avoid confusion with other HSUK publications)

### An evidence trail of wrong decisions and missed opportunities

A review by

**Colin Elliff** BSc CEng MICE

<b>Date</b>	<b>11<sup>th</sup> February 2016</b>
<b>Purpose</b>	Submitted as Appendix to HSUK response to HoC Public Administration & Constitutional Affairs Committee inquiry re Ombudsman’s ‘Report of the results of an investigation into a complaint about High Speed 2 Ltd (HS2 Ltd)’

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## Executive Summary

The Government's HS2 proposals, for a new network of high speed lines linking the UK's primary cities, is set to transform intercity travel. Greatly reduced journey times and enhanced network capacity are promised, and from this it is predicted that huge economic benefit will follow. The HS2 project will demand the investment of huge sums, currently estimated at upwards of £60 billion.

With this amount of public money at stake, it is reasonable to expect that all necessary due processes of option selection and optimisation have been rigorously applied to ensure that HS2 is the best possible scheme, delivering the best possible balance of national benefit against cost.

But the existence of the High Speed UK proposals, offering far greater connectivity and capacity gains for far less cost, and backed up by detailed route design and timetabling, shows clearly that HS2 cannot be the best possible scheme. This then raises the question, of how a Government mega-project, on which many hundred million pounds have already been spent, could have failed so badly.

This study identifies the evidence trail, within the official documentation of the HS2 project, that clearly demonstrates this failure. This evidence trail shows how the Government - or more precisely, its advisors in the DfT and HS2 Ltd - have failed to correctly apply the due processes necessary to ensure development of the best possible scheme, bringing the greatest possible national benefit.

These failures - ranging from the biased and unbalanced remit, to the misguided technical specification, the incompetent option selection process and the dismissal of contrary consultation responses - revolve around the central contradiction of the HS2 project. HS2 has been remitted and developed as a high speed line - but to bring greatest benefit to the UK, it must function efficiently as a network.

These failures are summarised in the table on the following page, but can be illustrated in one critical dysfunctionality:

- The first stage of HS2, from London to the West Midlands, was selected with no consideration of its performance in a national network.
- All options considered for further development of the HS2 network were based upon this London-West Midlands stem.
- HS2 Ltd excluded the alternative HSUK scheme on the excuse that it did not comply with the selected London-West Midlands stem.
- HSUK was developed with its M1-aligned spinal route running clear of the West Midlands for the precise purpose of forming the optimum UK intercity network, providing the greatest possible connectivity between the UK regions.

These issues have been repeatedly explained to HS2 Ltd. Yet HS2 Ltd remains focussed upon its self-remitted task, to build a stand-alone superfast high speed line, that is entirely contradictory to the development of an efficient UK network delivering optimum economic and environmental benefits.

This study sets out the costs of HS2's multiple failures:

- £20 billion extra construction cost.
- Integrity of UK rail network destroyed.
- Hard-wired London-centricity in UK transport system.
- Lost opportunity for step-change reduction in UK transport CO<sub>2</sub> emissions.
- Needless environmental damage in Chilterns AONB and other rural areas.

This study also calls for a wide-ranging independent public inquiry into these failures.

## HS2 : Under the Microscope : Key Findings

Section		Issue
HSUK vs HS2 Comparisons	4 App <sup>x</sup> A	All technical comparisons indicate that High Speed UK vastly outperforms HS2, on almost any conceivable criterion including cost - circa £20bn cheaper to build
HS2 Remit	5	HS2's remit failed to stipulate any outcomes, for instance a better-balanced intercity rail network in which all major city regions were directly linked.
	5	The remit was heavily loaded to favour a Chiltern-aligned route.
	5	The effective specification of HS2's proposed Old Oak Common interchange prevented fair consideration of alternative schemes routed via the M1 corridor.
Checking of Assumptions	6	Development of HS2 has been predicated on several unverified and false assumptions, in particular stand-alone operation and 400km/h design speed. These leave HS2 unable to perform efficiently as a network.
Option Selection Procedure	7	None of the justifications given to reject the M1 corridor stand up to serious technical examination.
	8	No consideration was given to the benefits that high speed rail might bring to M1 corridor communities.
	9	HS2's option selection procedure dismissed all M1-aligned options very early in the sifting process, with no detailed consideration given.
	10	HS2's Chiltern-aligned first phase route was selected with no consideration of how it would perform as part of a national high speed network.
Consideration of Future UK High Speed Network	10	The cursory consideration given to HS2's further development as a national network is highly flawed and inconsistent.
	10	HS2 Ltd's <i>Report to Government</i> details how the HSUK proposals were dismissed for their failure to pass through the West Midlands - in other words, for not complying with HS2's flawed Chiltern-aligned first stage, which was never designed as part of a network.
Consultation Process	11	The Government has ignored and suppressed dissenting views, either when presented as responses to official Consultations, or in other forums.
Consequences	12	Adoption of the Government's favoured Chiltern-aligned first stage route is central to the multiple failures of the HS2 project.
'Competence Gap' in HS2 Process	13	There appears to be a fundamental 'competence gap' in the HS2 process, with excessive focus upon the remitted task of building a high speed line, and no understanding of the true challenge, to develop an efficient national rail network.
Single Option Issues	14	Presentation of HS2 as a single option has had the effect of suppressing both debate and due process.

# **APPENDIX N**

PETITION TO:

**HOUSE OF LORDS HS2 SELECT COMMITTEE  
CONSIDERING HYBRID BILL FOR PHASE 1 OF THE  
HS2 PROJECT**

RESPONDING ORGANISATION:

**HIGH SPEED UK**

AUTHORS OF RESPONSE:

**COLIN ELLIFF &  
QUENTIN MACDONALD**

DATE:

**APRIL 2016**

**Detailed commentary on this submission is given in  
Section 14 of this report.**

## PETITION COVER SHEET

**THIS SHEET MUST BE COMPLETED IN FULL AND ATTACHED TO  
THE FRONT OF YOUR PETITION**

Contact details of first petitioner: Name: Colin Stuart Elliff Address: 20 Hartley Road, Harrogate, North Yorkshire. Post code: HG2 9DQ Daytime telephone: 01423 569600 Mobile: 07570 812158 e-mail address: colin@highspeeduk.co.uk	Contact details of second petitioner: Name: Quentin John Angus Macdonald Address: Manor Farm, Church Lane, Nether Poppleton, York. Post code: YO26 6LF Daytime telephone: 01904 339944 Mobile: 07771 995504 e-mail address: quentin@highspeeduk.co.uk
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We prefer to be contacted (a) directly [] (b) via our agent [] (please tick)

We understand:

4. that a copy of this petition, including any contact details which we have included but without our signatures, will be placed on the parliamentary website and a hard copy will be made available to anyone who asks for it.
5. that a copy of this petition together with this sheet will be:
  - a. kept in the Private Bill Office and subsequently kept as a record of Parliament in the House of Lords Record Office (where it can be accessed by the public under the Freedom of Information Act 2000);
  - b. will be made available to the Parliamentary Agent responsible for the bill once my petition has been deposited in the Private Bill Office.
6. that the personal information supplied above and on the petition may be kept in a database by either or both Private Bill Offices. These databases may be used to store summaries of e-mails and/or conversations for the purpose of keeping track of procedural advice/information given to the parties or received from them. This information will only be shared between the Private Bill Offices unless prior permission has been obtained from the petitioner/agent concerned.

We agree to obey and observe the orders and practice of the House of Commons and any rules prescribed by the Speaker in relation to the proceedings on this petition.

Signature of petitioners:

HIGH SPEED RAIL (LONDON – WEST MIDLANDS) BILL

Against – on Merits – [By Counsel], &c.

To the Honourable the Commons of the United Kingdom of Great Britain and Northern Ireland in Parliament assembled.

THE HUMBLE PETITION of Colin Stuart Elliff and Quentin John Angus Macdonald

SHEWETH as follows:-

2 A Bill (hereinafter referred to as “the bill”) has been introduced and is now pending in your honourable House intituled “A bill to make provision for a railway between Euston in London and a junction with the West Coast Main Line at Handsacre in Staffordshire, and a spur from Water Orton in Warwickshire to Curzon Street in Birmingham; and for connected purposes”.

2 The Bill is presented by Mr Secretary McLoughlin.

3 Objection is made to the entire bill, and to the definition of its ‘Principles’ as set out in the Draft Directions to the HS2 Hybrid Bill Committee. It must be stressed that these objections are not against the principle of a high speed line from London to the West Midlands, but instead to the detail of the route (as effectively defined by intermediate and destination stations listed as comprising the bill’s ‘Principles’) which then predetermines the configuration of further phases of UK high speed rail development and hugely limits its network performance, in terms of the connectivity and capacity that it can offer.

It is acknowledged that these objections go beyond the normal scope of petitioning against a Hybrid Bill, but your Petitioners’ reasons for so objecting are set out in greater detail in Item 6.

4 Your Petitioners are:

Colin Elliff BSc CEng MICE of  
20 Hartley Road, Harrogate, North Yorkshire

and

Quentin Macdonald BSc (Eng) CEng MIET FIRSE of  
Manor Farm, Church Lane, Nether Poppleton, York.

Your Petitioners are experienced railway engineers who have considerable experience in the development of UK high speed rail schemes. Your Petitioners have submitted responses to the various Government Consultations on HS2, as follows:

- July 2011 HS2 Phase 1 (London-West Midlands)
- July 2013 HS2 Phase 1 (Draft Environmental Statement)
- January 2014 HS2 Phase 2 (West Midlands-Manchester/Leeds)

Due to conflict of interest issues pertaining to his then railway industry employment, consultation responses prepared in 2011 & 2013 on behalf of your Petitioner Colin Elliff were submitted under the alias of 'Christopher Quayle'.

These Consultation responses consistently set out the advantages of an alternative suite of high speed rail proposals (namely High Speed North, and latterly retitled High Speed UK), developed to radically different principles of full integration, and adherence to existing transport corridors. These responses also set out HS2's many deficiencies. Taken overall, those studying the consultation responses should have been left in no doubt that an alternative to HS2 was available, that:

- Satisfied all the key requirements for HS2;
- Was considerably cheaper to build;
- Performed considerably better than HS2 on a huge range of criteria, including connectivity, capacity and reduced transport CO<sub>2</sub> emissions.

Despite raising these issues:

- Your Petitioners have never received any counter-rationale that might allay their concerns.
- No attempt was made by the Government or their advisors (at DfT or HS2 Ltd) to engage with your Petitioners in the investigation of these concerns.
- No change has been made to the HS2 proposals in respect of these concerns.
- No information has been provided to Parliament as to the substance of these concerns, so that Parliament might debate these matters.

5 Your Petitioners believe that they are 'directly and specially affected' by the proposals set out in the bill, for the following reasons:

- The excessive focus upon London and general lack of connectivity of HS2's proposed 'Y' network is an inevitable direct consequence of the proposals set out in the Bill. This will have an adverse economic effect upon the region in which your Petitioners and their families live, (along with most other UK regions).
- Although outline proposals have been advanced for 'HS3' trans-pennine high speed links, these proposals are being effectively retro-fitted onto the established HS2, whose routes and stations were designed with no thought for improved trans-Pennine connectivity.

Hence HS3 will do little or nothing to mitigate HS2's adverse economic effect upon the region in which your Petitioners and their families live.

- The lack of capacity on HS2's 2-track London to West Midlands section (as covered by the Bill). This is insufficient to allow high speed services to all Midlands, Northern and Scottish destinations currently served by the intercity network, and the result will inevitably be a 2-tier, 2-speed Britain. Again, this will have adverse impacts on the economy of the region in which your Petitioners and their families live.
- HS2 fails to achieve significant reductions in transport CO<sub>2</sub> emissions. This is in clear contravention of the spirit (if not the letter) of the 2008 Climate Change Act. This failure is directly attributable to HS2's huge connectivity and capacity deficiencies, and this will affect every UK citizen.
- The Government's failure to engage with alternative and apparently superior alternatives to HS2. In terms of extra cost and reduced benefit, this will again affect every UK citizen; however, more specifically, the Government's perverse and continued refusal to engage with apparently superior alternatives has had a direct and adverse impact upon the professional standings of your Petitioners.

Your Petitioners would submit that they possess a unique perspective upon and knowledge of the issues surrounding the development of an optimised high speed rail network for the UK. This is entirely in line with Government policy, and it seems vital that the Committee, and the wider Government, engages fully with this knowledge.

6. Objection is made to the detailed provisions of the entire bill, on the grounds that:
  - The railway infrastructure detailed therein (and summarised as its 'Principle' in the Draft Directions to the HS2 Hybrid Bill Committee) only comprises the first phase of a planned national high speed 'network'.
  - Passing of the current bill (relating to a railway between London and the West Midlands on a specific route) will have the effect of predetermining further legislation concerning the routeing, configuration, functionality and performance of any national high speed network.
  - The current bill is predicated upon false and unverified assumptions, together with a variety of failures in due process. These have resulted in proposals that are hugely sub-optimal and as such will fail to best serve the public interest. These issues are described in Item 7. Your Petitioners' attempts to draw these issues to the attention of the Government through the Consultation process have been constantly frustrated, as noted in Item 4.

Your Petitioners believe that the disjointed and deficient approach described above will prevent Parliament from applying the timely and holistic consideration necessary to ensure that high speed rail can be developed in a manner best serving the public interest.

The public interest might best be defined by the following public policy requirements:

- Reduction of CO<sub>2</sub> emissions in line with existing Parliamentary legislation (the 2008 Climate Change Act);
- Minimising public expenditure;
- Ensuring balanced regional development;
- Protection of local communities and rural environments;
- Integration of transport systems to maximise journey opportunities and economic benefit, and encourage modal shift from road to rail.

Your Petitioners consider that the public interest is also enshrined in the fundamental objective of the HS2 Project (as stated on 30<sup>th</sup> November 2015 by HS2 Ltd Technical Director Andrew McNaughton in evidence to the House of Commons HS2 Select Committee):

"The aim of the HS2 project is to deliver hugely enhanced capacity and connectivity between our major conurbations."

Both HS2 Ltd and the Government must face the inconvenient truth that the HS2 scheme embodies such major connectivity and capacity deficiencies that it cannot meet the requirements either of public policy, or of its own stated objectives.

Your Petitioners therefore recommend that the House of Lords HS2 Hybrid Bill Committee should review the 'Principle' of the Bill, as set out in the Draft Directions:

*the provision of a high speed railway between Euston in London and a junction with the West Coast Main Line at Handsacre in Staffordshire, with a spur from Water Orton in Warwickshire to Curzon Street in Birmingham and intermediate stations at Old Oak Common and Birmingham Interchange,*

to examine whether these principles, which are written very tightly around the specific HS2 scheme for which legislative powers are being sought, are actually:

- Counterproductive to HS2's own stated objectives for 'hugely enhanced capacity and connectivity', on which HS2 has been recommended to Parliament by the Government;
- Counterproductive to the attainment of wider public policy goals;
- Likely to prevent proper consideration of potentially superior alternative proposals.

Your petitioners believe that this review should facilitate the necessary examinations to ensure that the vital considerations of national interest set out above are not compromised.

Your Petitioners recommend that the following issues of principle are considered:

- The question of whether the new line should be integrated with and frequently connected to the existing railway network; or whether it should be segregated from the existing network (as with HS2).
- The maximum speed for which the line should be designed, consistent with the requirement to follow existing transport corridors where environmental damage is minimised and connectivity is maximised.
- The provision of sufficient capacity on the high speed line to enable all major 'stakeholder' communities served by the existing intercity network to be served by the new high speed line.
- The optimum routeing of the high speed line to allow all 'stakeholder' communities to be served.
- The optimum routeing of the high speed line to allow (with further sections also built) the formation of an optimised national network in which all major regional communities are efficiently interlinked for minimised length of new build (and therefore cost).
- The optimum means of interchange with local public transport networks.
- The development of an optimised strategy for integrated national rail development in which road to rail modal shift is maximised with consequent reductions in transport CO<sub>2</sub> emissions.
- Noting the fact that the HS2-HS1 link has been deleted from the HS2 bill primarily on account of being difficult, costly and 'suboptimal', whether this desirable link might be more easily achieved with a differently-aligned approach of the high speed line to central London.

Your Petitioners observe that these eminently sensible considerations appear to have been largely disregarded in the development so far of HS2.

Additionally, your Petitioners observe that the 'Principle' of the bill, as set out in the Draft Directions, does not accurately summarise the content of any of the Parliamentary debates that have taken place on the High Speed Rail (London – West Midlands) Bill . These debates mostly concerned the issue of whether a high speed rail line from London to the West Midlands should be built to serve the national interest. There has been little or no debate as to whether the precise proposals, as set out in the Bill and defined in the 'Principles', are the proposals that would best serve the public interest as the first phase of a national network.

7 Your Petitioners object to the bill on account of the following primary concerns. However, this list is not exhaustive, and space does not permit the listing of all concerns at this specific juncture:

- **Segregation of HS2 from existing network**

HS2 has been designed to be virtually segregated from the existing rail network. Within the London to West Midlands scope of the bill, this largely limits the connectivity that HS2 can provide to stations on the new build railway, and it hugely restricts the potential economic benefits. Far greater benefits – both economic and environmental – appear to be achievable with integrated operation between the new high speed railway and the existing network. The Government appears never to have seriously considered the alternative of integration, with full and frequent connection between the high speed line and the existing network. The Government has also never demonstrated why their preferred segregated model of operation is the best way forward.

- **Extreme speed assumed in the design of HS2**

HS2 has been designed to be the fastest railway in the world, with 360km/h operation planned and allowance made for future 400km/h operation. This is represented as ‘future-proofing’. However, designing for extreme speed has the effect of drawing the line away from existing corridors (where major populations exist that might benefit from the introduction of high speed rail) into unspoilt rural areas where populations are too small to merit the provision of local stations, and there are no other compensatory benefits to mitigate the intrusion. This has the effect of reinforcing HS2’s lack of integration. There are also major issues with higher maintenance costs, increased energy use, and higher CO<sub>2</sub> emissions. The Government appears never to have undertaken the necessary ‘sensitivity analysis’ to establish the optimum operational speed (ie the speed that achieves the best balance of benefits against adverse impacts). Nor has the Government ever demonstrated why a design speed of 400km/h (for operation at 360km/h, potentially rising to 400km/h) represents the best option.

- **Old Oak Common**

The proposed HS2 interchange at Old Oak Common is planned to achieve the twin function of interchange with Heathrow and CrossRail services. However, the requirement (written into the HS2 core remit) that these two separate functions are performed at a single station has the effect of predetermining HS2’s route through the Chilterns, and prevents fair consideration of the alternative M1 corridor route. The Government appears never to have considered alternative strategies to building a station at Old Oak Common, for achieving high speed rail access to Heathrow, or interchange with London’s local rail network.

It should particularly be noted that both Old Oak Common and the now-cancelled HS2-HS1 link – were both specified in the core HS2 project remit. However, Old Oak Common had the effect of dictating a westerly approach route to the proposed terminus at Euston from

which it has proved impossible to achieve an economic and environmentally acceptable link to HS1; and as a consequence, the proposed link to HS1 was cancelled which has greatly limited HS2's connectivity benefits for the UK regions. One element of the HS2 remit has proved to be incompatible with another.

- **Selection of HS2 Chiltern Route and Rejection of the M1 Corridor**

The Government's selection of their favoured route through the Chilterns (as described in the bill) is predicated upon rejection of the far less environmentally-damaging alternative of a route following the M1 motorway north from London. The reasons advanced by the Government for their rejection of the M1 corridor were variously false or spurious. Taken overall they did not represent the necessary balanced consideration of alternative options essential to ensure the outcome best serving the public interest (either for a London to Birmingham high speed line, or for future stages in the development of a national high speed network).

- **2 tracks or 4 tracks??**

HS2's route through the Chilterns is planned to comprise only 2 tracks. This is generally accepted as having the capacity to accommodate 18 trains per hour in each direction. This is insufficient to provide intercity services to all the cities of the Midlands, the North and Scotland served by the existing intercity network, and with many cities bypassed and left reliant on reduced services on the existing network, the result will be a 2-speed, 2-tier Britain. On HS2's chosen route, the necessary 4 tracks do not appear to be achievable, on account of either unacceptable additional intrusion on surface sections, or the doubled cost on tunnelled sections.

- **Selection of the 'Y'**

The 'Y' configuration adopted by HS2 fits naturally with HS2's west-sided route through the Chilterns from London to Birmingham, and further aspirations for development towards Yorkshire and the North-West. But with no Trans-Pennine high speed route offered, the 'Y' essentially comprises a conduit focussed upon London, and seems most likely to have the effect of concentrating economic activity in the South-East of England, and of exacerbating the North-South Divide.

The 'Y' is also inherently inefficient, in that it requires the operation of many trains, mostly poorly-filled, to accommodate all possible journeys between regional cities. The Government has not given serious consideration to alternative, more efficient network formats (such as the 'spine and spur' of High Speed UK) which allow far greater and properly balanced interregional connectivity.

The north-south routes of HS2's 'Y' and its stations have been designed with no consideration of future east-west trans-Pennine

'HS3' links. With the lines and stations in the wrong place and in the wrong configuration, HS3's potential to bring enhanced connectivity to Northern regions is hugely limited.

- **Birmingham Curzon Street**

The selection of Birmingham Curzon Street as HS2's terminus in Birmingham appears to have been driven partly by the desire to run supersized trains that are too long and too large in cross-section to fit into New Street Station, and partly by a perception that New Street is already full (which is not the case). But any intercity railway solution that does not achieve interchange with the local and regional services that concentrate at New Street, and does not allow through running, implies a massive loss of connectivity between high speed and local services within the West Midlands conurbation, and across the national intercity network. The Government appears not to have given serious consideration to operating smaller UK-sized trains and undertaking the necessary works to enhance capacity at New Street, in order to maintain the integrity of the local and national rail network.

- **HS2's 'Carbon Neutral' Performance**

Documentation released by the Government in support of the HS2 proposals sets out HS2's predicted 'carbon neutral' performance ie no significant reduction of transport sector CO<sub>2</sub> emissions. It is reasonable to expect that all major Government-led (and taxpayer-funded) interventions should play their part in maximising reductions of national CO<sub>2</sub> emissions. HS2's predicted 'carbon neutral' performance is therefore in clear contravention of the spirit (if not the letter) of the 2008 Climate Change Act. HS2's inadequate performance stems from its failure to achieve significant road to rail modal shift, and this in turn is attributable both to its lack of integration with the existing network, and also its inefficient 'Y' configuration, primarily focussed upon getting to London more quickly.

All these concerns have been raised by your Petitioners in their many responses to the Government's HS2 Consultations. Regrettably, the Government has failed to take necessary account of these concerns, and has failed to bring these concerns before Parliament for their consideration. As such, the process underpinning HS2 appears to be deficient.

Concerns relating to HS2's excessive environmental impact (ie its unnecessary Chiltern routeing and its inadequate 'carbon neutral' performance) were raised in your Petitioners' response to the Consultation on HS2's Draft Environmental Impact Statement (July 2013). In that

Government has a duty (under the Town & Country Planning Act) to ensure the best possible balance between a scheme's benefits and its environmental impacts, the Chiltern-aligned segregated HS2 was shown to be clearly suboptimal with respect to an M1-aligned integrated alternative; and as such, it would appear to be illegal.

It should be noted that all these adverse issues are avoided with the alternative 'High Speed UK' proposals developed by your Petitioners.

It should further be noted that High Speed UK comprises a suite of proposals all aimed at enhancing the UK rail network, and that by selecting appropriate HSUK elements, a scheme can be developed that is fully compliant with the 'Principle' of the HS2 Bill.

- 8 For the foregoing and connected reasons your Petitioners respectfully submit that the bill must be radically amended so that it reflects best practice for integrated transport, and all the other public policy issues described in Item 6, and thus comprises a fit-for-purpose intervention in UK intercity transport compatible with further development of an optimised national high speed rail network. It is however beyond the skills and experience of the Petitioners to suggest the necessary amendments to the bill, and as such, the bill as it stands should not be allowed to pass into law.
- 9 For the foregoing and connected reasons your Petitioners respectfully submit that the Government should conduct a far-reaching Inquiry to establish:
  - the reasons why the HS2 proposals have progressed so far towards legislative powers without adequate technical scrutiny;
  - how other apparently superior proposals have been dismissed, without just cause;
  - a more appropriate way forward for integrated high speed intercity transport in the UK.
- 10 Your petitioners note that the petition submitted to your honourable house is similar to the petition that they submitted in 2014 to the House of Commons HS2 Select Committee, and that the Promoter HS2 Ltd is likely to make broadly the same objections to your Petitioners being granted locus standi, that were made in 2014.

These objections broadly centred around the undisputed fact that your Petitioners both live a significant distance from any of the proposed HS2 works, and as such are well clear of the physical scope of HS2.

However, these objections fail to recognise that the effects of HS2 – which purports to be the first stage of a national network – will extend far beyond its physical scope. This submission has outlined the huge potential adverse effects that the ill-conceived HS2 could bring to regional communities.

Your Petitioners believe that they have both a public and a professional duty

to speak out on behalf of the millions in the UK regions who stand to be greatly disadvantaged by HS2's huge capacity and connectivity deficiencies. So far, these issues have not been given proper consideration by Parliament, and it is vital that they are properly considered before HS2 is developed any further.

- 11 Your Petitioners consider that the development of the HS2 proposals fails to meet any reasonable standard of democratic process, good government or fair play.

Your Petitioners respectfully request that your Honourable House will hear their petition, and that appropriate flexibility can be applied to the question of your Petitioners' locus standi so that their concerns with regard to HS2's huge deficiencies can be properly heard.

If the procedures associated with Hybrid Bills will not allow your Petitioners to be granted locus standi, your petitioners respectfully request guidance as to how their major concerns can be properly considered in the Parliamentary process.

As noted previously, this proper consideration of legitimate and informed public concerns has so far not happened. The result of this is a national infrastructure scheme that:

- fails to deliver HS2 Ltd's own stated objectives for 'hugely enhanced capacity and connectivity', on which HS2 has been recommended to Parliament by the Government;
- fails to attain wider public policy goals;
- fails to meet common 'due process' standards.

Your petitioners do not consider this state of affairs to be acceptable.

YOUR PETITIONERS therefore humbly pray your Honourable House that the bill may not be allowed to pass into law as it now stands and that they may be heard by their Counsel, Agents and witnesses in support of the allegations of this Petition against so much of the bill as affects the property, rights and interests of your Petitioners and in support of such other clauses and provisions as may be necessary or expedient for their protection, or that such other relief may be given to your Petitioners in the premises as your Honourable House shall deem meet.

AND your Petitioners will ever pray, &c.

(Colin Elliff)

(Quentin Macdonald)

IN PARLIAMENT  
HOUSE OF COMMONS  
SESSION 2013-14

HIGH SPEED RAIL (LONDON – WEST MIDLANDS) BILL  
PETITION OF COLIN ELLIFF AND QUENTIN MACDONALD

Against the Bill – On Merits – By Counsel &c

Colin Elliff: 20 Hartley Road, Harrogate, Yorkshire, HG2 9DQ : 07570 812158

Quentin Macdonald: Manor Farm, Church Lane, Nether Poppleton, York

# **APPENDIX O**

LETTER TO:

**Sir Jeremy Heywood, in connection with his investigation into the rising costs of HS2 (the 'HEYWOOD REVIEW')**

ORIGINATING ORGANISATION:

**MEDIA HOUSE INTERNATIONAL/  
HIGH SPEED UK**

AUTHOR OF LETTER:

**JACK IRVINE**

DATE:

**26<sup>TH</sup> JULY 2016**

**Detailed commentary on this submission is given in Section 15 of this report.**



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Sir Jeremy Heywood  
Cabinet Secretary and Head of the Civil Service  
Cabinet Office  
70 Whitehall  
London  
SW1A 2AS

26<sup>th</sup> July 2016

Dear Sir Jeremy,

I write to you on behalf of High Speed UK.

We understand that you are conducting an investigation into the HS2 project, with a view to controlling its rapidly escalating costs.

We believe that HS2's excessive costs – which seem certain to rise to well over £100 billion for a national system – are only a manifestation of a much deeper design failure. This stems from the fundamental mismatch between HS2's stated objective – “to deliver hugely enhanced capacity and connectivity between our major conurbations” – and its remit, to build a high speed line from London to the West Midlands.

The objective for improved capacity and connectivity can only be met by using the intervention of new high speed lines to create an integrated and enhanced national network. However, the designers of HS2 have taken the project in the opposite direction, developing HS2 as the fastest railway in the world while achieving minimal integration with the existing network.

The extent of HS2's failures can only be fully appreciated when HS2 is compared with a better-performing alternative. That alternative is High Speed UK (HSUK). The enclosed brochure demonstrates how the fully integrated HSUK will create far more connectivity and capacity than the segregated HS2 possibly can. Moreover, HSUK's full integration with the existing network also has the effect of speeding up the vast majority of UK intercity journeys by an average of 45%.

HS2's hugely suboptimal performance must raise huge concerns as to the technical direction of the HS2 project. These failures also carry massive costs.

The detailed design that underpins the HSUK proposals allows rigorous comparisons to be made that lay bare the enormous financial impact of HS2's design failings.

O2

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1. ***Selection of HS2's first phase route through the Chilterns***

HS2 Ltd has selected an ultra-direct route from London to Birmingham that passes through the Chilterns AONB and much unspoilt countryside further north. To cope with the difficult topography and to mitigate the environmental intrusion, 50km out of a total route length of 175km will be in tunnel. This represents an unprecedented proportion of tunnelling for a UK main line, and it is a huge contributor to HS2's costs.

So far, HS2 Ltd has justified its controversial Chiltern route by asserting that the clear alternative, of a route closely following the M1, is not practicable – but the design of HSUK's route following the M1 shows all of HS2 Ltd's assertions to be either false or spurious.

Comparative estimates show HS2's Chiltern route to be **£7 billion** more expensive than the M1 alternative.

2. ***Construction impacts at Euston***

HS2 Ltd propose to operate 18 high speed services per hour from Euston in addition to existing West Coast Main Line services, and this will require the expansion of the station into surrounding residential property, with a lengthy reconstruction programme estimated to last 20 years. This level of disruption will carry huge costs.

HS2 Ltd has ignored the very obvious mitigation strategy adopted by HSUK – to construct 2km of new railway at Old Oak Common to allow Crossrail services to extend onto the West Coast Main Line, and thus enable existing London Midland commuter services to be diverted away from Euston. This would eliminate most commuter flows on a permanent basis, offering two huge advantages.

Firstly, a much simpler and quicker reconstruction programme, lasting perhaps 5 years, is possible. Secondly, with no need to accommodate commuter services in addition to high speed intercity services, there is no need to physically expand Euston station.

This will save **£1 billion**.

3. ***Integration problems at other primary city stations***

HS2 Ltd's general failure to integrate HS2 with the existing rail network is typified in its proposals for either isolated terminus or remote parkway stations in many primary cities. This will require local transport networks to be refocused onto these new stations. HS2 Ltd's budget does not allow for the necessary works to adapt local networks to make them 'HS2 ready', but it is reported that the Government has allocated an extra **£4.2 billion** to plug the gap.

These costs are avoided through HSUK's strategy of developing local networks to allow high speed services to access central stations in all primary cities.

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4. ***Northern Powerhouse compromised***

HS2 Ltd's proposed 'Y-network' comprises long routes extending northwards on both sides of the Pennines from the West Midlands to the North-West and to Yorkshire. The western arm is ultimately projected to reach Scotland, and the eastern arm will extend to the North-East. Both Manchester and Leeds will be served by terminus stations on spurs from the trunk routes and the recent route change around Sheffield further demonstrates the failings in HS2 Ltd's planning process.

HS2's north-south routes and its proposed stations were developed with no thought for the east-west trans-Pennine connectivity that is now required under the Government's Northern Powerhouse/HS3 initiative. It is proving impossible to retrofit efficient HS3 links onto the established HS2 proposals, and this is likely to prevent cost-effective and timely implementation of the improved trans-Pennine transport links essential for the Northern Powerhouse.

Comparison with the HSUK scheme, which has been developed from the outset with an integral trans-Pennine arm, shows **£7 billion** potential savings.

5. ***Route to Scotland***

HS2 Ltd's rigid focus on its preferred west-side route to Scotland has prevented proper consideration of the more favourable east-side route adopted by HSUK that could link Scotland (and the English North-East) much more effectively to English and Welsh cities for much reduced construction cost.

HSUK's detailed comparative costings show **£11 billion** potential savings.

Overall, HSUK's costings show that HSUK would offer **£27 billion** potential savings in a 'like for like' comparison with the HS2 'Y' and relevant elements of HS3. These savings would increase to **£38 billion** when routes to the North-East of England and to Scotland are also considered.

HSUK's cost savings go hand-in-hand with full integration and much greater operational efficiency. With benefits increased and costs reduced, a far superior benefit-cost ratio can be anticipated, along with much more profitable operation. All this stems from HSUK's design of an integrated network, in contrast with HS2 Ltd's design of an isolated high speed line, with minimal consideration of network.

It must be emphasised that the concerns set out in the preceding paragraphs have been repeatedly raised to HS2 Ltd and the Government, in the form of responses to official consultations. Regrettably there has been no engagement whatsoever from HS2 Ltd. We would comment that this appears to be the consequence of HS2 Ltd's excessive focus on its flawed remit, with insufficient attention being paid to the true priority, for developing high speed lines to provide an improved network actually capable of meeting the HS2 project's true objective of "hugely enhanced capacity and connectivity".

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We trust that this information will be of assistance to your investigation into the costs of HS2, but we would respectfully suggest that the terms of reference of your investigation should be expanded, to cover all aspects of the process by which HS2 has been developed. We believe that this widening of the brief is essential, to enable Government and the UK public to gain a full understanding of how, and why the HS2 project has gone so badly wrong.

HSUK would of course be pleased to cooperate fully with such an investigation.

Yours sincerely,

**Jack Irvine**  
**Executive Chairman**

O5

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# **APPENDIX P**

LETTER TO:

**Andrew Jones MP, Junior Transport Minister  
responsible for HS2**

ORIGINATING ORGANISATION:

**HIGH SPEED UK**

AUTHORS OF LETTER:

**COLIN ELLIFF and  
QUENTIN MACDONALD**

DATE:

**17<sup>TH</sup> FEBRUARY 2017**

**Detailed commentary on this submission is  
given in Section 16 of this report.**



## High Speed UK

Connecting the Nation

e-mail: [mail@highspeeduk.co.uk](mailto:mail@highspeeduk.co.uk) Tel: 01904 339944 Mob: 079591959135 www.highspeeduk.co.uk

Andrew Jones MP  
Parliamentary Under Secretary of State for Transport  
House of Commons  
London SW1A 0AA

7<sup>th</sup> February 2017

Dear Andrew,

### HS2 in Yorkshire

We have been requested by Jonathan Pile and "The Crofton Campaign against HS2", to whom we have been giving technical advice, to supply a selection of material to inform your meeting of the 8<sup>th</sup> February 2017 with Jon Trickett M.P and Jonathan Pile.

This material consists of:

1. HSUK Letter to Andrew Tyrie – dated 20<sup>th</sup> January 2017.
2. HSUK Brochure – *"HSUK – Delivering the High Speed Network the Nation Needs"*
3. HSUK Publication – *"HS2 High Speed to Failure – 22 Reasons why the Government's Experts have got it wrong"*
4. HSUK Publication – *"Draft Executive Summary of High Speed to Almost Nowhere"*
5. HSUK – *"Draft Comparative Connectivity Charts"* for 8 Yorkshire Cities and Towns

These documents collectively demonstrate how HS2 will fail to deliver any significant improvements to connectivity or capacity for any city or large town in Yorkshire. On the contrary, HS2 would appear to make a great number of journeys worse than they are at present and also jeopardise the construction of efficient transpennine rail links for the Northern Powerhouse.

A great part of HS2's failure is its design for excessive speed (400 km/h) and its failure to follow existing transport corridors. The scale of HS2's failure can only be truly appreciated through a comparison with our alternative HSUK proposals. They have been designed to diametrically opposite principles of full integration with the existing network and adherence to existing transport corridors. The mere existence of High Speed UK as a demonstrably superior alternative to HS2 should trigger a full design review of the destructive HS2 route and scheme. At the same time the whole programme should be paused to establish just how much it is going to cost the public purse. The whisper is that it will be well in excess of £100 billion for a complete turkey.

We feel that you cannot possibly wish to be associated with scheme so damaging to Northern and National Interests. We look forward to a meeting with you in Harrogate in the very near future.

Yours sincerely,

Colin Elliff BSc, CEng, MICE  
Civil Engineering Principal HSUK

Quentin Macdonald BSc(Eng), CEng, FIRSE, MIET  
Systems Engineering Principal HSUK

17-02-07 Andrew Jones MP.docx

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# **APPENDIX Q**

LETTER TO:

**Chris Grayling MP, Secretary of State for Transport**

ORIGINATING ORGANISATION:

**HIGH SPEED UK**

AUTHORS OF LETTER:

**COLIN ELLIFF and  
QUENTIN MACDONALD**

DATE:

**2<sup>ND</sup> FEBRUARY 2018**

**Detailed commentary on this submission is given in  
Section 17 of this report.**



**High Speed UK**

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Chris Grayling MP  
Secretary of State for Transport  
HMG Whitehall, London.

2<sup>nd</sup> February 2018

Dear Mr Grayling,

## You really need to read this Chris!!

We at HSUK, like you, are committed to giving the UK a new generation of High Speed Rail Travel. We believe that rail has a great future in the coming years:

- by means of improvements to the existing network to improve local services;
- by major upgrades to the existing network to deliver significantly better regional and inter-city services and;
- by building a new high speed network integrated with the existing network.

On 30<sup>th</sup> November 2015, HS2 Ltd Technical Director, Andrew McNaughton told the HS2 Select Committee, in evidence, that "The aim of the HS2 project is to deliver hugely enhanced capacity and connectivity between our major conurbations."

We at HSUK, a small efficient group of rail professionals, are in total agreement with that vision. We believe that you too will be expecting nothing less from HS2. We also feel sure that you will have been assured by experts in HS2 and The Department for Transport that that is exactly what HS2 will deliver.

However, there is a Problem; a major Stumbling Block; a really Most Inconvenient Truth; HS2 simply will not deliver what you have been promised because its design, is not good enough for that to be possible. It is not fit for purpose.

The result is that you as Secretary for State for Transport and your ministers and staff are sent into the heat of public consultation meetings, public protest meetings, press conferences and media events defending the indefensible. You know the following story but we feel it is worth repeating here.

*The Emperor's New Clothes* (Danish: *Kejserens nye Klæder*) is a short tale written by Danish author Hans Christian Andersen, about two weavers who promise an emperor a new suit of clothes that they say is invisible to those who are unfit for their positions, who are stupid, or incompetent - while in reality, they make no clothes at all, making everyone believe the clothes are invisible to them. When the emperor parades before his subjects in his new "clothes", no one dares to say that they do not see any suit of clothes on him for fear that they will be seen as stupid. Finally, a child cries out, "But he isn't wearing anything at all!" The tale has been translated into over 100 languages.

## Mr Grayling that is you; the naked emperor.

Your train set simply will not deliver what has been promised. We at HSUK have been trying to tell you for years that HS2 cannot deliver the High Speed Network the Nation Needs. Only the HSUK design can do that. Successive Secretaries of State for Transport have refused to carry out an open and independent

assessment of the HS2 and HSUK designs to see:

- which scheme delivers the greatest increase in connectivity;
- which scheme delivers the greatest increase in capacity;
- which scheme damages the environment the least;
- which scheme totally avoids damage to the Chilterns AONB
- which scheme damages virtually no Ancient Woodlands
- which scheme demolishes almost no houses
- which scheme reduces CO<sub>2</sub> emissions the most;
- which scheme has the simplest and cheapest proposals for Euston;
- which scheme will “Start the Midlands Engine” the most effectively;
- which scheme will unleash the “Northern Powerhouse” the most effectively;
- which scheme serves City Centres the best;
- which scheme serves Conurbations the best;
- Which scheme has the best BCR;
- Which scheme is the cheapest to build and operate.

Mr Grayling, in all cases our analysis shows that the answer to all those tests above is HSUK is by far the best. We will give you just two quantified answers to the test listed above. HSUK has a BCR in the range of 4.0 to 6.0 compared with HS2's miserly 2.3. In addition it will be £21 Billion cheaper than HS2. May we state that again?

HSUK will be at least £21 Billion cheaper than HS2 with a BCR of at least 4.0 while avoiding the emission of hundreds of millions of tonnes of CO<sub>2</sub>.

HSUK is pleased to confirm that this evening in Morley Town Hall we presented you with copies of “HSUK – Delivering the High Speed Network the Nation Needs”, “HS2 – High Speed to Failure” and “HS2 – High Speed to Nowhere”. These documents can all be found on our web site: [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk).

The first is a short introduction to the HSUK design, the second is an analysis of why HS2 will fail, and the third is a detailed analysis which shows that 32 major cities and airports will fare very badly if HS2 is built but will be far, far better served if HSUK is built.

**Mr Grayling, HS2 is doomed and the time to ditch it is now.**

**Technically it is a dreadful design.**

Please take the easy way out and put HS2 on hold until an independent technical analysis has been carried out comparing HS2 and HSUK. Please let the science and engineering do the talking not the dogma. Do you really want to go down in history as the man who wrecked Britain's train set while parading as the Naked Emperor?

To be frank with you we would not let the unholy alliance of the Department for Transport and HS2 Ltd design our children's model railway let alone the nation's railway future.

The letter is an open letter and has been circulated to all relevant media outlets and publications as well as politicians generally.

Yours sincerely

# **APPENDIX R**

SUBMISSION TO:

**OFFICIAL CONSULTATION ON TRANSPORT FOR THE  
NORTH'S *STRATEGIC TRANSPORT PLAN***

RESPONDING ORGANISATION:

**HIGH SPEED UK**

AUTHOR OF RESPONSE:

**COLIN ELLIFF**

DATE:

**APRIL 2018**

**Detailed commentary on this submission is given in  
Section 18 of this report.**

# Response to Consultation on Transport for the North *Strategic Transport Plan*

by Colin Elliff (CSE), Civil Engineering Principal, High Speed UK

**Note 1 :** Consultation responses were submitted online, and the following document recording the HSUK response has been assembled from a contemporaneous record of the submitted text. Further commentary – in (bracketed italics) – is provided where the restrictive ‘tick-box’ format of the Transport for the North (TfN) questionnaire gave no opportunity for a written response.

**Note 2 :** The HSUK consultation response was extensively cross-referenced to the HSUK document *The Northern Poorhouse – How the Transport Establishment Failed the People of the North*, available on [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk).

## **Consultation question re Transport for the North’s Vision**

Q1a Transport for the North has a vision, which is to establish “a thriving North of England, where modern transport connections drive economic growth and support an excellent quality of life”. (For more information see page 12 of the Draft Strategic Transport Plan.)

To what extent do you support or oppose the vision of Transport for the North as defined in the Draft Strategic Transport Plan?

A1a **HSUK response: “Strongly Support”** (tick-box response required)

## **Consultation question re TfN’s 4 Pan-Northern Transport Objectives**

Q1b The Draft Strategic Transport Plan has developed four, pan-Northern transport objectives. (For more information see pages 12-13 of the Draft Strategic Transport Plan.)

To what extent do you agree or disagree with the pan-Northern objectives outlined in the Draft Strategic Transport Plan?

A1b **HSUK response: “Strongly Agree”** (tick-box response required)

Q1c Please let us know your comments on Transport for the North’s vision and/or the four pan-Northern transport objectives.

A1c **HSUK response:**

“Both the vision and the 4 pan-northern transport objectives are sound. However, the mistaken predication of TfN’s Northern Powerhouse Rail proposals upon the established HS2 routes in both Yorkshire and Greater Manchester mean that any chances of achieving either the vision or the goals is fatally compromised. Most specifically, adherence to the established HS2 routes means that the journey time targets originally set out by ‘One North’ cannot be efficiently met. For more information refer to *The Northern Poorhouse – How the Transport Establishment failed the People of the North*, available on [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk).

## Consultation question re Transport's Role in driving the Northern Economy

Q2a The 'Why' section of the Draft Strategic Transport Plan sets out the approach and process for developing Transport for the North's programmes of work. (For more information see pages 18-20 (which present the rationale for a spatial approach) and pages 24-25 (which forecast future transport demand) of the Draft Strategic Transport Plan.

To what extent do you support or oppose the process which has been followed to develop the Draft Strategic Transport Plan?

A2a **HSUK response: "Strongly Oppose"** (tick-box response required)

Q2b The Draft Strategic Transport Plan identifies at least three main roles which transport can play to help to drive the economy and deliver the transformational change required. These are *Connecting People*, *Connecting Businesses* and *Moving Goods*. (For more information see pages 30-35 of the Draft Strategic Transport Plan.)

Please let us know your comments on the three main roles which transport can play to help drive the economy and deliver transformational change, including if there are any other roles which should be considered alongside these.

A2b **HSUK response...**

"Essentially, the '3 main roles' identified (ie Connecting People, Connecting Businesses and Moving Goods) are a statement of the absolutely, utterly obvious, and they add little or no understanding to the true transport priorities of the North of England. These are to establish a fully interconnected transport system, in which links between our regional communities, and from these communities to nationwide and global markets, are as good as they are in London. This is the way that the North-South Divide will be redressed. The 'spatial approach' identified in pages 24-25 is all about 'process' – if the core plan, and most specifically its dependency upon the established HS2 routes, is wrong, then no amount of 'spatial approach' will remedy the situation.

Or (to somewhat paraphrase Alan Turing from his seminal 1950 paper *The Imitation Game*), when you're looking at the intelligence of a process, it doesn't really matter what's going on inside. All that matters is the output ie does the transport system that results work optimally and efficiently, in accordance with the original specification?"

## Consultation questions re identifying the major strategic interventions

Q3a Northern Powerhouse Rail aims to significantly improve capacity, frequency, speed, and services between the North's main economic centres. (For more information see pages 44-47 of the Draft Strategic Transport Plan.)

To what extent do you agree or disagree with the emerging vision for Northern Powerhouse Rail as shown on page 45 of the Draft Strategic Transport Plan?

A3a **HSUK response: "Strongly Disagree"** (tick-box response required)

*(HSUK Commentary: No option here for a longer explanation of why the TfN Strategic Transport Plan is the nonsense it is, and why it is unlikely to deliver in an optimal manner any of the stated objectives of improved capacity, frequency, speed, and services between the North's main centres.)*

Q3b The Long Term Rail Strategy aims to improve train services, stations and lines on the wider rail network. It defines a series of five 'themes', each addressing one or more of the key gaps preventing the current rail network from delivering the pan-Northern transport objectives. (For more information see pages 48-52 of the Draft Strategic Transport Plan, and the accompanying Long Term Rail Strategy published alongside the Draft Strategic Transport Plan.)

To what extent do you agree or disagree with the aims and objectives of each of the five 'themes' (i.e. Connectivity, Capacity, Customer, Community, Cost Effectiveness), as outlined on page 50 of the Draft Strategic Transport Plan?

A3b **HSUK response: "Strongly Agree"** (tick-box response required)

*(HSUK Commentary: How could anyone possibly disagree with any of these aims and objectives? The key point here is that TfN's Strategic Transport Plan is so misconceived in terms of the realities of creating a practical and efficient intercity rail network across the North, that it stands no chance of delivering any of these aims and objectives. Again, this is explained in greater detail in The Northern Poorhouse...)*

Q3c1 The Major Roads Network for the North (along with Strategic Road Studies) aims to improve the reliability, efficiency, quality and resilience of the North's road network. (For more information see pages 54-57 of the Draft Strategic Transport Plan.)

Transport for the North and its Partners have identified a Major Road Network for the North, which includes roads managed by local transport and highways authorities and also those managed by Highways England (such as Motorways and A-roads). This approach is based on the principle that the last mile can make all the difference as to whether goods or people arrive on time and/or as efficiently as possible, and so management and investment of this Network is a priority.

To what extent do you agree or disagree with the development of a 'Major Road Network for the North'?

A3c1 **HSUK response: "Strongly Agree"** (tick-box response required)

*(HSUK Commentary: Even from the slightly jaundiced perspective of a lifelong railway engineer, there's no question that we also need a 'Major Road Network for the North', with significant enhancement of key routes.)*

Q3c2 To what extent do you agree or disagree with Transport for the North's focus on 'the last mile' as a means to improve the overall reliability, efficiency, quality and resilience of the North's road network?

A3c2 **HSUK response: "Neither Agree nor Disagree"** (tick-box response required)

*(HSUK Commentary: We'll leave this one to the roads experts, but surely, in a modern, metricated age it should be 'last kilometre'??)*

- Q3d Integrated and Smart Travel aims to improve the experience for people using public transport across the North. (For more information see page 58 of the Draft Strategic Transport Plan.)
- How important or not do you think Integrated and Smart Travel is to delivering the four key programme objectives (i.e. Economic Growth, Customer Experience, Efficiency and Travel Experience), as outlined on page 58 of the Draft Strategic Transport Plan?
- A3d **HSUK response: “Fairly Important”** (tick-box response required)
- (HSUK Commentary: It’s difficult to disagree with any of these objectives, all of which are causes and effects of an efficient intercity rail network across the North. However, none can be achieved unless we get the basic structure of the regional rail network right. Again, check out The Northern Poorhouse – How the Transport Establishment failed the People of the North on [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk).)*
- Q3e Seven ‘Strategic Development Corridors’ have been identified to help inform major strategic transport interventions. (For more information see pages 60-61 of the Draft Strategic Transport Plan.)
- Do you agree or disagree with the approach to how the Strategic Development Corridors have been identified, as outlined on pages 60-61 of the Draft Strategic Transport Plan?
- A3e **HSUK response: “Strongly Disagree”** (tick-box response required)
- (HSUK Commentary: Whatever the merits of the ‘7 Strategic Corridors’ concept for development of the road network, it has no relevance in the development of the region’s rail network. Development of the region’s rail network must be driven by identifying the strategic interventions necessary to achieve the journey time targets between the primary centres of the North, that have already been established by ‘One North’ in 2014. These targets, augmented by specification of train frequency, have been included in all previous iterations of TfN documentation – but have unaccountably been omitted from the current Strategic Transport Plan. Again, this is explained in greater detail in **The Northern Poorhouse...**)*
- Q3f. Please let us know your comments on Transport for the North’s identified work programmes as set out in the Draft Strategic Transport Plan. (Please note at this stage we are not seeking feedback on specific infrastructure projects themselves – an opportunity will be given on a project-by-project basis when such projects are brought forward and developed.)
- A3f **HSUK response...**
- “This response concerns Northern Powerhouse Rail, Long Term Rail Strategy and the Major Roads Network.**
- Transport for the North’s **Northern Powerhouse Rail** scheme, and its wider **Long Term Rail Strategy**, are rendered effectively unfit for purpose by the undue dependency upon the established HS2 routes. This has introduced huge inefficiencies into the scheme for Northern Powerhouse Rail, and it has prevented the optimal implementation of the key

requirements of the original HS3 specification established in 2014 by the 'One North' group of Northern City Councils.

- Northern Powerhouse Rail fails to meet 'One North's journey time targets. These targets have been omitted from the current *Strategic Transport Plan*.
- Northern Powerhouse Rail fails to offer the single new transpennine route, fully integrated with north-south HS2 to link Manchester to Leeds and Sheffield.

These failures are fully described in ***The Northern Poorhouse – How the Transport Establishment failed the People of the North***, available on [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk).

Transport for the North has offered no reason for the omission of the 'One North' journey time specification from its *Strategic Transport Plan*. This has effectively reduced the specification to which Northern Powerhouse Rail will be constructed, and it will therefore reduce the scheme's potential to redress the North-South divide and therefore rebalance the national economy. This represents a huge cause for concern.

The *Northern Poorhouse* report also puts forward the Exemplar Alternative of the High Speed UK scheme. This demonstrates that the original 'One North' journey time targets and routeing specification are fully achievable if links between Northern Powerhouse cities are correctly specified, without dependency on the failed HS2 project.

The key project for the **Major Roads Network** (which is acknowledged in the *Strategic Transport Plan*) is the projected Transpennine Tunnel. There is a clear need for improved road links between Manchester and Sheffield, to address the crippling congestion on the existing A628T Woodhead Road and fill in the most glaring gap in the UK motorway network. Historically, the Peak District National Park has proved an insuperable obstacle, and this has led to the development of the concept for a new Transpennine road tunnel.

However, Transport for the North has so far failed to develop any credible scheme for the Transpennine road tunnel. Earlier iterations of the scheme indicated that the tunnel would be around 31km long, extending from the end of the M67 at Mottram to the A616 at Deepcar. This would have avoided the Peak District National Park, but the length of tunnel would have been excessive, leading to huge costs and a level of technical/driving culture risk that could not be mitigated.

The latest iteration calls for a much shorter tunnel, but this will inevitably result in new construction of motorway-standard roads in the Peak District National Park. This would appear to give rise to the same irreconcilable environmental issues that prevented previous road construction along the A628T Woodhead corridor.

So the project appears to be going nowhere.

Alternative schemes to eliminate, or vastly reduce road traffic must be considered.

Restoration of the former Woodhead line to allow the introduction of a Channel Tunnel-style lorry shuttle would seem to offer the best option. This is also covered under the wider HSUK scheme, and is also being proposed by the Grand Northern group."

## Consultation questions re delivering TfN's Investment Programme

Q4a The final chapter in the Draft Strategic Transport Plan presents seven strands which explain how Transport for the North's Investment Programme could be delivered. (For more information see pages 78-91 of the Strategic Transport Plan.)

To what extent do you think each of the seven strands listed (i.e. Governance & Accountability, Stronger Partnerships, Innovation, Northern Transport Skills, Funding & Financing, Appraisal & Analysis and Ensuring a Sustainable Investment Programme) are important to deliver Transport for the North's Investment Programme?

A4a **HSUK response: "Essential"** (tick-box response required)

*(HSUK Commentary: It's difficult to disagree with any of these strands. The point here is that they have to be applied rigorously if we are to get the efficient intercity rail network across the North (and wider transport system) that the North needs. So far, none of these strands have been efficiently applied, and that accounts for the widespread failure of the current Strategic Transport Plan, as identified in **The Northern Poorhouse...**)*

Q4b. Please let us know your comments on the seven strands below. Please comment on any other delivery strands which are not included in the list currently.

Q4b **HSUK response...**

"All of the 7 strands appear highly desirable. However, they have to be applied rigorously if the North is to get the efficient intercity rail network across the North (and wider transport system) that it needs. So far, Transport for the North has failed to apply any of these strands with the necessary rigour and efficiency. This at least in part accounts for the widespread failure of the current Strategic Transport Plan, as identified in **The Northern Poorhouse...**"

## Consultation questions re TfN's Draft Strategic Transport Plan

Q5a To what extent do you agree or disagree with the following statement?

'Overall, the Draft Strategic Transport Plan will give businesses the confidence to invest in the North over the coming decades,'

A5a **HSUK response: "Strongly Disagree "** (tick-box response required)

*(HSUK Commentary: Business can have no confidence in a regional transport system that doesn't work efficiently and optimally, and which (with the established HS2 scheme preventing efficient implementation of intercity links between the principal cities of the Northern Powerhouse) will tend to suck economic prosperity out of the North.)*

Q5b Overall, to what extent do you support or oppose the Draft Strategic Transport Plan in its current format?

A5b **HSUK response: "Strongly Oppose"** (tick-box response required)

*(HSUK Commentary: Basically it doesn't work. Those developing the Strategic Transport Plan have failed to recognise that in basing their proposals upon HS2 – which was designed with no thought for transpennine connectivity – it becomes impossible to deliver the*

*optimised transpennine connectivity – which is the core rationale of the TfN Strategic Transport Plan. This is fully explained in **The Northern Poorhouse...**)*

Q5c **HSUK response...**

“Transport for the North’s Strategic Transport Plan is unacceptable for many reasons:

- It fails to meet the journey time targets established by ‘One North’ in 2014.
- It fails to provide the single new transpennine route, efficiently integrated with a north-south high speed route and thus connecting Manchester with Leeds and Sheffield.
- It does not comprise an optimal solution. This is proved by the massively superior performance of High Speed UK on almost any conceivable criterion.
- It will fail to fulfil its original intention, to improve connectivity between Northern cities to the same standard that HS2 should achieve on north-south routes to London, and thus rebalance the UK economy.
- In its current form (i.e. with only a single new transpennine route identified from Manchester via Bradford to Leeds) Sheffield will be left bypassed by both Northern Powerhouse Rail and HS2. Sheffield, one of the UK’s primary cities, must surely be at the heart of any new high speed rail network formed by HS2 and Northern Powerhouse Rail. Without the necessary nodal position, Sheffield will be left hugely disadvantaged.

The people of the North deserve far better.”

## Consultation questions re the Integrated Sustainability Appraisal supporting TfN's Draft Strategic Transport Plan

Q6 Please provide any comments you have about the Independent Integrated Sustainability Appraisal, and its objectives, in the box below.

A6 **HSUK response...**

*"The Independent Integrated Sustainability Appraisal fails to address the core deficiencies of the TfN Strategic Transport Plan - that it fails to achieve its committed journey time targets and its undue and unnecessary dependency on the established HS2 route. Both reduce the efficiency of the proposals, and thereby reduce their potential to achieve the step-change modal shift necessary to achieve major reductions in transport CO<sub>2</sub> emissions and other sustainability goals.*

*As noted previously, the Independent Integrated Sustainability Appraisal fails to address the core deficiencies of the TfN Strategic Transport Plan - that it fails to achieve its committed journey time targets and its undue and unnecessary dependency on the established HS2 route. Both reduce the efficiency of the proposals, and thereby reduce their potential to achieve the step-change modal shift necessary to achieve major reductions in transport CO<sub>2</sub> emissions and other sustainability goals. Hence the appraisal cannot possibly be robust.*

*Transport for the North is under a clear public duty to develop for the people of the North an optimised transport system interlinking the principal cities of the Northern Powerhouse and thereby increasing its economic performance, to the benefit of all. However, Transport for the North has forgotten its public duty in its uncritical acceptance of the established HS2 routes. These have then governed the development of TfN's proposals, and have greatly impaired their efficiency. All this is demonstrated in **The Northern Poorhouse - How the Transport Establishment failed the People of the North**, available on [www.highspeeduk.co.uk](http://www.highspeeduk.co.uk)."*