

HIGH SPEED RAIL: INVESTING IN BRITAIN'S FUTURE

Consultation on the route from the West
Midlands to Manchester, Leeds and beyond

Consultation summary

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July 2013



Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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WHY THE UK IS INVESTING IN HS2

Capacity By 2025 the West Coast Main Line will be full

Long distance rail travel has **doubled since the mid-1990s**

Network Rail New Lines Programme

18 trains an hour will be run by HS2, **doubling** the number of seats between London and Birmingham

Connectivity HS2 will redraw the economic map of Britain

8 of Britain's largest cities will be better connected

2/3 of the population of Northern England will be within **2 hours** of London

Growth HS2 will help secure future prosperity

For every **£1** invested, the benefits of HS2 will return **£2**

HS2 Ltd Economic Case

£4.2 billion estimated contribution to UK GDP from the construction of Phase One

Deloitte

Regeneration HS2 is a major catalyst for job creation

In the West Midlands, HS2 is key to plans to provide **100k jobs**

Solihull Metropolitan Borough Council & Arup

When open, it is predicted that HS2 will underpin the delivery of **400k jobs**

The Core Cities Group

hs2 engine for growth

Summary

The purpose of this summary document and the main consultation document, *High Speed Rail: Investing in Britain's Future Consultation on the route from the West Midlands to Manchester, Leeds and beyond*, and of the public information events that will follow later in the year, is to help give people the information that they need to understand the proposals for the routes from the West Midlands to Manchester and to Leeds and to respond to the consultation.

The new high speed network is being planned and built in two phases. Phase One of HS2 will see a new line run from London Euston, through Old Oak Common in West London, to new stations at Birmingham city centre and a new Birmingham Interchange station near Birmingham Airport. The details of this route were announced by the Government on 10 January 2012.

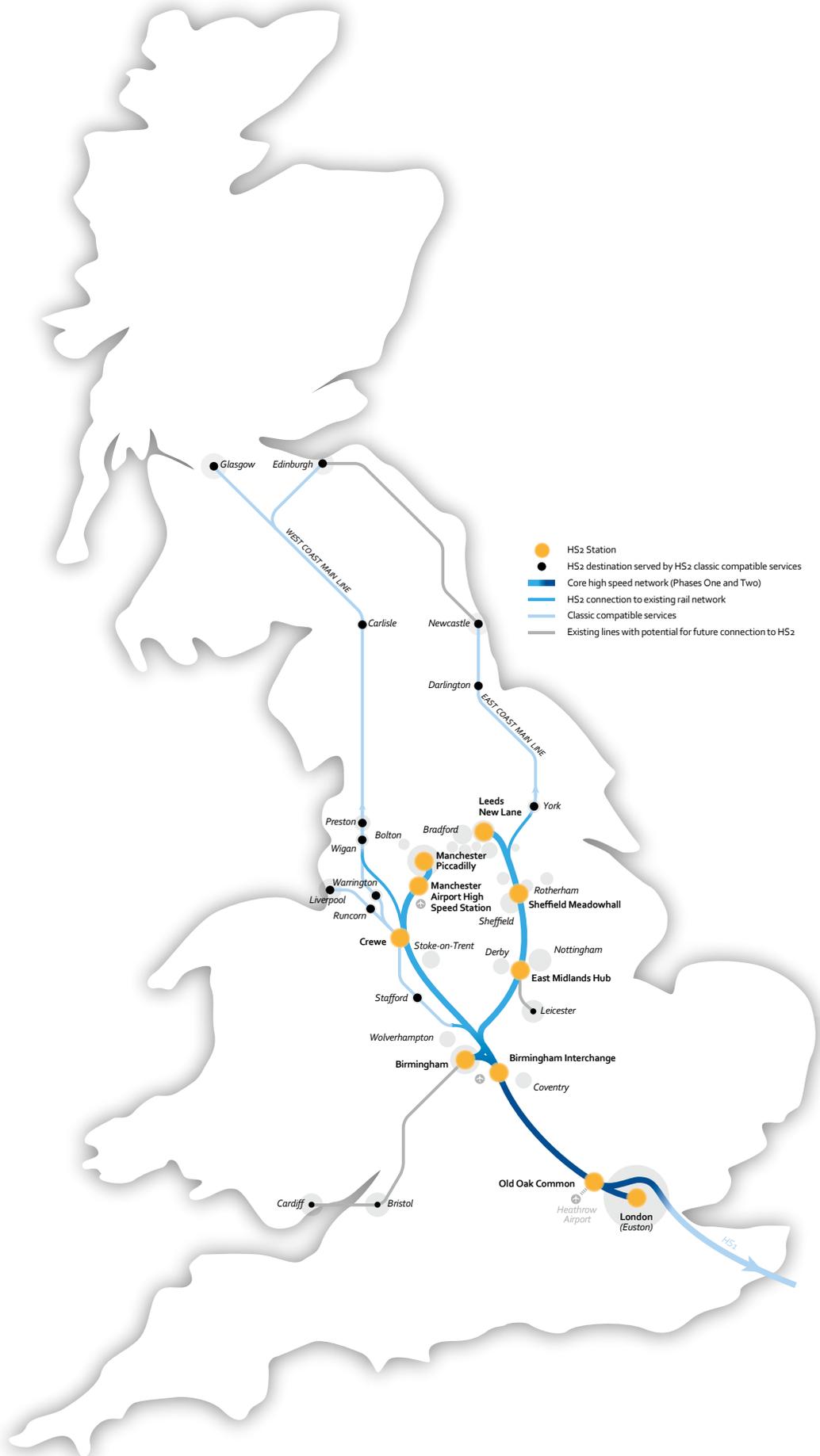
Phase Two would extend the high speed line from Birmingham to Manchester and Leeds, with connections on to the West and East Coast Main Lines to serve the rest of the North of England and Scotland. Intermediate HS2 stations would be built at Manchester Airport, Sheffield Meadowhall and an East Midlands Hub at Toton (between Nottingham and Derby). It would be integrated with the existing network, allowing trains to serve destinations such as Crewe, Liverpool, Wigan, Preston, York, Newcastle, Glasgow, Edinburgh and many others.

This document summarises how the Government has reached its view on the proposed route from the West Midlands to Manchester, Leeds and beyond and describes the ways in which you can submit your views on the proposals to help shape the development of HS2 (the full description is in *High Speed Rail: Investing in Britain's Future Consultation on the route from the West Midlands to Manchester, Leeds and beyond*).

The questions on which we are consulting are listed in Part 3 of this summary document together with details of how to respond.

The best way to help us develop the proposals for the Phase Two route is to take part in this consultation. Your opinion counts and the responses we receive to the proposals in this document are vital to ensuring that we consider every issue at this stage of the project's development. The decision by the Secretary of State on the route for Phase Two is due to be announced by the end of 2014. This would be followed by a hybrid Bill seeking powers to construct Phase Two in the next Parliament, following the May 2015 General Election. If Parliament approved that Bill, it would provide the necessary legal powers to construct, operate and maintain Phase Two.

Map of High Speed Britain



Part 1 – The need for HS2

Part 1 – The need for HS2

The Government's proposals for HS2, the biggest infrastructure project in the UK in recent years, have generated a wide public debate. This is as it should be: HS2 will change Britain, take time to complete and cost money. Parliament will be fully involved with the Preparation Bill for HS2 which is currently before the House and the hybrid Bills to follow later. But this is not just a debate for Government and politicians. People who will be affected or benefit, including representatives of cities and businesses, must all have their voices heard too.

The purpose of this document, and of the public information events that will follow later this year, is to seek views on the proposed routes from the West Midlands to Manchester and to Leeds

Enhancing our existing railway infrastructure is not good enough

A debate about the benefits and impact of high speed rail has to start with a proper awareness of why it is needed.

Until recently, the UK's railway infrastructure has not received the sustained investment required to keep pace with the growth in our population and the changes in our country. A growing economy and a rising population mean that there is an ever increasing demand for inter-city commuting and freight travel.

Past Governments took a piecemeal approach to upgrading the rail network. This can not overcome the fundamental limitations of a national railway infrastructure that started to be laid down in the 1830s and which was largely complete by 1900.

The clear trend of growing demand for inter-city rail travel and for commuter travel into the main cities in the UK is exacerbated by likely population growth and increasing urbanisation in the UK. The geography of our country means that our north-south transport links are amongst our most important national assets and will be most exposed to these pressures.

As part of our preparatory work in developing the proposals for HS2, the Government has looked at whether building a new conventional speed railway line would be a solution to our transport challenges. We have also considered whether improvements to the conventional railway would provide the same benefits as HS2.

HS2 Ltd's analysis indicated that building a new line along broadly the same route as HS2, but with a conventional line speed of 125mph, would be around £1.4 billion¹ less than a high speed line. This is because regardless of the speed of a new line, similar infrastructure is needed and also because a slower line would attract fewer passengers and would therefore generate reduced revenues. In contrast, the reduction in benefits as a result of slower journey times and reduced passenger numbers would be expected to be as high as £6.2 billion. The additional benefits from building a new high speed line compared to a conventional speed line outweigh the additional costs by a factor of more than four to one. If entirely new lines are to be built, then the additional benefits from the transformation in connectivity that high speed rail can provide far outweigh the relatively small incremental cost of such an approach.

¹ HS2 Ltd, *Economic Case for HS2* (2011); at: <http://highspeedrail.dft.gov.uk/library/documents/economic-case>

Enhancing existing railway lines has frequently been raised as a more attractive alternative to high speed rail and the Government has examined these alternatives to HS2 in numerous studies². We have considered the costs and benefits of measures which would:

- lengthen trains on existing services;
- add more tracks to the West Coast Main Line (WCML) to deliver more capacity for long-distance and commuter trains; and
- upgrade the Chiltern route to provide more commuter capacity and free the WCML for inter-city traffic.

This work has included extensive modelling of how major programmes of investment in the existing railway would work, including the assessment of an alternative proposition put forward by the 51M group of local authorities along the HS2 route.

The analysis of these potential alternatives has shown clearly that no upgrades to the existing line can offer the step change in passenger capacity required to meet long term demand and which HS2 will provide. Even the best of the alternatives offers less than half the level of benefits of HS2. Neither will they achieve the journey saving times of a high speed railway. Our long term strategy cannot rely on forcing growing demand into just one key economic artery.

HS2 will transform the transport infrastructure of the UK

HS2 not only meets our capacity challenge, but it gives us the opportunity to create a better railway. It will offer better services, reliability and connectivity. It will have the potential for trains to leave just over 3 minutes apart, and the ability to move around 800,000 people, roughly the population of Leeds, every day which will provide a huge boost to rail travel.

Reducing congestion and efficiently linking our major cities

Our rail infrastructure is already straining to cope with demand from both passengers and freight. The only viable solution to this challenge is HS2. The longer and larger trains that will be able to operate on the high speed network mean that HS2 will release the pressure building inexorably on the country's rail network, running up to 18 trains per hour between our cities, each carrying up to 1,100 passengers. As well as these high speed trains there will be trains capable of running on both the high-speed network and onto the existing railway. This will spread the benefits of high speed rail far wider, allowing people to reach destinations on the existing rail network without the need to change trains, delivering improved journey times and increased capacity.

The HS2 line from London to the West Midlands would tackle the most urgent capacity constraints foreseen by Network Rail at the southern end of the WCML. The full HS2 network will also release significant capacity on the ECML and MML. Long-distance services to the East Midlands, South Yorkshire and Leeds would switch to the new network, as well as the southern portion of journeys to Newcastle and Edinburgh.

² New Lines Study (Network Rail, 2008-09) <http://www.networkrail.co.uk/newlinesprogramme/>; High Speed 2 Strategic Alternatives Study – Strategic Outline Case (March 2010) <http://www.dft.gov.uk/about/strategy/transportstrategy/eddingtonstudy/reportbychapters> and <https://www.gov.uk/government/publications/delivering-a-sustainable-railway-white-paper-cm-7176>; High Speed Rail Strategic Alternatives Study – Strategic Alternatives to the Proposed Y Network (Atkins 2011) <http://highspeedrail.dft.gov.uk/sites/highspeedrail.dft.gov.uk/files/hsr-strategic-alternative.pdf>; "High Speed Rail London to the West Midlands and Beyond: A Report to Government by High Speed Two Limited (March 2010). Review of HS2 London to West Midlands Route Selection and Speed – A Report to Government by HS2 Ltd (HS2 Ltd 2012) <https://www.gov.uk/government/publications/review-of-hs2-london-to-west-midlands-route-selection-and-speed>; and, High Speed Rail Strategic Alternatives Study – Update Following Consultation (Atkins 2012) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3664/hs2-strategic-alternatives-study-update.pdf

The Government is aware of the importance of ensuring that the towns and cities in the Midlands and the North that do not have an HS2 station have the local connectivity so that they are still able to benefit from the new network. HS2 offers the opportunity to support wider regeneration as well as create new commuter markets. It is essential that the regions consider and plan now for the connectivity with HS2 that they would like to see when it opens. We want to hear from regions on their views for the connectivity offered to ensure that the benefits of HS2 are spread as widely as possible.

The benefits of HS2 will not only be felt by those accessing the new high speed services. Many long-distance, inter city rail services will transfer to the high speed network, which would allow us to run new services on the existing rail network. Understanding how this capacity can be best used will be a key factor in maximising the potential of HS2. There are many options for the use of this capacity including much needed additional commuter capacity; local and regional services that were previously impossible; and increases in rail freight, to boost the economy and take lorries off the roads.

Building on the analysis that Network Rail and Passenger Focus carried out on Phase One³, in January this year we asked Network Rail to consider how the existing rail network can respond to the growth opportunities generated after Phase Two of HS2 is open. Network Rail's initial findings suggest that there are a number of possible future journey opportunities that could be created by the capacity freed up by HS2. This is important as it demonstrates that HS2 would not be just about station cities but that it would enhance and improve wider regional connectivity. Network Rail felt that there was potential for around 110 towns and cities to benefit from the released capacity that HS2 will bring. Their report is available at www.networkrail.co.uk/highspeedrail

HS2: engine for growth

The economic growth of the United Kingdom has long depended on our ability to develop transport and communication links that promote trade and innovation. The development of the original railway, of our canal network, ports and road network allowed British cities to develop and compete successfully on a global level.

The growth of our country has continuously reflected this principle. International shipping routes helped to open up early phases of world trade; mass transit railways supported the development of cities here and all over the world⁴. In the modern era, the UK like other countries has benefited from the completion of international airports which provide global connectivity, as well as domestic motorways and highway networks that benefit productivity growth.

We are committed to maximising the economic growth benefits and job opportunities of HS2. An independent Growth Taskforce, led by Lord Deighton, will apply Lord Heseltine's prescription of leaving "no stone unturned" in the pursuit of growth⁵. The taskforce will report on its findings and recommendations early in 2014.

Exceptional Hardship Scheme

The Government understands the impact that these proposals have on property owners affected by the route. Although HS2 will benefit the whole country, we recognise that it may bring anxiety to those close to the proposed route. Past experience of similar infrastructure projects,

³ Future priorities for the WCML: released capacity from a potential high speed line (Network Rail 2012)

⁴ Crafts and Leunig *The historical significance of transport for economic growth and productivity*, 2005 (http://www.maroulaki.com/transport/UK%20transport%20Study/eddington_researchannex1.1_011206.pdf)

⁵ <https://www.gov.uk/government/publications/no-stone-unturned-in-pursuit-of-growth>

particularly the HS1 line to the Channel Tunnel, suggests that impacts on property markets are most significant during a project's early planning and construction stages, but improve later. With sensitive engineering design, the reality of those impacts has often turned out to be less than was first feared.

However, the Government has always been clear that it will assist property owners in the short and longer term. That is why we have already gone beyond what is required by law and in parallel to this consultation we have announced an Exceptional Hardship Scheme (EHS) to deal with cases of property blight caused by the proposals for Phase Two. The introduction of this scheme means that homeowners already being affected by the proposals, who have a pressing need to move, now have recourse to compensation.

Under this scheme, residential, agricultural and small business owner-occupiers whose properties may be affected by the construction or operation of the proposed route, and who can demonstrate that they satisfy the criteria of the scheme, are able to apply to have their properties bought by the Government at their full un-blighted value. More detail on the five criteria is available at www.hs2.org.uk

The EHS is just the first step in providing compensation to those directly affected by HS2. It is designed to be an interim scheme which will, in time, be replaced. The Government has undertaken to launch a fresh consultation on long-term compensation options for Phase One. Subject to the outcome of that consultation, we expect new compensation measures for Phase One to be introduced in due course. We will not be ready with our proposals for long-term discretionary compensation for Phase Two until after the final route has been decided.

The Government is committed to compensating fairly those who are affected, providing a generous and comprehensive package of measures which go above and beyond what is required by law.

Part 2 – Summary of proposed line of route and stations

Part 2 – Summary of proposed line of route and stations

HS2 Ltd was asked by the Government to propose routes for extending Phase One⁶, the high speed line between London and the West Midlands, to Leeds in the North East and to Manchester in the North West with connections to the East and West Coast Main Lines for onward services to places such as Darlington and Newcastle, and for serving Scotland. HS2 Ltd was also asked to provide advice, as part of Phase Two, on a proposed spur from the Phase One route to serve a station in the vicinity of Heathrow Terminal 5⁷. Proposing locations for supporting infrastructure including maintenance and rolling stock facilities was also part of the remit.

HS2 Ltd submitted its advice to Government in March 2012 and set out all the options the company considered, presenting the greatest detail on those options that had emerged as the strongest. The Government consulted with the station city partners who would be served by HS2 to ensure that its initial preferred options, announced in January 2013, would be those that best supported development and growth in future.

The Government then carried out a period of informal engagement in preparation for the launch of this consultation. Ministers met with Members of Parliament affected by the proposed Phase Two route, station and depot options to explain the context of the January announcement, ensure MPs were engaged, understood the process and had an opportunity to raise any initial concerns or local priorities ahead of the public consultation.

Through this exercise, Ministers looked to ensure that urgent changes required to the route could be made ahead of the launch of consultation and to listen to other suggested amendments and point the interested parties to this consultation as the place to register them formally. In parallel, HS2 Ltd also engaged with the local authorities, Network Rail, Highways Agency, station city partners and key environment and heritage organisations affected by the line of route. This approach ensured that the contributions of various stakeholders and partners were considered as HS2 Ltd continued to develop and refine their engineering designs. Changes were made to the route in two locations:

- close to East Midlands Airport which will reduce the impacts on a proposed planning application for a Strategic Rail Freight Interchange; and,
- at Sheffield Meadowhall where we have increased the curvature of the line to avoid impacting on a specialised engineering component maker and their proposed development and a major retail outlet.

This summary covers the proposed scheme for consultation. It is separated into a section describing the route, station and supporting infrastructure proposals for the western leg to Manchester and beyond; and a section describing the route, station and supporting infrastructure proposals for the eastern leg to Leeds and beyond. The route and stations are described in summary, including details of how HS2 Ltd sought to optimise the design at this stage of the process to minimise impacts.

⁶ HS2 Ltd.'s remit is set out in a number of publically available remit letters from Government

⁷ The January document, High Speed Rail, Investing in Britain's Future. Phase Two: The Route to Leeds, Manchester and Beyond- describes the Government's decision to pause this work and the next steps on Heathrow

Connecting the UK

HS2 would connect the major urban economies of this country, either directly or by high speed trains running on existing rail lines.

Connections to the existing railway would be built at the northern end of each leg. On the western leg, high speed trains would be able to run onto the classic network to serve destinations such as Wigan, Preston, Lancaster, Penrith, Carlisle, Glasgow and Edinburgh. From the eastern leg, the high speed line would continue almost as far as York, making it possible for high speed trains to continue directly to places such as Newcastle, Darlington and Durham.

Further south, HS2 would connect with the West Coast Main Line at Crewe, meaning key destinations like Liverpool, Runcorn, Crewe and Warrington would benefit from direct services. By calling at the key rail interchange of Crewe high speed train services would also be easily accessible for passengers in North Wales and elsewhere.

Western leg: Manchester route

Introduction

This section focuses on the proposed route from the West Midlands to Manchester including new high speed rail stations at Manchester Piccadilly and alongside Manchester Airport. The proposed locations for supporting infrastructure are also described.

Western route summary

The western leg of the network would serve the proposed stations at Manchester Airport and Manchester Piccadilly stations. The line would connect with the London-West Midlands leg near Lichfield in the West Midlands, before heading north-west past Stafford and on towards Crewe. A connection with the West Coast Main Line would be provided just south of Crewe, with the main line continuing in a twin tunnel under the town heading north. It would cross over the M6 and then the M56, and then head up past Warrington to a further connection with the West Coast Main Line south of Wigan. The Manchester stations would be served by a spur off the main line running roughly parallel with the M56 towards Manchester Airport. The Manchester High Speed Airport station would be located between Junctions 5 and 6 of the M56 as the line approaches the main built-up area of Manchester. Heading north from here the line would enter a seven and a half mile twin tunnel, surfacing a short distance from the new station alongside the existing station at Manchester Piccadilly. The total route length would be 94 miles (150km).

Manchester Airport High Speed Station

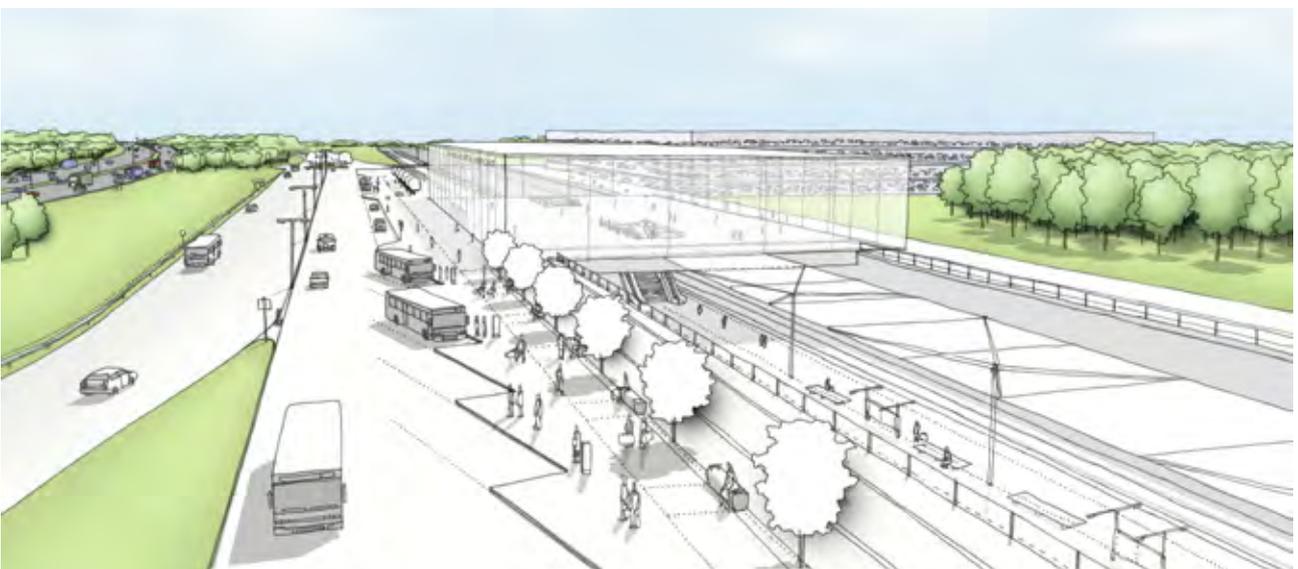
The Government asked HS2 Ltd to consider potential access to major airports as part of Phase Two. Following HS2 Ltd's report and further work and engagement, the Government confirmed its support, subject to a suitable funding package being agreed, for HS2 serving Manchester Airport and the wider area. An interchange station has therefore been included alongside the Airport as part of the proposed scheme. This station would also give South Manchester and the wider Cheshire area easy access to the high speed rail network, both by public transport and by car.



Manchester Airport High Speed Station – footprint



Manchester Airport High Speed Station – intermodal connectivity



Manchester Airport High Speed Station – possible station view

Manchester Piccadilly

The Government has announced its intention to construct a new Manchester city centre HS2 station alongside the existing main line station at Manchester Piccadilly. The new station would sit immediately to the north of the existing Manchester Piccadilly station. The HS2 platforms would be parallel with, and alongside, platform one of Manchester Piccadilly station. The platforms would be elevated with the HS2 concourse facilities located at ground level, beneath the elevated platforms and to the west side of the Metrolink. This would allow easy connections with regional rail services to places such as Salford, Stockport and Bolton. There would also be excellent easy access to the extensive Manchester public transport network, such as Metrolink services to Bury, Altrincham, Eccles and Salford Quays. Local and regional buses would be on the doorstep and there would be easy pedestrian access to the city.

Supporting infrastructure

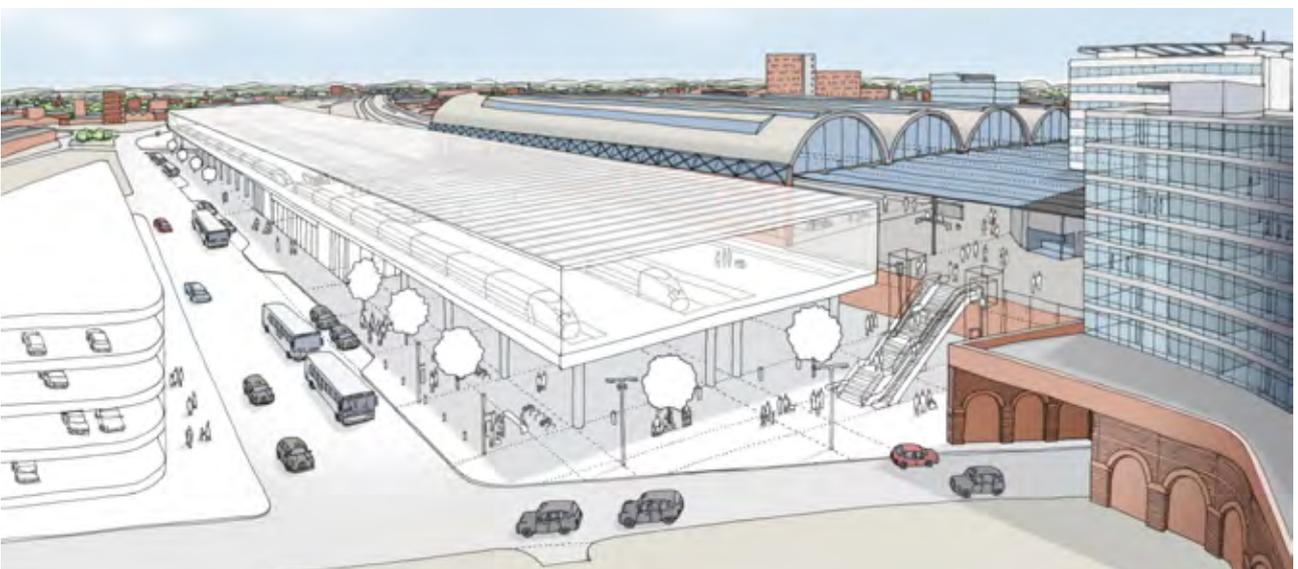
There would be an infrastructure maintenance depot to the south of the existing Crewe station and a rolling stock depot to the north of Golborne. There would also need to be a set of maintenance loops, the indicative location is north of Pipe Ridware, immediately north of the viaduct over the River Trent floodplain. For longer tunnels, shafts are required for ventilation, maintenance, pressure relief and emergency intervention. Five indicative locations have been identified on the western leg.



Manchester Piccadilly – footprint



Manchester Piccadilly – intermodal connectivity



Manchester Piccadilly – possible station view

Eastern leg: Leeds route

Introduction

This section focuses on the proposed route from the West Midlands to Leeds including new high speed stations in the East Midlands, Sheffield and Leeds, and a connection to the East Coast Main Line (ECML) enabling York, Newcastle and the wider North East and Scotland to be served.

Eastern route summary

The eastern leg would serve stations in the East Midlands, South Yorkshire and Leeds. The line would connect with the London-West Midlands leg to the east of Birmingham, near Junction 4 of the M6, and then follow the M42 corridor north-east towards Derby and Nottingham. The East Midlands Hub station would be located between these two cities at Toton, about a mile from the M1. The line would head north, following the M1 corridor as it heads towards South Yorkshire. The station serving this region would be located at Meadowhall alongside the M1, between Sheffield and Rotherham. From here the line would pass to the east of Barnsley and connect to the ECML nine miles to the south-west of York. As with Manchester, Leeds would be served by a spur off the main line. It would run within the existing Castleford to Leeds railway corridor, passing the southern suburbs of Leeds before rising above street level into the new station at Leeds New Lane. The total route length would be 115 miles (185 km).

East Midlands Hub Station

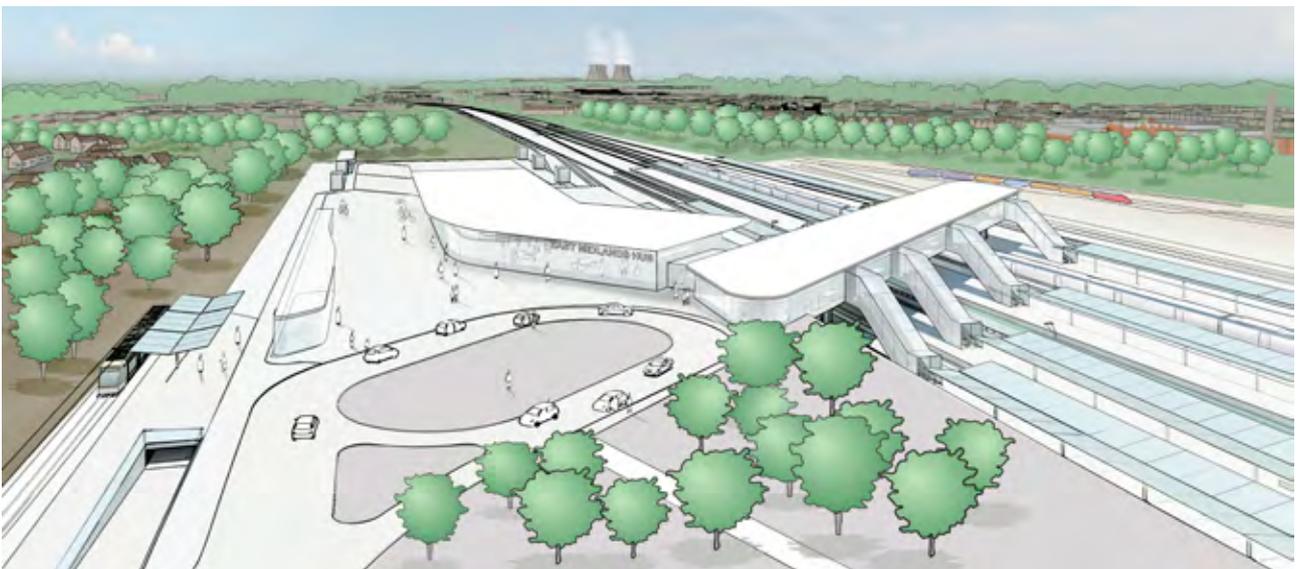
A new station at Toton located between Nottingham and Derby would offer excellent links to East Midlands cities and stimulate growth across the region. The station would be readily accessible by public transport from both Derby and Nottingham, with the site close to Junction 25 of the M1 and on rail lines which can be reconfigured to serve Derby, Leicester, Nottingham and many other regional centres and also from much of the wider East Midlands region.



East Midlands Hub – footprint



East Midlands Hub – intermodal connectivity



East Midlands Hub – possible station view

Sheffield Meadowhall Station (South Yorkshire)

A new station at Sheffield Meadowhall would be situated alongside the M1, providing convenient access by road from the wider region serving Sheffield and the wider South Yorkshire region. This station is well-placed to encourage jobs and growth in Sheffield and already has excellent connectivity with existing public transport networks. Trains connect Meadowhall to Rotherham, Barnsley and beyond to Wakefield, Doncaster, and stations to Leeds and Manchester, and Chesterfield. With the addition of HS2, Meadowhall could become a key transport hub within the region, in a location that allows not only quick access from central Sheffield but also from across the region.



Sheffield Meadowhall – footprint



Sheffield Meadowhall – intermodal connectivity



Sheffield Meadowhall – possible station view

Leeds New Lane Station

A new station in central Leeds, would be built in the Leeds Waterfront area of the city centre. This would be joined to the existing station via a dedicated pedestrian link, making it just a short walk between the two. This transfer time could be further reduced by the introduction of moving walkways. Leeds station offers connections to a number of regional rail destinations such as Bradford, Halifax and Castleford, as well as to the city's extensive bus network. There would be immediate access to this station from the M621 (Junction 3), providing connections with the city's ring roads and regional motorways.

Supporting infrastructure

There would be an infrastructure maintenance depot to the north-west of Staveley on the eastern leg to Leeds and a rolling stock depot to the east of Wakefield, south of the village of New Crofton. There would also need to be a set of maintenance loops, the indicative location is at Toton in the vicinity of the East Midlands Hub station. For longer tunnels, shafts are required for ventilation, maintenance, pressure relief and emergency intervention. One indicative location has been identified on the eastern leg.



Leeds New Lane – footprint



Leeds New Lane – intermodal connectivity



Leeds New Lane – possible station view

Sustainability summary

Since work on the Phase Two proposals commenced in October 2010, sustainability has been central to how route options were selected and progressed. An Appraisal of Sustainability (AoS) process was used specifically to help HS2 Ltd take account of sustainability issues at each stage of the scheme's development. As a result, the proposed scheme integrates considerations of sustainability alongside those of passenger demand, cost, ease of construction and journey time.

The overall findings of the AoS are reported in detail in the *HS2 Phase Two Proposed Scheme for Consultation: Sustainability Statement* which can be viewed at www.hs2.org.uk. At a later stage, once the Government has identified its preferred scheme following consultation, a more detailed Environmental Impact Assessment (EIA) will be undertaken.

People and communities

HS2 has the capacity to transform areas, driving longer-term shifts in economic performance and potentially altering the shape of economic geography. On a more local scale, the introduction of new high speed stations could have profound effects on the surrounding areas, as people and businesses take advantage of new opportunities arising from the transformation in connectivity, with each station designed to link with existing transport, allowing access to wider transport networks. In this way, HS2 could support a large amount of additional employment in the areas immediately around the stations.

The AoS has made estimates of the numbers of these additional supported jobs, as well as of new houses, around the HS2 stations. In total, up to around 70,000 jobs could be supported around the HS2 stations. In addition, up to around 7,500 new homes could be supported in these areas.

The route would inevitably pass through a number of built up areas in its approach to stations and along transport corridors or river valleys. The design has used tunnels to avoid some of these, for example in passing beneath Crewe and in accessing central Manchester. However, demolitions would be required at certain locations: an estimated 277 residential properties would be demolished by the scheme proposals. An estimated 228 commercial properties, 11 industrial properties and four community properties would also be demolished.

An estimated 1,100 dwellings on the western leg and 7,800 on the eastern leg are predicted to have 'noticeable' noise impacts, meaning a noise change of 3 decibels or more (3dB being a just perceptible change in total noise over an assessment period) and resulting in a daytime noise level of 50 decibels or more. Some of these may not be significant, and further work will be undertaken during the EIA, including baseline noise surveys, to identify where the significant effects will occur.

Landscape and cultural heritage

The route would pass through no nationally protected landscapes, such as areas of outstanding natural beauty; and a number of refinements to the design have sought to limit impacts within areas of more sensitive landscape. Some prominent structures, such as the viaducts across the Manchester Ship Canal and Dove and Aire Valleys and the embankment past Renishaw, would result in adverse change to local landscape character, but as the scheme design is progressed, landscape mitigation will become a key focus.

HS2 Ltd has equally given priority to protecting the historic environment. The western and eastern legs have been selected and aligned to have few impacts on known designated heritage

assets. They would avoid physical impacts on nearly all of the most significant designated features, including Registered Battlefields and Grade I and II* Listed structures.

Wildlife and ecology

The design has been responsive to numerous, widespread and diverse areas of protected habitat. There are a number of particularly important, European-protected habitats, particularly along the western leg, where water-bodies have been formed within glacial depressions. HS2 Ltd has worked closely with Natural England and the Environment Agency in its selection of routes and designs that avoid impacts to any of these sites. On the eastern leg, potential impacts on the European-protected River Mease, which is crossed by viaduct, have also been avoided, although later design development will need to be alert to the sensitivity and vulnerability of this feature.

Water resources

The proposed scheme would cross a network of watercourses of varying size. In a small number of cases this may necessitate a diversion or modification to the river channel. Further design will seek to avoid the need for diversion and to explore opportunities for environmental enhancement.

The proposed scheme could also exacerbate flood risk where it crosses designated flood zones. Where it does, it has been assumed that viaducts would be used.

Land and material resources

The proposed new railway would make good use of land that has had a previous industrial or railway use. However, some productive agricultural land would be lost. Further work would be undertaken during later design stages to examine how agricultural landtake could be reduced and severance to farmland mitigated.

Climate change

National and international studies confirm that rail transport is consistently amongst the most carbon efficient of mass transport modes in terms of emissions per passenger-km, with high speed rail particularly efficient in this respect.

The carbon footprint of HS2 will therefore be a balance between these new emissions and potential savings. This will be determined in due course, reliant as it is on knowing passenger demand figures which are presently being modelled as part of the economic case. It is clear that the carbon footprint of HS2 will depend on numerous factors outside its control. Whatever the outcome, HS2 will undoubtedly provide a fundamental contribution to getting more people onto trains and thereby supporting a low carbon economy.

Improvements to the existing rail network because of HS2

The opening of the full HS2 network will result in many traditional long distance journeys on the existing rail network being delivered by high speed trains. This could enable additional commuter, regional or freight services to make better use of the existing network. Understanding how this capacity can best be used will be a key factor in understanding how we can maximise the potential of HS2.

While we are not able to write the service timetable for the Phase Two railway today we are keen to explore the appetite for other services, including running high speed trains onto other parts of the existing rail network to widen the reach of HS2, where there is a strong case to do so.

Network Rail, as custodians of Britain's rail network, recognise that HS2 will play an important part in enhancing the existing network and in January this year we commissioned Network Rail to advise the Government on options for the future use of the existing rail network after Phase Two of High Speed 2 has been constructed and is operational.

Network Rail felt that there was potential for around 110 towns and cities to benefit from the released capacity that HS2 will bring. Even an incremental approach could deliver the following benefits:

- Bradford and Wakefield could get improved frequency of trains to Leeds as well as increased services to London;
- Additional services from the South Coast to Manchester stopping at one or more intermediate locations such as Winchester, Oxford, Milton Keynes, Stoke, Macclesfield, Stockport;
- Potential to re-establish Coventry to Leicester and Nottingham through-services;
- Potential for additional freight services; and
- Additional services could be provided between Birmingham, Wolverhampton and Warrington stopping at one or more of the following intermediate locations; Sandwell and Dudley, Wolverhampton, Penkridge, Stafford, Crewe, Hartford, Winsford, Warrington Bank Quay.

The complete report can be viewed at www.hs2.org.uk

Maximising the benefits of our infrastructure

The recently published *Investing in Britain's Future*⁸ describes the Government's proposals to ensure that the UK invests in and gets the most out of its infrastructure. We have been developing proposals for developing and enhancing "interdependencies" in UK infrastructure to boost their benefits and promote long term, sustainable economic growth. Interdependencies are where one network interacts with, impacts on or enhances another, for example where our drinking water supply depends on the proper functioning of the electricity network.

HS2 presents an opportunity to make wider infrastructure use of the route between London, Birmingham, Leeds and Manchester beyond running a railway. Where suitable additional uses for the corridor can be found, engineering costs can be shared resulting in significant overall cost savings while resilience and value can be enhanced leading to the creation of infrastructure that would otherwise not be built.

As the Government is determined to maximise the potential value for public investment that HS2 will bring to the country, provisions are already being made for the future installation of a communications cable along the 140 miles of track for Phase One if there is commercial demand. Such "future proofing" of the UK communications networks will make a new information superhighway possible, reaching even more people.

The Government is also working with industry experts to determine how we can better exploit such potential in modern infrastructure. We have been looking into whether provisions could be made along Phase Two of the HS2 network for other utilities such as water, electricity or

⁸ <https://www.gov.uk/government/publications/investing-in-britains-future>

integration with flood management schemes. This could further enhance the benefits brought to the country by HS2 while creating jobs and driving growth.

Supporting documents

The consultation document contains more detailed information on the proposed route, the specific consultation questions and how to respond. The following additional reports and resources may also be of interest. All of these are available at www.hs2.org.uk

Sustainability statement

Any new transport infrastructure has consequences for the people and businesses nearby and for the landscape through which it passes. Therefore, in addition to the consultation document, we have published a detailed environmental report on the sustainability impacts of the proposed scheme.

The *Sustainability Statement* describes the extent to which the Government's proposed scheme for Phase Two of HS2 supports objectives for sustainable development as part of the Appraisal of Sustainability (AoS) process. It has been prepared by HS2 Ltd's sustainability consultants, to assist with public consultation by explaining the potential sustainability benefits and adverse impacts of the proposals, as well as to explain how sustainability has helped support the scheme selection and design. Passenger demand figures modelled as part of the economic case will also be used to appraise the predicted carbon footprint of HS2, details of which will be included in the updated economic case due to be published in October.

Technical report

A technical report, setting out the detailed route description of each leg together with the proposed stations, depots and ancillary infrastructure including the maintenance loops and ventilation shafts for tunnels has been published. This is in addition to the detailed technical information on the routes and the other options considered that was published in January.

Factsheets and maps

Factsheets will provide bitesize information on HS2. Some of these will provide information on overarching themes such as noise, the exceptional hardship scheme and train types. Another set of factsheets will be for individual UK regions setting out how HS2 will improve connections, reduce journey times and bring major northern towns and cities closer than ever before

There will also be a set of maps that provide a depiction of the HS2 Phase Two proposed route. The bottom portion of each map depicts the profile of the line in relation to the ground. Further details can be found at www.hs2.org.uk

Network Rail Released Capacity report

This study was commissioned by the Department to understand other options for the future use of the existing rail network after Phase Two of HS2 has opened. Network Rail has undertaken this study at a high level and has consulted with local, regional and industry stakeholders.

A complete list of options can be found in their report which is available at www.hs2.org.uk

Ongoing work

Wider analysis documents (due for publication October 2013)

The case for HS2 is kept under regular review, and we will be publishing an update of the strategic and economic cases for HS2 later this year. These reports will set out the strategic and economic reasons for building HS2. They will be published in October 2013 and will be available from www.gov.uk/government/publications. We are not consulting on these documents, but respondents will have sufficient time to take account of the information before this consultation closes.

An important part of the case for HS2 Phase Two is to consider the strategic alternatives to the scheme that could meet the same objectives. With this in mind, the Department commissioned Network Rail to review and develop a range of options for enhancements to the existing network, building on previous work undertaken to support the decisions taken in January 2012. The results of the Department's appraisal of these options will be incorporated into the updated strategic and economic cases for HS2.

As HS2 Ltd's work progresses, we will continue to make useful information available to the public.

Public Information events

All the information you need to respond to this consultation is in this document. However, if you want to know more or to discuss in more detail with HS2 Ltd's technical experts then we will be holding a series of public information events from mid-October 2013 to early January 2014. Details of these events will be available at www.hs2.org.uk and will also be publicised in local areas.

Part 3 – Responding to the consultation

Part 3 – Responding to the consultation

The consultation is open to everyone.

This consultation seeks views on the proposed line of route from the West Midlands to Manchester and from the West Midlands to Leeds, both of which are set out in Part 2. Views are also being sought about the sustainability impacts, how the potential released capacity generated by HS2 could be used and the opportunities to introduce other utilities along the line of route.

The questions on which the Government is seeking views are set out below. In each case, the Government is interested in whether or not you agree with its proposals and why, as well as any additional evidence that you feel it should consider in reaching its final decisions.

Questions

This consultation is seeking your views on the following questions:

- (i) Do you agree or disagree with the Government's proposed route between the West Midlands and Manchester? 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.
- (ii) Do you agree or disagree with the Government's proposals for:
 - a. A Manchester station at Manchester Piccadilly?
 - b. An additional station near Manchester Airport?
- (iii) Do you think that there should be any additional stations on the western leg between the West Midlands and Manchester?
- (iv) Do you agree or disagree with the Government's proposed route between West Midlands and Leeds? 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.
- (v) Do you agree or disagree with the Government's proposals for:
 - a. A Leeds station at Leeds New Lane?
 - b. A South Yorkshire station to be located at Sheffield Meadowhall?
 - c. An East Midlands station to be located at Toton?
- (vi) Do you think that there should be any additional stations on the eastern leg between the West Midlands and Leeds?
- (vii) 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?
- (viii) 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?
- (ix) Please let us know your comments on the introduction of other utilities along the proposed Phase Two line of route?

Ways to respond

The consultation starts on 17 July 2013 and closes at 1700 on 31 January 2014. Please ensure that your response is sent to us by this date.

Online:

You can submit your response online through the HS2 Ltd website: www.hs2.org.uk

By response form:

You can complete the response form and send it by post to the address below.

You can request a copy by calling the document order line on 0300 123 1102 or by ordering online at www.dft.gov.uk/orderingpublications

Email:

You can email your response to: HS2PhaseTwoRoute@ipsos.com

By post:

You can post your completed response form and any additional information relevant to your response to:

Freepost RTEL-YAZX-HAZT
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