



**Response of the
Chilterns Conservation Board
High Speed Rail Consultation**

Final Draft 27.7.2011

PART 3: RESPONDING TO THE CONSULTATION

This consultation seeks views on the proposed national high speed rail strategy described in Part 1 and on the recommended line of route for an initial London – West Midlands line set out in Part 2.

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 in any additional evidence that you feel it should consider in reaching its final decisions.

The Chilterns Conservation Board wishes all comments in response to the set questions below to be read in the context of the Chilterns' status as a nationally protected Area of Outstanding Natural Beauty (AONB).

The Chiltern Hills were designated as an Area of Outstanding Natural Beauty in 1965. Such a national designation confers on it the highest level of protection. Any development which would cause damage has to be shown to be in the national interest and demonstrate why it cannot be located elsewhere. The HS2 proposal will cause serious and irreversible damage to the Chilterns AONB. The Chilterns Conservation Board is not persuaded that HS2 will provide the claimed national benefits to the economy or environment.

1. This question is about the strategy and wider context:

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?

A National Transport Strategy

- 1.1 No. In the absence of a national transport strategy which shows how investment in any form of transport infrastructure is necessary to achieve social, economic and environmental objectives, it is not possible to answer the question. Such a strategy would consider different ways of addressing the perceived problems.
- 1.2 A National Transport Strategy should identify the role that transport infrastructure plays in achieving national goals and the relative need for investment in different forms of infrastructure. The recent report by Sir Roy McNulty advised strongly against the 'predict and provide' model which is now widely discredited, not least because so many forecasts have proven to be inaccurate and, instead, recommends placing greater weight on managing demand - the 'predict, manage and provide' model.

- 1.3 The National Transport Strategy would need to demonstrate that not only is additional investment needed in the inter city rail network, but also why high speed rail is an essential element of any investment programme. In so doing it should demonstrate a case based on a range of higher speeds including the internationally accepted definitions. Such an exercise would explore the relative merits of, for example, upgrading the existing intercity network to be capable of operating services up to 140 mph (225 kph). This option may provide virtually all of the claimed benefits for services of up to 400 kph, but at a lower financial and environmental cost and with genuinely national coverage.

Economic Benefits

- 1.4 No evidence has been presented which shows that economic growth is currently being or, in the future, will be constrained by either restricted capacity or performance of the inter-city rail network. There is little international evidence to show that high speed rail stimulates significant regional economic activity. What evidence exists seems to show localised benefits within a small geographic area close to HS stations. Arguably much of that is re-location of existing businesses.
- 1.5 There is a strong argument, articulated by HS2 Ltd itself, that the high speed inter-city rail network proposed will favour any additional economic activity which might be stimulated in London rather than the north and Midlands. The nature of the network and spatial and travel patterns suggests that there is a danger that HS2 will accelerate the gravitation of economic activity to London rather than away from it. A more innovative strategy to generate regional economic activity would be to invest in the city or regional networks and connectivity between midland and northern cities rather than their connections to the capital. Better still would be a truly national network of high speed services on existing lines.
- 1.6 Due to its compact national geography the UK already has an international advantage by having short journey times between its major cities, served by an extensive rail network and frequent services, many at high speed. It is also clear that current investment is delivering many of the performance levels desired. The recent EU survey of rail travellers identified an exceptionally high satisfaction rating (92%) in the UK of journey times, exceeding those of all EU countries with high speed rail. There is a major concern that the massive investment needed for a short length of very high speed new track will divert investment from the existing network.
- 1.7 The attempt to support the case for HS2 by comparing it to a “do minimum” alternative is unfortunate and unrealistic. It is unfortunate because a comparison of HS2 with an investment in the existing

network (additional to that already committed) may well show the latter to be the better strategy.

- 1.8 The complex issue of spreading economic growth around the country is unlikely to be solved simply by reducing travel times by only a few minutes between London and a small number of cities in 20 years time. The best way of overcoming physical separation is by investment in and the use of instant IT communication and not by moving people about.
- 1.9 There is no recognition of damage to the economy and job losses as a direct result of HS2. In many rural areas and those towns and cities not served by HS2 they can anticipate reduced economic activity during and after the construction.

Demand

- 1.10 The current case for HS2 is based on an outdated model of using a selective forecasting base and then applying various, largely optimistic, growth forecasts in order to achieve a desirable Benefit Cost Ratio. It would have been a stronger argument if there had been some evidence of real market demand rather than simply using historic trend data. A more pragmatic and affordable approach would be to bring capacity and demand into balance. It is unfortunate that many statements made in support of HS2 give the impression that a high proportion of trains are full and the West Coast Main Line itself will be full shortly. This is a wild exaggeration of the truth and is illustrated by the HS2 report which shows the current load factors to be only just above 50%.
- 1.11 No rationale is provided as to why a national high speed rail network needs to operate at such high speeds with the consequent adverse environmental impacts. The small geographical size of the UK and close proximity of main cities, giving already short journey times by any international comparison, relatively high population density and lack of space compared with northern and central Europe, is not given sufficient weight.
- 1.12 The Government itself has already embarked on a travel reduction policy, analogous to the energy conservation policies also being promoted. This desirable policy should apply to all forms of travel and becomes meaningless if HS2 is designed to specifically encourage additional long distance journeys, and indeed needs them in order to meet its business plan targets. The role of IT is further emphasised in fulfilling this policy and providing a more cost effective solution to the problems of distance.

Environmental Impacts

- 1.13 Any major infrastructure proposal will throw up conflicts between objectives for enhancing economic growth against protecting the

environment. The Conservation Board does not believe that in this case an acceptable balance has been found, with over optimistic forecasts of economic gain set against an undervaluation of the environment. The Government's new Natural Environment White Paper and supporting publications make it plain that in future the "greenest Government ever" will ensure that the environment is given full weight in any decision. This is not the case, thus far, with HS2.

- 1.14 It is essential that investment choices on this scale are appropriate for the circumstances found in the UK, including its geographically small size and the close proximity of major cities. Full weight needs to be given to the lack of space compared to larger countries making it much more difficult to locate major infrastructure without causing significant environmental harm. The network chosen for high speed rail passes through some of the most densely populated areas in the world. The extent of environmental damage and general disruption will be on a scale not encountered in other countries which have constructed high speed railways. Comparisons with countries such as China and Spain are not relevant to the UK.
- 1.15 The high speed specification chosen for HS2 will mean there is little flexibility for route choice and design to avoid, not just reduce, environmental damage. The public have not been presented with alternatives which may have been more acceptable.
- 1.16 An important aspect about performance is the energy demand of transport and contribution to carbon dioxide reduction targets. On these grounds a very high speed railway would be ruled out as not being environmentally sustainable. Even with a strong push for de-carbonising the electricity generation capacity of this country the high speed railway will result in significantly increased energy demands and associated carbon emissions compared to classic rail. There may be some capacity to offset that by reducing the number of domestic flights but this is speculative and with improvements in aviation emissions the scale of offsetting will be increasingly limited. Conservation of energy should be the higher priority.
- 1.17 As has already been confirmed by the aviation industry, any domestic flights which may be removed will be replaced by long haul flights which typically emit up to ten times the level of green house gases. HS2 will, therefore, generate additional carbon dioxide directly and, indirectly, trigger a significant increase in aviation emissions. The ambition of Birmingham Airport to double its passenger throughput will be directly enabled by HS2 thus further increasing aviation emissions. Known consequences of this kind have not been adequately incorporated in the case for HS2.
- 1.18 Attempting to colour these facts by claiming reduced emissions per passenger kilometre does not detract from the fact that higher carbon dioxide emissions overall will result. The Board recognises that any

increase in aviation emissions under the new EU emissions trading scheme should be offset elsewhere. This could be achieved but at considerable cost which does not appear in the business case for HS2. It's a clear case of unintended consequences which should have a major bearing on any decision to go ahead. A more likely scenario is that it will make it more difficult for the UK to comply with its carbon reduction obligations. This matter should be at the heart of a long term national transport strategy and requires more thorough consideration and analysis.

- 1.19 The priority for the UK must be to reduce energy demand and de-carbonise the economy. High speed rail, as proposed, achieves neither goal. It is notable that the Chinese have recently decided to limit their new high speed trains to 300kph, in large measure due to the excessive energy demand and associated cost.

2. This question is about the case for high speed rail:

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 Need for a National Transport Strategy

- 2.1 No. Until a National Transport Strategy has been prepared and a number of options presented, it is not possible to answer this question.
- 2.2 It is important, as a matter of public policy, that the opportunity is provided to consider a number of strategic options for investment in transport infrastructure with full supporting evidence to enable objective comparisons.
- 2.3 It is arguable that the proposal for HS2 is a response to a perceived current and short term anticipated problem. A more far sighted investigation would consider societal issues such as reducing the need to travel; the effective use of technology; changing work patterns, and the conservation of energy.
- 2.4 The complex issue of spreading economic growth around the country is unlikely to be solved simply by reducing travel times by only a few minutes between London and a small number of cities in 20 years time. The best way of overcoming physical separation is by the use of instant IT communication and not by moving people about.

Value for Money

- 2.5 It is not possible to answer this question in full as the relative costs and benefits of alternatives have not been presented. Consideration of alternatives should include giving full weight to non monetised attributes (biodiversity, landscape, amenity, cultural heritage, access to the countryside) which do not figure in BCR calculations. Such alternatives may have a much lower, even beneficial, impact on the environment.
- 2.6 Even if value for money could be adequately defined, it is incontestable that, at an estimated present day cost of £33 billion, it represents a massive draw on public finances. There has been inadequate debate about whether this is affordable, even in the context of a 20 year investment programme, and what the opportunity costs will be. How the project is to be paid for, owned and managed is also a matter of public interest at this formative stage. Currently little information is provided. There is a role for Infrastructure UK to consider, amongst other things, whether this proposal for high speed rail represents value for money, is affordable, or is the best way forward in light of competing demands on public funds.
- 2.7 The reliance of railways on continuing annual public subsidy suggests that the costs of providing the HS2 services will require indefinite support from the taxpayer. If this is not to be the case above inflation fare rises will remain a feature of pricing policy not least in order to fulfil the Secretary of State for Transport's recent statement that the subsidy for rail travellers needs to be reduced and ideally withdrawn. This implies higher fares which will have a significant impact on demand and thus the HS2 business plan. The Oxera report for the Transport Select Committee shows that if fares rise by the RPI+2% the BCR (without WEI) falls to only 0.9. This is an entirely realistic scenario as it has already been applied in Kent to help pay for the additional cost of HS1.
- 2.8 Such a fare policy will also constrain demand from the less well off and the dominant market sector will be highly paid business travellers. Note that for many, their cost of living awards are tied to the lower CPI making high speed rail increasingly unaffordable.
- 2.9 It is regrettable that the Government has chosen not to include in any HS2 related documents, the EU definitions of high speed rail (Directive 96/48/EC Appendix 1). This would have prompted a debate on the option of creating a UK wide high speed rail network but with trains travelling at between 200-250 kph and not up to 400kph.
- 2.10 According to HS2 Ltd officials, the Government proposals for the HS2 route were predicated largely on achieving a track speed of up to 400 kph in order to generate sufficient time savings to underpin the business plan. Less emphasis should be given to speed and more to total door to door journey time and the benefits, if any, of shortening

journey times – relative savings are small and offer poor value for money.

- 2.11 The business case for the Y shape network appears to be very poor - much poorer than presented - with an inflated value attached to the notional value of time saved. It is clear that most travellers are capable of making good use of their time on a train whether they are reading printed reports or using increasingly advanced technology. Arguments that the process adopted by HS2 Ltd to value time complies with current modelling convention do not pass a more simple test of common sense.
- 2.12 The environmental impact is enormous, unacceptable and uncoded. It is assumed that HS2 Ltd will be instructed to re-work the business plan in the light of the Government acceptance of the report on Ecosystems Assessment which identifies the need to incorporate such factors in business plans. The irreversible damage to the physical environment and lack of saving in carbon emissions should rule out HSR as it is not environmentally sustainable.
- 2.13 Investment in the existing network, especially Rail Package 2, will provide earlier, lower cost and better value for money benefits with little of the environmental damage.

Demand

- 2.14 The demand forecasts show very high numbers of travellers using HS2 services daily. They have been subject to strong challenge by others on the grounds that:
 - 2.14.1. Previous forecasts for projects such as HS1 were far too optimistic.
 - 2.14.2. There is a strong likelihood of saturation of demand. Personal propensity to travel has been static for many years. Demand has been driven by other factors which will not sustain recent levels of growth for the long period forecast.
 - 2.14.3. It is questionable whether it is technically feasible for up to 36 trains to operate per hour. It is also noted that such demand forecasts do not include the need to operate additional services to Heathrow and the HS1 link. In other words it is not possible to carry the number of passengers forecast.
 - 2.14.4. There is a limit to the size of population that lives within a reasonable travelling distance of HS2 stations. The West Midlands does not have a large enough population to sustain the number of travellers forecast who are willing to travel into the new HS station at Curzon Street in central Birmingham. For many living around Birmingham, who give greater weight

to door to door times than rail journey times, there are alternatives to travelling to London without making an additional journey into the city centre. The saving of only 20 minutes is unlikely to alter their journey plans.

- 2.14.5 In general there has been insufficient analysis of how travellers make their choices and, in particular the importance of door to door journey times rather than station to station times.
- 2.15 The HS2 business case places a significant value on the reduced cost of operating existing services. Without specifying how these savings were calculated it can only be assumed that the services using alternative routes such as the WCML and Chilterns Line will suffer a fall in service provision. For those whom HS2 does not provide a practical alternative there is a considerable cost and inconvenience. Little weight appears to be attached to those who will lose in this way.
3. This question is about how to deliver the Government's proposed network:

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 to the High Speed 1 line to the Channel Tunnel?

The Existing Network

- 3.1 No. The priority should be investment in the existing intercity network. The McNulty Report, warmly welcomed by the Secretary of State for Transport, was clear in its recommendations:
- "To reduce incentives towards infrastructure solutions the Study considers that, in common with other transport sectors, there should be an end of 'predict and provide' in the rail sector. In its place there should be a much greater focus on making better use of existing capacity, whether that is through better timetables, pricing or behavioral options, perhaps 'predict, manage and provide'." (Section 6.2.6).
- 3.2 The scale of HS2 and its unconvincing business plan have generated much discussion about cost, value for money and the opportunity cost. The nature of the project and the way it is proposed to develop it will lock the Government into a long term investment which will be near impossible to stop, irrespective of whether it is good value for money, affordable or achieves its objectives. An incremental approach based on maximising the efficiency of the existing infrastructure and attempting to manage demand and supply in line with capacity (as recommended by Sir Roy McNulty) would be a more pragmatic, flexible and affordable approach.

- 3.3 Based on recent announcements by both the Mayor for London and Transport for London, there is significant emerging evidence that there are considerable barriers to this proposal in London, which render it either unworkable or significantly more expensive than forecast. It is likely that with such a complex project other such technical difficulties will arise, further eroding the already weak business case and thus reinforcing the McNulty recommendation to make better use of existing infrastructure and capacity.
- 3.4 The high speed network will be poorly connected to the wider rail network. The significant investment in Old Oak Common and Curzon Street in Birmingham exemplifies the separate nature of the new network. A more suitable investment strategy, with many fewer environmentally damaging impacts, would be to upgrade existing inter-city networks so that the entire country is linked into a high speed network offering services of up to 250kph.

HS1-HS2 Link and Heathrow

- 3.5 The direct link to the continent is likely only to be used by small numbers of travellers which is unlikely to justify the cost or provide the basis for a commercially viable operation. To date no information has been provided to demonstrate there is a sufficient demand for such a service to justify the level of expenditure required.
- 3.6 The lack of confidence in the HS1-HS2 link is illustrated by its absence from the original report and the proposal to build a single track tunnel capable of only handling 3 trains per hour. Transport for London believes that due to a known bottle neck it may only be able to operate 1 train per hour, which would make this link unviable.
- 3.7 It is arguable that the success of Heathrow has not been hampered by the lack of a high speed rail link. The airport will shortly benefit from the considerable public investment in Crossrail which will provide enhanced access by rail. The limited impacts of HS2 on domestic flights (largely confined to the London – Glasgow/Edinburgh routes) suggest the only reason for a link to Heathrow is to provide additional convenience for a small number of onward long haul passengers which generates little additional economic or environmental benefit.

4. This question is about the specification for the line between London and the West Midlands:

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 No - the need has not been demonstrated. It is difficult to agree with the principles and specification for something which has not been agreed as a matter of transport policy.

Principles

- 4.2 The principles for the route selection give insufficient weight to the environmental impact and costs. Recently the Government has accepted the Ecosystem Assessment Review which requires full weight to be given to environmental impacts, and where necessary to apply a monetary value to ensure that there is no bias in favour of other attributes of a proposal. This principle needs to be incorporated in the HS2 business case. The Board accepts that not all environmental impacts can be satisfactorily converted to a monetary value, but at present the failure to do so undervalues significantly the impact on the environment.
- 4.3 When designing high speed rail networks the EU (Directive 96/48/EC Appendix1) recognised the need to incorporate constraints placed by environmental considerations. Accordingly its own definitions make allowance for specific geographical requirements. It should have been a principle for the entire project that it would not cross the nationally protected Areas of Outstanding Natural Beauty.
- 4.4 The public has not been consulted on any alternatives – the current HS2 proposed route and strategic network is a ‘take it or leave it’ option. It is likely that the Government is in contravention of the Aarhus Convention which requires the public to be consulted by Government at a formative stage and provided with realistic options.

Route Specification

- 4.5 The route alignment has been dictated by specification of an unrealistically and undesirably high track speed of up to 400 kph. A lower track speed than 400kph, which would have relaxed horizontal and vertical alignments, would have allowed less environmentally damaging route options to be considered which would have used less energy, created fewer carbon emissions whilst still reducing journey times.
- 4.6 This has severely restricted the options for route alignment which avoid significant environmental impacts of the route selected. A lower track speed, which might have added a few minutes to the proposed journey,

would have provided much more flexibility on route alignment. According to HS2 Ltd it seems that as the BCR rests so fully on the value of time saved, a lower speed would significantly reduce the BCR and would fail any test of value for money. The net effect is a compromise resulting in a high and, as yet, not fully evaluated environmental cost with no options to avoid damaging the Chilterns AONB.

- 4.7 The Board was surprised to read the following in the letter by Philip Graham of DfT (30th June 2011): “In respect of route choice, the journey time implications were a comparatively small aspect of the route choice process.”

This directly contradicts the experience of the Conservation Board in liaising with HS2 Ltd officials who repeatedly emphasised that the chosen speed was essential to make sufficient journey time savings to underpin the business case, so much so that no route avoiding the Chilterns was considered possible. At an HS2 Ltd seminar, the Chief Engineer, Professor Andrew McNaughton, explained in response to questions as to why a more flexible route strategy was not being taken, that consideration of a lower design speed was not possible due to the need to make journey time savings.

- 4.8 The Board does not accept that time spent on a train is unproductive and therefore that a value can be assigned to a journey time saving of the order of magnitude that has been done for HS2. Now that the DfT has accepted this point it is surprising that it remains such a significant component of the business case and is also dictating track speed and route selection.

- 4.9 Despite the high speed specification, HS2 delivers surprisingly little journey time saving. This is simply because distances between major cities are short and high speed cannot deliver significant time savings compared to current services. Based on the current timetable the time savings achieved by HS2 will be as little as:

Birmingham to London	23 minutes
Liverpool to London	24 minutes
London to Glasgow	38 minutes
London to Newcastle	14 minutes
Edinburgh to London	30 minutes

These are journey times offered by HS2 in 2033 compared to today’s best times. Investment in the existing inter city network would mean that HS2 improvements would be even more modest. These time savings are not, as claimed, transformational. Placed in the context of door to door times these rail journey time savings are even more modest, to the point of making little difference to the working day of most travellers or their productivity.

5. This question is about the route for the line between London and the West Midlands:

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 No. It is not acceptable to cause such damage to an Area of Outstanding Natural Beauty. It undermines the credibility of designating an area as an AONB. The Chilterns was designated as an Area of Outstanding Natural Beauty in 1965. Such a national designation confers on it the highest level of protection. Any development which would cause damage has to be shown to be in the national interest and demonstrate why it cannot be located elsewhere. The HS2 proposal will cause serious and irreversible damage to the Chilterns AONB. The Chilterns Conservation Board is not persuaded that HS2 will provide national benefits to the economy or environment.
- 5.2 The proposal misleadingly suggests that HS2 follows an existing transport corridor through the Chilterns. In fact it follows a single carriageway A class road for 2 kilometres but will otherwise be built across open countryside.
- 5.3 It is not possible to adequately mitigate the damaging environmental, economic and social impacts.
- 5.4 The failure to provide adequate information on all environmental impacts means it is not possible to answer this question in full.
- 5.5 As stated above the failure to consider options including the specification of a lower track speed means that alternatives which may have been more acceptable, have been discounted and not presented for consideration by the public.

6. This question is about the Appraisal of Sustainability:

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?

Shortcomings of the Appraisal of Sustainability- impact on the Chilterns AONB

- 6.1 It is unacceptable to the Board that no separate assessment was undertaken of the impact on the Chilterns AONB. By simply incorporating the Chilterns within a section stretching from West Ruislip

to Aylesbury it has not been possible to identify the distinct impacts on the AONB - the problem is compounded as the character of the landscape to the north and south of the AONB included in this section is very different to that of the Chilterns.

- 6.2 This shortcoming brings into question whether the Government itself has complied fully with the duty in Section 85 of the Countryside and Rights of Way Act 2000, which requires any public body to have due regard to the special qualities of the AONB when undertaking its activities. Notwithstanding this requirement it is surprising that, in view of the sensitivity of the impact of HS2 on the Chilterns AONB, the consultants were not instructed to make a separate assessment.

Inadequate information

- 6.3 The Board does not believe that the consultation document provided for the public includes sufficient information about the environmental impact of HS2, both during the construction and subsequent operation. The Appraisal of Sustainability, whilst an essential pre-requisite for the assessment of environmental impacts is a high level strategic document and is not sufficient for the purposes of enabling the public to judge whether or not the environmental impact of HS2 is acceptable.
- 6.4 The Board notes that the Appraisal of Sustainability has been prepared by consultants to HS2 Ltd but it is not stated that either HS2 Ltd or the Department for Transport have accepted the report. Indeed, the consultants have included a standard disclaimer on the reliability of the information. It would seem that by doing so the public is not in a position to give weight to the information provided. The AoS does not provide sufficient information on environmental impacts for the purpose of public consultation.
- 6.5 The Government is seeking public endorsement for the Y shaped network but has not undertaken an AoS on the entire proposed network. The environmental impacts of supporting the Y shaped network are unknown. It is unreasonable to expect unqualified support for such a proposal.

Impacts Identified by the AoS

- 6.6 The AoS shows that the majority of impacts will be negative. The few positive impacts are associated with economic benefits and are highly contentious. Little, and, largely unpersuasive, evidence is provided to support the claims for those economic benefits. Based on the outcome of the AoS there is serious doubt placed on the environmental sustainability of HS2. A further failing in the methodology adopted is that the AoS is not used to help avoid damaging impacts but simply to identify them. The objective of the Strategic Environmental Assessment (SEA) process is to identify impacts and options to avoid damaging

impacts. The overall approach adopted by HS2 Ltd is to identify and then mitigate impacts rather than avoid them.

- 6.7 There is no information to enable the public to interpret the proposed impacts on the area where they live. The entire report should have been prepared on a section by section basis.
- 6.8 In general, the assessment of the impact on the landscape and biodiversity is inadequate and fails to recognise the importance of the wider landscape, instead just concentrating on direct impacts on a small number of designated sites. Some aspects, all negative, are scarcely covered, e.g. impact on the Chilterns aquifer, public rights of way, the historic environment and noise.
- 6.9 Insufficient weight has been given to ancient woodland. Nearly 11 hectares will be destroyed in the Chilterns AONB and in total over 46 hectares of ancient woodland will either be lost or fragmented. This woodland is irreplaceable. The Appraisal of Sustainability does not fully reflect the importance of ancient woodland or the damaging impact of HS2 on this unique and valuable habitat.

Impact of construction phase

- 6.10 No assessment is made of the impact of construction which will be severe and prolonged. Disruption is given by DfT as a reason for not undertaking further upgrading of the WCML and yet is not given any weight when proposing HS2. The impact of the construction itself will be so significant it is, arguably, a reason to reject the entire project.
- 6.11 An example of the inadequacy of the AoS is the issue of spoil requiring offline disposal. It states that only 680,000 cubic metres will be removed from the West Ruislip to Aylesbury section. The correct figure for the total volume of loose spoil to be removed is over 12 million cubic metres of which less than 10% can be used along the line, the rest will have to be removed by road. Sources in the railway industry have told the Board that it will not be possible to use any part of the Metropolitan/Chiltern line for this purpose. The enormous quantity of spoil has to be disposed of somewhere offline outside the Chilterns AONB. The AoS does not adequately address the matter nor incorporate the associated disturbance to communities or emission of green house gases, let alone the financial cost. This is not a matter of detail to be considered at a later stage.

Impact on the local economy

- 6.12 There is no assessment of the impact on the local economy as required by PPS7. There is a high likelihood that jobs will be lost along the line which needs to be balanced against claims for job creation which, it seems, would be within close proximity to the small number of HS2 stations. The relevant AoS sections fail to identify this probability.

- 6.13 The impact of farmland and farming is scarcely mentioned in the main documents or the supporting AoS. This is a vital resource and at a time when food security is of growing concern the cumulative loss of production of decades from farmland either destroyed or rendered unviable will be significant and is deserving of greater recognition than that given. The impact will be greater than the simple value of the farmland lost. The impact on the viability of the farm and associated business should be taken into account. There appears to be no such negative valuations built into the business case.

Impact of Noise

- 6.14 HS2 Ltd gives precise numbers for those affected by noise, but refuses to publish the noise contour maps which are needed to calculate them. The impact of noise pollution and its effects on a sense of tranquillity are given little weight in general and the numbers of properties which, it is claimed, will be significantly affected looks very low.
- 6.15 The report gives no recognition to the impact on noise on visitors who currently visit the Chilterns in large numbers to enjoy the amenity of the area and actively enjoy walking, cycling, horse riding, even hot air ballooning which is a popular activity in the Misbourne Valley. For them the area will lose its appeal and arguably the amenity they seek will no longer be found once the railway is built.
- 6.16 The Board acknowledges that in some circumstances noise can be reduced, but often it cannot be. Heavy reliance on sound barriers in an AONB is unacceptable, as they are visually intrusive and ugly engineering features. This is another example of how a negative impact should be avoided in the first place rather than mitigated. It is also noted that the very high track speed will generate additional aerodynamic noise and, at 400 kph, the noise impacts are not known.

Impact of Associated Infrastructure

- 6.17 The HS2 documents, including the AoS, do not include any mention or assessment of the environmental impact of the wide range of associated infrastructure - everything from work camps, new access roads, masts, gantries, fences, storage compounds, electricity supplies and ventilation shafts and other temporary and permanent structures. They are all likely to have a deleterious impact on the landscape and biodiversity of the Chilterns, but have not been taken into account.
- 6.18 It is not known whether the energy demands of HS2 will require the provision of additional electricity supplies necessitating the installation of new cables, either above or below ground. Either will have significant impacts and should be known at this stage. If a great deal has been learned from HS1, as is claimed, then these issues should already have been given much thought.

Land Take

- 6.19 The HS2 reports do not quantify the final land take or that required for associated structures or the construction phase. This is an extraordinary omission. It is known that HS2 Ltd knows this and the breakdown by land use type (which was confirmed at an HS2 seminar). Despite requests to HS2 Ltd that it should be provided, HS2 Ltd has refused to do so. One consequence is that the AoS does not include an assessment of the loss of economically productive land especially farmland. At a time when food security is of increasing concern the impact of HS2 on food production could, and should, have been readily calculated and the public informed.

Impact on Enjoyment of the Countryside

- 6.20 The Chilterns is very popular for walking, cycling and horse riding. The quality of experience of those visitors, many of whom are seeking escape from the hustle and bustle of city life, will be diminished and they are likely to avoid the central Chilterns, not just for the duration of the construction period, but for many years afterwards. Some areas will lose their appeal altogether especially where the noise and urbanisation become permanent.

Green House Gas Emissions

- 6.21 This consultation document does not specifically address the major issue of greenhouse gas emissions (see response to Q.1). Despite earlier claims that HS2 would be part of a low carbon economy it is noted that HS2 Ltd now claim that it is likely to be only broadly carbon neutral, but only if flight slots vacated due to competition with HS2 are not filled by flights to other destinations. BAA has already made a published statement that this is extremely unrealistic and withdrawal of a domestic flight is more likely to be replaced by a medium or long haul flight, which typically generate up to ten times the amount of green house gases.

“Every time BMI or British Airways have cancelled a domestic route in the past, they’ve replaced it with a more profitable medium or long haul route. That is exactly what will happen when HS2 comes and more domestic routes get cut.” Nigel Milton, Director of Policy and Political Relations for BAA.

- 6.22 Compared to classic rail, high speed trains will generate several times the emissions due to their energy demand. The limited modal shift from cars and planes restricts the scope for offsetting. According to the CAA passenger numbers on the routes between London, Glasgow and Edinburgh are experiencing long term declines. This restricts the extent of offsetting that is possible and will require an unrealistically high market share to be captured by HS2. As HS2 does not bring significant journey time savings compared to current rail services the modal shift will be limited.

- 6.23 The combined effect of increased energy demand from the faster and more frequent HS2 services and indirect increase in longer haul flights triggered by HS2 will lead to a significant increase compared to today. This is compounded by HS2 forecasting that 27% of its passengers would not have otherwise travelled at all and several hundred thousand more car and train journeys will be made per day to reach stations served by HS2.
- 6.24 The extent to which energy generation can be de-carbonised will affect the total amount of additional emissions of green house gases but will nonetheless result in a proportionately large increase compared to classic rail. In the context of very challenging legal and binding international commitments to reduce carbon emissions the Government should be ensuring that any major public investment delivers substantial reductions in carbon emissions especially as the transport sector is responsible for a high proportion of national emissions.

Embedded Carbon

- 6.25 The impact of embedded carbon is given insufficient weight. A report by Booz Temple for the Department for Transport in 2007 concluded that it would take many years for a high speed railway to pay off the embedded carbon involved in its construction. This is confirmed by studies into a possible high speed railway in California which came to the same conclusion (Dept. of Civil and Environmental Engineering, University of California, Berkley 2010).
- 6.26 Notably the AoS does not include the carbon emissions from the operation of several very large new railway stations. It is extraordinary that in the HS2 calculation on the emissions arising from the construction work a nil value is given. With so much machinery involved and transportation of materials taking place the emissions must be considerable.

Need to Travel

- 6.27 It is surprising that the Government is not giving greater emphasis to helping people avoid the need to travel and thus avoid generating transport related emissions of green house gases. The use of IT will provide many people with a viable alternative to travel and, in view of the financial and environmental cost of travel, a national objective should be to reduce travel especially over long distances. The current drive by Government, itself, to reduce travel and make greater use of video technology is an example of the way ahead. The aspiration, even requirement, for HS2 to generate significant numbers of additional long distance journeys is wholly incompatible with this objective.

7. This question is about blight and compensation:

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 Whilst the Board does not have any specific views on property values it is, however, concerned that the overall blight which is affecting the area is addressed, including the negative impact on the local economy. For example, many farms will be divided and it is questionable whether they will all remain viable as a result. Other businesses depend for a substantial part of their income from visitors who will increasingly stay away. Many local journeys will be affected by the construction works leading to greater inconvenience and cost. None of the negative impact on the local economy has been given any consideration or costed.