



HSR: Investing in Britain's Future - Consultation

Response by The Royal Society for the Protection of Birds

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For more information, contact Melanie Coath, Senior Climate Change Policy Officer
Tel: 01767 693046 e-mail: melanie.coath@rspb.org.uk

Summary

- 1 In the context of any expansion of the UK's national transport infrastructure, the RSPB supports high speed rail (HSR) over alternatives such as further motorway expansion or increasing aviation capacity. This is because these other transport options would be significantly worse than HSR for the UK's greenhouse gas emissions, and would also have major impacts in their own right on wildlife, landscapes and communities. However, we have serious concerns about the HS2 proposal and the process the Government has followed to this stage. We do not believe the case has yet been properly made for this specific proposal.
- 2 HSR must be part of a package that reduces carbon emissions and protects biodiversity. For us this means:
 - Avoiding impacts on protected wildlife sites as far as possible, mitigating unavoidable impacts, and compensating for residual impacts before damage is permitted;
 - Using HSR to shift existing trips from planes and cars, not generate new ones;
 - A moratorium on airport expansion and major road development;
 - Prioritising investment in existing public and local transport and ensuring that HSR does not draw funding away from these;
 - Using pricing to encourage people to choose rail: lower train fares and increased taxes on short distance internal flights are needed.
- 3 We are concerned about the damage likely to be caused to Sites of Special Scientific Interest (SSSIs) and local wildlife sites. In line with UK legislation and national planning policy, we expect HS2 to avoid harm to all wildlife sites and semi-natural habitats wherever possible. Mitigation measures to reduce any direct and indirect effects are then required. Where damage to habitats and species cannot be avoided through appropriate mitigation, we will expect proposals for like-for-like

compensatory habitat to be agreed and implemented before damage occurs. Beyond this, all opportunities for enhancing biodiversity must be taken.

About the RSPB

- 4 The RSPB welcomes the opportunity to respond to the Government's consultation on HSR. The Royal Society for the Protection of Birds (the RSPB) is the charity that takes action for wild birds and the environment. We are the largest wildlife conservation organisation in Europe with over one million members. We own or manage over 142,000 hectares of land for nature conservation on over 200 reserves throughout the UK.
- 5 We believe that sustainability should be at the heart of decision-making. The RSPB's policy and advocacy work covers a wide range of issues including planning and regional policy, climate change, energy, transport, trade and agriculture. As well as commenting on national planning policy issues, the RSPB's professional conservation and planning specialists make representations on over 1,000 items of planning casework each year throughout the UK, including development plans and individual planning applications and proposals including major infrastructure projects such as ports and wind farms.
- 6 The RSPB is working as part of a coalition of NGOs which support the Right Lines Charter, calling on the Government to do HSR well. We feel that current proposals fall short of the principles that we believe should be embodied in any HSR scheme. We have discussed these principles with Government and HS2 Ltd and set out the RSPB's position in more detail in this consultation response.

The RSPB's position on transport and climate change

- 7 The RSPB considers that human-induced climate change is the greatest long-term threat to humans and global biodiversity. Up to one third of land-based species on earth could be committed to extinction by 2050 if we do not act to address this problem. Rapid and deep emission cuts are essential to avoiding dangerous climate change. An urgent challenge for the UK is therefore to tackle rising carbon emissions from land transport. The Committee on Climate Change says that at least a 60% cut in domestic emissions is needed by 2030 to be on the path to secure a 90% cut (equivalent to at least 80% once emissions from international aviation and shipping are factored in) by 2050. It is essential that the Government's transport and climate change policies are aligned.
- 8 Current science shows that for the UK to play its fair share in avoiding catastrophic climate change, we need to reduce our emissions by at least 80% by 2050. The transport sector has a crucial role to play in the UK's efforts to tackle climate change. Transport is the fastest growing source of greenhouse gas emissions and accounts for over 20% of the UK's total.

- 9 Strategic planning for transport at both the national and local levels is an essential process in the move towards a more sustainable transport system. We will expect key strategic planning issues that will lead to a sustainable transport system, including the role that HS2 is expected to play, to be addressed in the forthcoming National Networks National Policy Statement. All development needs to be designed to minimise the need to travel and encourage the shift to more sustainable modes. The RSPB considers that this should include a presumption against building new roads and airports; subjecting transport plans at all levels to Strategic Environmental Assessment (SEA); and utilising sustainable resource use practices.

The RSPB's response to the government's consultation questions:

Question 1: Do you agree that there is a strong case for enhancing the capacity and performance of Britain's inter-city rail network to support economic growth over the coming decades?

- 10 We cannot agree or disagree with this question because there is no national transport strategy setting out wider policy on transport and it is therefore not clear what role HS2 might play in supporting economic growth. Furthermore, this question focuses on economic growth and indeed an efficient, sustainable transport system is vital to both economic prosperity and society's wellbeing. However, the focus, as with all Government policy, should be on social, economic and environmental outcomes of any policy not just on a growth agenda. Government's own policy development work has also accepted the need to look beyond this, for example with measures to move beyond GDP as a measure of growth.
- 11 Therefore, in the context of wider sustainable development, a key priority is to shift journeys from road and air to rail to reduce the damaging impact of travel on the environment and local communities. HSR is one option for increasing rail capacity and connectivity and proposals need to be set in the context of a coherent long-term national transport strategy stating clear objectives, as takes place in other countries. Such objectives need to be ambitious yet realistic and could include:
- Avoiding damage to the environment from new infrastructure;
 - Reducing emissions;
 - Reducing the need to travel;
 - Improving rail capacity and connectivity throughout the country;
 - Reducing regional economic disparities, and;
 - Ending dependence on fossil fuels.
- 12 Strategic Environmental Assessment
We believe that HS2 should be subject to Strategic Environmental Assessment (SEA) under European Directive 2001/42/EC "on the assessment of the effects of certain plans and programmes on the environment" ("the SEA Directive"). We note that paragraph 1.4.2 of the AoS says (without offering further explanation) that the HS2 scheme does not qualify as a plan or programme under the SEA Directive but that the Directive "*was key to determining the overall appraisal framework.*"

- 13 The approach actually taken to HS2 was one of sustainability appraisal, which seeks to balance social, economic and environmental concerns. This misses one of the main drivers for using SEA, which is supposed to contribute specifically to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development. SEA should also identify, describe and evaluate reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme.
- 14 There are strong parallels between carrying out SEA of options for developing plans for HSR, and options for developing the tidal power potential of the Severn estuary. In the latter case, SEA of the Severn Tidal Power Feasibility Study was done, and considered a range of technologies. While the object of the Study could also have been treated as a “project” rather than a plan or programme, DECC decided that SEA provided a robust framework in which to make an early assessment of alternatives: an approach which the RSPB strongly supports.
- 15 For an infrastructure project as significant as HS2 it seems unlikely that a single EIA will be possible for all of the works involved, and therefore the overall scheme constitutes a “programme” setting the framework for more than one subsequent EIA. While we accept that HS2 may not be a “plan or programme” in a strict interpretation of the SEA Directive, SEA should certainly have been applied to the development of high speed rail as one approach within a wider UK strategy for enhancing our transport infrastructure (i.e. a plan SEA), and again to the numerous route options considered by HS2 Ltd which do not form part of the current public consultation (i.e. SEA of alternative programmes).
- 16 As HS2 London to Lichfield is the first phase of a new national network the Government still has an opportunity to adopt the SEA approach for the “Y” shaped network north of Lichfield, and subsequent programmes, and should do so.

Question 2: Do you agree that a national HSR 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?

- 17 It is impossible to assess whether the current proposals represent the best solution when we have not seen all the evidence and alternatives set out. Government is consulting on only one route and one set of proposals. We cannot provide a full answer to this question until evidence on how this compares to alternative routes and proposals is made available.
- 18 Nevertheless, for the RSPB, one key measure of whether or not HS2 delivers value for money hinges on whether or not the plan delivers on its potential to substantially reduce transport emissions without direct environmental harm to habitats and species. The extent to which it achieves this is one of the key tests for us as to whether or not we will ultimately consider building HS2 to be the right course of action. It is essential that the Government puts in place the right policy framework

and that any new HSR line be planned and justified as a strategic element of a sustainable, near zero-carbon transport system.

- 19 As such, HS2 needs to be considered strategically in the context of the likely alternative transport options on the table and their impacts on the natural environment and the climate. In the context of the need to address dangerous climate change we believe that it is essential to shift investment away from expanding domestic aviation and motorway networks, and HSR can represent a sustainable alternative. The carbon benefits can be considerable with the average carbon for domestic flights being 172.8g CO₂ equivalent per passenger km¹, for the average car in the UK is 202.82g CO₂² (assuming single occupancy) whereas on average European HSR network is linked with 6.3 g CO₂³.
- 20 The RSPB therefore supports the principle of HSR and believes it can play a role in the future low carbon transport infrastructure of the UK. It is in this context that we welcomed and wholly supported the Government's decision to announce no new runways in the South East alongside a new HSR network as key to upgrading the UK's transport infrastructure.
- 21 However, currently, the carbon case for HS2 is not clear-cut. Overall the Government's analysis shows that the scheme would be broadly carbon neutral. The Climate Change Act 2008 requires a reduction in CO₂ of at least 80% by 2050, and spending £30bn for no reduction or even a small increase in CO₂ raises significant questions about this plan's value for money. In addition, HS2 investment requirements will compete with other low carbon investment – for example, the £30bn needed for HS2 is very significant compared to the estimated £200bn required to invest in low carbon electricity by 2020.
- 22 Government needs to do much more to demonstrate that HS2 is part of a low carbon future. The carbon footprint of HS2 will be determined by the infrastructure which includes construction costs and manufacture of rolling stock, the electricity mix powering the high speed trains and the frequency of usage. However, it is not clear what set of policies and measures the Government intends to put in place in order to deliver the lowest carbon outcomes. In particular, it is not clear to what extent modal shift will be delivered. The construction of a HSR network should result in a decrease in domestic air journeys but it will only do so if the right policies are put in place to support this shift.
- 23 The RSPB believes that it is therefore essential that a policy framework is put in place to enable HS2 to deliver on its potential to substantially reduce transport emissions. Such a framework will include the following:

¹<http://www2.dft.gov.uk/pgr/statistics/datatablespublications/energyenvironment/latest/climatechange/factsheets.pdf>

²<http://www2.dft.gov.uk/pgr/sustainable/smarterchoices/programmes/pdf/chap18.pdf>

³ UIC Carbon Footprint of High-Speed rail infrastructure (Pre-Study) Methodology and application of HSRway operation of European Railways, 2009

- Ensuring significant modal shift from flights from UK airports and road travel onto the high-speed rail network. While no expansion at the three major South-East airports is a welcome step, additional measures will be needed such as:
 - A policy that “retires” aviation slots permanently as they are freed up from journeys switching to rail
 - A general moratorium on new/wider motorways and airport expansion.
 - Prioritising investment in existing public and local transport and ensuring that HSR does not draw funding away from these;
 - Using pricing to encourage people to choose rail: lower train fares and increased taxes on short distance internal flights are needed.
- Ensuring that the high-speed fleet is powered by renewable energy in order to lower substantially the CO₂ emissions from running the network.
- Seeking to reduce as far as possible the embedded carbon cost of construction through, for example, careful design and alignment of bridges and tunnels to minimise spoil (though not at the expense of maximising the effectiveness of mitigation for the local environment and communities), and by maximising the use of recycled aggregates, steel and other materials.
- Ensuring wise use of freed-up capacity on existing rail lines, which will also be important in increasing rail passenger journeys and shifting a significant amount of freight from road to rail. Rail freight produces 70% less carbon dioxide emissions than road freight on the equivalent journey^[2] while an average freight train can remove 60 HGVs from road^[3].
- Utilising opportunities for planning low carbon developments in new growth areas in the west of England which could also significantly shift the carbon balance of the wider impacts of the proposal.
- Putting in place measures to reduce the demand for travel overall. A new trip by rail is less damaging than a new trip by air but still means an increase in emissions at a time when levels are supposed to be falling. HS2 Ltd’s modelling suggests that as many as 27% of trips on HS2 would be new trips rather than existing ones transferred from other modes of transport^[4]. There does not seem to have been any modelling of the use of capacity that would be freed up on existing lines, which could attract trips from cars as well as generate new local rail trips.

Question 3: Do you agree with the Government’s proposals for the phased roll-out of a national HSR network, and for links to Heathrow Airport and to the High Speed 1 line to the Channel Tunnel?

24 No. A phased roll-out seems a sensible approach but any approach should see HSR proposals embedded in a strategic transport plan for the country with each phase fully justified within that plan. At the moment, the broader strategic approach has not been set out and therefore it is impossible to answer this question.

^[2] DfT logistics perspective Dec 2008 p10

^[3] Network Rail value and importance of rail freight July 2010p3

^[4] Paragraph 5.43 in Cm 7827, 2010

- 25 Links between HS2 and HS1 will be essential if the HSR system in the UK is to provide a meaningful alternative to aviation for passengers wishing to reach Europe and to heavy goods vehicles for freight transport to the continent. The introduction of a HSR line between Brussels and Paris, for example, has virtually eliminated commercial flights between those two cities. According to Eurostar, on the London to Paris/Brussels route, Eurostar now has an 80% market share of the journeys made. Since the opening of HS1, Eurostar has observed a significant modal shift from air to rail, as passengers grow accustomed to the speed and ease of HSR travel.⁴
- 26 Links to Heathrow airport that substitute domestic flights to Heathrow could also be valuable in the context of reducing emissions from domestic aviation but as highlighted in our response to the previous question, policies should be put in place to ensure that this does not lead to an increase in flights from Heathrow. It has been suggested that a switch from domestic flights to HSR will release airport capacity for long-haul flights and better enable Heathrow to preserve and build upon its status as a global aviation hub.⁵ Using aviation capacity freed up by HSR for new long-haul flights would undo any potential savings from a reduction in domestic flights, and therefore policies must be put in place to prevent this.

Question 4: Do you agree with the principles and specification used by HS2 Ltd to underpin its proposals for new HSR lines and the route selection process HS2 Ltd undertook?

- 27 No. It is clear that the most important considerations in determining which route would be the preferred one were the costs of construction and the economic benefits. This is not surprising if the economic case for HS2 is so finely balanced that a relative difference in journey time of 90 seconds can make “*a small but measurable impact on the [economic] benefits*” of different options (Annex B, paragraph 47).
- 28 The RSPB considers however that HSR proposals need to be designed from the start to avoid significant impacts on the natural environment, cultural heritage and local communities (including biodiversity, landscape, tranquillity and access) during both construction and operation.
- 29 Setting inflexible objectives for HS2 to meet technical specifications (such as a theoretical top speed of 400km/h) and preconceived requirements (such as interchange stations at airports) has seriously limited the range of route options considered. It also limits the scope for those participating in the consultation to propose changes to the preferred route. We have heard HS2 Ltd suggest that there is a “corridor” within which the exact alignment of HS2 can be adapted to minimise local effects. If so, this is not made clear in the consultation document and the detail in the preferred route maps suggest this not the case.

⁴ <http://www.publications.parliament.uk/pa/cm201012/cmselect/cmtran/writev/rail/m128.htm>

⁵ *Ibid.*

30 Although mitigation can reduce adverse impacts, it is not as good as avoiding impacts in the first place. Specifications and design speed should not have been rigidly fixed in advance but should be outcomes shaped by the opportunities to minimise impact and maximise benefit. This requires respecting environmental limits and a strategic approach to reducing impacts by prioritising avoidance over mitigation, with compensation being the option of last resort.

Question 5: Do you agree that the Government’s proposed route, including the approach proposed for mitigating its impacts, is the best option for a new HSR line between London and the West Midlands?

31 No. It is impossible to answer this question objectively because this consultation only presents the preferred option in full detail. We have not been given the information needed to assess for ourselves the relative environmental, social and economic impacts of the large number of options originally considered by HS2 Ltd.

32 For this question to have any meaning, public consultation needs to have occurred earlier – following the development of the short list, if not prior to it. Ideally, this consultation should occur in the context of SEA and the need to consider alternatives, as we have said in our answer to Q1.

33 So, we cannot agree that Route 3 is the “best option”. Instead, we can comment on the likely environmental impacts of the preferred route and on the approach to mitigation set out in the consultation, about which we have serious concerns.

34 Overall approach required for avoiding, mitigating and compensating for environmental damage:

In line with UK legislation and national planning policy, we expect HS2 to avoid harm to all wildlife sites and semi-natural habitats wherever possible. Mitigation measures to reduce any direct and indirect effects are then required. Where damage to habitats and species cannot be avoided through appropriate mitigation, we will expect compensation proposals to be agreed and implemented.

35 While we welcome the “summary of generic mitigation measures for biodiversity” on p92 of the AoS, several of the proposed measures listed must be regarded as compensation, not mitigation. The AoS badly confuses these terms. The distinction is important because the environmental impact of HS2, with mitigation, must be accurately assessed to inform the scale of compensation required for residual impacts.

36 The following principles must guide proposals for mitigation and compensation:

- Mitigation and, where necessary, compensation measures should well-timed, enabling them to be fully functioning before any damage to existing habitats or species occurs.
- Compensation must be ecologically effective: habitats should be provided on a like-for-like basis, based on the measures needed to offset for those species, habitats and ecological functions adversely affected.

- Compensation should be well-located: delivered as close as possible to the site of loss in locations where they will not be impacted by HS2 or other developments.
- Compensation must be sufficient to meet the needs of the affected species and habitats and targeted at completely compensating for the damage caused: where there are uncertainties in the ability to establish and deliver compensatory habitats, either due to ecological risks or time lag in creating the semi-natural habitat, the area of compensatory habitat provided must be significantly more than the area lost.
- Compensation must also be legally effective: provision must be made for the protection and management of compensatory habitats in perpetuity, as the damage caused by HS2 will last forever.

37 Beyond this, all opportunities to enhance biodiversity through this project (e.g. buffer and landscape planting) need to be taken, in line with UK legislation and national planning policy. Enhancements should be structured around the priorities and targets for habitats in the UK Biodiversity Action Plan as they pertain to the area affected by HS2. An undertaking to plant two million trees sounds impressive but we do not accept this as mitigation for the loss of habitats, or as enhancement: at best, it amounts to a poor form of compensation. We will expect enhancements to be appropriate, ambitious, and well thought through to deliver the maximum benefits.

38 We comment further on possible mitigation and compensation measures in relation to specific sites in Annex 1 of our response.

39 The scope of likely impacts on wildlife sites and protected species:
At this stage, it is difficult to state the exact impacts that the preferred route may have on biodiversity. Nevertheless it is clear that at least two, possibly three SSSIs will be partly damaged by the preferred route and a much larger number of local wildlife sites (LWS) will be severely damaged or even completely destroyed, including several areas of irreplaceable semi-natural ancient woodland. Further details of some of these impacts are explored in Annex 1.

40 Indirect impacts from noise and visual disturbance may also have significant impacts on other SSSIs and many more LWS lying close to the preferred route. The effects of fragmentation of the countryside may also be significant especially in light of the predicted impacts of climate change and the need for species to move in response to shifting “climate space”.

41 Some wildlife sites near HS2 could be adversely affected by changes in hydrological conditions. Some watercourses in permeable limestone areas such as the Chilterns are already suffering from low flows at certain times of year. The potential hydrological impacts of HS2 where it runs at or below ground level near such semi-natural wildlife habitats are unclear at present and will need to be carefully examined. Mitigation measures may be required.

42 Internationally important wildlife sites:

We are pleased to note that no sites of international importance would be adversely affected. This will need to be confirmed through full Environmental Impact Assessment at a later stage but for now we agree with the findings of the AoS in paragraph 9.2.1.

43 Nationally important wildlife sites:

In PPS9, the Government confirms that SSSIs should receive a high degree of protection. Where an adverse effect on a SSSI's notified special interest features is likely, an exception should only be made where the benefits of the development, at that site, clearly outweigh both the impacts that it is likely to have on the features of the SSSI that make it of special scientific interest and any broader impacts on the national network of SSSIs.

44 No less rigorous an approach should be expected of HS2. While we appreciate that on such a long, linear development, it may not be possible to avoid all sites and potential impacts to them, we continue to advocate further consideration of avoidance measures as the first approach, and only then should mitigation and (where necessary) compensation be considered and provided. We feel that this rigorous approach has not been sufficiently reflected in the Government's overall case for HS2 or the detailed plans for the preferred route, or the proposals for mitigation and compensation.

45 Local wildlife sites:

The sheer scale of the HS2 proposal and number of sites potentially affected makes it quite difficult for consultees to form an accurate assessment of the scale of damage likely to be caused. This task is not helped by the failure of the AoS to identify all known LWS. Nevertheless our discussions with the Wildlife Trusts and the limited information in the Appraisal of Sustainability make it clear that the total amount of damage will be severe and many sites are not shown at all in the AoS.

46 SSSIs enjoy a level of statutory protection above that of LWS, but SSSIs are only a representative sample of the best wildlife habitats in any given area. Many LWS support exactly the same species and habitats for which SSSIs have been designated and are often just as intrinsically valuable for wildlife.

47 By the most conservative estimate, considering only those LWS actually on the line of the preferred route, HS2 is likely to cause significant direct loss of habitat in at least forty sites. In Annex 1, we cite a few examples where the scale of impact on LWS is likely to be particularly severe.

Question 6: Do you wish to comment on the Appraisal of Sustainability of the Government's proposed route between London and the West Midlands that has been published to inform this consultation?

48 Yes. While we accept that if HS2 goes ahead a full Environmental Impact Assessment will be required, the Appraisal of Sustainability (AoS) should have done much more

to consider the full scope of the likely impacts of HS2 on wildlife and other aspects of the natural environment.

- 49 For example, we are very concerned that the AoS overlooks the existence of many LWS. Identifying Biodiversity Action Plan habitats en route is important but does not give the whole picture, especially as the quality of habitat mapping varies widely across different areas.
- 50 It should be unacceptable to the Government that we are asked to comment on a preferred route when such basic environmental information is omitted. HS2 Ltd has had plenty of time and money to present a more complete picture of the environmental impacts of the scheme to inform responses to this consultation.
- 51 We have some more detailed, specific comments on the main report, volume 1 of the AoS as follows:
- 52 Paragraph 2.1.19: we grant that the HS2 embankments might offer some species a “green corridor” for movement and colonisation but this must be set against the certainty that many existing “green corridors” will be cut, including many habitats designated as LWS or even SSSI. The same issue crops up in paragraph 8.6.7. The potential for HS2 to provide a new green corridor goes a short way towards mitigating the overall impact but cannot reasonably be treated as compensation. The AoS contradicts itself on this point since Table 6 confirms that HS2 will not support the sustainability objective to maintain and enhance biodiversity.
- 53 Paragraph 2.1.22: making good use of land with previous industrial or railway use is not a point in HS2’s favour if that land has developed significant nature conservation value. For example, HS2 will have a negative impact on one SSSI and several LWS on disused railway lines.
- 54 Paragraphs 7.4.7 and 7.4.16: in predicting negative trends for the future baseline for landscape character and the overall status of biodiversity, the AoS implies that the Government is “planning to fail” in terms of agri-environment delivery and overall biodiversity quality outside statutory sites. We believe the AoS should assume that current Government policies for the conservation and enhancement of the environment will succeed, and therefore the potential for HS2 significantly to obstruct or delay this outcome should be recognised in the AoS.
- 55 Section 8.11 on community integrity gives no indication that AoS has considered potential impacts on the integrity of farming operations or landowners’ ability to operate effective businesses. This could be considered an economic or social/community impact.
- 56 Taking into account the effects on farm businesses, islanding impacts are likely to be far more significant than inferred in paragraph 8.11.9, which is based only on impacts on private residential properties.

57 Paragraph 8.12.8: it is very hard to see how the AoS can conclude that the impacts on pedestrian access and open land will be neutral, as portrayed in Table 6. We assume that the 27 footpaths mentioned in 8.12.8 are merely those where sensible diversions are unfeasible. Conservatively, we count 165 public rights of way lying across the route and several more close alongside it. Many of these will experience disruption during construction, permanent diversion of some, and permanent loss of amenity by reason of passing over, under or close to HS2 in previously tranquil areas. This does not take any account of additional impacts on permissive paths and access land provided by farmers under Countryside Stewardship, or access to and enjoyment of sites of nature conservation.

Question 7: Do you agree with the options set out to assist those whose properties lose a significant amount of value as a result of any new high speed line?

58 This question is for property owners affected by HS2, and we not have any specific comments to make.

59 However, the preferred route passes close to the RSPB's nature reserve at Middleton Lakes, near Tamworth, as shown on map #27.

60 While there are unlikely to be any direct impacts on the steadily increasing nature conservation interests at our site, we will expect potential indirect effects to be explored fully, and if necessary for appropriate mitigation and compensation to be provided in line with the principles listed above.

61 Separate to any implications for the wildlife value of our reserve, are possible impacts on road access arrangements to the site.

62 We have a permanent easement along the track leading from Bodymoor Heath Road opposite Primrose Cottage, running north towards Coneybury Farm. If the possible realignment of Bodymoor Heath Road shown on map #27 is taken forward, we will require this easement to be protected and for a new junction to the realigned road to be provided that fully meets highways standards.

63 We would be interested in exploring options for an alternative realignment for Bodymoor Heath Road that passes nearer to Coneybury Farm, diverting north of the Aston Villa training ground and linking to the A4091 approximately 200-300m north of the junction currently proposed on map #27.

64 We look forward to discussing these matters with HS2 Ltd in the near future.

Annex 1

Details of SSSIs and some locally important wildlife sites likely to be damaged by HS2

Colne Valley Gravel Pits SSSI (London/Buckinghamshire)

Features of interest likely to be affected:

This SSSI is nationally important for the diversity of its breeding woodland and wetland birds and for the numbers of wintering waterfowl, and is also important for its botanical interest.

Nature of impacts:

Consultation map #5 indicates that the south and west sides of the SSSI are to be spanned by a viaduct. While technically speaking, this may reduce the amount of permanent, direct land take, in practice we believe that impacts from the construction phase and the permanent overshadowing of part of the SSSI will be no less severe.

At least 3.2 hectares (2.2%) of the SSSI will be damaged directly by construction access requirements, placement of viaduct footings, or by loss of light and rainfall under the viaduct spans. This loss of vegetation will amount to the direct loss of some of the features of interest of the SSSI, and may also have indirect impacts on populations of some breeding bird species that use these habitats.

Further indirect impacts on bird populations in the SSSI are also likely through noise and visual disturbance, and habitat fragmentation. The 6 hectare southern lake within the SSSI will be particularly badly affected as the viaduct will fragment it into sections of around 1.6 ha and 3.8 ha. The capacity of the remaining, undisturbed open water and margins in this part of the SSSI to support significant breeding and wintering water bird populations will be much reduced.

Mitigation:

The proposed viaduct must be designed so as to minimise the impacts on the SSSI through direct land take, overshadowing and construction methods. This includes deciding the exact design and positioning of bridge piers and minimising the overhead width of the viaduct within the SSSI.

Compensation:

Compensation for direct loss of some of the SSSI habitats likely to be affected by HS2 will be necessary, especially the woodland habitats on the western side of the site. It would not be appropriate to increase the amount of tree cover elsewhere within the SSSI because this would probably have an adverse impact on other features of interest. Therefore we expect provision for new semi-natural woodland habitats to be made on land outside the SSSI but nearby.

Sheephouse Wood SSSI (Buckinghamshire)

Features of interest likely to be affected:

This large semi-natural ancient woodland is designated for its woodland interest, especially the mix of coppice stand types, the ground flora and several notable invertebrates. The SSSI also has a diverse woodland bird community, with over 40 species recorded.

Nature of impacts:

Consultation map #13 shows the preferred route lying directly adjacent to the western edge of the SSSI. It is very difficult to tell from the consultation material whether there is likely to be any direct loss of habitat. However, the proximity of HS2 to the wood and its ground-level position on this stretch means that noise and visual disturbance may have an adverse impact on breeding bird densities in an indeterminate zone alongside the high speed line. We would also be concerned if HS2 was laid so close to the edge of the wood that there might be future pressure to cut back within the SSSI to avoid leaf mulch problems on the line.

Mitigation:

As a first priority we believe further consideration must be given avoiding any direct impacts on this SSSI (if further detailed route assessments show these are likely). Further investigations should be made of the potential to introduce a minor curve into the line that bends it a few metres further SW at the point it passes the SSSI, so avoiding any direct land take from the designated site. We acknowledge that there may be sound technical or other environmental reasons why this is not feasible or appropriate (e.g. increased adverse impacts on dwellings at Moor Farm and other locations).

Compensation:

If the southern margin of the SSSI is directly damaged by the construction of HS2 compensation will be required. This could be through additional woodland planting on the margins of the SSSI in places unaffected by HS2.

Helmdon Disused Railway SSSI (Northamptonshire)

Features of interest likely to be affected:

This site is an extensive length of disused railway cutting and embankment, supporting plant communities typical of Jurassic limestone grassland,. The SSSI also supports a rich butterfly fauna.

Nature of impacts:

Consultation map #16 shows the preferred route cutting obliquely across the SSSI at ground level, dividing the site into unequal parts. The direct loss of habitat will probably amount to about 0.48 hectares or ~3% of the SSSI. The features of interest of this site mean that the fragmentation effects are likely to be particularly significant as many plant seeds and butterflies could find HS2 a major barrier to dispersal and genetic exchange.

The condition of most of this SSSI is classed as “unfavourable, no change” at present, and the future fragmentation of this site by HS2 will severely hamper any efforts to restore and maintain this site in favourable condition, particularly through grazing.

Mitigation:

It is difficult to see what mitigation could be provided beyond keeping the amount of habitat loss to a minimum.

Compensation:

Compensation will be required for the direct loss of habitat and for the additional fragmentation effects. We expect provision for new limestone grassland habitats to be made on land outside the SSSI but nearby. Given the nature of the features of interest of the site the compensatory habitats provided should be directly adjacent to the existing SSSI, preferably on the larger northern section to maximise the overall value of the area created.

Local Wildlife Sites:

Keepers Wood, near Little Missenden, Buckinghamshire

Keepers Wood is a semi-natural ancient woodland, one of several such woodlands on this part of the preferred route through the Chilterns that will be badly damaged by HS2. Map #7 shows that Keepers Wood will be almost completely destroyed by a deep cutting, leaving only tiny fragments to the north and south.

Calvert Jubilee, near Steeple Claydon, Buckinghamshire.

Calvert Jubilee Nature Reserve is former clay pit and is now one of the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust's (BBOWT) premier nature reserves. Map #13 shows the preferred route lying exactly along the eastern side of the main lake and bisecting the area of grassland in the northern part of the site. Elsewhere on the site, suggested road realignments will cause further direct damage. Calvert Jubilee is a popular site for local people to visit and aside from the wildlife impacts, the severe noise and visual disturbance to this reserve will have a major impact on visitors' enjoyment. This LWS is missing from the AoS.

Aston-le-Walls disused railway, Northants

Another example of a site missing from the AoS, the disused railway is identified as a LWS for its grassland and scrub interest.

South Cubbington Wood, near Leamington Spa, Warks

This is another area of semi-natural ancient woodland, with many indicator species like bluebells and wood anemones. The site is also important for white admiral butterflies, a stand of wild service trees, and a range of woodland birds. Also under threat close by is a wild pear tree, believed to be the largest and one of the oldest in Britain and recently designated as the species "national champion" by the charity, The Tree Register.

Map #22 shows HS2 passing right through the southern portion of the wood in a deep cutting, with around 2.3 hectares directly destroyed and the remaining areas left fragmented and isolated.

North Wood, near Middleton, Warks

This is another small semi-natural ancient woodland. Map #27 shows HS2 passing at ground level exactly through the centre of the site, destroying over one hectare of woodland and a pond and isolating the remaining fragments.