

Executive Summary

The HS2 London to West Midlands EIA Scope and Methodology Report provides an outline to the way in which Environmental Impacts will be evaluated and reported during the design, construction and operational phases of the scheme. Warwickshire County Council (hereafter known as The Council) considers that the information provided is inadequate to accurately predict and assess direct, indirect and cumulative impacts. The Council wishes to make various recommendations to attempt to re-address concerns covering:

- a number of gaps in data acquisition and collection
- the analysis of this data
- modelling techniques
- where gaps remain, that a precautionary approach is adopted.

The Council also recommends research sources and metrics to assist in evaluating impacts and the involvement of Local Authority Officers to advise on the production of the EIA is essential.

In the formal response to the 2011 consultation on HS2, (Question 6 Appraisal of Sustainability), The Council outlined why it viewed the AOS as inadequate for a major infrastructure proposal.

The Council considers that a number of aspects of the current 2012 EIA Scope & Methodology document are similarly inadequate in their clarity and detail. Specifically:

- i) The absence of detail for the Y route makes it almost impossible to comment on the true environmental impact of HS2 on Warwickshire. The omission of detail on North Warwickshire and its cumulative impact from phase 2 as well as the current phase 1 is unacceptable.
- ii) Without the detailed route, safeguarding corridor and precise land take figure, it is ineffective to respond to the scoping proposals for ‘ assessing the distance from the proposed scheme over which changes to the environment are likely to occur, as a result of the construction or operation of the proposed scheme, taking account of the temporary and permanent land features.’

An example of this would be how can the agriculture & soil be accurately assessed when amount of land take is not yet known?

The study area must be defined before the EIA commences.

- iii) In the absence of and without the detail regarding electricity feeder stations or other off site requirements, e.g. residential camps, it is difficult to comment on the scope for the EIA. Without this, the true environmental impact of HS2 on Warwickshire cannot be identified.

- iv) In the absence of, and without the detail relating to the specific proposal for the Birmingham Interchange Station, it is difficult to comment on the scope for the EIA, as without this the true impact of HS2 on Warwickshire cannot be identified.

Reference is made (Para 2.2.8) to consideration of consequential development around stations and interchanges. Will this cover any potential airport expansion plans over the time period of HS2?

The Council, in its response to the consultation in July 2011 forwarded additional information (Cabinet report 14.7.11 Appendix C, copy attached) highlighting those issues which will need further consideration in the scoping and EIA. These included:

- Natural Environment
- Flood Risk
- Heritage
- Landscape & Visual Impact
- Emergency management
- Rights of Way
- Existing road network
- Rail enhancement
- Agricultural land
- Minerals
- WCC landholdings
- Coventry & Warwickshire Chamber business survey.

The EIA Scope and methodology document addresses some of these but not in adequate detail.

The Scope & methodology document in its current form raises a number of general questions and anomalies that The Council do not feel have been adequately addressed, namely:

- i) The lack of quantitative definition for the terms 'short, medium and long term'?
- ii) The frequent use of the term 'professional judgement' to imply some form of quality assurance without referencing a scale or other quantitative measure is of deep concern to The Council.
- ii) The document makes numerous mentions to cross referencing throughout the document but without a consistent approach to cross referencing of chapters and proposed methodologies.
- iv How will direct and indirect effects be measured?
- v) There is no explanation as to why the EIA scope (temporal) does not continue after 2026 across all 14 areas of assessment, with the exception of the social economic considerations and traffic and transport.

- vi) It is not evident how is it proposed to assess the potential longer term implications for food production and security arising from loss of agricultural land?
- vii) How will assessments be made of the physical, psychological and wider health social impacts and effects on communities?
- viii) Why is there not a consistent approach to information sources e.g. approach taken on soil, compared with approach taken on community impact?

The remainder of this report sets out in detail, comments on individual sections of the report.

1. Introduction

Consultation

Consultation on the EIA (section 1.7) makes it clear that the only forum that does not involve local representation is the Environment Forum. It will only '*involve national representation of environmental statutory authorities and government departments*'. The Council has requested that there is Local Authority representation on the National Environmental forum, and furthermore a suitably qualified representative should be present within this forum so that local knowledge is used in the preparation of the EIA and subsequently during the construction and operational phases of the project. Without this representation it is suggested that the potential impacts will be significantly higher as a result of a failure to consider ecological issues at the earliest possible opportunity.

Within the Monitoring of performance against sustainable and environmental goals (section 1.8) there is reference to monitoring being covered in a Code of Construction Plan (CoCP) and that, after construction, management plans, monitoring and remedial response plans would be established as required. It could be construed that any impacts that cannot be evaluated within the EIA will be resolved after the impact has occurred. Although we welcome these inclusions, they must not be viewed as a 'get-out' clause to cover inadequate assessments within the EIA.

Recommendations:

- a) To invite a local authority environmental representative onto the National Environment Forum to assist with evaluating impacts.
- b) To ensure that there are plans for appropriate assessments and commitments to continual reviewing of impacts and procedures prior to, during and after construction of the railway.

2. EIA methodology

Within the introduction we welcome the establishment of the baseline conditions based on specialist local knowledge and that it will be *'extrapolated to take account of predicted or anticipated changes'* as the project develops. However, we suggest that this is not enough. This data should be modelled against potential scenarios and not just extrapolated. There are scientific models for climate change adaption, ecological connectivity in the landscape as well as creating 'virtual landscapes' that will inform impacts.

Within the Geographical Scope (section 2.2.7) it is unclear if this includes the associated impacts from construction sites, ventilation shafts, access roads, highway improvements and alterations. It is understood that these have not yet been decided upon so it is unclear how these impacts can be assessed.

The Cumulative effects section (section 2.4.1) does not provide any detail on how this will be calculated and how it will be *'discussed during consultation on the scope and further researched during the EIA'*. This is continued in the Defining significant effects section (section 2.5.4) that states *'Where it is not possible to quantify impacts, qualitative assessments will be carried out, based on professional experience and judgement'*. Therefore, no comment as to the effectiveness of this approach can be made. However, it is an accepted methodology both internationally¹ and nationally that in such circumstances a 'Precautionary Approach' should be adopted when evaluating impacts.

It is suggested that when defining significant effects the condition of a habitat or ecological feature is ascertained and then given *'due consideration'* in the list under section 2.5.5. It is recommended that temporal measures are considered in relation to the time it will take habitats and ecological features to reach their target condition. Without these two attributes the significance of impact cannot be evaluated. These attributes conform to the Biodiversity Offsetting model currently being developed by Defra and Natural England and piloted by Warwickshire County Council.

¹ IAIA Biodiversity in Impact Assessment (2005)

Ecosystem Services methodology to measure impacts has not been referenced within the document. It is recommended that this approach is considered as it is being promoted by the UK Government as an appropriate assessment.

Recommendations:

- a) To use appropriate impact assessment techniques additional to those referenced with the scoping document to evaluate impacts.
- b) To clarify that the geographical scope will include all associated works and the necessity to acquire data to accurately assess impacts.
- c) A precautionary approach to impact assessments must be carried out where there is insufficient data or modelling to evaluate impacts.
- d) That condition assessments of habitats and ecological features is evaluated as part of survey work.
- e) To include Ecosystem Services methodology as a measure of impact.

3. Reporting of alternatives in the ES

It is accepted practice that the Environmental Statement and Assessments should be carried out on all alternatives in order to enable an equitable and informed decision. These assessments should be used to *“provide an outline of the main alternatives studied by HS2 Ltd and Department of Transport (DfT) and the reasons for their rejection”* (section 3.1.5).

It is welcomed that design refinements will be made in response to the EIA and consultation (section 3.1.13). However, by not knowing the locations and extent of *“site compounds, the access routes to and from construction sites and vent shafts”* or highway alterations, both temporary and permanent, there is a significant chance that the impact will be incorrectly determined. These sites may not have been surveyed to evaluate their ecological or geological value.

Recommendations:

- a) To evaluate alternatives to an equivalent degree.
- b) To identify and survey the significant areas of impact for assessment.

4. Air Quality

We would like to query whether only acquiring gaseous pollutants data from the “UK network of protected sites” is adequate to model impacts on Local Sites (section 4.2.6 & 4.2.7).

Recommendations:

- a) Gaseous pollutant data is collected from various local sites to quantify and qualify national datasets to measure potential impacts.

5. Agriculture and soils

It is suggested that the acquisition of 1km Provisional ALC data (section 5.2.5) will not be sufficient to determine the impacts and future mitigation and compensation required. It is our opinion that this data will be critical in evaluating donor and receptor sites for ecological impacts.

An additional area for impact consideration is the non-renewal or take-up of Agri-Environment Schemes along the route prior, to and during, the construction of the line. This may have a significant impact on the wider ecology and needs assessing.

It is suggested that the permanent and temporary disruption of soil structure and nutrient content through disturbance, displacement and re-construction of land is added to the list of bullet points under section 5.4.1. Similar to this the temporal effects of temporary land take to return to its target condition (Grade) is a consideration not addressed in Section 5.6.

Recommendations:

- a) A wider area of Provisional ALC data is acquired to inform the EIA.
- b) To model the likelihood of non-renewal or take-up of Agri-Environment Schemes during pre-construction and construction phases.
- c) Add 'the permanent and temporary disruption of soil structure and nutrient content through disturbance, displacement and re-construction of land' to section 5.4.1.
- d) To consider the temporal effects of temporary land take to return to its target condition (Grade).

6. Climate

It is suggested that the model to assess and evaluate climate change adaption is included in this section. This would outline the methodology that would be investigated in the relevant disciplinary chapters. Such a model being the percentage increase forecasted during predicted lifespan of the project plus a reasonable time in the future.

Within the scope of the assessment, the GHG emissions for site surveying can be evaluated (section 6.5.2). This figure can be incorporated into the impact and could be used to evaluate similar activities including '*commuting of construction workers*'.

Recommendations:

- a) To outline the climate change adaption model which the key topic areas will be assessed under.
- b) To use commuting GHG figures from survey workers to evaluate impacts for other 'commuting' activities.

7. Community

There does not appear to be any reference to the impact on museums both in terms of new acquisitions, recordings and disposals. This should not be restricted to physical items but also social history. The recording of the cultural impacts on individuals, families and communities need to be assessed prior to, during and after construction of the line.

The statement that 'engagement will be appropriate to each organisation' does not go far enough. Consultation must be at a very local level when it comes to assessing community impacts.

Recommendations:

- a) To measure the impact on museums and their disciplines and describe mechanisms to reduce and monitor these impacts.
- b) It is recommended that interviews/ meetings with local communities should also be included in the methodology.

8. Cultural Heritage**Effects**

As detailed in Chapter 8: Cultural Heritage of the EIA Scope and Methodology Report, the proposed scheme will have a significant impact on the historic environment. Components of the historic environment which could be impacted include archaeological and palaeo-environmental remains, historic landscapes (including townscapes) and historic structures.

These impacts may be direct or indirect, and of a temporary (for example during the construction phase), or permanent nature.

Paragraph 8.3.4 of the report states that a permanent effect 'will involve the all-time loss of a cultural heritage asset'. This is not always the case. A permanent impact could include impacts that result in the loss of, or damage to just part of a heritage asset, rather than its whole, damage to a heritage asset rather than its complete loss, or a permanent impact upon the setting of a heritage asset, whilst not directly in any loss (or damage) to the asset itself.

Baseline data collation

Section 8.4 of the report sets out the strategy for the establishment of the baseline, listing the proposed data to be collated and the baseline data sources.

Recommendations:

We would recommend that the following data also be obtained:

- a) Documentary, cartographic and other resources as held by County Record Offices²
- b) Data held by the National Trust
- c) The assessment reports produced during landscape character assessment projects, rather than just the mapping presently proposed.
- d) Information held by Local Planning Authority Conservation Officers
- e) The British Geological Survey borehole data, in addition to the geological mapping referenced.
- f) Information held by Local Planning Authority Conservation Officers.
- g) Regional and local research agendas

Definition and scope of survey

Whilst Paragraph 8.8.1 states that ‘all heritage assets will be identified and assessed’, and Paragraph 8.4.4 makes reference to the undertaking of detailed surveys³ to obtain baseline data. Section 8.5, which defines the survey to be undertaken, only details a series of field visits and walkover surveys, suggesting that these will be the only/primary on-site mechanisms by which heritage assets will be identified, and information about the assets’ nature and condition obtained.

In addition, Paragraph 8.5.1 of the report states that ‘in developing the baseline and consideration of effects, consideration of the historic landscape, as opposed to point specific assets, will be the primary concern’ [sic].

Recommendations:

We consider that the direct impact that the scheme will have upon all significant heritage assets⁴ should be *thoroughly* assessed during the course of this project, not just the impact upon the wider historic landscape. Further information than can be obtained by field visits and walkover survey may be required in order to sufficiently inform this assessment.

² It is acknowledged that, whilst not specifically referenced in section 8.4, reference to County Record Offices is made in Section 8.10: Assumptions.

³ Including Lidar, geophysical survey and trial trenching

⁴ Designated or undesignated

Whilst Paragraph 8.4.4 makes reference to the undertaking of non-intrusive and intrusive surveys to obtain baseline data, the report does not detail how these techniques will be applied, (for example, it does not detail whether or not Lidar and geophysical survey will be undertaken across the whole site or just a very small proportion of it, whether the trial trenching will only target known archaeological sites, or will sample other areas).

We cannot therefore confirm whether or not the surveys proposed by the scoping report are likely to obtain sufficient information to enable the impact of the scheme upon the historic environment to be appropriately assessed. We are also concerned that the limited timeframe for the gathering of baseline data and subsequent assessment (based upon the proposed date of publication of the Environmental Statement), along with a potential lack of access to parts of the route to undertake detailed surveys, may result in an Environmental Statement which does not sufficiently detail the likely impact of the scheme upon the historic environment.

Recommendations:

- a) That a detailed strategy to obtain baseline data be developed, agreed with appropriate specialists⁵, and implemented at the earliest opportunity.

In addition to obtaining sufficient information about known heritage assets, this strategy must also aim to identify previously unidentified archaeological sites which may be impacted upon by the proposed scheme, but would not be identified through walkover surveys alone. Archaeological work during the construction of HS1 and the M6 Toll motorway have both demonstrated the significant potential for previously unidentified archaeological sites to be disturbed by schemes such as this.

The strategy must include a programme of systematic building assessment of any historic structures which are likely to be (directly or indirectly) impacted by the scheme. The level of building assessment undertaken of each structure should be sufficient to accurately establish its significance. This is of particular importance as it can be difficult to accurately ascertain the significance of a historic structure on the basis of documentary sources and external examination alone.

The use of existing information to formulate predictive models for establishing the potential for sites of historic and archaeological interest should be explored and assessed (see Paragraph 169, NPPF).

The development of the assessment and subsequent mitigation strategy should be informed by local and regional research frameworks. A research framework should be developed and agreed with appropriate specialists including English Heritage and Local Authority archaeological advisors;

⁵ including English Heritage, local authority archaeologists, Conservation Officers etc.

this should be re-assessed and refined throughout the project as new information becomes available.

It is likely that further discoveries will be made throughout the course of the project, including the identification of new archaeological sites or other heritage assets. The assessment methodology should make provision for further assessment throughout the project, including the updating of any research agendas set.

The resulting Environmental Assessment document should clearly set out the limitations of the surveys/assessments undertaken up to that point (including the absence of survey across any inaccessible areas), and comment on the implications that this may have for the accuracy of the conclusions reached.

Consultation

We are reassured that Paragraphs 8.6.7 – 8.6.10 confirm that a wide range of specialists, including English Heritage, Local Authority Archaeologists or their equivalents, and other relevant societies (including the Garden History Society, Society for the Protection of Ancient Buildings and the Historic Houses Association) will be consulted during the course of the project.

However, we are concerned that Paragraph 8.4.5 states that the requirement for, and the scope of *intrusive* survey, is to be agreed in consultation with English Heritage, with no reference to other specialists.

Recommendations:

- a. The requirement for, and scope of intrusive survey should also be agreed with Local Authority archaeological advisors, Conservation Officers, and other specialists as appropriate.
- b. The requirement for, and scope of *non-intrusive* survey (e.g. Lidar and geophysical survey), should also be agreed with English Heritage, Local Authority Archaeologists, Conservation Officers, and other specialists as appropriate.

Study areas and assessment of impact of HS2 upon the settings of heritage assets

The scoping document states that within the urban and rural areas, study areas of 250m and 500m respectively from the edge of the land take for the proposed scheme, or as defined by the Zone of Theoretical Visibility (ZTV), will be established (paragraph 8.5.4). It is proposed that these areas be subject to survey to verify the baseline research, assess the nature and condition of known heritage assets and identify hitherto unidentified features which may be affected by the scheme (Paragraphs 8.5.5 & 8.5.9).

There is a potential for the scheme to impact upon heritage assets beyond this corridor, for example light and sound pollution may have an impact upon the settings of heritage assets (including conservation areas and listed buildings). The assessment methodology must reflect this.

In addition, Paragraph 8.8.2 states that within the maximum extent of the study, only designated assets of the highest significance will be identified and their setting assessed, whilst Para. 8.8.6 confirms that, unless they are associated with a designated site, the settings of undesignated heritage assets will not be assessed. We do not consider that this is sufficient.

Recommendations:

- a. That the potential impact of the scheme upon heritage assets which are not of the highest significance, including grade II, locally listed buildings and other undesignated sites are assessed, as per the requirements of NPPF.

We have presumed that the study area will be defined by the ZTV when this is further than 250m (urban) or 500m (rural) from the edge of the land take. However, this is not explicitly stated by the report.

Cross discipline assessment

Whilst chapter 8 specifically deals with the historic environment, the assessments detailed elsewhere in the report⁶ could provide data which could inform the assessment of the impact of the proposed scheme upon the historic environment, (e.g. noise and light pollution could have a negative impact upon the settings of heritage assets). We would therefore recommend the input of historic environment specialists into the development of assessment methodologies for other disciplines, (for example, providing input into the choice of key viewpoints and noise monitoring locations etc.).

In addition, as mitigation measures for one environmental factor could have a significant impact upon another environmental factor, such as the historic environment, (e.g. the creation of off-site compensatory wetland habitats could have an impact upon archaeological deposits, the erection of a noise reducing bund could impact upon the setting of a heritage asset), it is vital that discussions are held between disciplines in order to minimise these potential conflicts.

Whilst we are pleased to note that Para. 8.4.2 of the scoping report acknowledges that there are interfaces with other disciplines, and confirms that these interfaces will be actively addressed as part of the EIA process, it is not clear *how* this will be addressed. We have also noted that whilst

⁶ including 11: Land Quality, 12: Landscape, Townscape and Visual Assessment, 13: Sound and Vibration, 15: Traffic and Transport, 17: Water Resources and Flood Risk Assessment.

chapter 8 references cross-discipline working, only one of the relevant chapters makes reference to any requirement for the input of historic environment specialists, (e.g. Chapter 13: Sound and Vibration makes no reference to the impacts that sound and vibration could have upon the historic environment and how this will be assessed).

Recommendations:

- a) We strongly recommend cross-discipline working throughout this project, both during the assessment phases, and throughout the development of mitigation strategies, and that procedures are in place to help ensure this takes place.

Other cross-discipline issues could include:

- i) Proposed changes in road layout etc., resulting in increased pressure upon historic structures such as bridges.
- ii) Landscaping, flood alleviation works, and the construction of sound barriers etc. could have a direct impact upon heritage assets and/or an impact upon their setting.
- iii) De-contamination works having an impact upon archaeological remains.
- iv) Deliberate de-watering having an impact upon water-logged archaeological deposits.
- v) The proposed planting of two million trees could have an impact upon archaeological deposits
- vi) Changes in hydrology, (either deliberate or as a result of tree planting etc.), could result in both on-site and off-site impacts upon sensitive waterlogged archaeological or palaeo-environmental deposits.

Specialist Assessments

Whilst Para. 8.2.2 of the report makes reference to palaeo-environmental remains, there is little reference throughout the rest of the document as to how the potential for palaeo-environmental remains will be assessed, and an appropriate mitigation strategy developed.

Recommendations:

- a) That there is a potential for palaeo-environmental remains to be disturbed or destroyed by the proposed scheme is of concern to Council. Therefore we require that this potential be assessed by an appropriately qualified and experienced specialist prior to the publication of the Environmental Statement and an appropriate mitigation strategy developed. This assessment should consider both the on-site and off-site impacts of the scheme upon any such remains.

- b) The potential for the scheme to impact upon Palaeolithic Archaeology should also be assessed by an appropriately qualified and experienced specialist and an appropriate mitigation strategy developed.

Community Engagement

We would strongly recommend that a strategy for engaging the public throughout the project be developed. This could include engaging and informing local communities through the creation of public displays of the results of the fieldwork, holding open days to enable members of public to view exemplar sites being investigated, and the use of social media and other new technologies.

Other

Any work associated with the project should be undertaken by appropriately qualified and experienced specialists, in accordance with industry standards and best practice guides, including, for example, those published by the Institute for Archaeologists, English Heritage, the Institute for Historic Building Conservation etc.

The surveys (including archaeological fieldwork) undertaken during the assessment and mitigative phases of this project will generate a substantial amount of data and finds which will require detailed analysis. The results of these surveys will require publication, and the archives generated will require storage in appropriate museums etc. in perpetuity, with displays for public benefit as appropriate. These factors will have cost and other implications which should be planned for from an early stage.

Paragraph 8.2.1 incorrectly defines undesignated assets as 'heritage assets formally identified by Local Authorities and recognised through their inclusions within the local Historic Environment Record' (HER). Undesignated heritage assets can also include those which are not on a Historic Environment Record, including those which have not yet been identified.

Paragraph 8.8.2 of the report makes reference to PPS5. This should be updated to reference the NPPF, which has replaced PPS5.

Paragraph 8.4.4 incorrectly references Para. 130 of the NPPF instead of Para. 139 (archaeological assets of schedulable quality and as identified in NPPF).

Section 8.4 is titled 'Establishment of baseline and definition of survey'. The definition of survey is covered in section 8.5: Definition of survey.

9. Ecology

The inclusion of '*effects on geological and geo-morphological features of recognised nature conservation significance*' needs clarification, (section 9.1.2), as it is not clear what features this includes and how it will conform to the significance criteria mentioned later.

The acquisition of data outlined in section 9.2.3 is welcomed. However, we have concerns that Phase 1, including '*priority or otherwise notable habitats or features within or adjacent to the route*', will not be sufficient to adequately evaluate the impacts of the route. Our concerns include modelling impacts relating to connectivity in the landscape where recognised methodology requires all habitat parcel identification to a phase 1 (or equivalent) level. This data will also be essential for targeting mitigation and compensation.

The baseline data listed in section 9.2.7 will need to satisfy the aspirations of the Natural Environment White Paper (NEWP, 2011), and the England Biodiversity Strategy (EBS, 2011), plus the National Planning Policy Framework (NPPF, 2012). The aims revolve around creating and then joining strategic functioning ecological networks. The amount of survey effort required will need to support this strategy. It is suggested that the list within section 9.2.7 includes hedgerow and tree surveys, plus condition assessments.

Local Authorities made ecological comments to the earlier consultation and these should be included within section 9.3.1, or within the list at section 9.3.4. LA Ecologists should continue to be represented in advising design, construction, mitigation and aftercare.

The statement that '*the impact assessment methodology for the Proposed Scheme broadly follows the standard method for ecology ...*' is ambiguous and unhelpful. This must be defined more clearly as to which areas will be followed, which will be improved upon and which areas will follow a precautionary principal.

The Scoping document does not cover the relevant guidance documentation to adequately assess the impacts of the project. Additional strategic documentation includes International Association of Impact Assessment¹, NPPF, NEWP, EBS, Local Biodiversity Action Plans and Local Plans and Strategies. This includes survey standards and criteria set locally for Local Wildlife Sites. The adoption of this approach will ensure that there is consistence at both a local and national level. Additional material that should be referenced include Natural England, Forestry Commission and Environment Agency research papers and advisory notes, plus other similar documents produced by leading authorities in species conservation. These publications will inform '*professional judgement*' and a precautionary approach (section 9.6.3).

In relation to significance, (section 9.6.4 to 9.6.9), it is agreed that there must be a consistent approach to defining significance. However, the standard approach outlined in the ODPM circular needs to be redefined to align with the referenced Lawton Report, (section 9.6.3). It is our professional opinion that weighting should be given to sites that have a connective function within the landscape. For example, a linear stretch of grassland along a road could be of local importance, but be the only connective feature between two county or national sites. This grassland strip should be weighted to reflect its connectivity importance.

An impact that has not been considered within the document is that of significantly increasing the spread of invasive species.

It is strongly recommended that Biodiversity Offsetting is used to evaluate the impact of the project using the defined Defra/Natural England methodology. Warwickshire, Coventry and Solihull are a pilot area and have developed a mechanism for evaluating impact.

Recommendations:

- a) To acquire polygon and linear data to Phase 1 level for up to 5km from the sites (particularly in rural areas).
- b) To further define the extent of species survey effort to identify strategic populations and subsequently model connectivity.
- c) To measure the condition of habitat and ecological features.
- d) To include LA Ecologists and Local Record Centres in the consultation and implementation of the EIA.
- e) To ensure that research papers and current best practice is used to inform the EIA.
- f) To update the hierarchal significance model to account for connectivity indices.
- g) To assess the potential impact of invasive species associated with the construction and operational phases of the project.
- h) Biodiversity Offsetting is used to evaluate impact.

10. Electromagnetic Interference

It is unclear what impact the electromagnetic interference and waves have on wildlife, in particularly bats. It is suggested that this is investigated and assessed as part of the EIA.

Recommendations:

- a) To assess the effect of electromagnetic interference on wildlife

11. Land Quality

It is acknowledged that the '*impairment or destruction of geological sites of interest would be considered an adverse impact*'. It is not understood why new exposures of rock or soil that is '*not accessible to the public*' is considered negligible. The site can be recorded and potentially viewed from a distance. It may also be accessible by permit. Accessibility is one selection criteria for the designation of Geological Sites. It is recommended that this statement is reviewed. Any Local Geological Site destroyed or created by the scheme will need to be recorded with condition and extent and then assigned appropriate management in the same manner as that of ecological sites and features. This is to accord with the report of Single Data List 600-1 Biodiversity and Geodiversity.

With regard to the Scope of assessment (section 11.5) the management of geological assets and cumulative impacts will occur within the operational stage of the scheme and should be recognised.

It is suggested that SSSI and Local Geological Site assessment criteria is used as an assessment criteria and included in section 11.6 covering legislation, guidance and significant criteria. These sites do appear in the significance table (Table 10, section 11.6.5). These sites are not referenced in Construction effects, Operational effects and Cumulative effects (section 11.6.12 to 11.6.17) and should be included with evaluation criteria.

Recommendations:

- a) To identify, record and condition assess existing and new geological sites and define appropriate management prescriptions to maintain their interest.
- b) Operational impacts on geological sites will need to be considered.
- c) Geological SSSI and Local Geological Site criteria is defined in the EIA's assessment criteria.
- d) To evaluate construction, operational effects and cumulative effects on geological features.

12. Landscape

The report gives an adequate outline of the scope and methodology of the landscape assessment and refers to the appropriate guidelines.

However, more detailed information will be required for us to give more constructive and meaningful comment. In particular, we require information on the following to comment further:

- i) The extent of the study area;
- ii) The landscape character assessments that will be used in the production of baseline information;

- iii) The locations of viewpoints;
- iv) How tranquillity will be defined and measured;
- v) How professional judgement will be applied to determine sensitivity and the significance of an effect;
- vi) Detailed information about mitigation proposals.

Recommendations:

- a) A formal definition of 'professional judgement'.
- b) Much greater clarity and transparency of the data and survey methods to be employed.

13. Sound and Vibration

In the determination of which noise standards to work to, it is essential that HS2 use the highest possible international conventions and do not opt for the inferior but widely accepted UK standards.

It is important to measure and model sound at a variety of wave lengths and not just those associated to human welfare. Those that potentially affect wildlife will need to be collected at appropriate locations. This evidence can be used to model disturbance. Similar disturbance factors will need to be measured and evaluated.

Recommendations:

- a) As an absolute minimum noise management standards must be of international quality. The Council expects the European standards to be the benchmark.
- b) To record and monitor appropriate sound and vibration levels to evaluate the potential impact on wildlife.

14. Socio economic

Overall, this assessment in this chapter is more qualitative than quantitative and based on a subjective analysis of potential impacts. This approach would not generally be acceptable for a Local Plan or similar document in the public sector, this is far from a best practice approach to the methodology.

The chapter does not give any detail as to what specific data sources it will be using (it lists general categories such as population, enterprises, employment, etc.) or the geographic tier that will be looked at.

This is a serious omission because, if large geographic areas are used (such as county or district level) it will generalise the resulting issues.

There does not appear to be any specific economic model to undertake the forecasting work. This suggests that only a simple projection is envisaged (i.e. just assuming the future continues the same path as the past). This is a very rudimentary approach and will not provide sufficient information to construct an impact analysis.

Para 14.2.5 sources of information, in the current form this list is too generic and insufficient to provide a meaningful assessment.

Para 14.4.1, there is little to no consideration of the indirect impacts of HS2 on existing or planned development sites. This paragraph talks about looking at the "catalytic effects on wider development", but it only focuses on the positive enabling effects that the scheme may generate. There is no acceptance that there maybe negative displacement activities (e.g. will a developer build on a particular site when they know that HS2 may change the market demand or areas of opportunity?). The assessment must consider the issue of deadweight within this assessment - i.e. to what extent would many of the developments have occurred anyway?

Furthermore the document must consider the impact on the business rates in local areas. The Government's shift towards the localisation of business rates means that in some localities an area could do well out of the HS2 development, while other localities could suffer and see a fall in their local revenue. This will impact on the finances of the local authorities and their ability to provide quality services to their residents.

Para 14.7.1 makes the assumption that there will be no change in working practices or labour productivity, this is in the Council's view an incorrect assumption and needs to be addressed in the document. The current economic forecasts suggest significant changes in skill requirements for the future, so it seems strange to ignore this fact and assume no change in the skills mix.

Within the Socio economic aspects covered in this chapter, it is not clear why there is an inconsistent approach to the methodology between "potential construction workers being within 90mins travel time of construction access points", and displacement of existing employed labour for construction- within 30km of route?

The use of both time and distance as measurements renders the resulting data invalid or at best it provides limited value to the overall assessment.

Recommendations:

- a) HS2 Ltd use Local Economic Assessments, data and findings from Functional Economic Geographies, and levels of deprivation in their modelling rather than the current proposed none specific high level data.

- b) A suitable economic model and forecasting tool is used in the appraisal instead of the proposed projection.
- c) Address the basis of the assumptions in section 14.7.
- d) Detailed analysis must be given and reported, on the effects of localisation of business rates and the corresponding effect on communities.
- e) That the report addresses the inconsistent terminology used and corrects the error.

15. Traffic and Transportation

The EIA Scope and Methodology Report is lacking detail in its treatment of traffic and transport. It appears that this is on account of the current lack of information about the detailed design of the Proposed Scheme. It also appears that the EIA will be carried out in parallel with the design for the hybrid bill and more precise details of the scope of the EIA will emerge by cross-linking the two processes of design and EIA. Far more detail as to how the process is to be managed to achieve this is needed to reassure The Council of the practicality of this approach.

Paragraph 15.2 lists the organisations which are to be consulted on traffic and transport issues. This infers the intention to consult. Key decisions in the process of the EIA and the associated transport assessment will evidently be reached as more design information and traffic/modelling data become available, e.g. establishment of baseline, spatial scope, including which transport routes are likely to be affected etc. Local Authorities should be consulted at key decision points in the development of the Transport Assessment and the scoping document/methodology should set out the points at which consultation should occur. If such consultations are not carried out, there is likely to be accumulative divergence of view over the process, and more disagreement over the outcome of the Transport Assessment than would otherwise be the case.

The Transport Assessment,(15.6) "Assessment methodology". The DfT document "*Guidance on Transport Assessment, March 2007*" (15.6.4) to be "relevant". This is insufficient. A commitment should be given to carry out the Transport Assessment in accordance with the guidance in Chapter 4 ("Preparing a transport assessment") of the above document.

Paragraph 15.2 "Establishment of baseline and definition of survey requirements". This is a crucial consideration and has only two very short paragraphs which appear inadequate. It sets out the intention to use transport models to provide information to determine the baseline and to consider the growth in travel demand, including those arising from committed development. A major omission from this section is reference to accidents. Baseline data should be established (4.7 of "*Guidance on*

Transport Assessment, March 2007"), and this should include "for the study area, establish the current personal injury accident records for the most recent three-year period, or five years if this is considered to be more appropriate". Issues like this would be clearer if a commitment to follow the DfT Guidance were given. This would then cover most of the issues likely to be of concern to Local Authorities.

Accidents and Safety (15.6.13) more thought needs to go into the use of accidents rates. See comments in the paragraphs below.

The definition of "significant impacts on accidents and safety risks" is "Links and junctions for which data is available that have experienced on average more than nine personal injury accidents in a three year period ending in 2011/12, and which would be subject to an increase of 30% or more in total traffic flow during construction, for a period of more than four weeks in any 12 month period".

- i) The criterion of nine personal injury accidents in three years is too high to ensure that accident cluster sites are identified. Six personal injury accidents in three years is normally used to identify cluster sites. The addition of "and which would be subject to an increase of 30% or more in total traffic flow" is also unlikely to help to identify problem sites which could be affected by the Proposed Scheme. Data needs looking at more intelligently than that, e.g., does traffic impact increase the number of vehicles making a particularly vulnerable turning movement etc.? As it stands, the criteria as set out, will eliminate consideration of some sites which may suffer significant adverse impact on safety as a consequence of the Proposed Scheme.
- ii) Accidents are normally recorded against calendar years not financial years.
- iii) How long is a link? It does not seem logical to have a criterion based on the number of accidents occurring on a link of undefined length.

Recommendations:

- a. More detail is required on how the processes are to be managed to reassure Local Authorities of the practicality of this methodology.
- b. All affected Local Authorities must be consulted at key decision points in the development of the Transport Assessment.
- c. A commitment must be given to carry out the Transport Assessment in accordance with the guidance in Chapter 4 ("Preparing a transport assessment") of the DfT publication 'guidance on transport Assessment March 2007.

- d. The threshold of nine personal injury accidents in three years is too high. A more acceptable level would be six personal injury accidents in a three year period. The Council requests this threshold is amended accordingly.

16. Waste & Material Resources

Minerals

The report is inadequate in setting out how the issue of Minerals Safeguarding is to be addressed and how the environmental impacts of this will be considered. The issue of minerals safeguarding and prior extraction is fundamental to the Appraisal of Sustainability (AoS) and Environmental Statement (ES). Without this information, the AoS and ES will be insufficiently robust.

Paragraph 16.3.4. states that consultation will be undertaken with councils to "identify and confirm mineral resources located along the route corridor", but no further detail is provided in terms of what action will then be taken to prevent the sterilisation of mineral resources. The Government's National Planning Policy Framework requires that the prior extraction of minerals should be encouraged, where practicable and environmentally feasible, if it is necessary for non-mineral development to take place. In accordance with the Government's guidance on Minerals Safeguarding in England (2007), a more robust assessment of the depth and quality of affected deposits (including borehole records/surveys, BGS information, discussions with the minerals industry and specialists etc.) should be undertaken so that the viability of prior extraction and subsequent use on site can be established.

Recommendations:

- a) To clearly set out how the issue of minerals safeguarding will be addressed, including the proposed detailed methodology for assessing the depth and quality of minerals resources, and the feasibility/practicality for prior extraction and use on site.

Waste

Paragraph 16.6.2 states that the assessment methodology will "consider the types and quantities of waste generated during construction and operation, and the severity of the likely significant environmental effects that might arise from waste requiring off site disposal to landfill". If the waste is to be managed in accordance with the Waste Hierarchy, disposal to landfill should only take place as a last resort. The report should therefore consider the environmental impacts resulting from the re-use,

recycling and recovery of waste, both on and off site, in order for the Environmental Impact Assessment to be fit for purpose.

Furthermore, paragraph 16.6.13 states that "assumptions regarding the type and quantity of waste to be diverted from landfill will be applied". The report needs to set out clearly what these assumptions are, and what information has been used on which to base them. These assumptions are likely to have a significant impact on the results of the EIA.

In tables 33 and 34, it is not clear how the significance criteria thresholds have been chosen. For example, the report does not say why the 10,000,000 tonnes threshold has been chosen as a 'major adverse' impact. Furthermore, the report does not provide any indication of potential waste arising from the project. If other comparable projects are to be used to base predicted waste arising, they need to be clearly stated in the report.

Paragraph 16.6.17 states that "cumulative effects will be assessed qualitatively, (based on professional judgement), taking into account other major development proposals along the route corridor". The report does not clearly set out how the impacts will be assessed qualitatively or how significance will be determined. A transparent assessment framework is required for this so that the impacts can be thoroughly assessed and reported in the EIA.

Recommendations

- a) To consider the environmental impacts, both on and off site, arising from the re-use, recycling and recovery of waste.
- b) To clearly set out what assumptions have been made (e.g. total waste arising for the project, volumes of waste to be sent to landfill etc.), and to identify the information used to base them.
- c) To clearly explain how the significance thresholds have been chosen and to identify what information has been used to underpin them.
- d) To clearly explain the methodology for assessing cumulative impacts.

As a general point, a thorough minerals and waste baseline assessment that takes account of both existing and planned/potential future minerals and waste sites and infrastructure must be undertaken . This will ensure that all environmental impacts can be thoroughly assessed as part of the EIA.

Recommendations

- a) To liaise with Minerals and Waste Planning Authorities to identify current, planned and potential minerals sites and waste management facilities
- b) To examine the potential environmental impacts of the scheme upon these sites/facilities.

Supporting documents:

Cabinet report 14.7.11 Appendix C