Response by Central Chilterns Community Forum to:

The Draft Environmental Statement

Responses to Volume 1, Volume 2 Report 27, Community Forum Area Report 9 and Draft Code of Construction Practice.

Submitted on behalf of the Central Chilterns Community Forum by: Dr S C W Hook 17 Kings Lane South Heath Great Missenden Bucks HP16 0QY

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Overview

In submitting their response to the Draft Environmental Statement (DES) issued for consultation, Community Forum Area 9 (CFA9) begin by summarising their reasoned conclusion that the DES is not fit for the purpose it is intended, namely consultation with the public about the environmental issues that would be significantly affected by the building and operation of HS2. It is unacceptable to have produced flawed documents upon which full consultation cannot take place.

We reach this conclusion for the many reasons that are detailed in this response to the DES; the more important of which are:

- Given the original published timetable, there has always been a legitimate expectation that there would be a reasonable degree of congruence between the DES and the Environmental Statement (ES) in the Hybrid Bill. The DES is a 'snap shot' of the environment effects of HS2. At its very best the DES is an out of date snapshot that HS2 Ltd admit will change materially
- Consultation at the hybrid bill stage is too late to shape outcomes, particularly given the published time-scale of one year for the hybrid bill's passage through parliament
- Proposals for essential identified mitigation in numerous instances are stated as "will be addressed in the ES deposited with the hybrid bill", thereby precluding full consultation at the draft stage. This makes this consultation seemingly pointless unless substantial changes made as a result of the consultation are incorporated into the subsequent proposed design
- Major modelling is incomplete, field surveys are incomplete, and many sections are skeletal because of the lack of evidence and rigour.
- Confidence that HS2 Ltd will present, with integrity, a formal ES to parliament giving an accurate assessment of the impact of HS2 on the environment is eroded even further by this consultation
- The countless references to the Code of Construction Practice as a form of mitigation is speculative given the significant flaws in the document
- Communities are concerned about cumulative effects. It is totally inadequate that these assessments are dismissed in the DES and will be left to the formal ES
- The Chilterns AONB is an area so designated by Parliament and the statutory body (The Chilterns Conservation Board) was set up to preserve the AONB. It has not been properly consulted regarding the impact of HS2.
- The assessments of the impact on the project are seriously misleading even more so given that cumulative impacts are not assessed. DES describes a scheme that will have a major adverse impact on the AONB in perpetuity. HS2Ltd's design process is cavalier in its approach to the environment, resorting to the lowest inappropriate level in its mitigation hierarchy.
- In setting up the consultation, the incorrect distribution of maps and documents to libraries, incorrect supply of documents to individuals, lack of publicity of the roadshows further eroded a very tight, inappropriate time-scale given to the consultation

Structure of Response

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NB Italics within the document are quotations from the text in the DES.

Executive Summary of the Response to Draft Environmental Statement

Any consultation or comment after the ES has been deposited will have very limited scope to shape outcomes. The programmed consultation on the draft ES (DES) is therefore particularly important. Not only because it provides an opportunity to comment on the scheme but also because it provides public confidence that HS2 Ltd will provide an final ES that gives an accurate picture of the impact of the project. There has always been a reasonable expectation that the DES would be a close approximation to the final ES, particularly given the original published timing of the submission to Parliament. Instead, we are presented with a 'snapshot'.

The DES represents little more than a moment in a series of successive approximations. It often does not have the level of detail that is necessary for informed comment. It is based on incomplete surveys, modelling which is yet to take place and lack of analysis of cumulative impacts and constant reference to future activity. Essentially, it lacks rigour and is not fit for purpose. HS2 Ltd has stated that they do not need to consult at this time. Nevertheless, they have done so. This means that the consultation has to be meaningful.

The DES consistently seeks to reassure and minimise the *major adverse* impact of the scheme on the environment through the language used. In addition spin, interlaced throughout the documents, seriously undermines confidence in the independence of assessments and the resulting judgements.

The references to the CoCP are part of this process. The lack of external vigilance and reference to the role of the local authority seriously **undermine the CoCP's** potential effectiveness. It appears to **be a constructor's charter to build as they see fit**.

Natural England's response to the AoS detailed the specific tests to be applied to major development proposals affecting nationally designated areas. It concluded that these tests have not been applied in the AoS, which means that the "exceptional circumstances" required have therefore not been articulated.'

Given that the tests were not applied in the AoS, the expectation is that they will be applied within the DES. The tests which are now contained within the National Policy Planning Framework are not applied in Volume 2, 27 which specifically deals with the AONB, nor are they in report CFA9.

Volume 1 does not provide convincing evidence of the need for development, nor the *'exceptional circumstances'* required to meet Natural England's test. Neither does it present a convincing case why this particular route has been chosen. In addition, it fails to state why the need *cannot be met or moderated* in some *other way*.

Volume 2, 27 Section 2 is seriously misleading. It provides an inadequate picture of the *major adverse* impact on the AONB. The measures proposed in mitigation are inadequate. Mitigation is based on changing the landscape and planting to attempt to mask alien features, thereby creating an alien landscape. It makes a mockery of the concept of an AONB.

Paragraph 2.5.4 of CFA9 gives on a bland understated view of the issues raised consistently within forum meetings. This can only be viewed as a deliberate misrepresentation.

The forum has always been consistent that the only proper mitigation is a fully bored tunnel throughout the length of the AONB. Tunnel proposals, submitted from within the community and designed to minimise the impact of the proposed scheme on the AONB, are included in the DES and are rejected on cost grounds. The DES provides very inadequate information on the environmental benefits of these tunnel proposals to offset construction costs.

Impact of loss woodlands is weak in Section 3.

The key issue of for communities (Section 5) is the impact of multiple (in combination) effects. These are not yet assessed, or are dismissed. The DES does not review reputational damage caused by the operation of the line nor is loss of personal equity considered. There is no section on well-being, health or indeed safety contained within the DES..

As with other sections, the CoCP is used to provide a false reassurance in Section 6. Despite describing how the principal undertaker and contractors will manage the impact of construction works on cultural heritage assets there is very little on how these approaches are to be monitored or enforced.

Section 11 states that the study limit in the DES was reduced to 1km and it does not take into account the effect of the local topography such as the transmission of sound across the Misbourne valley towards Prestwood and Little Kingshill approximately 1.5 to 2kms away. The areas through Hyde Lane, South Heath and Potter Row cannot be described as having noise levels similar to a *'rural market town'*. No baseline data is published. No peak pass-by noise data is published. The World Health Organisation states that most countries in Europe have adopted 40dB as the maximum allowable daytime level and therefore sound contour maps should include a further band 50 to 40dB daytime.

The transport infrastructure associated with the project results in a dissonant urbanisation completely out of character with the environment and, in combination with other effects, effectively despoils this part of the AONB. (Section12)

Volume 1 Paragraph 7.3.40 states that the benefits of three schemes under consideration would be delivered at the expense of substantial and prolonged disruption to existing rail users. It is currently planned to build HS2 on the un-costed, hidden subsidy provided by individuals and businesses along the line as they suffer substantial and prolonged disruption caused by traffic problems.

The separation into two forum areas disguises the significant HGV and LGV movements. Essentially, there is a construction site from Pipers Wood to Wendover with multiple access points. However, all access points are dependent on the A413 and then often use the same core of roads as routes to gain access to different compounds.

The B485 will be used heavily both for traffic feeding into Kings Lane and Hyde Heath Road. In addition, there will be heavy demands on Kings Lane, feeding into Potter Row. Leather Lane and Rocky Lane will also be heavily used to feed the associated compounds and haul roads. These are rural lanes.

Within the CoCP the main thrust of the responsibility for delivering the requirements of the Code has been placed on the contractors. Best Practicable Means appears to be decided by HS2 Ltd, not independent assessors and is limited by commercial considerations. There is little or no reference to enforcement or the role of HS2 Ltd in this. Neither is there any reference to the County and District Councils and the exercise of their statutory duties and obligations. This means that **enforcement of the Code's provisions is weak and it appears that there will be no one who has** responsibility for ensuring that contractors adhere to it.

As happens on other projects, HS2 Ltd should pay the local authorities to employ additional, project-dedicated Environmental Health Officers (EHO's), to monitor and ensure that these agreed 'procedures' and control 'measures' are in place and are being complied with. The local authority EHO's should also have the powers to suspend the works should the agreed control measures be breached, until more rigorous measures have been put in place.

Bearing in mind that half the archaeological sites excavated during the construction of HS1 were unknown before work started, HS2 Ltd should also pay for local authorities or bodies such as English Heritage to employ dedicated archaeologists, independently financed to maintain an effective watching brief. The principals of Planning Policy Statement 5, issued in 2010, should be applied to sites affected by any aspect of work on HS2.

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Foreword

The draft environmental statement falls well short of the necessary requirements. It is unclear why such a poor quality document should be published at this time. One explanation is that it fulfils a timetable requirement irrespective of its quality. Alternatively, it is an information gathering exercise by HS2 Ltd who wishes to ensure that the final environmental statement contains full and correct facts. Whatever the case, it is unacceptable to publish documents on which full consultation cannot take place.

Volume 1 describing the Hybrid bill procedure indicates that the public has an opportunity to *comment* on the ES following the First Reading and deposit of supporting documents. The preface to Volume 1 indicates that public *consultation* will be undertaken on the formal ES during the passage of the hybrid bill. These are incompatible statements. **Whilst** *'comment*' can be ignored, *'consultation'*, **if it is to be meaningful**, implies an opportunity to shape outcomes. The published **timetable for the bill's passage through parliament is one year.** How can consultation during the hybrid bill process change any aspect?

Throughout the process communities have been told that they will be consulted on the DES. Given that the original published timetable indicated that the formal ES will be placed before the House in October 2013, there has always been a legitimate expectation that there would be a fair degree of congruence between the two documents. The public have an expectation and right to comment on the scheme and its impact, essentially gaining confidence that HS2 Ltd also understands the impact of the scheme and that they will present it fairly, with integrity, to Parliament. As of now this does not appear to be the case.

We are now told by HS2 Ltd that the DES is an out of date 'snap shot' and that HS2 Ltd do not have to consult at this time. The fact is that HS2 Ltd has decided to go ahead with a consultation lays a duty on HS2 Ltd to ensure that consultation is meaningful. Rather than having the opportunity to comment on the impact of HS2, we are now expected to respond to the many allusions to future activity namely: the 'likely', the 'possible', the 'will be', the 'should be', the 'subject to approval', the 'following consultations': and always a lack of data and analysis. The result is that HS2 Ltd has once again been very successful in generating enormous frustration in the local community by ensuring that the consultation is not fit for purpose.

The description of the project suggests that it is based upon initial findings and incomplete survey work does not have the necessary detail or rigour that is required to inform consultees. It effectively either dismisses the effect of HS2 or, where it recognises impact, it seeks to downplay and minimise the effect. The description of the project is essentially engineering based and any serious attempt to reduce the environmental impact appears to have been lost to the expediency of cost.

In terms of **HS2 Ltd's** requirement to implement measures to prevent, reduce or offset the effects of the project; '*prevent*' and '*reduce*' are ignored and '*offset*', is the only means of mitigation, often applied inappropriately and with no regard for the environment. Statements are out-dated and fail to incorporate the sensible and appropriate suggestions for mitigation made by community forums. Where the community has suggested practical and environmentally sensitive mitigation it is always dismissed on cost grounds.

Accepting that HS2 Ltd's role is to promote HS2, an environmental assessment is not the place to do it. Interlacing spin, rhetoric and assertion, together with government promoted tag-lines into a library of documents of such fundamental importance for a project that will have impact on the

environment in perpetuity is totally inappropriate. In addition, it seriously erodes confidence in the independence of any assessments.

The process of consultation is meant to be a tool to inform decision-making. The way in which this consultation is being managed demonstrates cynical manoeuvring by HS2 Ltd and the government in order to drive through HS2 and implement a pre-judged outcome, with a pre-determined 'minimal' impact on the environment and pre-decided 'minor' inconvenience to people and communities. The reality is very different. HS2 will have a major adverse/catastrophic impact on the AONB. The measures proposed in mitigation are inadequate. This has to be recognised, by HS2 Ltd, government and Parliament. The AONB, as a protected landscape is entitled to the investment required to ensure mitigation of the highest order.

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Response Volume 1

In the muted language of one government department criticising another, Natural England judged, in its consultation response, that the Appraisal of Sustainability (AoS) *'underplays a number of environmental aspects of the proposal.'*

It then goes on to consider the impact on the AONB and states: *The AoS has adopted a simplified* approach which Natural England advises does not fulfil the requirements of PPS 7, paragraph 22, which sets out the tests which should be applied to major development proposals affecting nationally designated areas, i.e. that consideration should be given to:

-the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy

-the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for it in some other way; and

-any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.

It then states: Natural England advises that these tests have not been applied in the AoS, which means that the "exceptional circumstances" required by PPS7 have therefore not been **articulated.**'

Given that these tests were not applied in the AOS there is therefore, a clear expectation that the equivalent tests in the National Planning Policy Framework would be applied in the DES.

They are not covered in the section of the AONB in Volume 2, 27, nor are they applied in CFA 8, 9, 10. Volume 27 fails to explore cumulative impacts. It also fails to assess its impact on the local economy.

Volume 1 provides an overview of HS2, background, and milestones and in sections 7 and 8 considers alternatives. It does not provide convincing evidence of the need for development, **nor the 'exceptional circumstances' required to meet** NPPF paragraph 116. Neither does it present a convincing case why this particular route has been chosen. In addition, it fails to state why the need cannot be met or moderated in some other way.

Volume 1 identifies considerations rather than objectives for the project. These considerations have changed over its life-time. Firstly, it was speed; then it was related to 'green' issues; then capacity and finally it is presented as a panacea for the north south divide and an *engine of growth*. Indeed the fact that there has not been a transparent major motive but it has to rely on accretions of varying political ambitions strongly suggests that HS2 is a solution looking for a problem.

Essentially this is because from the start, there was a lack of clarity and evidence to identify the specifics of the problem. One would expect an irrefutable flow of evidence and argument towards the solution and a thorough exploration of other ways to meet the problem. As it is the solution is presented and justifications for the project are retrofitted to it. Every reframing of the argument is shrouded in a lack of data, opaqueness and obfuscation, preferring assertion and spin. Much of the relevant sections of Volume 1 have the same assertions as the AOS. The arguments are no more developed or underpinned by evidence.

The link between very high speed rail and subsequent journey-time savings (exaggerated anyway) and regenerative growth is not explained. We are assured that there will be wider-economic benefits. These are not analysed or presented nor do they seem to be even targeted. The same

claims were made for HS1 but there is no analysis presented in Volume 1 of the wider benefits in Kent resulting from HS1.

Volume 1 asserts that 'there is a compelling case for delivering a step-change in the capacity and performance of Britain's inter-city rail network to support economic growth over the coming decades.' However, it fails to make the case.

In addition, the fact that Volume 1 does not include the business case is startling.

Volume 1 presents the main milestones in the development of HS2. However, the McNulty Report is omitted. HS2 is always presented as a stand-alone solution. HS2 has never been set in the context and challenges that McNulty raises: unit costs; capacity as measured by train utilisation rather than train paths; (to forecast HS2 train loading of little over half and for conventional trains at a third by 2043 eschews any value for money arguments), fares that are 30% higher than European fares but levels of subsidy the same as pre-privatisation; fragmentation; National Rail debt charges exceeding their maintenance budget to name but some of the challenges McNulty highlights.

The operational phase of HS2 and the possible contribution or dis-benefits that HS2 might bring to tackling some of these fundamental issues are not explored. Also to assume that HS2 will operate in a non-competitive context with regard to fares is naïve.

The list of milestones does not include the publication of *The Productive Use of Rail Travel- Mott MacDonald, which* challenges HS2 Ltd.'s assumptions about productivity.

Green credentials are rated as broadly neutral in the AoS. These are not explored in any depth in Volume 1 or elsewhere. The power demands for up to 36 very high speed trains on the track in any one hour are staggering. There is no assessment of the implications for the supply industry or the nature of its production. To claim green credentials on the back of 'dirty' supply is disingenuous. Hence, there can be no confidence that HS2 will reduce the nation's carbon footprint associated with travel to Birmingham and beyond.

The relative high cost of maintenance of very high speed rail is not explored. The associated subsidy to support operation is ignored.

The impact of very significant over-capacity on the existing network resulting from high speed rail is not assessed

Volume 1 does not provide adequate information about '*the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for it in some other way'***.** It explores alternatives but only compares them with the pre-existing solution, HS2.

The report argues that of targeted infrastructure enhancements are not applicable to rail. This is because the solution, HS2, is often established as the comparator rather than whether the scenario meets specific objectives. Journey-time objectives are therefore inbuilt because this is a major plank of the CBR. This is despite the fact that the case for very high speed rail in relation to overall economic growth is not made. Cost benefit ratios and value for money are applied to other scenarios but given the lack of evidence, apparently are assumed for HS2. As a last resort, wider economic benefits are claimed for HS2 but not specified. The dice are heavily weighted against other scenarios.

Thus alternatives are rejected even where cost benefit ratio is well in excess of those of HS2. Unsubstantiated claims of wider benefits, which are not specified, are made for HS2. Given, that these apparently arise from very high speed rail but are not quantified and given that there is no evidence presented of what wider benefits an alternative might present, the argument has no validity. As a result, some scenarios meet capacity, at a better CBR but do not provide (no evidence presented) the scale of benefits achieved by HS2 (no evidence presented).

In addition, a factor in the rejection of the conventional rail-based alternatives to the London to West Midlands high-speed line is the disruption to existing rail users. The very real disruption to communities by designing and building a high speed link has been totally discounted. Arguing that one scenario will cause disruption as a factor for rejection whilst ignoring the massive impact of construction on communities is disingenuous in the extreme.

The environmental impact and associated costs to communities along the proposed line are not assessed and the benefits of upgrading existing lines with regard to the environment not made.

7.4.6 to7.4.17. The case may for selecting route 3 is unsubstantiated in this section. The impact of other routes on longer journey times is vague as no evidence is presented. Additionally, routes other than route 3 are also rejected on environmental grounds but without a strategic impact assessment. The serious impact on the environment of route 3 is not discussed and is effectively dismissed. In conclusion, the selection of route 3 appears to be based solely on the journey time and no environmental consideration whatever.

The requirement of a 400kph maximum design speed has driven the necessity for an essentially straight line route between London and Birmingham. This has overridden all environmental considerations.

7.4.24 to 7.4 26 Any benefits that may accrue from lower speeds have been rejected purely on the 'requirements' of the journey times of this route. Reductions in journey time apparently might weaken the CBR, based as it is on out-dated data, but this is not evaluated against environmental cost. Hence this section clearly avoids the option of alternative less straight-line routes that might have considerable environmental benefits; it is at the very least disingenuous.

8.1.2 States that local alternatives were addressed in autumn 2011 in response to feedback from the consultation process. The consultation process was flawed and did not take into account all **submissions. Specifically to the Central Chiltern's Community Forum area concerns about** the under-estimate of the amount of spoil removal (admitted by HS2 Ltd's chief engineer, 'We got our **sums wrong!')** have been used as a justification for a shallower cutting north of the South Heath green tunnel. This has resulted in a greater adverse environmental impact in this area despite repeated requests to reinstate the original deeper cuttings. These have been rejected by HS2 Ltd on the grounds **that 'there are no gains for us'**. It should be noted that this alternative is not given in table 6 on page 107.

8.3 Alternative alignment permitted by lower design speed. Table 7, study area 1 Wendover to South Heath. A speed reduction to allow re-alignment to avoid Grim's Ditch, This has a reason for rejection that makes no sense and completely ignores the status of Grim's Ditch.

Finally, although not directly related to the **Natural England's** PPS7 test requirements, while it is recognized that the UK rail network infrastructure requires investment there is no mention of this investment being part of an integrated transport infrastructure. Thus the scheme is proposed without the key decisions relating to a hub airport.

Nor does Volume 1 explore how investment in other schemes might be more effective in facilitating growth in the north – such as cross-Pennine tunnelling and investment in rail that does not link to London. In addition, HS2 Ltd has failed to assess the impact of major investment in high speed fibre broadband. Furthermore, it has not considered whether similar investment to HS2 could be made in a range of projects that would have to greater effect on a greater number of UK rail passengers or whether the north south divide can be healed in ways other than HS2.

The opportunity to comment on but not shape the ES when submitted as part of the Hybrid Bill procedure raises serious questions about the validity of the Aarhus process as here applied. **Petitioning by** *those specifically and directly affected* **by the bill will be at a cost. Given the** circumstances of the consultation, any costs incurred in petitioning should be repaid by HS2 Ltd.

Throughout the DES great weight is attached to the draft CoCP. A key feature of this is the lack of independent scrutiny and enforcement procedures. No redress is identified if assurances given to petitioners and parliament are not met, as happened with HS1. The commitment to *reduce further the reported adverse environmental effects* reflects little more than a pallid aspiration when efforts to do so have to be 'reasonable' and 'as long as this does not add to unreasonable cost or delay' and the judge is the principal undertaker.

The draft planning and heritage memorandum and the environmental memorandum, key documents, are not part of the consultation.

It is evident that environmental factors were not considered in the decision making process since no Strategic Environmental Impact Assessment was carried out on the various scenarios and the lack of costs to the environment were not included in the advantages of targeted existing infrastructure improvements.

It is also evident the NPPF suggestions in 2.8.5 are not met. HS2 Ltd stresses economic and social gains at the expense of the environment. As a result, it fails to adopt measures, which could in the terms of NPPF 116, *meet the need for it (the project) in some other way* or *the extent to which that could be moderated.*

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Response Volume 27

Introduction

HS2 Ltd was established to promote high speed rail – hence its name. HS2 Ltd is therefore seen as being synonymous with Government/DFT policies. Consequently HS2 Ltd lacks independent creditability. Volume 27 reflects this.

Sections indicate what the formal ES will present, so that parts are incomplete, speculative or obfuscatory but in tone they are always designed to reassure and minimise the impact of the project. Consultation on Volume 27 is not fit for purpose.

It is unacceptable that full information is not included for the consultation. Throughout the **'engagement process' we have been chided because the information we have requested is not yet** available but told that it will be in the draft ES. Although the public can comment on the formal ES when submitted and question the validity of what is presented, it will not be able to contribute to shaping the document and petitioning is only available at a cost. Design refinement and essential information on which the arguments for HS2 are based will be presented at the Hybrid Bill stage but effectively escape public scrutiny.

It is unclear, or, conversely, if one was cynically minded, it is very clear, why HS2 Ltd is consulting at this time. Much surveying is incomplete. This means that there are significant gaps in Sections 3,7 & 8. The economic assessment and its associated modelling have not yet been done. From this modelling flows the output of the transport models for informing Section 13. This information should also underpin Section 5, which states little and should provide more detail for Section 11.

Volume 27 does not explore cumulative effects of what are described as local impacts. Consideration of the impact of construction and operation beyond 100 meters of the line does not seem to be in HS2 Ltd's purview. In the chief executive's words 'There will be no impact on this village because it lies one kilometre from the line.' Given that cumulative (in combination) effects have not yet been assessed, it is difficult to see how the chief executive came to this conclusion. The reality is that the impact on all the Chiltern villages in CFA 9 will be immense.

The effect of the project on individuals and communities is not acknowledged nor is loss of local reputation or visitor-based economies. The disregard for the environment and ecology is reflected in the current or incompletely lacking field survey data available so that there is, as yet, no detailed knowledge of what is to be lost in perpetuity on which we should have been consulted. Societal costs are presented solely in market terms so that the positive contributions that landscape and the environment make to the recreation, health and well-being are not even considered.

The document examines the text of Section 2 relating to the AONB in detail. Other sections are dealt with more succinctly.

Section 2 The Chilterns AONB

2.1 Introduction

The introduction recognises the existence and designation of the AONB, however, it fails to recognise that the effects of HS2 will be highly detrimental to a sensitive area. Also, the section fails to acknowledge that everything should be done to preserve the AONB as a nationally protected landscape.

2.2 Assessment scope

This section is unclear and there is no indication of what actual surveys have been undertaken and the methodology used. Landscape character has not been defined and whether this is appropriate for the AONB is doubtful. To state that individual impacts are not cumulative is outrageous. Each and every one of them contributes to the destruction of the character of the AONB.

2.3 Environmental baseline

This section describes the key features of the AONB so yet again acknowledges its existence. It should be apparent to anyone designing a major infrastructure projects that under these circumstances everything should be done to preserve the features. The paragraphs use a definition of tranquillity found in the scoping document. It describes some intrusive features to **justify the judgement** *'medium tranquillity.'* The lack of balance and selective choice of features appears to be an attempt to minimise the impact of the scheme. Regardless of the assessment, the immediate landscape and character remain protected. Paragraph 2.3.6 concludes that the resulting sensitivity of the AONB to change is high

2.4 Description of the Project

The following features of the project are described. It should be apparent to any designer that these despoil the AONB.

o Cutting for 1.5km;

o Green tunnel at South Heath, 1.2km;

o Cutting for 3.1km;

o Wendover Dean viaduct, 500m;

o Minor embankments and cutting 1.6km;

o Small Dean viaduct, 500m;

o Embankment for 700m;

o Wendover green tunnel, 1.3km; and

o Cutting for nearly 1km to the edge of the AONB.

This list fails to include the Chilterns tunnel portal at **Mantle's** Wood and access route for construction and removal of the TBMs. It also does not mention the tunnel vent and auto transformer at Little Missenden. All these features will have a devastating effect on this area within the AONB.

2.5 Assessment of impacts and mitigation during construction

2.5.1 This is unhelpful and contains no detail. What does 'where reasonable practicable' mean? Who will decide what is reasonably practicable? If it is the contractor, then these controls have no substance and they suggest that contractors are to be given carte blanche to build this railway at the lowest cost possible with no regard for the environment. It fails to fulfil the requirements of a consultation document and does not allow the respondents the ability to reply satisfactorily.

2.5.3. Surface works of the tunnel portal works are described as having *a significant temporary local impact on the character and appearance of the landscape*. The term *local* is inappropriate in a nationally protected landscape and if construction takes three to five years, this cannot be considered to be *temporary*.

2.5.4. Comment as for 2.5.3

2.5.5 Detailed comments will be given in CFA report 9.

2.5.6. The word *temporary* is totally inappropriate, as construction activity will lead to a permanent and detrimental alteration to the landscape. The removal of ancient woodland, the building of cuttings both very deep and shallow, the visibility of pantographs and placement of associated buildings and equipment will be permanent and highly visible to residents and visitors alike.

2.5.7 This section shows total disregard for the communities in close proximity to the line. The construction of the tunnel portal and the ventilation and transformer will have a severe impact on Little Missenden and its access to A413. Those living in South Heath, Potter Row, the Lee and Ballinger will be severely affected by the construction of the green tunnel and cuttings north of the green tunnel. Severance, closing and diverting roads (Frith Hill, Kings Lane and the Chesham Road, B485) will increase journey times and this will be compounded by construction traffic on Kings Lane and Potter Row. The noise and dust arising from construction activity will be high and have a huge adverse effect on these areas of high tranquillity. Residents are likely to become stressed and ill. To dismiss all this as just a *significant effect* shows total misunderstanding of the impact on this area and the feelings of residents.

2.5.8 Changes to the AONB landscape will be permanent and adverse. The magnitude of the change must be considered as very large. This section is a complete misrepresentation of the situation. Again the term *local* is inappropriate. The urbanisation of the route leads to a major adverse magnitude of change in the character and nature of this part of the AONB.

2.5.9 This section is a complete misrepresentation of the situation. The magnitude of change to the AONB will be severe and highly detrimental to the high sensitivity of the Chilterns AONB. The term *moderate significant* is not an agreed definition in the published Scoping and Methodology report. Correct application of the criteria issued in that document results in a judgement of *major adverse* to describe the impact of the route.

2.6 Assessment of impacts and mitigation during operation

It is clear that the list given below in the ES in no way fulfils the requirements of mitigation of Avoid, Reduce, Abate, or Repair. It is very doubtful that they even fulfil the requirements of Compensate. In general, the items listed are superficial and lack detail.

Comments are given by items in bold.

2.6.1 Measures that have been incorporated into the design of the Project to reduce operational effects include:

o The bored tunnel for the southern portion of the Project within the AONB, with ventilation shaft head houses and associated infrastructure visible above ground;

o Inclusion of two green tunnels, whereby the landscape would be reinstated above the Project; o Placing the majority of the remainder of the Project into cutting north of the Chilterns Tunnel; o Use of earthworks to integrate the Project into the landscape, providing visual screening and noise attenuation; these could be a string of adverse features that add to the despoliation of the AONB. There is insufficient detail to comment satisfactorily.

o Integration of embankment landforms into the natural topography, including earthworks associated with road diversions, and road and pedestrian bridges;

o Reinstatement of severed lengths of hedge / enclosure of fields;

o Replacement of areas of lost woodland; and. A totally inadequate statement that gives no indication that mitigation measures have been considered fully.

o Introduction of screening through new planting where this fits into the existing landscape pattern. As above, insufficient detail to be of any use.

2.6.2 Another totally misleading and incorrect statement. By nature of the fact that extensive construction works will be undertaken the character of the landscape and visual appearance will be extensively altered. This section, yet again, fails to acknowledge the protection requirements of an AONB.

2.6.3 Without details of the proposed design this is a meaningless statement and does not allow consultation on this point. The negative impact on this area will be extensive and not simply local in nature 2.6.4 Without details of the proposed design this is a meaningless statement and does not allow consultation on this point.

2.6.5 This goes against the requirements of an AONB. Any alterations to the landscape should be such that the impact both during construction and operation should not be seen, heard and felt.

2.6.6 Detailed comments will be given CF2.6.7 This statement is demonstrably incorrect. As the route of HS2 passes over-ground, requires extensive works to build green tunnels and viaducts, the impact on the landscape to be considerable and permanent.

2.6.8 This statement could not be further from the truth and shows total disregard for the negative impact of both construction and operation of the proposed railway. Even within the villages tranquillity is high, traffic noise levels are low and the presence of existing structures whilst sometimes unwelcome cannot be considered to have a current negative impact. The existing roads are a matter fact but as these are significantly far away from much of the proposed line they should be discounted. To suggest that construction work and operation noise will not significantly erode the tranquillity of the area is outrageous and complete misinterpretation of the situation. Peak pass-by noise level noise contours have not been published. HS2 Ltd is reported to be working to reduce pantograph noise. The statements therefore are totally speculative and again designed to minimise the impact of the line.

2.6.9 See comment above for 2.6.8. The term *moderate significant* is not an agreed definition in the published Scoping and Methodology report. Application of the criteria issued in that document results in a judgement of *major adverse* to describe the impact of the route. This is a serious misrepresentation.

2.6.10 Planting will be dealt with in our comments on CFA report 9. In summary, much of the planting suggested is inappropriate and hence whatever state of maturity in achieved by 2041 it will not have ameliorated the destruction of large areas of the AONB by the building and operation of HS2. Furthermore it is unclear who will have the responsibility of maintaining the newly planted areas so they may even become an eyesore. This paragraph implies that local residents and visitors to the AONB will have to accept the strongly negative effects of HS2. The impact will reduce visitor numbers, destroy the visitor-based economy, and adversely affect the property market and cause stress and illness. Hence this final section acknowledges that HS2 only brings pain and suffering to the AONB and no tangible benefits.

Section 3 Agriculture, Forestry and Soils

Section 3 is inadequate.

It is highly selective in what it covers. Essentially it seeks to minimize the impact of the project. It focuses on analysis of the loss of agricultural land, which it states as 0.01% of the utilised agricultural land but does not consider the negative effects of severance on agricultural land holdings and the associated businesses. From the farms detailed in Vol. 9, this is clearly a major

effect of the scheme, which in few instances can be rectified and this situation will be replicated along the route.

It fails to address the loss of woodland and specifically ancient woodland. The cumulative impact of loss of woodland is not assessed. Nor is there a cumulative assessment of loss of ancient woodland, which accounts for 2% of all woodland.

The Woodland Trust's analysis of the route indicates that 21 ancient woodlands are under threat, covering 409ha. What percentage of ancient woodland remains? In detailed CFA sections there is no analysis of what trees or species supported by these woodlands are being lost because survey work has not been undertaken or completed. Natural England's advice as published in response to the AOS namely: *that the requirements of PPS 9 for ancient woodland should be fully addressed including further survey work and designing for the avoidance and minimisation of any damage* is incomplete or has not been carried out. If this has been done then full details should be included here.

Section 4 Air Quality

Section 4 is dependent on wider scale assessment and reported in the formal ES. It is incomplete.

The statement that 'the CoCP would enable these activities to be controlled such that the effects on air *quality would generally only be locally slight*' is significantly misleading. Shifting large amounts of earth will create dust. It is an inevitable consequence. It may be reduced by watering but never eliminated.

The section stresses the importance of the CoCP in ensuring that effects on air quality 'would generally only be locally slight.'

However, given the scale of the operations in a variety of soils and topography this is optimistic at best.

Specifically with regard to Section 7 of the CoCP

- *'Erection of hoardings or other barriers along the site boundary'* will not mitigate to any significant degree, dust arising from earthworks and transportation of spoil
- o Dump trucks operating within the site boundary will not be sheeted
- o Stockpiles are located near the site boundary in the Draft Environmental Statement
- o Spoil material stockpiles are too large to be adequately watered or sheeted
- o Even haul roads surfaced with granular material will generate dust under heavy trafficking
- Excavation and depositing of spoil in live working areas will not be on hard standing

No trigger levels for dust emissions have been included in the CoCP. There is no mention of significant pollen release or monitoring.

In addition, though the *'relevant local authorities will be consulted regarding the monitoring procedures to be implemented,'* crucially there is no allowance for the rigour of independent monitoring and enforcement required to safeguard the local communities along the line.

Section 5 Climate

Section 5 is inadequate. When the decision to proceed with the Project was announced in January 2012 the Secretary of State said, "HS2 will be an important part of transport's low-carbon future".

The AOS stated that HS2 was broadly Carbon neutral. It is however, still presented as a green solution. Sceptics were doubtful of this claim. The lack of analysis in this section or consideration of aspects such as:

- 11% modal shift
- the forecasts of the Climate Change Committee with regard to 60% of vehicles being hybrid or electric by 2030
- 24% using HS2 because it is there
- the high energy costs of running at very high speed and implications for power supply
- the use of average emission figures rather than day-time emissions
- the low value attached to the construction phase

only serve to reinforce these doubts.

At this stage of consultation it is not acceptable that the GHG assessment is not carried out and reported on. Similarly it is not acceptable that major modelling is incomplete and hence unable to inform this section.

Section 6 Community

The claim that community impacts arising from both construction and operation of the Project are considered to be of no more than local significance is highly contestable. It assumes that there is no cumulative effect region or route-wide.

Neither here nor in the socio-economic section is there any appraisal of the impact of reputational loss and the impact on communities of the loss of visitor economy. Additionally, there is no consideration of loss of national resources such as landscape and amenity to the region relating to the benefits derived from the countryside.

In addition, the cumulative effects along the line are not considered. Urbanisation will bring with it a change of character of the local area that extends beyond the boundaries of the CFA. Whilst for example, Volume 27 explores loss of agricultural land it does not indicate the number of farms lost or severely restricted within a particular region or county. It is therefore impossible to consider the community, social and cultural impact within that region on the potential loss of a number of significant employers. The issue is not whether there is a critical mass of farms at risk within the community as a result of the project. The issue is that HS2 Ltd has no idea whether there is or not.

The health and wellbeing of residents in the communities all along the proposed HS2 route should be of paramount concern. HS2 Ltd has a duty of care. There should be a section in the DES that deals specifically with health, wellbeing and safety. This section should spell out the implications, financial and otherwise, for the NHS, emergency services and local authorities along the route. It should also state what monitoring programmes are being instituted route-wide to assess the impact of, for example, noise on the health of communities.

Section 7 Cultural Heritage

This section is inadequate.

The statement that *These effects are considered to be of no more than local significance and have accordingly been assessed in the CFA reports* is astonishing in the light of the destruction of a substantial portion Grims Ditch - a scheduled monument and so by definition a heritage asset of national significance.

Citing Grim's Ditch as a long linear feature so *that the loss only affects part of the asset* attempts to minimise the impact. The use of the word *only* is crass. The loss of any part of something affects **the whole of it. Substitute 'bridge' for 'ditch' to reveal the fallacious logic.** 'The bridge is a long linear structure so that the loss of the central section only affects part of the asset'. It is an attempt to minimise the impact. Moreover the surviving section will be severely impacted as a result of its **close proximity to the line. In addition, the paragraph links Grim's Ditch to other long linear** features namely hedgerows. It is outrageous to equate the loss of a substantial part of a scheduled monument dating to the Iron Age and identified as a Key Feature in the Thames and Solent research framework with the loss of hedgerows, however regrettable that might be.

The loss of historic cityscape in Camden is not identified. The impact of the route on industrial archaeology such as canals and waterways is not assessed.

There is no identification of strategies to fund investigation of what is not known. Absence of evidence is not evidence of absence. Volume 1 refers to range of research that has been carried out but this has not been published. Baseline survey work is still ongoing as is discussions with English Heritage and local planning authority archaeologists and conservation officers. The results of the LIDAR survey and aerial photography should be available to any relevant authority who requests it. Why is a consultation taking place on a DES that is incomplete? It is not possible to comment properly on the archaeological impacts of the proposed scheme when so much work is yet to be done. Will there be an interim consultation on Cultural Heritage when this work has been finished to enable informed responses before the final Environment Statement is drawn up and submitted to Parliament?

The Code of Construction Practice identifies procedures to be followed but very little on monitoring and enforcement.

HS2 Ltd must be required to fund English Heritage and all the Local Authorities - District as well as County since the both have responsibilities for *'heritage assets'*, to employ or retain properly qualified and independently financed, experienced officials with specific responsibility for HS2 so that proper monitoring and effective watching briefs can be maintained. Any person with a watching brief should have the authority to stop work for a limited period for investigation.

Local Authorities/ independent experts must have powers to stop work in the event of an unanticipated discovery, however insignificant it might appear, to allow for investigation, and if they consider that the CoCP is not being adhered to with respect to heritage assets.

Consultation is meaningless - procedures must require the approval of English Heritage and the Local Authorities. The term *reasonably practicable* should be replaced by <u>'with all possible</u> <u>means'</u>. Once an archaeological feature or old building is destroyed it's gone forever.

The section acknowledges the loss of ancient woodlands and damage to hedgerows. With regard to hedgerows the loss, it states, generally only *affects part of the asset*. Nevertheless the loss has a significant local and national impact and should not be disregarded.

Volume 27 seriously underplays the cultural and heritage aspects of landscape along the route.

The aspiration to build a world class railway in the 21st century does not simply require a focus on engineering because it is essentially 19th century technology writ large. It requires that the planning and construction process is exemplary and relentless in its pursuit and commitment so that future generations are not denied their endowment of landscape, ecology and in the broadest of terms, culture. The pressures of time have already tainted the project. Nowhere is it more evident than in this section. The scarring in perpetuity, of the historical landscape at Winchester as a result of the M3 and the Chilterns at Stokenchurch, as a result of the M40, are an eloquent testimony to the aspirational values of the DfT and seemingly HS2 Ltd.

Section 8 Ecology

It is revealing that the section on socio economics runs to nearly five pages and this section is dealt with in two and a bit. This is a clear demonstration of apparent priorities.

The section is incomplete and lacking in specifics. It is therefore inadequate.

The impact on specific SSSI's is still being considered. This statement is totally uninformative and does not permit consultation to take place. Mitigation, it states, would address the majority of the possible negative impacts in the Mid Colne Valley. Screening would be used to reduce the risk of disturbance to sensitive species at Sheephouse SSSI and further proposals are also still being considered at three other SSSI's. Neither the local nor the cumulative impact has been addressed.

8.1.12 States that there will be land take from a range of habitats including many that represent habitats of principal importance. Further survey work is being undertaken.

8.1.14 States that the formal ES will include an assessment of the impacts of the project on connectivity and result of fragmentation. How is this comment possible? A steel wildlife-Berlin Wall is being driven up the centre of England to Birmingham and at the point of consultation we are not able to respond to a very obvious concern.

8.1.15 states that adverse effects on protected species or species of principal importance could occur in many locations. 8.1.16 states that survey work is on-going and it is not currently possible to identify the scale of all the effects that would occur at regional or route-wide level. These statements indicate that no actions has been taken or planned.

Woodlands are not dealt with in Section 3 or in Sections 7, 8 or 10. There would appear to be no route-wide assessment of the loss of woodlands including ancient woodlands within Volume 27.

By the time the formal ES is submitted it will be too late to subject the negative impact of HS2 to the rigour of public scrutiny. At the moment it is clear that there is no overall assessment of the impact of the route on the nation's ecology and what we, as a nation, are in danger of losing.

"it is critical that Government comes up with a compelling and ambitious vision for how the project will benefit nature and people, not just journey times and jobs... We need to hear how HS2 will support nature's recovery, by ensuring there is more wildlife and not less by the time the project is complete." Paul Wilkinson, Head of Living Landscapes for The Wildlife Trusts,

Sadly this section fails to provide either the ambitious vision or the reassurance that HS2 Ltd has assumed this responsibility. It essentially suggests that the adverse ecological impact will be dealt with in the Formal ES. This is unacceptable and shows complete lack of project management.

Section 9 Land Quality

Part of the route runs through a designated Minerals Safeguarding Area (MSA). The local authority is concerned that HS2 may sterilise economically valuable mineral deposits.

Section 10 Landscape and Visual Assessment

The methodology used to aggregate LCA's to form the judgement that it is not considered that there are any significant route-wide effects on landscape and visual receptors arising from the construction or operation of the project is not stated. It is therefore likely to be a professional subjective judgement. As such, it is highly contestable. Quite how anyone is expected to believe that the construction and operation of a railway through virgin countryside will not have any significant route-wide effects on landscape and visual receptors is beyond belief.

The introduction of alien urban features into rural surroundings will impact on the character of the landscape. This is one of the costs of building the railway. Simply to deny that it will have any impact assumes gross gullibility and merely affirms the gap in credibility that HS2 Ltd has established. Attempting to minimise the scheme's impact as a strategy to promote the scheme in Parliament is naïve because it is so transparent.

Volume 27 fails to assess the impact of light pollution on the landscape. The impact of fully lit coaches streaking across the horizon in otherwise dark areas devoid of light pollution is not identified.

Nor does it assess the impact of night-time working. The maintenance will largely be done at night. This will involve workers, illuminated areas and sometimes, a deal of noise for example when working on the rails themselves. This is not a matter that can, or should, be relegated to the Code of Construction Practice. It is, potentially, a significant environmental effect and should, therefore be included in the full ES.

It is clear that the **Government's expectation and hope is that the line will suck in development** along its length. This needs to be stated as an overt aim within this section and the implications for the landscape of sporadic ribbon development explored fully.

The media have already reported government members suggesting that land devalued by HS2 should be bought cheap for development. HS2 will set a planning precedent for others to exploit. Such potential development and the implications for the landscape are not considered. There is no statement of how many incursions are to be made into designated green belt. Government has clearly stated views about the desirability of reducing planning restrictions including incursions into the green belt. The fragile green belt separation between Birmingham and Coventry is unlikely to withstand the impact of HS2. The whole-route landscape and visual assessment makes no evaluation or even comment of this impact.

Enforcement of green belt requires constant resolution. Precedents and incursions only make it far harder to protect what is left. Paragraph 2.3.5 is symptomatic. This paragraph cites various preexisting incursions, such as power lines into the landscape, in this case the landscape of an AONB, as an apparent justification for another far worse incursion.

There is no assessment of, or strategy for, the parcels of fragmented disused land resulting from the construction. Nor is there any statement regarding the long term responsibility for the management of the artificially created woodlands.

There is no assessment of loss of regional reputation and the potential impact arising from this in terms of visitor numbers.

11 Socio Economics

This is the most developed section in volume 27.

Essential elements of the government's business case are included within this section when the rationale for the government's 'decision to proceed' with HS2 is contained within Volume 1.

The socio-economic baseline is interesting *per se* but pointless, unless arguing that HS2 will **rebalance employment trends i.e. shift** '*other*' **employment to** '*construction*'. There is no attempt to do this.

The economic case is strong on assertion but weak on evidence not allowing analysis or comment.

The apparent precision of job losses as being 2190 during Phase 1 is based solely on very limited criteria. It is a summation of job losses from the CFAs of those businesses directly affected by the **line's construction**. There has been no broader view and doubtless local job loss totals will be challenged for each CFA.

Startling in its omission is the lack of any analysis of base-line by Tourism South East, East Midlands and survey of potential drop in visitor numbers and the likely knock on effect to Retail, Arts entertainment and other services. This is a major omission.

Startling too is the lack of analysis of the potential drop in farm productivity as a result of land-take or severance. Technically the farm may still be able to operate and there may not be job losses in the short-term but there has been no assessment of impact.

There is no exploration of loss of personal value. The section concentrates on a narrow view of the socio-economics, that of the labour market. There is no quantification of loss of equity because of falling house prices as a result of property blight. This too is a major omission.

HS2 Ltd cannot maintain a myopic view that it is only concerned with 100 metres distance from the line. The proposal, implementation, construction and operation have and will have a profound major adverse impact on people's lives along the line. Loss of amenity is not valued. This is not explored at all within the business case. This in itself is seemingly drawn up from a depressingly narrow range of criteria.

The loss in perpetuity of part of the nation's highest value landscape and the value of other landscape along the line is not evaluated.

12 Sound, noise and vibration

This section reaches an inappropriate conclusion that is seriously misleading. This section is inadequate.

Given that the CFA report states that further assessment is being undertaken to confirm operational sound and vibration significant effects is still being undertaken and will be reported in the formal ES, it is difficult how this section comes to its conclusion in 12.2.3.

Noise could be a problem all the way along the route. Successive CFAs are likely to experience noise disturbance. That is a route wide problem. There is a lack of reassurances provided in the form of pass-by peak noise levels and noise contours. CFA sound contours are based on averages that inaccurately represent the instantaneous peak noise of 14 to 18 trains per hour each way.

Although the Non-Technical Summary states that measures to control Electromagnetic Interference (EMI) are described in the CoCP, there is in fact no reference to it in that document, nor is there any section in volume 27 dealing with Electromagnetic Interference (EMI) although there is mention in Volume 1. It is therefore included in this section. The potential for route-wide impact of EMI is not assessed. Mobile phone 4G developments have caused local problems for TV interference and certainly the combination of 4G and ERTMS is known to cause communication black spots on high speed rail in Holland. The potential for impact on digital reception for local communities is not assessed.

Volume 1 Paragraph 5.8.6 assumes that EMI from elements of the signalling and communication systems generally only affect the internal railway operating systems and any further effect is not considered. Modern train control systems rely on radio communications. These systems which are covered by completely different European Standards to those listed in Section 5.8 operate over ranges of several km and are normally operational continuously, not just when a train passes. Therefore, the potential exists for EMI well outside the railway boundary.

5.8.8 is incorrect in suggesting that traction interference peaks will only last a few seconds at a time. Due to the nature of the catenary system this acts as continuous antenna and thus the EMI is radiated over km of track not just at the point of contact with the train pantograph.

In addition there is no reassurance about potential health issues resulting from EMI.

13 Traffic and Transport

This traffic and transport section is not yet complete by HS2 Ltd so that informed comment is impossible. Paragraph 13.1.2 states that the assessment of traffic and transport impacts at regional and route-wide levels is to a large extent based upon the output from transport models which themselves flow from the economic assessment and its associated modelling.

It provides much interesting detail that will be covered in the formal ES but will be outside consultative scrutiny.

Detailed information with regard to HS2 operation would seem to be an essential requirement within the consultation because aspects such as modal shift, loading, impact of increased capacity, reduction in services on non HS2 lines and effects on London Underground are basic. These are not included.

Comment is not possible. The section is inadequate.

14 Waste and Material resources

It is planned that approximately 1 million tons of material will be diverted to landfill.

In association with the Waste Planning Authority some indication of potential landfill capacity at target locations would be helpful. Disposal of excavated material is a local concern given that mass haul strategy for excess spoil is yet to be determined.

The assumption that over 90 million tonnes is planned for re-use in 'the integrated earthworks design' presumes that the specific designs are acceptable in all areas. Reshaping the landscape, for example, within the AONB is not acceptable.

The section does not detail material resources. There is a concern regarding the impact of HS2 on the local authority's mineral apportionment and reassessment of land bank or annual supply.

15 Water resources and flood risk

15.1.4 identifies that the route-wide effect on flows as being not significant. It describes the tunnels passing through the White Chalk aquifier below the groundwater table in part of the route through Bucks. It states that this is not anticipated to affect overall flow rates.

While this is reassuring, the long term monitoring of impacts, which CFA9 states is under consideration, should be implemented. This is important because the River Misbourne, is deserving of conservation status. Globally chalk streams are very rare. The winterbourne is by nature fickle and fed through a network of capillaries within the chalk from the ridges of the valley. Therefore, the impact of the various drainage proposals in the project, no doubt effective from purely an engineering point of view, may result in unintended consequences for the River Misbourne.

The formal DES should give an unequivocal statement that HS2 will not a) effect the river's natural flow b) have associated features which would prevent it achieving conservation status.

Back to structure of response

Response to Community Forum Area Report 9

2. Central Chilterns

2.1 Overview of the area

2.1.3 Ballinger and Ballinger Common are within CFA 9 but excluded from this paragraph.

Notable community facilities 2.1.8 to 2.1.10

There are numerous errors in this section. Missenden Abbey is a conference centre. South Heath does not have a post office or shop and it should also have been noted that the pub/restaurant (Annie Baileys) has already been closed due to the threat of HS2.

Hyde Heath also has a School and Pre-school. Hyde Heath Infant School and Hyde Heath Preschool for children aged 3 to 7 year olds. Over 100 children have to cross and re-cross Weedon Hill each school day. Hyde Heath has a cricket ground and small un-fenced play area at the opposite side of Hyde Heath Road from the village.

Little Kingshill has a Combined School with 211 pupils; Nursery School with 30 children; Little Kingshill Village Hall; the Scout hut; Kingshill Baptist church; Full Moon pub; cricket ground; common; allotments; Priestfield Arboretum.

The final paragraph of this section implies that residents of the Chiltern villages, including Little Missenden and Ballinger travel away from the construction areas and line of proposed route for shops and services. This is not the case as the Great Missenden is usually the primary destination requiring access along the A413 or across the site(s) of construction. Great Missenden has the main junior school and the designated non-selective secondary school for the area.

2.1.16 states that:

There are a number of key planning designations in the area:

- The entirety of the Central Chilterns area is within the Chilterns AONB;
- There is a designated green belt in this area.

There seems to have been scant/no regard for this anywhere in the ES. In particular all green belt settlements should be identified by village name and location in the formal ES.

2.2.2 Since the January 2012 scheme was announced by the Secretary of State, route development work has continued, and the Proposed Scheme now differs in some respects, i.e.: the vertical alignment of the Chiltern bored tunnel and the alignment between Mantle's Wood and South Heath green tunnel has been raised. In the sections of cutting this has raised the alignment by up to approximately five metres. This would reduce the amount of surplus excavated material generated by the project.

This has reduced potential mitigation and severely increased visual and noise impact on a major **part of the surface route through the AONB. It must be noted that although** *'consultation responses'* expressed concern about the removal of spoil this has been misinterpreted as a requirement to reduce the cutting depth by ~8m. This is clearly driven by engineering and cost and goes totally against the concept of mitigation and preservation of the AONB. A tunnel beneath the entire Chilterns AONB offers the only acceptable solution to the passage of HS2 through this area.

2.2.6 bullet point 3 refers to a vent shaft at Little Missenden and an adjacent auto-transformer station. There is no mention of power to and from this (or other auto-transformers). Will power be

supplied buried or overhead? If the latter is the case then it has a detrimental impact on the environment

2.2.7 No reference is made to construction of the portal to effect noise reduction. The footnote refers to pressure reduction but not noise. This comment also applies to 2.2.9. This is of great importance and should be included as a high priority design issue.

2.2.9 The permanent diversion of the Chesham Road (B485) and Kings Lane cuts through a farm and isolates part of the land. There is no recognition of this, its environmental impact or of compensation to the owner. 2.2.9 also includes reference to the temporary diversion of overhead power lines. If overhead power lines need to be moved temporarily this gives an opportunity to bury them alongside the track. Why is this not included, as this is a simple form of mitigation?

2.3.5. Working hours (construction period) are effectively 07:00 to 19:00 on weekdays and 07:00 to 14:00 Saturdays when you include the hour for set-up and closedown activities. *2.3.6* and *2.3.7* effectively allow working at all times. (See also response to CoCP)

2.3.10 and maps CT-05-32/33 show a construction compound (South Heath Green tunnel southern portal) in very close proximity to Cudsdens Court and with construction of the Green tunnel requiring up to 5 years. This placement is totally unacceptable.

2.3.16 fails to recognise that there is no effective public transport in this area for workers to travel to and from construction site. This is likely to add to the already excessive load on the local roads at peak times.

Construction traffic and access

2.3.17 The following lorry routes, which would commence at either the M25 (via the M40 and A412 Denham to Watford) and/or the M40 (via the A355 Amersham to Beaconsfield), are currently proposed to access each of the site compounds:

- The route to the Chiltern tunnel northern portal satellite site compound via the A413, the B485 Chesham Road, Hyde Heath Road and an upgraded Bull Baiters Lane. Map CT-05-032-02 does not show Bull Baiters Lane as a construction route and hence the text is incorrect. Access to the Chilterns Tunnel Portal at Mantles Wood for construction and emergency vehicles via Hyde Heath Road also seems illogical and will have a high impact on residents. An alternative direct but temporary access from the A413 has been proposed for the construction phase. Why have alternative access routes not been considered in this area? (See also 2.7.2)
- The route to the northern satellite site compound associated with the green tunnel at South Heath via the A413 and Frith Hill (which leg?) via B485 Chesham Road and/or via the A413, B485 Chesham Road and King's Lane. Maps CT-05-32/33 - If this implies that the South Heath leg of Frith Hill is to be used when the B485 and Kings Lane are diverted then it may prove impossible for large lorries to turn from B485 into Frith Hill (South Heath Leg) due to the very high gradient of this turn. Winter conditions, with leaves on the road, increase the difficulty of this turn and likelihood of accidents.

*Maps CT-05-*33 shows two construction traffic routes, one via Frith Hill (South Heath leg) and the second via Kings Lane. The junction of Kings Lane and The Ballinger Road is blind and as it is the point of school bus collection and drop-off for school children should not be available to construction traffic.

Maps CT-05-33/34 Potter Row is not wide enough for two lorries. This is known because in the past two delivery trucks have blocked this road. There is no pavement and nowhere for

pedestrians to escape from oncoming vehicles. i.e. no verges. The road is frequently used by walkers (between the PRoWs) horses (to access the bridle paths) and cyclists who come from miles around to enjoy the Chiltern Cycle way. Potter Row is a school bus route dropping off children along Potter Row. Unless there are plans to widen the road and install a pavement Potter Row is totally unsuitable for this type of construction traffic. However, any major alteration to these minor local roads will alter their character and make them inappropriate for the AONB.

Access to the compound at Leather Lane (located in CFA10) via the A413, B485 Chesham Road and Leather Lane via Potter Row, Frith Hill, and/or via the A413, B485 Chesham Road and King's Lane.

Leather Lane is an ancient hollow way, a particular feature of the Chilterns AONB and will be destroyed if altered in anyway especially if used for construction traffic. Why have dedicated temporary construction roads from the A413 not been considered?

Utility diversions

2.3.21 This section cites numerous overhead power line diversions during the construction phase. A sensible form of mitigation would be to provide all the named location with buried power sources.

Highway and Road diversions

2.3.24 Diversions are listed but there is a lack of clarity about when the works will take place and how they are to be scheduled. This is unacceptable. It does not allow a proper response and hence is valueless.

Footpath, cycleway and bridleway diversions

2.3.26 Proposed footpath, cycleway and bridleway diversions listed in Table 3 are not shown on any of the maps CT06-030 to CT 06-034. This was confirmed by Simon White (HS2 Ltd Environmental Manager) at the Great Missenden Roadshow on 14th May 2013. The approximate additional journey lengths are understated. e.g. the diversion of LMI/21/2 in the construction phase is ~450m, which is not negligible.

Failure to show diverted routes means that a fully considered response cannot be given. For example, examination of map CT-06-32 indicates that footpaths GMI/32, GMI/33 and GMI/34 will all be lost and not re-instated due to the construction of the southern portal of the South Heath green tunnel.

A similar situation applies at Mantles Wood with footpath LM/21/1 and LM/21/2. LM1/40/2 A temporary diversion of this footpath should be provided round the safeguarded area at Little Missenden vent shaft.

Earthworks

2.3.28 Major earthworks in the area would include:

- An approximately 1.5km long and up to 23m deep cutting leading from the Chiltern tunnel northern portal to the southern portal of the South Heath green tunnel.
- The approximately 1.2km long green tunnel at South Heath and associated earthworks.
- An approximately 3km long cutting from the northern portal of the green tunnel at South Heath to the viaduct at Wendover Dean, which would be located in the adjacent Dunsmore, Wendover and Halton area.

This list ignores the Little Missenden Vent Shaft and transformer station, the major construction and earthworks in creating the Mantles Wood tunnel portal and access road for construction and TBM extraction. In addition, given that in an emergency such as on-board fire, trains will aim to exit a tunnel if safe to do so, the full ramifications of the emergency requirements around tunnel portals are not clarified. Are we to expect helicopter pads, acreage of additional hard-standing for emergency vehicles as the design process is further refined?

All these earthworks will destroy the character of the AONB. They can and should be avoided by tunnelling the entire length of the AONB.

Examination of map CT-05-33 shows a massive material stockpile on Frith Hill Farm and in very close proximity to Cudsdens Court. This stockpile which will be ~4m high and is too large to be sheeted or effectively watered (as required by the CoCP) and will produce excessive dust causing a health hazard to the residents of Cudsdens Court.

2.3.30 This paragraph is concerned with spoil removal, processing and stockpiling. A deep bored tunnel throughout the Chilterns AONB would remove the need to relocate spoil and preserve the status of the AONB.

Main construction works - Structures

Overview

2.3.31 The main design elements in this area would be the northern end of the tunnel through the Chilterns, the vent shaft at Little Missenden and green tunnel near South Heath. This implies that no thought has been given to the design of the above ground section of the route from Little Missenden to south of the South Heath Green tunnel. CCCF members were reassured that mitigation was a design requirement but it appears that this has been completely ignored. Hence a massively deeper cutting is required for the proposed design.

Vent shafts

The appearance of the vent shaft at Little Missenden as shown in the photomontage LV-12-25 is unacceptable. The vent shaft looks like an industrial building with industrial fencing and takes no account of the environment and its location in the AONB.

Green Tunnels

2.3.39 Tunnel portals – yet again no mention of noise reduction. An indication of the noise level (db) as trains enter and exit the tunnel is required.

2.3.40 Landscaping and planting would be used to blend the structure back into the surrounding area and to provide a safe point for wildlife to cross the route. Roads and footpaths would, where appropriate, be restored across the green tunnel.

This is a very vague statement and does not give any idea of what planting will be undertaken or where footpaths will go. Examination of maps CT-06-30 to 34 shows what appears to be totally random and inappropriate planting areas. These will be dealt with more specifically below under the section on maps. However, it is clear from a conversation with Simon White (HS2 Ltd) that no consultation with residents took place before HS2 Ltd decided to locate areas of new planting.

Landscaping and permanent fencing

2.3.44 Landscaping (i.e. earthworks and seeding and planting) would be provided to address visual and noise impacts, as well as to provide screening for intrinsically important ecological habitats and heritage features. Where appropriate, the engineering embankments and/or cuttings would be reshaped to integrate the alignment sympathetically into the character of the surrounding landscape. The planting would reflect tree and shrub species native to the Chilterns AONB landscape. Opportunities for ecological habitat creation would be considered. A vague statement designed to reassure that does not allow a considered response. Even when reviewed with the relevant maps this gives no clear idea of what will be done and the (negative) impact on the AONB. Where planting is required to shield the visual impact of the line there is no indication of how close to the line this will be. What planting, if any, is envisaged on engineering embankments and cuttings? Autumn leaf fall on rails causes service disruption and revised time-tabling on conventional railways. Does this apply to very high speed rail? Does that imply a tree-free zone? Are embankments grassed and how will they be maintained?.

What does *engineering embankments and/or cuttings would be reshaped to integrate the alignment sympathetically into the character of the surrounding landscape* actually mean? How is a long linear feature of a cutting re-shaped? Does *integrate* of say, embankments imply massive redistribution of spoil and more extensive reshaping of virgin landscape? The photo montages provide no reassurance. Both show alien features that are certainly not *sympathetic* or *characteristic* of the surrounding landscape.

2.3.45 Permanent fencing would be erected and will be shown on plans to accompany the formal ES. Again without any details this statement is meaningless. Any permanent fencing should be unobtrusive and should be screened by planting that is sympathetic to the Chilterns AONB.

Community Forum Meetings

2.5.4 The main themes to emerge from these meetings were:

In general everything is understated, in particular they do not include the item agreed as a policy statement by the forum members and automatically included as an Appendix in all the minutes, which called for a fully bored tunnel throughout the Chilterns AONB.

Alterations and comments have been made in bold to correct the emphasis that should have been applied.

- 1. That the most effective and preferred form of mitigation for this section of the route was considered to be a fully bored tunnel throughout the Chilterns AONB; (inserted as a major missing item)
- 2. That the Proposed Scheme would have strongly adverse visual and noise impacts for those people who wish to enjoy the Chilterns AONB;
- 3. The forum stated that the landscape of the AONB should be preserved in its current form;
- 4. *Potential noise impacts on areas close to the tunnel portals.* Noise in general was stated as an issue, not just tunnel portals but also shallow cuttings.
- 5. That construction and operation of the Proposed Scheme would deter tourists from visiting the area, which would have a significant negative effect on local economies;
- 6. *That construction traffic would severely impact upon local roads and towns.* Both in terms of road diversions and construction traffic causing delays to persons going to work and school
- 7. Concern that road realignments would prevent access for delivery vehicles and cause severance of some communities, such as South Heath. This probably refers to deliveries to South Heath Garden Centre (large lorries with plants from Holland etc) and is extremely important as loss of access will mean that this business and other local businesses will be unable to be financially viable and will close with significant loss of local jobs.
- 8. *The potential impact on Grim's Ditch.* As an ancient structure this should be preserved at all cost.
- 9. Potential impacts of public rights of way (PRoW), bridleway and cycleway diversions upon people using these facilities. This will have a huge negative impact on both leisure and persons going to work.

- 10. Potential health and safety considerations arising from construction activity and diversion of roads and PRoW. Health and wellbeing has been ignored in this document and is dealt with in a separate section.
- 11. Potential impacts on local habitats and wildlife.

It should be noted that the items above do not concur with those given in Martin Well's letter to CCCF members dated March 2013 (see immediately below). They all differ from those in *2.5.4* and should have been included and acted upon. There seems to have been little point in raising these items at Community Forum meetings if they are to be ignored. Our views have not been represented.

Extract from letter to Central Chilterns Community Forum dated March 2013 from Martin Wells.

- The preference for the route to be in a bored tunnel, as set out in the detailed paper submitted by CRAG (on which we have already reported).
- If a fully bored tunnel were not adopted, the next preference for the route to be lowered to the extent that the pantographs cannot be seen and that road crossings can be at ground level.
- In addition, the wish for cuttings with side slopes of the steepest possible gradient to minimise land take in the Chilterns.
- The acceptance of the principle of complete reinstatement of Sibley's Coppice
- The South Heath green tunnel being low enough to allow the covering soil to not be above the current ground level when completed.
- Phasing of works during the construction of the South Heath green tunnel to ensure that neither Frith Hill nor the Chesham Road 8485 together with Kings Lane) be closed at the same time
- The use of tracks alongside the route to be created to avoid use of Potter Row, The Lee or Ballinger by construction vehicles.
- The desire for all noise barriers to be designed and tested to the highest international standard and made of absorbing and not deflective materials.
- All public footpaths to be reinstated.
- The wish to ensure that access is maintained at all times for deliveries to South Heath Garden Centre and domestic heating oil to all homes.

Route section main alternatives

2.6.2 States that HS2 Ltd's reviewed a range of community proposed alternatives to ensure that *Proposed Scheme draws the right balance between engineering requirements, cost and actual and potential environmental impacts.* The key reason why the community proposed alternative schemes is to ensure the fullest protection of the AONB. It is clear from the description of the workshops that the legislative framework and subsequent protected status of the AONB was not one of the factors in the equation of drawing *the right balance* in considering the various scenarios. Furthermore it is evident from sections 2.6.3 to 2.7.2 where HS2 Ltd considered the tunnel options that they have ignored the environmental benefits of the alternatives and rejected them on the basis of cost alone. No value is attached to the environment to offset engineering costs.

Less there be any doubt members of CFA9 have always supported a continuous fully bored tunnel throughout the AONB as providing the only meaningful way that the AONB can be protected. The DES provides totally inadequate information on the environmental benefits of a full tunnel to fully protect the AONB.

Hence at the end of this section we have included a detailed analysis of the benefits of two tunnel proposals (see pages 25 to 33). This provides a comparison of the environmental benefits of the proposal for an Extended Tunnel solution from Mantles Wood portal to a point north of Wendover close to the boundary of the Chilterns Area of Outstanding Natural Beauty (AONB) against those detailed by HS2 Ltd in the scheme in their Draft Environmental Statement. This comparison demonstrates clearly the benefits to the environment of the extended tunnel options but makes no judgement between them. It also by implication identifies the environmental benefits of Option B submitted by the Chesham Society as a contribution to the hierarchy of mitigation measures. This is also included.

Raising the alignment from Mantle's Wood through the green tunnel at South Heath

2.6.18 to 2.6.26 This section considers a cost reduction alternative that appears to have no benefit to residents or the environment. 2.6.20 refers to design refinements to reduce the depth of the cutting and realise a number of benefits to the local area. Nowhere are these benefits described so they must be assumed to be non-existent or illusory.

Lower the alignment through the AONB

2.6.27 to 2.6.29 This section recognises that community forum members asked for the alignment to be lowered but the DES rejects it on the basis of more spoil/lorries (temporary inconvenience) and increased cost. A further suggestion to use different construction techniques to lower the alignment was also rejected because of added construction complexity. If a fully bored tunnel throughout the AONB is not included in the project then it essential that the alignment is lowered.

Operational speeds through the AONB

2.6.30 to 2.6.33 This section recognises that community forum members requested a lower line speed to reduce noise impact and allow horizontal alignment variation. HS2 Ltd rejects this because of the effect it would have on journey time (savings) and claims that a lengthened tunnel (to Mantles Wood) reduces the environmental impact. The proposed line speed for this part of the track is 360kph not 400kph – presumably an engineering/energy use reason but the rationale for this decision is not actually given. The reasons for rejection fail to take environmental impact into consideration especially as other alternatives e.g. vertical alignment (considered above) has environmental dis-benefits. The impact on journey time will be small and there is no guarantee that design specification speeds will be attained.

Leather Lane (re-alignment)

2.6.34 to 2.6 37 This section recognises the request to re-align Leather lane to the north of the existing path so as to avoid mature oak trees. It rejects it on basis of increased engineering (cost) and visual impact and yet again ignores the environment.

2.7 Proposals for further consideration

2.7.1 Viaduct design. Fails to address the issue and postpones decisions on design until the formal ES.

2.7.2 Access to Mantles Wood. Saying that the alternative access from the A413 is still under consideration is unacceptable as deprives interested parties of the opportunity to make a formal consultation response.

2.7.3 Construction site at Chesham Road. Yet again failure to resolve this proposal before the DES was issued for consultation does not allow a formal response.

Map book 9

Defintions

There is no definition for 'Ancient lanes'

Noise fence barrier "Denotes fence-style barriers provided as part of the noise mitigation measures. Note that other noise barriers have also been included in the form of landscaping or engineering cuttings – see the SV-01 map series for more detail on noise mitigation." This definition tells you nothing.

Construction	Proposed	Observations
Phase	scheme	
CT-06-030	CT-06-030	Little Missenden Vent Shaft & Auto transformer station. Placed adjacent to A413, with screening by earthworks and new planting. Re- instatement of footpath LMI/40/2 that is now within new planting is required.
CT-05-031	CT-06-031	Chilterns tunnel exit (Mantles Wood). Portal building alongside line (northern side). New construction road from Hyde Heath Road to be used both in construction and as access to tunnel for maintenance and safety. Extensive cutting and earth works (Material stockpile). Re- instatement of footpaths LMI/17/1 LMI/21/1 is not included. New planting alongside construction road (North West) and on land to South West of the line. What is the purpose of the latter? A large swathe of new planting on agricultural land that contains 2 balancing ponds is inappropriate and does not represent mitigation. In total there are 4 balancing ponds on this map.
CT-05-032	CT-06-032	Mantles Wood to South Heath. The map shows a haul road from Hyde Heath Road to the materials stockpile near Hyde End apparently running along footpath GM/26/1. At the roadshow we were assured that this was an error and that there was no intention of damaging this wooded track. This needs correcting on the map. B485 diversion is shown but not marked as a construction road nor is the diverted Kings Lane. The existing B485 and original Kings Lane are marked as the construction roads. Footpath and road diversions are scheduled for 3 rd quarter 2017 (CFA report 9 page 26). Green tunnels are scheduled to start 1 st quarter 2018. This does not make sense. You can't divert the road over the green tunnel until you have built it. Conversely if you have diverted the B485 according to schedule then it has to become a construction road. New road to service Green tunnel portal. Hyde Lane re-instated over the track. Footpaths GM1/33/5, GMI/33/1, GMI/33/2 appear to have been lost. GMI/27/1 has probably been re-instated (over bridge) onto new embankment, but this is not shown on the map. There are massive earth works with very large new embankment to both side if the line. 5 balancing ponds (not shown on CT-06-031). New planting in Sibleys Coppice and behind Wood Lane (presumably to act as a sound barrier). Overall the landscape will be altered dramatically. Without a 3D image it is impossible to ascertain the extent of the violation of this part of the landscape.
CT-05-032-02	CT-06-032- 02	Hyde Heath Road and new construction road to Chilterns tunnel exit. Only feature not shown on CT-06-032 (above) is new planting on North side of Hyde Heath Road close to new road entrance. There is no explanation or rationale for this new planting
CT-05-032-03	CT-06-032- 03	Detail to south west of line (CT-06-032). Shows extensive 'mitigation planting' to south west of line with large balancing pond close to Chiltern line track. The large pond in the newly planted area close to the Chiltern line is in an area known to flood, albeit in the 1920s with heavy winter rains and extra water from the track/tunnel this could endanger the Chiltern line by causing destruction of the

		embankment.
CT-05-033	CT-06-033	South Heath green tunnel and ~0.7km onwards north. Construction roads shown (Frith Hill South Heath leg is included as well as Kings Lane. Why both? The turn onto Frith Hill is very steep and dangerous!) New construction road from Frith Hill to green tunnel exit to service construction and Auto-transformer station and portal building. 2 balancing ponds. Large Materials Stockpile on Frith Hill Farm. This appears to be temporary as not shown on CT-06-033 but with its very close proximity to Cudsdens Court it will be a source of excessive noise and dust, constituting a severe health hazard. The size of this stockpile is such that it will be impossible to sheet or water it effectively. Cuttings to north of tunnel and new planting area to south west of the line. Why is this here? Footpaths – Those in Sible y's coppice GMI/79/1&2, GMI/80/1&2, GMI/81/1and GMI/28/1 not shown so apparently lost forever. GMI/13/3 is assumed to be diverted alongside track to join GMI12/1which has bridge across the line. We specifically stated that running a PRoW alongside the track was unacceptable. This is just a cost saving by not building a bridge.
CT-05-34	CT-06-034	Centred on Leather Lane. Extensive (shallow) cutting all across this map. Leather Lane diverted (over bridge) and satellite compound sited north of track of Leather Lane. Liberty Lane (PRoW) to south of Leather Lane is also diverted with an overbridge. Access to Cottage farm is by diverted bridge (over the line of the track). There are numerous material stockpiles on north side of track, which appear to be made into new embankments to north side of track and new planting to the south side. Are these new structures here as noise mitigation? Yet again inadequate information is provided. 5 new balancing ponds are shown with no explanation of their purpose or impact on the environment.

It is noted in the comments on the maps above that many balancing ponds are shown on the **'proposed scheme'**. It is understood that there are three types of ponds yet no description or explanation is given for these ponds and in particular what contaminants they might introduce, together with the associated health risk to land owners and walkers. What safety factors will be put in place to ensure that contaminated water will not leak into aquifers? Will these ponds be fenced and have safety issues especially relating to children been considered?

Attention to construction roads is needed urgently. Their placement on the above maps suggests a paper exercise without any detailed engineering surveys. Comments have been made previously under construction traffic and access 2.3.17 and it must be emphasised the use of local roads is inappropriate, often dangerous and extremely damaging to the environment. Alternative temporary access route must be considered.

It is clear from these maps that the re-instatement of footpaths has been ignored. Simon White, Environmental Manager for HS2 Ltd, stated at the Great Missenden ES roadshow (30th May 2013) that footpath re-instatement had not been included on the 'proposed scheme maps' but they would be re-instated. This is totally unacceptable as these are the maps provided and they are therefore inadequate to allow proper consultation. CCCF members have no confidence that the footpaths will be re-instated or that they will be in sympathy with the AONB. It appears that some footpaths will be completely lost. HS2 Ltd has not adequately informed the local population, councils Chiltern Conservation Board or the Chilterns Society about the fate of our footpaths.

The proposed scheme map CT-60-030 shows clearly the very limited effect a tunnel has on the natural environment. This is in sharp contrast to maps CT-60-031 to 034 where the AONB has been drastically altered to the considerable detriment of both resident and visitors.

Back to structure of response

Extended Tunnel Proposals

CCCF members have been consistent in their insistence at forum meetings that a fully bored tunnel throughout the whole length of the AONB is the only satisfactory total environmental mitigation.

The purpose of the CRAG proposals is to minimise the impact of the HS2 project on the AONB.

It outlines two proposals, which demonstrate clearly the benefits to the environment of the extended tunnel options but makes no judgement between them.

Structure of the report

The overall structure of this section follows that of the HS2 Draft Environmental Statement Volume 2 CFA Reports.

- an overall description of the extended tunnel proposal and a linear comparison of the scheme between Mantles Wood and a point at the north end of the AONB at Wendover detailing the differences between the HS2 solution and the extended tunnel options T1 and T2.
- a summary of the comparisons against each environmental topic as listed in the HS2 documents.

This submission does not take account of any understated or unidentified impacts that may arise in response to the DES consultation process. These will increase the benefits of extended tunnelling.

Overall description of the extended tunnel proposal and comparison with that proposed by HS2

The extended tunnel proposals follow the horizontal alignment defined by HS2 Ltd from Mantles Wood to the north of the AONB. The vertical alignment of the extended tunnel proposal follows a lower alignment to facilitate bored tunnelling.

To meet European requirements on tunnel length a tunnel between the M25 portal near Denham and the proposed end of the tunnel near the end of the AONB north of Wendover it has to be divided into two sections each under 20km separated by an open to the air gap of a minimum length of 500m between portals. To meet this requirement two possible locations have been identified. In option T1 the gap is located immediately adjacent to the end of the Chiltern tunnel at Mantles Wood ch 44800 and in option T2 at Wendover Dean in the location of the HS2 viaduct ch circa 51000.

Vent shafts will be required at approximately 3km spacing. This means there will be three addition vent shafts for each option T1 and T2.

The portal at the north end of the tunnel at Wendover will be moved from the current location at the end of the Wendover green tunnel to a location near Nash Leigh Road. The bored tunnel will

end at a suitable location to suit construction operations and tunnel cover limitations and will be continued with a green tunnel which includes an alignment transition to the north portal.

The locations of the gap portals and vent shafts are shown on the relevant drawings together with the access routes, environmental mitigation construction sites and other details.

From inspection of the proposed extended tunnel drawings it can be clearly seen that the impact on the AONB is reduced to localised impacts.

Extended Tunnel proposal T1 section by section

The HS2 Chiltern tunnel ends at Mantles Wood portal. The arrangement at this point remains unchanged. The line is then in cutting open to air for 500m and then enters a bored tunnel portal. This portal is provided with access and services using the same access route as provided by for the HS2 portal extended along the side of the track.

• The impact on Mantles Wood will be reduced as the drainage requirements from the major cutting to the north can be reduced due to the small open to air length.

The bored tunnel then continues on the same horizontal alignment to that of the above ground route. The route continues in bored tunnel to a vent shaft located at ch 48300 near the location of the Havenfield Wood accommodation bridge proposed by HS2 Lyd.

This length of tunnel eliminates the following significant impacts arising from the HS2 Ltd scheme:

- Loss of agricultural land
- All utility diversions (including National Grid)
- All the fencing, cuttings, embankments and landscaping works including planting and noise bunds (except that required at the open to air gap and vent shaft).
- Extensive drainage and balancing pond requirements
- Loss of part of Hedgemore Wood
- Hyde Farm access track and footbridge
- Hyde Lane over bridge and road diversion
- Demolition of Rowen Farm and Dar Lor and associated out buildings on Hyde Lane
- Demolition of outbuilding related to Chapel Farm and Sheepcotes Cottage on Hyde Lane
- Demolition of Meadow Leigh on Chesham Road
- Demolition of Annie Bailey's public house restaurant
- The Chesham Road and Kings Lane diversions
- Demolition of numbers dwellings and out buildings at 86, 90 and 94 Kings Lane, Chiltern Cottage and Weights and Measures Gym on Frith Hill and buildings at Elwis Field Farm
- Footpath disruption and diversions at South Heath
- Removal of approximately half of The Coppice and Sibley's Coppice ancient woodland
- Temporary closure of Frith Hill
- The construction of the South Heath green tunnel, portals and associated tunnel and ATS buildings and access track
- The need for temporary diversion and reinstatement of the National grid overhead power line
- Demolition of 2 main building (including a dwelling) and outbuildings on Mulberry Park Hill
- Footpath diversions and footbridge construction at Mulberry Park Hill

The vent shaft at ch 48300 will require permanent access to be provided. This can be achieved from Potter Row without significant impact. Landscaping and planting may be required. This can also be the site of an ATS.

The route continues in bored tunnel to a vent shaft located at ch 50700 near Durhams Farm at Wendover Dean, the location of the HS2 Ltd Wendover Dean viaduct.

This length of tunnel eliminates the following significant impacts arising from the HS2 scheme:

- Loss of agricultural land.
- All utility diversions
- All the fencing, cuttings, embankments and landscaping works including planting and noise bunds (except that required at the vent shaft).
- Extensive drainage and balancing pond requirements
- The construction of Havenfield over bridge and adjacent footpath diversions
- The construction of Leather Lane overbridge and diversion.
- The destruction of a large section of Grimm's Ditch Scheduled monument
- Loss of part of Jones Hill Wood ancient woodland
- Three over bridges for a footpath, a farm access and Bowood Lane
- The temporary closure of Bowood lane and the diversion route (which is not suitable for construction traffic.)
- The construction of the 500m long Wendover Dean viaduct which is some 17m high plus the pantograph feed cables and posts and barriers
- Demolition of Durhams Farm
- Diversion of footpaths in Wendover Dean

The vent shaft at 50700 will require access from Bowood Lane and can be the location for the Wendover ATS. Landscaping and planting could be required but this is not significant compared with the viaduct.

The route continues in bored tunnel to a vent shaft located near the roundabout on the A413 at the south end of the Wendover bypass ch 53100.

This length of tunnel eliminates the following significant impacts arising from the HS2 scheme;

- Loss of agricultural land
- All utility diversions
- All the fencing, cuttings, embankments and landscaping works including planting and noise bunds (except that required at the vent shaft).
- Extensive drainage and balancing pond requirements
- The construction of Rocky Lane diversion and under bridge and diversion of private accesses
- The construction of Small Dean Viaduct over the A413 and the Chiltern Railway line including diversion of private accesses and the significant disruption the A413.
- Demolition of Road Barn Farm and outbuildings.

The route continues in bored tunnel to a point north of Ellesborough road where it joins a green tunnel.

This length of tunnel eliminates the following significant impacts arising from the HS2 scheme: Loss of agricultural land

- All utility diversions. (including National Grid)
- All the fencing, cuttings, embankments and landscaping works including planting and noise bunds
- Drainage and balancing pond requirements
- Road upgrades to Small Dean Lane and Grove Farm
- New bridge to provide access to Grove Farm
- Provision of an access to the Wendover green tunnel portal and portal buildings

- Construction of part of the Wendover Green Tunnel and south portal
- Closure and diversion of Bacombe Lane
- Diversion of public right of way at Bacombe Lane
- Diversion of the National Grid high voltage line south of Bacombe Lane
- Temporary diversion of Ellesborough Road and subsequent reinstatement
- Demolition of 6 residential properties on Ellesborough Road
- Partial loss of Cricket Ground
- Removal of potential buried remains
- Disturbance of unknown archaeological remains

The route continues from the bored tunnel into a green tunnel to the north portal near Nash Lee Lane. The length of green tunnel replaces the part of the HS2 Ltd green tunnel and extends its length. In doing so it reduces the length of route in open cutting. The green tunnel will be landscaped. An over bridge at Nash Lee lane will still be required.

Extended Tunnel proposal T2

The proposals for option T2 follow the same horizontal alignment as T1 but with adjustments to the vertical alignment to accommodate the changed location of the open to air gap. This description will deal with the differences but not repeat the impacts where common with T1 above.

The HS2 Ltd Chiltern Tunnel portal at Mantles Wood is eliminated together with all cutting replaced by a continued bored tunnel to a vent shaft behind Annie Baileys at ch 46000.

This change eliminates the following significant impacts arising from the HS2 scheme additional to the impacts detailed for T1 above:

- Elimination of the access route from Hyde Heath Road
- Construction of the portal and portal building
- Elimination of drainage requirements
- Elimination of damage to Mantles Wood ancient woodland.
- Elimination of loss to Hedgemoor Wood
- Elimination of drainage requirements

The vent shaft at Hyde Farm and associated building can be accessed from Hyde Lane. Landscaping and planting will be required. The route continues in bored tunnel as T1to a vent shaft at Leather Lane ch 48800 moved from T1 location ch 48300.

This change eliminates the following significant impacts arising from the HS2 scheme additional to the impacts detailed for T1 above:

• Avoids the need for a new access route from Potter Row as the vent shaft now located at ch 48800 adjacent to Leather Lane.

The route continues in bored tunnel to a portal at the south end an open to air gap located at Wendover Dean, the site of the HS2 high level viaduct at Durham Farm and then enters another section of bored tunnel via a portal. The gap will be a minimum of 500m between portals. The gap replaces the need for the option T1 vent shaft at ch 51000[?]

- Access to the portals and associated buildings can be achieved form the A413 via Bowood Lane
- The impact of the gap and portals can be mitigated by noise bunds, landscaping and planting. The residual impacts will be insignificant compared with the HS2 high level viaduct.

- The Chiltern Way footpath crosses the centre of the gap. Diversion of the footpath behind a portal is the most practical solution.
- Durham Farm would need to be demolished unlike for option T2

The route then continues as option T1 above to the end of the green tunnel near Nash Lee Road

Land required for the extended tunnel options Land requirements for both options T1 and T2 are minimal compared to the current HS2 Ltd scheme.

Construction of the Extended Tunnel.

This section only addresses those matters that are different from the HS2 scheme.

Construction site compounds

The construction of the extended bored tunnel will require two separate tunnelling operations. The drive north from the M25 portal will stop at Mantles Wood gap south portal for option T1 as is planned for the HS2 Ltd scheme and at the vent shaft on the A413 at Little Missenden 43000 for option T2. The tunnel boring machines will be extracted at these locations.

There will be a separate drive south from the north end of the extended bored tunnel at Wendover, Option T1 tunnel boring machines being extracted at the Mantles Wood north gap portal and the option T2 machines at the A413 vent shaft at Little Missenden. This will require an additional tunnelling launch and servicing operation north of Wendover. Spoil from the south drives will be removed at Wendover.

Both T1 and T2 options will alter the need for construction compounds and access routes along the route.

The following changes in construction compounds result for option T1 Those no longer required:

- South Heath Green Tunnel satellite compound 1 at A485 Chesham Road
- South Heath Green Tunnel satellite compound 2
- Leather Lane over bridge satellite compound is eliminated
- Wendover Dean Viaduct satellite compound at Bowood Lane .
- Wendover Dean Viaduct Launch satellite compound
- Rocky Lane under bridge satellite compound
- Small Dean Viaduct Launch satellite compound
- Wendover Green Tunnel satellite Compound No 1
- Wendover Dean satellite compound No 2
- Nash Lee Lane over bridge satellite compound
- The Main Construction compound at Small Dean Lane could be incorporated with the compounds required to the north of Wendover

Those required:

- Access to Mantles Wood from Hyde Lane still required
- A small satellite compound is required for the vent shaft at ch 48300 accessed from Potter Row
- A small satellite compound is required for the vent shaft at Durhams Farm accessed from A413 via Bowood Lane
- A small satellite compound for the vent shaft at ch 53100 accessed from Small Dean Lane
- A construction and tunnelling compound near Nash Lee Lane

Option T2 compound requirements are as for T1 above except that:

- The satellite compound at Mantles Wood is moved to the vent shaft at ch 46000 and is accessed from the B485
- The satellite compound for the vent shaft at Havenfield wood is moved to Leather lane.

With the exception of the main construction and tunnelling compound north of Wendover the compounds will have no more or much less impact than those proposed for the HS2 scheme.

It is recognised that the main construction and tunnelling compound will impose impacts on the area and will require 24/7 working for tunnelling operations. Provision should be made for mitigating the impacts by screening and noise minimisation and attenuation. If the green tunnel north of Wendover is completed soon after the TBMs have started their southward drive the noise impact of construction on Wendover will be reduced.

Construction site traffic and access

The HS2 scheme has a significant impact on the local roads, residents and visitors of the AONB from Hyde Heath to Wendover. In particular the B485 Chesham Lane, Frith Hill, Hyde Heath Road, Potter Row, Leather Lane, the A413 end of Rocky Lane, Small Dean Lane and in Wendover. The extended tunnel options eliminate the vast majority of the construction traffic other than that required to service 3 vent shafts and the gap portals. This will bring significant impact reduction to the area. The construction and tunnelling compound needed at Wendover can be accessed direct from the A413. Removal of tunnelling spoil from the tunnelling compound could be achieved by use of the Chiltern Line thus reducing the impact on the A413.

Preparatory and enabling works

Demolition works

The demolition works required for the HS2 Ltd scheme are eliminated under the extended tunnel proposals with the exception of Durham Farm under option T2.

Drainage and culverts

There is little requirement under the T1 and T2 options unlike the HS2 Ltd scheme requirements. Watercourse Diversions

There is no requirement under the T1 and T2 options

Utility Diversions

The vast majority of the extensive utility diversions needed under the HS2 Ltd scheme will be eliminated. Diversions that will be required are those to the north of the end of the bored tunnel north of Ellesborough Road.

Highway and road diversions

All road diversions required from the HS2 scheme are eliminated with the exception of Nash Lee Lane

Footpath, cycleway and bridleway diversions

The extensive diversions required under the HS2 Ltd scheme will in the main be eliminated.

Under option T1 there will be a need for the diversion of public footpath LMI 27 at Mantles Wood. The path to be retained under option T2. Under option T2 the diversions of public footpaths TLE5 WEN36 and WEN39 will re-routed to behind the gap portals. Diversions north of Ellesborough road will be required similar to the HS2 Ltd scheme for both options T1 and T2

Main construction works – Earthworks All major earthworks south of Ellesborough road will be eliminated with the relatively minor works at the option T1 gap at Mantles Wood and at the option T2 gap at Wendover Dean. Earthworks north of Ellesborough road will be required from the end of the bored tunnel for the construction and landscaping of the green tunnel, that is not a significant change to the HS2 Ltd scheme and along a reduced length of route.

Structures

All structures south of Ellesborough road are eliminated

Green tunnels

The HS2 Ltd scheme green tunnel at South Heath is eliminated under options T1 and T2. The HS2 Ltd scheme green tunnel at Wendover remains under T1 and T2 but is restricted to the length beyond the end of the bored tunnel eliminating the disruption to the Bacombe lane and Ellesborough road area.

Viaducts

Viaducts at Wendover Dean and Small Dean are eliminated under options T1 and T2.

Bridges

All over bridges and under bridges required under the HS2 Ltd scheme are eliminated under options T1 and T2 with the exception of that at Nash Lee Lane.

Bored Tunnel.

The HS2 bored tunnel ending at Mantles Wood is extended to a point near Nash Lee Lane under both options T1 and T2. Construction is covered in the above sections. Portal structures are required at the open to air gap on each scheme but the number of portals is reduced from 5 on the HS2 Ltd scheme to 3 on both options T1 and T2. Vent shafts are required in 3 locations for both options T1 and T2.

Rail Infrastructure fit-out

Power supply

The position of auto transmitter stations is adjusted for T1 and T2 to suit tunnel access points

Landscaping and permanent fencing

The extensive landscaping requirements south of Ellesborough road under the HS2 Ltd scheme are eliminated. Only localised landscaping at the gap and vent shafts are required for options T1 and T2.

Landscaping for the green tunnel north of the end of the bored tunnel at Wendover for options T1 and T2 is similar to that under the HS2 scheme. The extensive permanent fencing required for the HS2 Ltd scheme south of Ellesborough road is eliminated. Only localised permanent fencing at gap and vent shafts are required for options T1 and T2.

Further environmental advantages of the extended bored tunnel are given in the relevant sections of part C below.

Extension of the bored tunnel beyond Frith Hill

2.6.5 Option B was proposed by the Chesham Society in response to the request for comments on the plans presented to the November Forum, with a request that a comparison be made between the cost of the South Heath cut and cover tunnel (with associated works), and the cost of continuing the bored tunnel from Mantles Wood to beyond Frith Hill (South Heath leg). Chesham Society were surprised to learn that these options have been considered (2.6.6), because no

adequate response was made at the Community Forums, and consequently this issue has been raised with HS2 Ltd at higher levels.

In the absence of any evidence to substantiate the claim (in section 2.6.7) that option B in particular would incur additional costs, and given that these other options are acknowledged to have environmental benefits (when compared with option A; 2.6.6) a bored tunnel extension should be re-evaluated. If it is found to be cheaper than the current above ground option it should be incorporated in the design and include in the formal ES.

The full report, *Proposal for a South Heath Chiltern Tunnel Extension* by Residents Environmental Protection Association has been submitted separately as part of their consultation.

Back to Structure of Response

Part C Environmental topic assessments

3 Agriculture, forestry and soils

Environmental advantages of the extended bored tunnel

All issues and impacts south of Ellesborough road to the HS2 bored tunnel portal at Mantles Wood are eliminated by the extended tunnel options T1 and T2 apart from localised impacts at gap and vent shaft positions. North of the end of the extended bored tunnel to the north of Ellesborough road the impacts of options T1 and T2 are similar to those of the HS2 Ltd scheme

General Comments

The operation of the project will be built (literally) on the impact on agriculture, forestry and soils. Therefore, *'operation'* cannot be separated from the impacts of *'construction'*. To conclude the section by stating that there are not considered to be any residual effects associated with the *operation* minimises the impact and is seriously misleading.

The scoping report stated that significance criteria will be developed based on best practice and discussions with Defra. No significance criteria are given. Thus the terms used to describe impact **are 'significant' or 'not significant.' These are bland terms**, which minimises the impact. Terms such *'major adverse'* at least give a sense of scale to the impact.

This section provides an environmental base-line including a description of nine local holdings. The list of holdings is not complete. Seven of those listed have been identified as being affected by construction of the project, mainly due to severance and the proportion of land removed temporarily. Much of the land, it is claimed, will be restored and returned to agricultural use so that the effects *for a number of farms would cease to be significant*. This minimises the impact, which is very high during the construction phase. According to the figures supplied, of the seven listed, one is likely to cease operation according to the survey and five others *will suffer significant residual impact*. Thus the sentence should read the 'effect on one farm would cease to be significant'. Given that farms do not start and end at artificially created CFS boundaries and there may exist a degree of mutuality between them, there is no assessment of cumulative impact of farming along the ridge.

The scoping and methodology report states that: The assessment will set out the predicted physical impacts on individual farm holdings, including the land lost by each holding during the construction phase, the area of land severed, the area to be restored to agriculture and the resulting residual

permanent land loss to each holding. The effects identified will be assessed in accordance with the established

significance criteria, The draft environmental statement does not even approach this level of analysis.

The long-term viability of farms is not considered. The short-term viability of farms surviving throughout the construction phase is not examined. The potential for crop or grazing land contamination through dust not explored. There is no linkage made to the section on socio-economic impact in, for example, the impact on local labour markets and number of jobs lost. The impact on the land of extensive drainage ponds is not assessed.

Remediation of soil quality is dependent on how well the measures identified in the draft Code of **Construction Practice are applied. Extensive use is made of the word** *'ensuring'* **in paragraph 3.5.1.** This is reassuring. However, it is misleading. The CoCP does not use this word except in relation to liaison with landowners. The word used in the CoCP is *'require.'* It requires its contractors...as *'far as reasonably practicable.'* Thus the reassurance and certainty provided within the text in paragraph 3.5.1 over, for example, *ensuring that agricultural land and corresponding soil quality can be reinstated post construction...'* becomes in the CoCP *'reasonable precautions will be taken in relation to handling and storage of soils...'* The CoCP states that *'appropriately qualified environmental management staff....will be appointed to facilitate compliance....'* Is this to be interpreted as being appointed on a site-by-site basis or a section of the line? The choice of the word *facilitate* is interesting. Clearly their function will not be to oversee, monitor, or indeed *'ensure'*.

However much soil is replaced, the judgement remains that overall, the loss of the best and most versatile land in the Central Chilterns area is considered to be significant.

The assessment of the impact on woodlands is very weak. The identification of which ancient woodlands will be lost as a result of the project is incomplete. There is no total assessment of area (ha) lost. Other woodland loss is not identified. There is no data relating to tree species. The section states that the intention is to mitigate this loss by replanting. There is no identification with what. HS2 Ltd identifies planting a 20ha area to the south of Mantle's Wood and 'areas of agricultural land elsewhere that would not be viable for agricultural use as a result of severance'. There is no identification who assumes responsibility for the management of these woodlands or indeed who would own them. Indeed there has been no discussion with the owners about these plans. There are no footpaths shown through the newly planted areas. Is that an omission or does it reflect new ownership? On what basis do we comment? 'Woodland soils could be re-used in woodland planting' yet the CoCP contains no generic reassurance about what expectations, even if only when reasonably practicable, will be required of contractor in their dealings with woodlands.

Loss of woodlands, including sections of ancient woodland at Mantle's Wood and almost the entirety of Sibleys Coppice, would be significant. Given the scarcity of ancient woodlands nationally this represents serious misrepresentation. Paragraph 3.5.6 judges that agricultural land designated for new planting is not viable. There is no justification for this assertion. The new planting in other locations is entirely inappropriate and random. Replanting will not mitigate the loss of ancient woodlands. Replanting strategies and principles need to be explained. For example, what is the proposed mix between fast growing and slow maturing trees?

4 Air quality

Environmental advantages of the extended bored tunnel

Air quality impacts arising from construction activities of the tunnel options T1 and T2 will be significantly reduced from that of the HS2 Ltd scheme due to the vastly reduced surface work south of Ellesborough Road. Impact mitigation for option T1 and T2 will be required for activities north of Ellesborough Road and at gap and vent shaft locations in accordance with the CoCP.

General Comments

4.5.3 states that air quality would be controlled during construction through route-wide implementation of the CoCP. The reality is that dust is an inevitable consequence of major earthworks. No trigger levels for dust emissions have been included in the COCP. In addition, though the 'relevant local authorities will be consulted regarding the monitoring procedures to be implemented,' there is no allowance for the rigour of independent monitoring and enforcement required to safeguard the local community.

4.5.4 relies upon the mitigation of the CoCP to judge impacts as *negligible*. It is therefore speculative. There is no assessment of dust on arable and pasture land. The speculative reassurance is at odds with the Kent experience.

There is no mention of pollen release.

5 Community

Environmental advantages of the extended bored tunnel

In general the negative impacts from the above ground HS2 Ltd scheme in the Central Chilterns area are eliminated under options T1 and T2 except at the open to air gap options of either Mantles Wood or Wendover Dean, which are similar to the HS2 Ltd scheme.

Residential Property

All demolition requirements of the HS2 Ltd scheme are eliminated by the extended tunnel options T1 and T2 except Durham Farm under option T2.

Community Infrastructure

The loss of amenities under the HS2 Ltd scheme: Annie Bailey's on Chesham Road, Weights and Measures gym on Frith Hill and the Cricket Ground at Wendover under the HS2 scheme are eliminated by options T1 and T2. The disruption to the community of South Heath during construction of the HS2 Ltd scheme will be eliminated by options T1 and T2. The impact of amenities at Wendover, St Mary's Church, Wendover House School and Playing field and the Rifle Range due to the close proximity of the raised level of the HS2 Ltd scheme near London Road and A413 will be eliminated by options T1 and T2.

Public rights of way and open space

The impact on public open space at South Heath through to Wendover Dean by the HS2 scheme will be eliminated under options T1 and T2. The impact on the Chiltern Way PRoW at Wendover Dean by the HS2 Ltd scheme will be eliminated under option T1 and can be accommodated by a diversion on Option T2.

Additional information required /correction

- 5.4.3 Little Kingshill has been omitted
- 5.4.5 The catchment area for the Little Missenden school is far wider than stated and access to the school is from the A413.
- 5.4.6 Recognises LMI/40/2 runs through the site of the site of the Vent shaft at Little Missenden and yet this is ignored on all maps and in the list of diversions.

5.4.7 Footpath LMI/21/1 needs to be added to the list of paths in the woodland. The PRoW identified in 5.5.7 linking South Heath to Great Missenden need to be kept open during the construction phase. The proposed diversion for traffic is unacceptable for pedestrians.

Health and Wellbeing

The health and wellbeing of residents in the communities all along the proposed HS2 route are of paramount concern. There should therefore have been a section in the DES that dealt specifically with health, wellbeing and safety. It is not sufficient to make passing references under other headings, e.g. Air Quality, Land Quality, Sound, Noise & Vibration.

There is already substantial anecdotal evidence of stress-related illness suffered by residents along the phase 1 route who stand to lose their homes and businesses through compulsory purchase, who are suffering property blight, or those further away from the route who cannot sell properties that are significantly devalued.

There is no consideration at all in the DES of the effects on the health and wellbeing of these people in the pre-construction phase. HS2 Ltd should have commissioned independent, peer-reviewed research into this significant phenomenon, and then reported on it in the DES.

The Sections that do make oblique reference to health and wellbeing contain only vague or overoptimistic, self-referencing statements, with no detail or credible independent verification. This is characteristic of all the DES documents, irrespective of the aspects of the assessment with which they are dealing, and numerous examples can be cited throughout.

Section 4 – Air quality – of the CFA 9 report is typical of the casual, sloppy way in which health concerns are treated. The footnote to 4.1.1 merely states that PM10 & PM 2.5 are: of concern to human health, without detailing their extremely serious effects and those of NO₂ upon human health. 4.5.6 then goes on to claim that: Following a more detailed assessment of the changes in traffic emissions on these roads, <u>it has been identified</u> that impacts on NO₂ and PM10 concentrations would be negligible. No details are given, and much more rigorous, independent scrutiny is needed before such airy, dismissive claims can be accepted.

There are also glaring inconsistencies and inaccurate cross-referencing between the DES documents. For instance, in the Non-Technical Summary, it is confidently asserted in 4.5 that: *The generation of electromagnetic fields would be carefully managed during construction and operation of the scheme to ensure that electrical equipment and human health are not adversely affected. <u>The draft Code of Construction Practice contains measures</u>, in line with industry good practice and British and European standards, to manage electromagnetic interference. Again, there is no explanation of the possible adverse effects on human health, and the CoCP makes no mention at all of measures to manage electromagnetic interference. It should also be noted that this statement refers only to good practice, and not to the best practice that should be axiomatic throughout the whole HS2 project.*

Simon White has stated that issues of health and wellbeing will be reported on as a specific category in the formal ES that will form part of the Hybrid Bill. We have no confidence in this statement. As with so much else in the DES, its publication should have been delayed until all the necessary research into the present adverse effects and potential future effects upon human health and wellbeing had been conducted and peer reviewed or independently verified.

Corrections

5.5.5 Sprinters Leisure Centre is in Prestwood not Great Missenden

General

The impact of multiple, in-combination effects, is the major concern for the communities affected. That this will be dealt with and reported in the formal ES is not good enough.

This section is focused on the immediate impact of the line. It does not pay any attention to loss of amenity and hence reputation (i.e. the area's attractiveness to visitors). The impact of the project on the local community's economy is not assessed. There is clear responsibility to undertake this requirement in NPPF 116. It is not assessed in the socio-economic section. Visitors to the Chilterns AONB (last estimated in 2007 as 51m leisure visits per year) contribute £471.6m to the economy).

Nowhere within the documents is there acknowledge of the cost to individuals brought about by blight.

The business case is apparently to be subsidised by individuals and communities; for it is they who suffer loss of equity, amenity, and cost of disruption.

6 Cultural heritage

Environmental advantages of the extended bored tunnel on designated and nondesignated assets

The impact on designated and non-designated assets under the HS2 Ltd scheme will be eliminated along the extent of the extended tunnel in options T1 and T2 other than at gap and vent shaft locations, which will be insignificant compared to the HS2 impacts.

General Comments Cultural heritage

Paragraph 6.4.1 states The assessment of cultural heritage considers features within 500m of the Proposed Scheme, as set out in Volume 1. This is referred to as the study area.

Assessment within 500m is inadequate. Volume 1 identifies a baseline of 5 kilometres, narrowing down to a study area of three kilometres. This is too limited. The *zone of theoretical visibility' is an unacceptable concept*. It is perfectly feasible to map the visibility of HS2, as the Chilterns Conservation Board has done for the area of the Chilterns AONB. HS2 Ltd should have produced visibility and noise contour maps as a starting point and assessed the impact of HS2 on all heritage assets within sight and sound of the route. It might be that there are heritage assets within the visual impact area that are not affected but only a proper study of that whole area will establish which are and which are not.

The final limit of *within 250m of construction works* will exclude sites that experience significant disturbance. It takes no account of the impact of construction away from construction sites, e.g. traffic movements near listed buildings with shallow or no foundations.

Volume 1 also states that baseline activities have been carried out but this research has not been made available. It is ongoing. It raises the question why we are being consulted when key information is not available. It is not possible to comment properly on the archaeological impacts of the proposed scheme when so much work is yet to be done. Will there be an interim consultation on Cultural Heritage when this work has been finished to enable informed responses before the final Environment Statement is drawn up and submitted to Parliament?

Paragraph 6.4.4 states: By the Norman Conquest the present settlement pattern, focused on the villages of Little Missenden and Great Missenden had probably been established.

The fact that Great Missenden church stands outside the village and that the earliest buildings in the High Street are laid out in a way that suggest Burghal plots means that the settlement pattern there may have been different in the 11th century. It is likely that there were buildings around the church.

In addition, the implications of: *the pattern of scattered settlement set within a relatively wooded landscape established in the medieval period* means that settlement sites could be found anywhere in the area. Account must be taken of small finds scattered across the area and in particular along Potter Row.

The AONB is a historic, heritage landscape reflected in the landscape and list of designated and non-designated features.

In addition, the following assets are not identified: Little Kingshill - site of c10 monastery at Ashwell Farm plus Grade II listed Kingshall on the same site, which has mediaeval importance as a hunting lodge for King John. There are numerous other significant buildings from c10 to early c20. There is no mention of the 20 or so designated listed buildings in Little Missenden conservation area or Great Missenden conservation area. Also, there is no mention of Missenden Abbey or St. John the Baptist, Little Missenden, which along with St Peter and St Paul, Great Missenden, makes three religious communities, which have had significant influence and importance.

How contractors approach construction within this landscape is crucial. For detailed comments on construction in relation to heritage assets please refer to the draft CoCP response. The tone of the document suggests that remediation is possible when the reality is very different.

Limitations to the landscape earthworks at Mantle's Wood to reduce impacts on the ancient woodland and potential medieval archaeological remains. Mantle's Wood, Farthings Wood and Sibley's Coppice ancient woodlands are assets of high heritage value and would be partly removed.

The impacts on Mantles Wood are such that it will disappear. The fragments that will not be grubbed up during construction will be undermined as a result of changes to ground water levels resulting from the digging of a very large ditch. It is questionable how far any remaining part would be protected from the impacts of construction, given the weaknesses of the CoCP. What remains of the three woodlands is unlikely to survive in the changed topographical circumstances.

The section on construction concludes that: The construction of the Proposed Scheme would not have an impact on any other identified heritage asset within the temporary and permanent land take and would not have an impact on the setting of any other designated asset identified with the ZTV.

This is simply not true. The construction and operation of HS2 would undoubtedly have an impact on the assets listed above. For example, St Peter and St Paul's Church – Grade 1 listed – will suffer serious effects during construction because of the proximity of the construction site and the fact that construction traffic will be going right past it down Frith Hill to the A 413, especially since the CoCP allows for construction traffic including heavy plant to be moved on Sundays. The normal use of the church for services will be affected. So too will the Sunday afternoon teas, which are an important source of income for the Church. Reduced congregations and a reduction in its attractiveness to visitors could undermine the ability of church officials to maintain the fabric of the church in future. Similar assessments are required for the other designated sites.

Since the ZTV is theoretical rather than actual, proper assessments of the impacts on heritage settings have not been done. The statement in 6.5.7 therefore cannot be relied upon as a true statement of the impacts.

When considering the operational impact, the section identifies

- elevated sections on embankment and viaduct, together with realignment of the existing highway infrastructure and the introduction of road and foot bridges over the Proposed Scheme. However, the impact of these features is not assessed. They will change the appearance of the landscape and therefore have an impact on settings. The viaduct in particular will result in noise over a wide area.
- The provision of earthworks and planting would provide an effective means of mitigation to reduce the effects of the Proposed Scheme. However, mitigation would not be fully effective until planting has matured. Again, they will have an impact on settings for example views may be obscured, to the detriment of a setting. These effects must be properly assessed.
- Even with earthworks and planting, the presence of the Proposed Scheme would result in significant residual effects on the listed buildings at Sheepcotts Cottage, Sheepcotts and Hyde Farm. The setting of the buildings along Hyde Lane will be profoundly changed because of their proximity to the line. Pass-by noise from trains which is recognised as more intrusive than constant background noise will undermine the tranquillity of the setting. Long-term changes to Hyde Lane may result from construction works, which will alter the immediate environment.

7 Ecology

Environmental advantages of the extended bored tunnel The impact on ecology under the HS2 Ltd scheme will be eliminated along the extent of the extended tunnel in options T1 and T2 other than at gap and vent shaft locations, which will be insignificant compared to the HS2 impacts.

General Points

The Scoping and Methodology Report details that baseline data will be obtained through a combination of desktop study, field survey and consultation. It implies a robust assessment. It goes on to state: *Further details on the survey methodologies will be set out in the ES.*

Paragraph 7.3.5 states that surveys *were undertaken* although the evidence base is not shared. Apparently, there was limited access and surveys will continue during 2013. The level of consultation and with whom is not recorded. There was no consultation with the Chilterns Conservation Board.

The result is a generic assessment largely based on suitability of habitat. It reads as if it was largely derived from a desktop study. There is no indication of the composition of the woods other than mixed deciduous woodland. There is neither detail of fauna nor assessment of the impact of construction and operation on wildlife.

It is focused around the woodlands and from Mantle's Wood to South Heath. There is no assessment of the route from South Heath onwards. Ecology in the DES ceases to exist north of South Heath.

There is no assessment around Leather Lane – an ancient hollow way –no ecological assessment in the mix to achieve the right balance, in the decision, about the engineering design of **the lane's** re-alignment and loss of oak trees.

It is difficult to see how in 7.6.2 the judgement can be made that the green tunnel *would reinstate habitat continuity* when there has been no assessment of habitat. Rather like in archaeology, absence of evidence is not evidence of absence.

Local Wildlife Sites and Biological Notification Sites are listed. *Parts of Weedonhill Complex are ancient woodlands*. In fact, 10.12ha of Weedonhill Complex are ancient woodlands. **Mantle's** Wood and Hedgemore and Farthings Wood are described as *ancient replanted woodland*. The final ES should clarify that this in no way diminishes their status as ancient woods.

Ancient Woodlands are defined as an area that has been wooded continuously since at least 1600 AD. Ancient woodland is divided into ancient semi-natural woodland and plantations on ancient woodland sites. (Ancient replanted woodland) Both types of stand are classed as ancient woods.

7.5.2 The following measures have been identified as part of the design of the Proposed Scheme and avoid or reduce impacts on features of ecological value

- Placing the route in a bored tunnel in the south of this section of the route would avoid the loss of habitat, including ancient woodlands
- Redesigning the extent of the proposed scheme at the vent shaft at Little Missenden to reduce impacts on the Weedonhill Complex LWS
- Planting 30 ha to compensate for losses at Mantle's Wood, Farthings Wood LWS and Sibley's Coppice (cumulatively about 13.9 ha)

The recognition of the tunnel as avoiding the loss of habitat is helpful and should be count highly in preserving the environment.

It is unclear *what redesigning the extent of the... vent shaft means*. Is this a proposal? Has the redesign taken place? Given that the DES contains no specifics about the design it is not possible to respond.

Planting timber might compensate for loss of timber. It does not compensate for loss of ancient woodlands. NPPF paragraph 118 identifies ancient woodlands as *irreplaceable habits*. Ascribing County/metropolitan significance to the permanent loss of site integrity to an *irreplaceable habitat* particularly given the national very low percentage of ancient woodland seeks to minimise the impact. The significance is national.

Paragraph 7.5.4 assumes implementation of measures set out in CoCP, which includes *translocation of protected species...* The CoCP gives little if any protection to the environment so this statement is meaningless.

7.5.8 acknowledges the *permanent adverse effect on site integrity*. Yet states in 7.5.9 *the large increase in woodland, including translocation...would help improve the ecological value of the local woodland*. How is that assessment made? From *help improve the ecological value* to describing the residual effect as *a permanent beneficial effect* is a very big and unjustified jump.

7.5.9 states that *new woodland*, specified as broadleaved, *would be established in a minimum of 20 years*. This in no way compensates for the loss of ancient woodland and will significantly change the local environment.

The CoCP states *relocation or translocation of species, soils and plant material, as described in the ES.* The DES does not define which species or soils will be translocated or how.

It is confusing that woodlands are not covered in Volume 27. In CFA 9 they are not in Section 3 Agriculture ,forestry and soils but Section 9 Ecology. In the CoCP woodlands are covered in section 10 Landscape and Visual.

Further measures currently being considered, but which are not yet part of the design, is provision of measures to facilitate the passage of species across the route where significant foraging or commuting routes would be disturbed. It is reassuring that such measures are under consideration – even more so if there was some analysis of where such routes existed. However, 'Green' footbridges to allow for wildlife foraging were rejected by HS2 Ltd within the forum. They should be included in the formal ES.

The ecological impact either in potentially positive or negative terms of the many ponds is not assessed. They are an apparent engineering necessity but there is no explanation of their function. Albeit natural ponds are a rare feature of the landscape there is no indication which ones (if any) could be naturalised to enrich wildlife or which ones will contain contaminants. There is no ecological assessment of the impact of this surface drainage on the River Misbourne and its ecology.

The ecological impacts of noise, light pollution and disturbance, habitat connectivity, fragmentation and barrier effects are not assessed.

Potential bird strike is identified for Red Kite and Barn Owl. Provision of *an alternative roosting habitat to compensate for the loss of a pipistrelle roost near Jenkins wood and as appropriate in remainder of this section of the route* is proposed but not detailed.

In some sections, it might be possible to distinguish baseline, construction and operation as separate phases and report on them. This section is not one of them. The operation is built literally on the ecological impact of construction. The judgement that are no residual effects would be anticipated at more than local/parish level cannot be justified. Cumulative effects are not assessed. Nowhere in this section is there recognition of the unique nature of the AONB and the complex inter-relationship of ecology, landscape and tranquillity that define its natural beauty.

8 Land quality

Environmental advantages of the extended bored tunnel The impact on Land Quality under the HS2 Ltd scheme will be eliminated along the extent of the extended tunnel in options T1 and T2 other than at gap and vent shaft locations, which will be insignificant compared with the HS2 Ltd impacts.

Minerals

There is a concern regarding **the impact of HS2 on the local authority's mineral apportionment and** reassessment of land bank or annual supply. In addition, part of the route runs through a designated Minerals Safeguarding Area (MSA) where the designation seeks to avoid sterilising mineral resources where non-minerals development is proposed. The local authority is concerned that HS2 may sterilise economically valuable mineral deposits.

9 Landscape and visual assessment

Environmental advantages of the extended bored tunnel

The impact on landscape and visual assessment under the HS2 scheme will be eliminated along the extent of the extended tunnel in options T1 and T2 other than at gap and vent shaft locations, which will be insignificant compared to the HS2 impacts

General comments

9.6.14 acknowledges the highly sensitive nature of the landscape and the visible nature of the project, and significant residual effects on the character of the local landscape and views from residences, *PRoW and travellers on roads throughout the study area would remain as set out in Table 9 and Table 10.* Hence the residual visual impact on the environment is significant and could be avoided if the line was placed in a continuous tunnel throughout the Chilterns AONB.

Tables 9 and 10 indicate the level of effect on visual receptors. Given that the features described are: *addition of new features or components that are continuously highly visible and incongruous* ...(Scoping Report) it is difficult to see how the judgement *moderate adverse* is made, either when considered singly or certainly cumulatively. The project entails the creation of alien features and urbanisation, which is totally incongruous *within the highly sensitive nature of the landscape*. Even if one was to accept that some features would be screened from some views (which we do not) then the cumulative impact must be *major adverse*. The cumulative visual impact is not assessed.

- There are no similar tables to indicate the *Landscape significance of effects*. (scoping report). This is deliberate selective presentation. The impact of each feature could only be judged as *major adverse*. Because, as the Scoping and methodology identifies in its significance criteria, it:
- Would be at considerable variance with the existing character, degrading its integrity; would permanently degrade, diminish or destroy the integrity of valued characteristic features, elements and/or their setting; would be judged adverse at a national or regional level; would comprehensively conflict with national, regional or local environmental policies for the protection and enhancement of the landscape.

Further mitigation proposals put forward are in themselves alien features. *Sympathetic landscape design* has a reassuring ring but what does it mean? It might be reassuring that the proposed **balancing pond near Mantle's Wood is selected for** *being integrated into the existing landscape.* Does this mean that other ponds are not?

Light Pollution

The impact of light pollution on the landscape from construction and **the train's operation** and maintenance is not assessed or evaluated.

There is very little detail of the additional height requirements for the radio antennae.

Note. 9.4 Environmental baseline. The final sentence in 9.4.2 states: *The London to Aylesbury railway and the A413 run north to south through the Misbourne Valley, creating a strong linear feature within the landscape.* This is misleading, as both are relatively invisible from many public vantage points. It is the valley that creates a strong linear feature. In addition, on occasion throughout the documents there is a suggestion that the project follows the route of the A413. This is totally misleading; the route follows the ridge and cuts through virgin landscape.

10 Socio-economics

Environmental advantages of the extended bored tunnel

The socio economic effects under the HS2 Ltd scheme is not provided in the DES however given the disruption to the AONB and the local communities it is clear that options T1 and T2 will have a negligible effect in comparison.

General Comments Socio-economics This is a desk study. It fails to state that the Chilterns being an AONB.

10.4 The environmental baseline described in this section is based on the ONS 2011 Business Register and Employment Survey for Chiltern District. It gives no detail of the Central Chilterns area.

10.4.4 Construction jobs 11%. This includes jobs classified by ONS under 41 Building (i.e., house/housing building), 42 Civil Engineering (i.e. larger firms road/rail construction) 43 Special Construction (i.e. general builders including roofers, plumbers etc.). The CCCF area shows less than average construction jobs with no large firms in either category 41 or 42 so there are no transferable skills to HS2. It is therefore most unlikely that HS2 will cause a net gain in jobs in this area.

10.4.4. Identifies the largest proportion of job in the CCCF area as 'professional, scientific and technical' – GE Healthcare, Little Chalfont probably contributes to this statistic but is not within this CFA. However, together with BMI Chiltern Hospital both need staff to be able get to work using the A413. Also, other professionals who need to commute will need easy access to Great Missenden station hence road closures/diversions and construction traffic will increase travel times considerably.

10.5.1 'No significant direct effect on non-agricultural employment have been identified within the CFA. Construction of the Proposed Scheme would encroach on some businesses. These include Weights and Measures Gym at Frith Hill and a workshop at Elwis Farm'. This is an incorrect statement as they will be demolished hence the gym will close and the farm business will be severely disrupted.

10.5.2 It is estimated that the Proposed Scheme would result in the displacement or possible loss of approximately five jobs at two businesses within this CFA. The closure of Annie Baileys and Weights and Measures will account for more than 5 jobs and this estimate fails to take into account the impact of HS2 on other employment in South Heath and villages within the Central Chilterns. Furthermore, the loss of visitors to the AONB caused by the construction of HS2 will lead to many job losses in the Central Chilterns area. The loss of the fields (see 2.2.9) in which the twice-yearly Craft Shows are held would also lead to local job losses.

10.5.4 The use of these (construction) sites could result in the creation of up to 1,050 person years of construction employment that, depending on skill levels required and the skills of local people, are **potentially accessible to nearby residents...** There is no basis for this statement and without supporting evidence it is meaningless. The disruption of HS2 construction is likely to reduced employment in the area not create it (see 10.5.2)

10.5.4 continues - It could also lead to opportunities for local businesses to supply the project or to benefit from expenditure of construction workers. Firstly, South Heath, which is local to construction sites has no shop/pub and hence will not receive any local business benefit. Second Access to Hyde Heath/Little and Great Missenden would involve construction worker using the B485 and A413 to get to shops, pubs or supermarkets adding to traffic congestion. Third, HS2 Ltd previously stated that construction workers 'needs' will be met on site. Fourth, there is very limited overnight accommodation in the CFA so there will be no use of local facilities by workers to buy take-away food and use of pubs/restaurants. In conclusion this statement is both wrong and misleading.

10.5.5 It is intended that discretionary measures, such as business support, supply chain engagement and local construction skills development initiatives to enhance local business performance will be included as appropriate in the formal ES. This statement serves no useful purpose and without detail cannot be consulted upon.

10.6.1 The Proposed Scheme would create direct and wider operational employment opportunities at locations along the route including stations, train crew facilities and infrastructure/maintenance depots. Although no plans exist to locate these facilities within this CFA, it is considered possible that wider operational employment opportunities could be accessed by residents of the CFA. As no stations, train crew facilities and infrastructure/maintenance depots are planned and 'wider operational opportunities' is not explained there is no evidence of job creation with in this area of the AONB.

Points omitted in Section 10

Tourism has an important socio-economic significance in the CCCF area. This has not been addressed in Section 10 of the DES. In addition, the CFA is located in the middle of the designated Area of Outstanding Natural Beauty. It is the nearest AONB to London and provides the opportunity for a wide range of recreational activities including cycling (Great Missenden is a gateway to the DfT funded Cycle Chilterns initiative) hiking/camping orienteering and a wide range of equestrian pursuits. One of the purposes of the AONB is to foster recreation and enjoyment of the countryside. There is no assessment of the impact of HS2 Ltd proposals on this **aspect of the AONB's work**.

At present this is a thriving tourist area that underpins many businesses in the high street and local area. There are 57 retail outlets in Gt. Missenden including pubs and restaurants, but excluding banks and non-retail businesses. All to a greater or lesser extent are dependent on visitors. Within Bucks 8.9% of jobs relate to tourism and the 51 million visitors to the AONB play a very important part of the local tourist industry contributing £471.6 million to the economy. Visiting cyclists to the area spend on average £71 per day. In addition there are 70,000 visitors per year to the Dahl museum in Great Missenden.

The lack of HS2 Ltd commissioned research by the various tourist boards is a serious failing. It fails to address an important aspect of the tests identified in NPPF 116 in the assessment of the impact of the development on the local economy.

During the construction of HS2 the CFA will be unattractive to tourists. The range of footpaths/bridleways will be severely restricted. Five years of construction will result in a huge reduction of visitor numbers with a direct effect on business and employment. The significant negative effects on local businesses and business people will adversely affect the prosperity of the CCCF area. Given that the AONB will be permanently scarred, many of these visitors may never return.

The judgement of paragraph 10.5.1 that there are no significant direct effects on nonagricultural employment as a result of construction is therefore unfounded and seriously misleading.

Many businesses require the use of local roads (identified as seeing a significant increase in traffic during construction (12.5.8)) and together with small (sole-trader) village based businesses access to clients and by clients is paramount. Delays caused by endless traffic holdups along the A413 are a significant hidden cost.

Volume 4 (Kilburn - Old Oak Common) Para 2.2.15, outlines plans to "*partially sever*" the Acton -Northolt Junction Line. In fact the proposal is a complete severance, the consequence of which is to remove the access from the Chiltern Main Line (serving stations in South Bucks) to Old Oak Common, where connections into HS2 and direct or indirect access to Crossrail and to Paddington would have been possible. *2.2.15* Identifies that there is currently one train per day in either direction, but severance precludes possible development given the importance of Old Oak Common to the project. No impact assessment is detailed. The severance is not detailed in Volume 1.

11 Sound, noise and vibration

Environmental advantages of the extended bored tunnel

The nature and wide reaching of the sound and noise impacts caused by the construction and operation of the HS2 Ltd scheme will be eliminated by the tunnel extension under options T1 and T2 except at the gap, vent shaft and Wendover tunnelling launch and serving locations, as will the need for all the mitigation such as bunds and barriers.

The vent shafts will be similar to those on the HS2 Chiltern tunnel and are provided with appropriate mitigation.

The option T1 gap at Mantles Wood is little different from the portal under the HS2 Ltd scheme but will be more enclosed. The option T2 gap at Wendover Dean is in a low elevation but exposed location and will require appropriate mitigation. However, the residual impact will be significantly improved from that which remains from the HS2 Ltd scheme high level viaduct in this location.

The route of the option T1 and T2 tunnels will pass under dwellings saved from demolition by the options. Vibration from tunnelling operations and rail operations would not be different from elsewhere on the route and would be mitigated in the same way.

Sound and noise mitigation will be needed for the 24/7 tunnelling operations near Nash Lee Lane.

General Comments on Sound, noise and vibration

Volume 1 states: 5.12.23 Baseline sound level information has been gathered through successive substantive field surveys, initially focused in locations where significant effects were considered to be more likely. This initial assessment has taken account of baseline data collected up to the end of 2012. Baseline data collection is on-going and may influence the assessment presented in the formal ES.

The sound contour maps SV-01-16 and 17 are based on sample baseline data taken up to December 2012 and are likely to be significantly different in the formal ES.

It was apparent from assessing and talking to the HS2 Ltd contractor carrying out noise measurements in the autumn of 2012 that the measurements taken were one hour samples and taken during the day on the grass verges of local roads and in some instances close to fences. The baseline data will be strongly influenced by the traffic noise both directly and by reflection off any fence.



The data is not representative of noise by a dwelling: readings are certainly not representative of sound levels in a tranquil area and were not carried out for long enough for a viable measurement to be produced.

This assertion is further supported by the following statement in part C of the CAF9: **11.4.1 The baseline sound environment for the area as a whole is typical for a rural 'market town' area.** All roads in the area are quite busy, especially during the day, with the most notable source being the A413, which is a particularly dominant source close to the ventilation shaft at Little Missenden. Baseline levels are also elevated at receptors in close proximity to the existing Marylebone to Aylesbury line.

The areas through Hyde Lane, South Heath and Potter Row, nearest to the line of the proposed route cannot be described as having noise levels similar to a *'rural market town'*.

No baseline ambient sound data has been published in the DES to support the sound contour maps.

Methodology

Section 11.6.3 defines LpAeq, day the daytime sound level from 07.00 to 23.00 as the equivalent continuous sound level over that period and LpAeq, night for 23.000 to 07.00.

Whilst it is important to measure overall equivalent long term levels of sound, the nature of the trains pass-by noise of trains is intermittent and dependent on the speed of the train, its length, the number of pantographs and number of trains passing.

It had been accepted previously by HS2 Ltd that peak noise levels would also be assessed and published; they have not been included in the DES. The peak pass-by sound levels are what concern the community.

Mitigation at source

Volume 1 states: 5.12.21 It has been assumed that HS2 trains will be specified to be quieter than the relevant current European Union requirements and this will include reduction of aerodynamic noise from the pantograph that would occur above 300kph (186mph) with current pantograph designs, drawing on proven technology in use in East Asia. It is also assumed that the track will be specified to reduce noise, as will the maintenance regime.

The above is speculative. None of these assumptions have yet been substantiated in practice but they have been included in the DES.

An HS2 representative at the DES roadshow stated that the train pass-by sound source used for the creation of the sound contour maps was 92dB at 25m at a height of 1m.

This is 3dB lower than the data measured for the TGV at the same distance and substantially less than the aerodynamic noise generated around the pantographs which increases with speed up to a level of 104dB at 350kph at the same distance.

With gantry height at around 8 metres, the noise generated by the pantographs will be significant in shallower cuttings such as those in the valley near Hyde and Chapel Farms and the shallow cuttings from Potter Row towards Leather Lane. Reference Photomontage LV-12-26 & 27

Impact of Noise

Equivalent continuous sound levels

HS2 Ltd has decided that unless the equivalent continuous sound level from the train is above 50dB during the day (40dB at night) there will be no impact Volume 1: 5.12.5

5.12.5 The lowest daytime sound level contour shown on the maps is 50dB. For HS2's envisaged operation this is equivalent to a night-time sound level of 40dB. In general below these levels adverse effects are not expected. In assessing the risk of sleep disturbance, the maximum noise level for each train pass by has also been calculated and considered in this initial assessment.

The impact in some tranquil areas with a sound level below 50dB will not be considered – this is unacceptable.

The World Health Organisation states that most countries in Europe have adopted 40dB as the maximum allowable daytime level and therefore sound contour maps should include a further band 50 to 40dB daytime.

Where HS2 Ltd considers there is an equivalent continuous sound level of \geq 65dB daytime, it will be regarded as significant and qualify for an insulation grant – in the CAF9 report section 11.6.10 there is one dwelling in Hyde lane which qualifies in the DES.

The WHO guidelines for community noise advise that 55dB should not be exceeded to protect people from being seriously annoyed in outdoors areas.

Peak levels

The next criteria to determine a significant impact is that the peak noise level would have to be \geq 85dB OR a \geq 3dB increase in the equivalent continuous sound level to be deemed moderately noticeable, and deemed to be major if \geq 5dB.

At a peak level of 85dB outdoor, is unacceptably high and would make conversation within a dwelling extremely difficult.

Tunnel Portals

The sound contour maps show a substantial fall-off of noise at the entrance/exit to tunnel portals. This does not appear to be substantiated by any data published by HS2 Ltd in the DES – another assumption that may not be applicable.

Limit to Sound Study Area

A sound study area of 3km either side of the proposed route was used in the AoS as it was considered sufficient to encompass all areas subject to potential airborne noise impacts – Appendix 5 AoS Technical Report section 5.2.1.

However the study limit in the DES was reduced to 1km and it does not take into account the effect of the local topography such as the transmission of sound across the Misbourne valley towards Prestwood and Little Kingshill approximately 1.5 to 2.5kms away.

The extent of rail services

Volume 1: section 5.12.18 states that passenger services will start at 05.00 and then there will be a progressive increase in the number of services up to 07.00 with a corresponding decrease from 21.00 to 23.00. This was not mentioned during the consultation in July 2011.

The night period had been designated as 23.00 to 07.00 and trains within this period are likely to have a more significant effect than trains during the peak day times. The DES mentions this but does not offer any projections.

Night-time working.

The maintenance will largely be done at night. This will involve workers, illuminated areas and sometimes, a deal of noise for example when working on the rails themselves. This is not a matter that can, or should, be relegated to the Code of Construction Practice. It is, potentially, a significant environmental effect and should, therefore be included in the full ES.

There is no section on Electro Magnetic Interference so a brief comment is included here.

Volume 1 assumes that EMI from elements of the signalling and communication systems generally only affect the internal railway operating systems and any further effect is not considered. Modern train control systems rely on radio communications. These systems which are covered by completely different European Standards from those listed in Section 5.8 operate over ranges of several km and are normally operational continuously, not just when a train passes. Therefore the potential exists for EMI well outside the railway boundary. 4G developments have caused local difficulties with digital reception and the combination of ERMTS and 4G has had a known impact on break down in train communication. There is no reassurance or analysis of the potential interference in digital reception for local communities. In addition, there is nothing to reassure genuine concerns about the impact of EMI on health apart from a brief reference in the COCP.

12. Traffic and Transport

Environmental advantages of the extended bored tunnel

Under the HS2 Ltd scheme the local roads will incur heavy impacts from both heavy haulage and light vehicles accessing and egressing the works. Also, there are many road diversions and closures, which will cause confusion and disruption. The T1 and T2 tunnelling options considerably reduce the amount of traffic on the local roads and eliminate the need for diversions and closures.

Removal of tunnelling spoil from the main compound could be achieved by use of the Chiltern Line thus reducing the impact on the A413.

General comments on section 12

The transport section concludes that there are no significant transport related effects during operation. We strongly dispute that assertion. The transport infrastructure associated with the project results in a dissonant urbanisation completely out of character with the environment and, in combination with other effects, effectively despoils this part of the AONB.

Volume 1 Paragraph 7.3.40 states that the benefits of three schemes under consideration would be delivered at the expense of substantial and prolonged disruption to existing rail users. It is currently planned to build HS2 on the un-costed, hidden subsidy provided by individuals and businesses along the line as they suffer substantial and prolonged disruption caused by traffic problems.

Much of the commentary within the consultation document is associated with construction. We note the comments with reference to the draft CoCP and the defined good practice. We also note that the policing of such policies as laid down will be by the principal contractors and independent scrutiny is undefined. There is insufficient stress on the independent role of the local authority to monitor transport planning or activities in this section or in the draft CoCP. This is a serious omission.

Time and cost will be principal drivers of the scheme. For safety reasons transport contracts should not put drivers under additional time pressure to reach specific targets in order to gain or lose a bonus.

It is difficult to provide detailed comment because aspects of the scheme have not yet been assessed, e.g. capacity of junctions, or, still being developed e.g. mass haul strategy.

The separation into two forum areas, CFA9 & CFA10, disguises the significant HGV and LGV movements. Essentially there is a construction site from Mantle's Wood to Wendover with multiple access points. However, all access points are dependent on the A413 and then often use the same core of roads as routes to gain access to different compounds.

A conservative estimate using figures from the documents suggests that there will be in excess of 800 two-trips per day using the A413 to service the sites in the two Central Chilterns and Wendover forum areas. Over a three-year period the A413 will have an estimated 1.2 million single trip lorries serving these two sites. The A413 is also under pressure from the construction work in the Chalfont area of the route (CFA8) and possibly from some site access in the Stoke Mandeville area (CFA11). The cumulative effect on residents is not identified. The proposed scheme will be subsidised by the un-costed delays and frustrations of residents trying to travel along the A 413 and the loss of amenity during construction. In addition, there has been no attempt to quantify the cost to the NHS as a result of the increased burden placed upon it; physical illnesses associated with air pollution from dust and diesel emissions are well documented, and stress-related conditions are likely to be induced by the inevitable and protracted disruption to daily routines caused by traffic congestion.

The A413 is not a major transport corridor as described in Volume 27. There are stretches of dual carriageway but also long stretches of single carriageway. Apart from peak times in morning where there is a significant traffic flow towards London and the reverse in the evening, the road serves to provide links to local villages and towns along the valley and environs.

We welcome the statement at 12.5.9 regarding reduction of lorry trip generation at peak traffic periods. Within CFA9 there is intense local traffic into Great Missenden from outlying villages, delivering pupils to schools, including coaches from about 7.30 to 9.00 and similarly around 15.30.

We wish to reinforce the point that transport activities should be at a minimum at this time. HS2 Ltd should explore with Bucks CC the possibility of using one lane of the dual carriageway opposite Shardeloes as a lorry park to avoid deliveries at these crucial times. (similar to the M20 stacking system when Cross channel ferries are cancelled). Transport to and from the sites should also be avoided at this time. On occasion, the A413 has been blocked because of traffic accidents. Locally, diversions for light vehicles have been established, often through Great Missenden and Little Missenden; such diversions are not suitable for HGVs.

Correction of Detail

The text refers to access to Mantle's Wood site using Bull Baiters Lane. The maps show the upgrading of a farm track to the west of this.

12.4.4. This rail line does not carry the waste trains. They are routed via High Wycombe and Aylesbury.

Within the context setting paragraphs there is mention of an infant school in Little Missenden. There is also an infant school in Hyde Heath. This is significantly more important to note given its closer proximity to major site traffic.

The descent of the B485 Chesham Road towards the A413 roundabout near Great Missenden is called Frith Hill. There is a turning off this road called Frith Hill South Heath Leg. In the text it is unclear whether potential road closures apply to the B485 or the Frith Hill South Heath Leg. Closure of the B485 will result in major traffic dislocation.

12.4.3 There are no scheduled bus services operating on the roads listed. However, school coaches use these and many other local roads. This suggests the traffic surveys undertaken by HS2 Ltd are unreliable.

Specific comments

The text states that construction traffic will be spread over a number of roads. This is misleading in that the A413 will be used by all construction traffic in this area. The B485 will be used heavily both for traffic feeding into Kings Lane and Hyde Heath Road. In addition, there will be heavy demands on Kings Lane, feeding into Potter Row. At a forum meeting HS2 Ltd indicated that there would be 50 or so two way trips along Potter Row. Leather Lane and Rocky Lane will also be heavily used to feed the associated compounds and haul roads.

These are rural lanes. Frith Hill, Frith Hill South Heath Leg, Kings Lane and Potter Row are part of established, published cycle ways. Potter Row and Hyde Heath Road do not have pedestrian pathways but are used by walkers, horse riders and farm equipment. The text states that: *Congestion may occur to users of King's Lane (level of effect to be determined*). Kings Lane is residential and served by a bus route. Bucks CC will be able to advise whether these rural lanes have foundations sufficient to cope with the pounding they will receive. It is a local concern. Kings Lane has 30mph limit. Hyde Heath Road has a 60mph limit to the start of the village and Potter Row has a 40mph limit. In conjunction with Bucks CC consideration should be given to lowering the speed limit along these lanes for the duration of construction.

HGV access into Frith Hill South Heath Leg is ill advised. It is potentially dangerous and would require a truck to move well over into oncoming lane in order to make the turn. The turn is very steep and when wet and covered with leaves is very slippery. This has been raised at the forum and indeed at the consultation roadshow.

Access from Hyde Heath Road onto B485 is a local accident spot. There are deceptive sight lines to the right. It is also a school coach drop off point. Other accident black spots are the junctions with the A413 at Deep Mill, Chalk Lane and Keepers Lane.

Closure of Frith Hill South Heath Leg for vehicles and pedestrians would sever PRoW links to Great Missenden used by local residents, including children and students to walk to school. The proposed deviation is not suitable for pedestrians.

Road closures, traffic diversions and the huge increase of traffic owing to construction will affect communities a number of miles away from the proposed construction trace. Chesham is accessed via the B485 and could be affected in a number of ways. Firstly, it is totally unsuitable for construction traffic and if anyone was to use it there is a very high likelihood that Old Chesham (Church Street) would become blocked. Second, heavy traffic loads will restrict access from the Chilterns villages area to Chesham and have a negative effect on trade.

Haul Roads

There is little information about haul roads. Clearly they will be used for the safe operation of the site. Although the glossary defines these as temporary structures, the potential for long term scarring through compaction is not explored. Hopefully effective programming will ensure that plant equipment crossing public roads and for example the use of traffic lights will be kept to a minimum especially at times of peak traffic flows and especially but not exclusively any crossing of the B485.

PRoW

There are references to diversions and permanent re-routing of PRoW in this section. However, it is dealt with more fully in the landscape section. Therefore, comments about PRoW are included in our response to that section.

Pedestrian/Walkers /Visitors/Cyclists/Riders

Advanced notice of road closures should be publicised well away before the actual closure, with advertisements in Specialist magazines for Riders/Walkers/Cyclists and bodies such as Sustrans should be informed of the fact that heavy plant will be in operation along the proposed HS2 route. The information sessions in local schools regarding safety during the construction period identified in CoCP is helpful. The document focuses on potential traffic disruption. Safeguarding of pedestrians is insufficiently stressed. Information regarding possible deviation of PRoW's should be provided at key points on the PRoWs.

At the bilateral meeting with LMPC the provision of cycleway/footpaths alongside the A413 where there is no immediate parallel route was requested. It is noted that no notice has been taken of this request.

There should be ongoing protocols established with emergency services to reflect changing circumstances. The A413 is key to accessing Stoke Mandeville hospital emergency department, which is the area centre for serious trauma cases.

There should be regular risk assessments with regard the lorry routes in response to weather conditions, particularly but not exclusively relating to Frith Hill. Close cooperation should be established with the local authority over, for example road gritting.

13 Water resources and flood risk assessment

Environmental advantages of the extended bored tunnel

The impact on water resources and flood risk under the HS2 Ltd scheme will be eliminated along the extent of the extended tunnel in options T1 and T2 other than at gap and vent shaft locations which will be insignificant compared with the HS2 Ltd scheme impacts.

General Comments

This section concludes that no significant residual effects on water environment or flood risk are anticipated. Monitoring of the impact of the project on the River Misbourne, currently being considered, should be established.

The River Misbourne is a particular concern for the local community.

Chalk streams are recognised as a unique global asset providing a pristine environment for wildlife with rich clean water and high quality habitat. Some 85% of the worlds chalk streams are located in England. Only a handful receives the high levels of protection that their conservation status requires. Those in the Chilterns are amongst the worst-affected by over-abstraction of groundwater – (Chiltern Conservation Board)

The winterbourne in the upper reaches of the river Misbourne is fickle. The formal ES should provide an unequivocal statement that the project will not have an impact on the river flow or include features or have effects that would prevent the River Misbourne from being designated as a special area of conservation.

Back to structure of response

Response to the Draft Code of Construction Practice

General comments

The main thrust of the responsibility for delivering the requirements of the Code has been placed on the contractors. There is little or no reference to enforcement or the role of HS2 Ltd in this. Neither is there any reference to the County and District Councils and the exercise of their statutory duties and obligations. This means that enforcement of the Code's provisions is weak and it appears that there will be no one who has responsibility for ensuring that contractors adhere to it.

HS2 Ltd will take *reasonable steps* to engage with the community. Experience of *engagement* with HS2 Ltd through the Community Forums suggests that this will be a box-ticking exercise with little notice being taken of views expressed by community representatives. It leaves the question of what the alternative unreasonable steps would be and who or which organisation decides on this. What are the tests for reasonableness?

The Local Environment Plan site controls will be provided after the Bill Submission has been made in support of the Hybrid Bill. Any comment, which local authorities, other organisations and the community wish to make on this, will have to wait until then. Commenting at that stage will be an expensive and difficult task and may well prove to be too late.

Main Issues

During the construction phase, the issues that most directly affect local communities are as follows:

* Working Hours * Noise * Dust Emissions * Visual Intrusion * Traffic

In addition, the response also considers how heritage aspects will be managed.

Working Hours

Working hours are noted generally as 08:00 to 18:00 on weekdays and 08:00 to 13:00 on Saturdays.

However the following activities are not limited to core working hours:

- One hour start up and close down at each end of the normal working hours
- Earthworks
- Concrete pours
- Piling and diaphragm walling
- Plant maintenance
- Materials deliveries

Therefore, most of the major activities associated with the construction phase are not limited to core working hours.

In addition, the contractor must conform to core working hours for other construction activities 'as far as reasonably practicable or unless otherwise permitted' presumably these are judged by HS2 Ltd.

This clause does not provide the rigour and independent monitoring and enforcement required to safeguard the local community and ensure the majority of the works are indeed carried out within the core hours.

Noise

Best Practicable Means (BPM) will be applied during construction' is defined as *those measures that* are reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications'

- Best Practicable Means appears to be decided by HS2 Ltd, not independent assessors and is limited by commercial considerations
- Perimeter hoarding will provide negligible sound reduction for major earthworks and construction of large structures
- Bunds may limit the extent of noise emission but are only practical in limited and restricted areas and not over the length of the construction worksites
- Noise insulation to adjacent properties will be offered when 'noise levels are predicted or measured by the contractors to exceed the relevant trigger level defined in Table 13.1 at that property for at least ten days out of any period of fifteen consecutive days or alternatively 40 days in any 6 month period', which allows the contractor significant leeway
- The trigger level for insulation, dependant on the time of day, varies from 55 to 75 dB. Noise levels around 45 to 50 dB are sufficient to be intrusive and make normal conversation difficult.

The CoCP does not set a noise limit or even an expectation. Subject to a maximum of 55dB(A)LA eq, 1h (free field), contractors should aim to establish a noise limit at the noise-sensitive property that does not exceed the background level by more than 10dB(A). The limit set should be as near that level as practicable during normal working hours (07:00-19:00) and should not exceed 55dB(A) LAeq, 1h (free field). Evening (19:00-22:00) limits should not exceed background level by more than 10dB(A) LAeq, 1h (free field) at noise-

sensitive dwellings. Where tonal noise contributes significantly to the total site noise, it may be appropriate to set specific limits for this element.

HS2 Ltd's contractors will seek to obtain consents from the relevant local authority under Section 61 (s.61) of the Control of Pollution Act 1974 (CoPA) for the proposed construction works.

There is no provision in the COCP for failure to reach agreement with the local authority. Nor does the COCP define actions to be taken if the agreed s.61 levels are breached and does not include for independent monitoring, control and enforcement, to safeguard the local community.

In reality, noise emissions will be significant and unavoidable and the only way to reduce the impact on the community is to rigidly apply limits to working hours for all activities near premises, which is at odds with Section 5 of the COCP.

Dust Emissions

During the construction of HS1, a local councillor stated that **'construction had meant disruption, temporary road closures and diversions and a lot of dust over a couple of years.'** HS1 was an exemplar project and construction of HS2 will largely employ the same designers, contractors and technology used on HS1, so the impact on the community will be similar.

With regard to Section 7 of the COCP,

- *'Erection of hoardings or other barriers along the site boundary'* will not mitigate to any significant degree, dust arising from earthworks and transportation of spoil
- o Dump trucks operating within the site boundary will not be sheeted
- o Stockpiles are located near the site boundary in the Draft Environmental Statement
- o Spoil material stockpiles are too large to be adequately watered or sheeted
- o Even haul roads surfaced with granular material will generate dust under heavy trafficking
- Excavation and depositing of spoil in live working areas will not be on hard standing.

In reality, significant emissions of dust are a natural consequence of major earthworks and the extent of emissions may be reduced by watering but never eliminated.

No trigger levels for dust emissions have been included in the COCP. In addition, though the *'relevant local authorities will be consulted regarding the monitoring procedures to be implemented,'* there is no allowance for the rigour of independent monitoring and enforcement required to safeguard the local community.

The CoCP makes no mention of site-specific dust assessment. This is essential given the proximity of the route locally to hospitals, schools, residential homes and farm land. The National Planning Policy Framework makes it clear that a dust assessment study should be undertaken by a competent person/organisation with acknowledged experience of undertaking this type of work. The scope of a dust assessment study should be agreed with the contractor and local planning authority. Such studies should be used to:

o establish baseline conditions of the existing dust climate around the site of the proposed operations;

o identify site activities that could lead to dust emission without mitigation;

o identify site parameters which may increase potential impacts from dust;

o recommend mitigation measures, including modification of site design; and

o make proposals to monitor and report dust emissions to ensure compliance with appropriate environmental standards and to enable an effective response to complaints.

Visual Intrusion

The major earthworks and construction of large structures cannot in reality be disguised by anything other than the natural topography of the land – except where unsightly spoil heaps are located between the worksites and public areas.

- The *'use of well maintained hoardings or fencing'* will not hide the excavators, dump trucks, bulldozers, cranes and other miscellaneous items of major construction plant
- Appropriate measures to reduce landscape, visual and other environmental impacts associated with temporary site offices and compounds' is so vague as to be meaningless. The only way to remove compounds from the public view is to locate them in an area screened by topography or woodland

'Relevant local authorities.....will be consulted, as appropriate' does not provide for agreement with local authorities to locate compounds away from public view and therefore does not safeguard the local community.

Traffic

The impact of increased traffic during the construction phase will be significant, on the basis that in excess of 1000 HS2 staff is likely in the Chilterns area, with >800 LGV and 300 >HGV trips per day estimated on the A413 alone.

- The CoCP traffic management states that *'procedures'* and *'measures'* will be put in place to mitigate traffic impact, which is meaningless without some description or examples of what these measures and procedures will be
- *'public access is maintained where practicable'* presumably means that access will not be maintained if considered not practicable by HS2 Ltd.
- The construction works will require road closures and diversions which will have an impact on the local community
- Vehicle sharing by the workforce has historically not been achieved to any significant scale
- The HS2 workforce will be trying to get to work at the same time as local commuters and when school bus trips are taking place, resulting in significant peaks.
- *'Phasing of the works'* to reduce traffic congestion is unlikely though deliveries are not restricted to core working hours
- It is likely that traffic control will be required where 'B' roads intersect, such as the B485, to allow construction traffic to cross, which will impact on local road users

The Traffic Management Plan will be compiled and monitored by the contractor, with no provision for independent monitoring, control or enforcement.

Heritage concerns

Despite the assurances describing how the principal undertaker and contractors will manage the impact of construction works on cultural heritage assets there is very little on how these approaches are to be monitored or enforced.

The reality is that HS2 Ltd managers and construction companies will be incentivised by bonus schemes that reward completion of the line at least on time and on budget. They will regard considerations about the historic environment and heritage assets as an impediment. They will have no incentive to take account of them during the course of normal working and every incentive to disregard them wherever possible. It is therefore essential that strong enforcement provisions be written into the CoCP to ensure that it is adhered to.

The principle undertaker (HS2 Ltd) should pay local authorities to engage, or retain the services of, well-qualified and experienced, independently financed, archaeologists and field officers who will monitor the construction works on a regular and frequent basis to ensure that the CoCP is adhered to. The Local Authority must have the power to order work to stop so that finds can be investigated and if they consider that the contractor is not abiding by the provisions of the CoCP in relation to heritage assets.

Conclusion

There are insufficient independent controls in place to safeguard the local community from the adverse impact of HS2. Appropriate 'procedures' and control 'measures' should be agreed with local authorities before implementation.

Requirements for Noise and Dust Emissions should be based on the NPPF Technical Guidance for Minerals issued by the Department for Communities and Local Government in March 2012, which should be regarded as the minimum acceptable.

As happens on other projects, HS2 Ltd should pay the local authorities to employ additional, project-**dedicated Environmental Health Officers (EHO's), t**o monitor and ensure that these agreed *procedures* and control *measures* are in place and are being complied with.

The local authority EHO's should also have the powers to suspend the works should the agreed control measures be breached, until more rigorous measures have been put in place.

Apart from works that have to be carried out on a 24/7 basis, e.g. tunnelling, no work should be permitted on Sundays except with the prior agreement of the local authority. Applications must be made 14 days in advance and the work to be done specified in detail. Bank Holidays hours should be the same as Saturdays.

Bearing in mind that half of the archaeological sites excavated during the construction of HS1 were unknown before work started, HS2 Ltd should also pay for local authorities or bodies such as English Heritage to employ dedicated archaeologists to maintain an effective watching brief. The principles of Planning Policy Statement 5, issued in 2010, should be applied to sites affected by any aspect of work on HS2.