Response to the HS2 Ltd Environmental Statement and Associated Documents

23-Feb-2014 Vn 1.2

Riders on Bottom House Farm Lane

The Chalfonts and Amersham Community Forum Area 8

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1 Introduction

1 .1: This response to the Environmental Statement (ES) has been prepared by representatives of Community Forum Area 8 (CFA8), including action groups, representatives of the community, local elected councillors and private individuals so that Parliament is informed of the views of a cross-section of the public about the Hybrid Bill's Environmental impact.

1 .2: This consultation response is without prejudice to our contention that the HS2 project should be cancelled and that the consultation itself and the process of which it is a part are deeply flawed. Without limitation, significant impacts have been ignored or inadequately assessed by the authors; impacts of the scheme have been minimised, unsupported assumptions and factual errors have been made and therefore the conclusions drawn by the authors are invalid and unacceptable. To make matters worse, the size of the volumes and difficulty of navigating and cross-referencing the illogical, disparate and frequently confusing consultation documents has been extremely difficult.

1 .3: Representatives from along the line met with MPs to discuss the many failings of the engagement process on the 13th September 2012. HS2 Ltd responded to the criticisms from MPs saying that it would review the Community Forum process in November 2012. No perceptible change took place, the number of meetings reduced and to say that they were held on a bi-monthly basis is factually incorrect. (Only two were held for CFA9 in 2013 and there was no meeting in CFA8 area on 5 March 2013)."

1 .4: In particular the extremely limited time initially allowed of 8 weeks for responding (56 days including the Christmas Holiday period) was grossly unfair and extremely prejudicial to an informed response. The time available for the full review in querying, receiving replies, understanding, and preparing a response to the Environmental Statement was totally inadequate to allow proper study and understanding of the facts and the very serious issues surrounding the proposed scheme. It is only because of the errors created by HS2 Ltd themselves that Parliament overruled this inadequate time period which debased the consultation process; for example, *the consultation on "Maximum speed limit for tractors on public roads" is scheduled to run for 85 days,* 29 days longer.

1 .5: This is the largest proposed infrastructure project ever with a Hybrid Bill and Environmental Statement totalling over 50,000 pages. It is self-evident that a much greater length of time should have been allowed for this. So much so that we consider the original time allowed for response (**56 days**) is insulting to the local communities as well as the total UK public and such a short time allocation is highly damaging to democratic principles. It fundamentally belies what the Prime Minister and various Cabinet Ministers have repeatedly said about this project and shows what little confidence they actually have in the justification for this project.

1 .6: Additionally, the proposals made within the ES fall back to a large degree on the **presently constituted** Draft Code of Construction Practice (CoCP), which by definition is not yet agreed as a working standard. Therefore our response will of necessity need to be changed in the light of any variations when the final CoCP is agreed.

1 .7: All our response material is submitted on this basis and is without prejudice to any further submissions or addendums which we reserve the right to make after the specified

closing date, should significant facts or information come to light after further and reasonable examination of the documents.

1 .8: All representatives of this community submitting this response are resolute in our fundamental objection to the proposal before Parliament for the building of the High Speed Rail (HS2) on the grounds that:

a) It has not been shown to be in the national interest compared to investment into regional transport needs such as set out in the 51M alternative, an alternative based on the DfT's own Rail Package RP2 enhanced.

b) The West Coast Main Line (WCML) from Euston is a very long way from reaching capacity.

- WCML will not be full by the mid-2020s. Network Rail figures shows that, except for HS1, it is the least crowded main line into and out of London
- Future demand on WCML will only come from growth in total transport market as the switch from road and air has already happened post-upgrade
- Nationally the number of rail journeys fell in the first quarter of 2013
- Commuter capacity issues into Euston can be solved immediately at no cost by allowing commuters to use Virgin trains
- Commuter capacity in Birmingham, Manchester and Leeds will only gain two more trains, on just one route, into each city
- HS2 will not provide additional capacity for freight
- Disruption caused by the 51m alternative would not be comparable with the WCML upgrade
- HS2 delivers no benefits to ECML and MML until 2033 at the earliest

c) The estimated projections of passengers for HS2, especially Business passengers, are massively overstated, just as those for HS1 have been proved to have been substantially overstated -
Eurostar carried 10 million passengers in 2013 - a goal it was originally forecast to reach by 1998 [the forecast was over-optimistic by 10 years][1]

d) HS2 does not form part of a national transport or rail strategy; the last Transport Study, (The Eddington Transport Study 2006) produced by Sir Rod Eddington[2], which recommended investment in improving our existing classic railways ***not*** **a High Speed Railway**, has inexplicably been completely ignored by this and the previous government.

e) There has been **totally inadequate consideration of alternatives**, especially the much more cost-effective alternative set out by the 51M Group[3] which includes upgrading the

[1] • http://www.telegraph.co.uk/finance/newsbysector/transport/10542378/Eurostar-hits-10m-passenger-target-15-years-late.html

[2] Currently Chair of the government body Infrastructure Australia and a director of News Corporation, and has served in other senior positions including as CEO of British Airways

[3] http://www.51m.co.uk/wp-content/uploads/2013/08/ch1.pdf

existing West Coast Main Line at 3 key pinch points, lengthening carriages and platforms and reducing First Class carriages. This alternative has a BCR of over 5.0!

f) A **Strategic Environmental Assessment** (SEA) was not carried out prior to planning and determining the preferred route.

g) The **business case for HS2 is shown to be fundamentally flawed** by the recent doubling of the estimated number of Business Travellers forecast to use the new line which is contained in the most recent Business Case supporting the BCR (Oct 2013). Without these seriously over-estimated (some would say concocted) figures, there is no Business Case whatsoever for HS2. **The true BCR is unacceptably low**.

h) The proposed scheme is **not carbon neutral,** neither is it the best way to reduce UK carbon emissions[4]; there is very limited information on this subject within the ES; furthermore the statements of carbon emissions fail to include emissions from the construction phase.

1 .9: And finally, HS2 fails on the 5 key criteria set by the government (DfT) for infrastructure investment[5]

[4] See Eddington Report **2006, Vol 3, 1.84** : "Given that domestic aviation accounts for [only] 1.2 per cent of the UK's carbon emissions, it is unlikely that building a high-cost, energy-intensive, very high-speed train network is going to be a sensible way to reduce UK emissions."

[5] http://www.dft.gov.uk/webtag/documents/overview/unit1.1.php#1_5

2 Comments on the Non-Technical Summary

2.1 Introduction

2 .1: The Non-Technical summary states on Page 3 that this section of the Environmental Statement is

"prepared by a group of independent environmental consultants",

namely ARUP and URS..

2 .2: ARUP's home website states that they are '**designers, planners, engineers, and technical specialists**. URS state that they are a **design, engineering and construction corporation**.

2 .3: Clearly both companies are focussed on engineering and thus their assessments, observations and conclusions are based on engineering principles, not environmental principles, for the proposed HS2 project.

2 .4: The fact that both companies will be substantial financial beneficiaries if the project goes ahead means that the Non-Technical Summary cannot be independent; this renders this section of the ES null and void.

2 .5: There are well-established principles in central and local government that prevent MPs and Councillors from voting for projects where they stand to gain personally. These same principles should exclude such firms from carrying out an environmental review of HS2 and producing such reports as the ES.

2 .6: Our detailed responses to the Non-Technical Summary, will serve to illustrate and reinforce the above statement.

2 .7: **Section 4.2** states that details will be decided by Local Environmental Management Plans **after** the Hybrid Bill stage, which means that the true environmental impact will only become clear when these details are finalised. Under that statement, if the Government, the DfT, HS2 Ltd or the contractor(s) involved determine that X should happen, irrespective of its environmental impact, then such actions could easily override any claimed benefits arising from the ES.

2 .8: There is already serious concern as to the adequacy and effectiveness of public consultation at this stage, especially the very narrow focus on those determined by HS2 Ltd to be directly affected, rather than there being a full country-wide involvement.

2 .9: As a simple example there is much use of vague, imprecise or ill-defined terminology or phrases – for example,. what do the phrases "*engage with"* and *"in consultation with*" mean in practice? A reasonable person would say they only mean "talk to". Anyone can talk to anyone else but such terms are meaningless when used in such a vitally important document. They certainly do not give any reasonable reassurance whatsoever.

2.2 Detailed comments

2 .10: **Section 1.1** This states that Phase 1 of HS2 would bring "*significant benefits to inter-urban rail travellers"*. The Environmental Statement must not be merely concerned with rail users but must be focussed on all the environmental effects of the proposed HS2 project. These "*significant benefits"* for rail users are not specified, therefore this claim is

unsupported, and the huge negative effect on non-users along the route is completely omitted from this paragraph.

2 .11: **Section 1.2** (paragraph 1) states that the aim of HS2 is "*to enable the nation to take full advantage of the opportunities and benefits* [of HS2]. This is a nonsense statement and is simply not true, since "the nation" will not benefit, only a very small number. The beneficiaries, from the proposed HS2 will be the construction companies and those wishing to travel to the very few stations which the proposal serves, and the majority of the "nation" will not be able to "benefit" from the project. In fact other HS2 Ltd financed reports illustrate that a number of cities will be severely disadvantaged.[6]

2 .12: Furthermore those affected by the destruction of their environments resulting from both the construction and operation will be also be severely disadvantaged, but they are to a large part completely ignored.

2 .13: **Figure 3** details the "Approach to Mitigation". The 'Avoid' categorisation is inadequate as it does not give as an example the use of tunnels, only changes in alignment. **The use of tunnels is the most significant method of 'avoiding' causing serious effects.**

2 .14: The second paragraph on this page specifically states that the mitigation measures applied to this project include

- *"developing the route... to avoid likely adverse environmental effects on.... sites of ecological and/or heritage importance and the wider landscape."*
- The third paragraph refers to use of tunnels "*where appropriate*" which is conveniently ignored in the table. There is no indication of how and by what process the "appropriateness" of tunnels will be determined, nor any criteria for establishing this.

2 .15: The proposed route passes through the Chilterns Area of Outstanding Beauty (AONB) in tranquil open countryside and it is inconceivable that a report prepared by 'a group of independent environmental consultants' would not include a tunnelling option in the '**avoid**' section in the mitigation opportunities to avoid the desecration of this AONB.

2 .16: In the penultimate paragraph of **section 1.2**, it is stated that the aim of HS2 Ltd is "*to ensure that during the construction of the project, significant adverse environmental effects will either be avoided or mitigated"*. Open tracking, using cuttings, viaducts and embankments through the AONB is not avoidance or mitigation of the significant adverse environmental effects.

2 .17: Full tunnelling is the obvious solution, as has been implemented through part of this AONB. HS2 Ltd therefore does not show any consistency in their proposed approach to mitigation, and we believe that truly independent environmental consultants would have highlighted this.

2 .18: The conclusion must be that the claimed "independence" of these consultants can be challenged. As major firms they will benefit financially if the project goes ahead and yet they are charged with the responsibility of identifying the true environmental impact of the proposed HS2 project. **This is a clear conflict of interest.**

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[6] KPMG Report 'Assessment of Methods for Modelling and Appraisal of the Sub-National, Regional and Local Economy Impacts of Transport.

2.2.1 Claims regarding carbon efficiency are strongly disputed

2 .19: Section 2.4 refers to controlling greenhouse gas emissions and page 11 cites that

> *"The construction of a new high speed rail line will result in substantial greenhouse gas emissions. However, in terms of enhancing inter-urban connectivity, high speed rail is one of the most carbon-efficient means of transporting large numbers of people, measured in terms of emissions per passenger kilometre."*

2 .20: HS2 will only be efficient if these "large numbers" actually use HS2 as forecast, since the actual train operation will only be carbon efficient with load factors above that currently experienced on classic rail. As HS2 Ltd claim that classic rail users will transfer to HS2, this then makes current rail less carbon efficient, unless the increases in train users results in the higher load factors on both Classic and HS2 operations.

2 .21: **None of the HS2 carbon efficiency claims include the carbon generation in the construction process,** which will include manufacture of huge quantities of concrete as well as numerous road vehicle operations. Section 2.4 notes that HS2 Ltd has identified that 91% of greenhouse gas emission, (mainly carbon dioxide) is from vehicle operations. The carbon emissions from vehicle operations associated with the construction of HS2, will add to this percentage (400 vehicle journeys per day from just one tunnel vent shaft site (**ES Volume 2 CFA8, Table 15**). Any truly independent environmental consultant could not fail to refer to this when preparing an environmental statement on the proposed HS2 construction process. The only reference to the actual construction process carbon emission is section 9.4, p157 –

> *As a **yearly average**, the project's carbon footprint over the course of the construction period will represent approximately 1.9% of the UK's annual construction carbon footprint (based on the UK's annual construction emissions in **2026**).*

2 .22: The calculated average of the carbon footprint over 17 years is very misleading. Surely all MPs and anyone concerned about the potential impact of climate change will want to know what the total impact of this project is going to be.

2 .23: Given that the construction is proposed to take place over the period 2017 to 2033, 17 years, then it appears using the one year figure provided that HS2 will produce 17 times 1.9% which equals 32.3% of the UK's annual construction carbon footprint. This huge figure is the true impact on the UK and global environment of building HS2! The UK annual construction carbon footprint in 2008 was 298.4 million tonnes (Mt CO2), so HS2 construction alone will produce at least 96.4 Mt CO2.[7] Forecasts of a 120 year design life are unreasonable

2 .24: Within paragraph 9.4 p157 it is claimed that Phase 1 construction and operation may deliver a small saving within the **120 year design life** of the project. This raises the question of the reliability and accuracy - and thus admissibility - of 120 year forecasts.

2 .25: **Is 120 years considered acceptable within forecasting norms**? That would seem to be very doubtful. Does evidence of forecasting any other comparable major projects over such long periods exist? If not then using a 120 year life is inadmissible evidence.

[7] See BIS 2010 report: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/31737/10-1316-estimating-co2-emissions-supporting-low-carbon-igt-report.pdf

2 .26: Could we, **in the year 1893 (120 years ago),** have forecast the design life of tarmac roads, given the then lack of knowledge of the impact of motor cars on society? Although our national railway system began in the 1840s it was not until 1904 that the Flying Scotsman was able to exceed 100 mph going downhill. Much more recently **in 1976 the UK introduced the InterCity 125** which had a maximum operating speed of 125 mph (200 km/h)[8].

2 .27: So, **here in the UK we have just 38 years' experience** of operating trains at a maximum operating speed of 125 mph and the impact on maintenance of our existing lines. Yet, HS2 Ltd claim to be able to forecast a 120 year design life for an as yet untested and non-operating HS2 design speed of 225 or even 250 mph. Such a claim is simply ridiculous and represents yet one more example of the exaggerated claims made for HS2, whilst minimising its huge cost, environmental impact and appalling impact upon 300,000 people, the vast majority of who will receive no compensation.

2 .28: Neither HS2 Ltd nor the DfT have provided any empirical evidence to support such an extremely long "design life"? For example why isn't evidence relating to the TGV high speed rail system in France provided, since this has been operating since 1981 32 years ago? The TGV normally operates at a maximum service speed of 300 km/h (186 mph) and yet is already suffering from excessive and increasingly high maintenance costs. When HS2 was announced in 2010 it was proposed to operate at a design speed of 400 km/h (250 mph). Now it is proposed it will operate at 360 km/h (225 mph). At 360 km/h HS2 is 20% faster than the TGV system, which will increase the maintenance costs further.

2 .29: However, there is actual evidence from France regarding their high speed TGV system (see Appendix 1) Recent evidence that has come to light regarding the French High Speed TGV Network indicates that the life of a high speed railway may well be very, very much shorter, due to the much increased wear and tear and high maintenance costs created, especially when compared to all the existing UK High Speed lines with which the UK is already very well served.

2 .30: These HS2 Forecasts therefore lack any credibility. They might be more believable if they were made over a shorter period, for instance over 40 or 50 years – especially since many 'climate change scientists' would argue that **all** future infrastructure decisions should not be allowed to go ahead unless they are carbon positive within a far shorter period, say 20 years, if the Government is to meet the UK carbon emission reduction target.

2 .31: Section 2.4 (page 11) states

> *"The construction of a new high speed rail line will result in substantial greenhouse gas emissions. … Furthermore, the carbon emissions of high speed rail are likely to reduce in future as the energy supply is decarbonised."*

2 .32: This supposition is already out of date, less than 6 months later.

2 .33: The ES was written and published in the autumn of 2013, but in **January 2014 the EU removed the mandatory requirement surrounding the green energy targets**. Additionally, the UK government is now firmly set on introducing "fracking" into the UK, to produce natural gas for energy purposes.

[8] Under European definitions 125 mph is defined as a High Speed Train.

2 .34: These two points together are sufficient to destroy this supposition and therefore destroy the suggested carbon-efficient nature of the proposed HS2. Additionally, given that both these points have emerged during and after the preparation of this so-called "Environmental Statement" points up the fundamental weakness in the argument for building HS2. That is that the rate of technological and energy resourcing change we now experience prevents us seeing what the future will bring and therefore extrapolating future growth in railway usage to calculate both carbon impact and as important, the BCR, is to move into the area of pure guesswork on a project costing at least £50 billion.

2 .35: The ES then goes on to claim that only most of the gas emissions from construction and operation will fall within the European Union Emissions Trading System (EUETS). This system merely allows companies to buy emission allowance to stay within agreed emission targets, and that if they fail to do so they are fined. Clearly by referring to the EUETS in reference to meeting these emission targets, HS2 will have to participate in this market, particularly as only "***most*** *of the Construction and operation carbon levels meet EU standards"*.

2.2.2 Misrepresentation of the route

2 .36: The maps on page 2 Figure 2 show that the proposed HS2 Phase 1 route will terminate just north of Birmingham and the maps on Page 35 Figure 11 'Alternative Configurations considered for high speed rail network' show the options for the proposed Phase 2 routes to Leeds and Manchester.

2 .37: These maps indicate that, although the ES is only about Phase 1 of the proposed Scheme, the HS2 network (illustrated by a thick blue line) will then continue further north to Teesside, Newcastle, Edinburgh and Glasgow, and further west to Liverpool. As such they misrepresent the facts about the proposed HS2, being both misleading and **incorrect** as the route beyond Leeds and beyond Manchester will in fact use current tracks, not high speed tracks.

2 .38: The full page photograph on page 22 (untitled) illustrates concrete sleeper units being laid on ballasted tracks. However, this is misleading as on Page 20 Paragraph 2 -'Track' states that the track design has not yet been established, and could be either ballasted or slab base. Therefore the photograph is not necessarily relative to the eventual track design and should be captioned accordingly. Furthermore the statement on options for track design does not indicate the environmental effects for each option, or what will determine the eventual choice of track.

2 .39: Paragraph 4 Page 27 notes that two maintenance loops will be provided for train parking overnight (stabling). These arrangements will involve additional train journeys, (not quantified) with empty trains, which, while contributing to carbon emissions, will have no passengers on board - thus they will be totally inefficient in terms of passenger kilometres covered. This is an environmental issue which is disregarded in the Environmental Statement of the Non-Technical Summary.

2 .40: This situation reinforces the conclusion that this part of the ES is not environmentally driven. Again truly independent environmental consultants would have highlighted these necessary train operations as being carbon inefficient.

2 .41: In Section 5, 5.1 page 29 states that, within the Foreword to this NTS, there is stated the arrangements for public participation and comment on these **following** submission of the

Bill and the ES to Parliament. The Foreword contains no such information about the arrangements.

2.2.3 HS rail and Air Travel

2 .42: **Section 6.3** Page 33 states that carbon emissions from air travel are significantly greater than those from high speed rail. This is not a valid comparison, as the emissions from air travel cover the whole of air travel within and across the UK whereas high speed rail operates only on a very limited network over restricted hours, compared with the 24/7 nature of air travel. There is no passenger kilometre comparator to justify this statement. Therefore this is a misleading and probably erroneous statement, written from a biased viewpoint.

2 .43: Furthermore, the air travel emission statement does not exclude long haul air traffic over-flying the UK en-route to distant worldwide destinations. These routes should also be removed from the comparison, as should UK air routes which operate outside the corridor of HS2 operation such as West Country networks including Scilly Isles, over water flights to Ireland, Northern Ireland and the Scottish Isles.

2 .44: Finally, the so-called 'independent environmental consultants' should have been aware of something else which invalidates their comments: All major airports such as Heathrow operate a 'slot' system whereby airlines request take-off and landing time slots at particular times to maximise their operations. The allocation of slots is controlled by the company responsible for slot allocation at Heathrow, (and all major airports in the UK), Airport Coordination Ltd. Experience has shown that if the slots used for a short haul route, such as Leeds or Manchester, were no longer required they were replaced with another service. Historically the new service has been an international flight away from the UK and therefore of a longer distance, and with larger aircraft, thus increasing, rather than reducing carbon emissions.

2 .45: The second paragraph of **6.3** notes that the Government's intention is for the proposed HS2 to replace reduce short-haul routes. All airlines are linked by computer networks to enable all-sector seat assignment, boarding pass issue and baggage transfer documentation to be completed at point of origin, avoiding any need for these facilities to be repeated at the transfer airport. The proposed HS2 will never be able to offer the same through check-in at origin airport and seamless baggage transfer service that flight to flight can offer. Thus these passengers will never be attracted to rail travel, either high speed or classic.

2 .46: This section takes no account of the fact that on short-haul routes like Manchester to Heathrow, the majority of passengers (historically 78% on BA alone), are in fact transferring directly to other BA and partner airlines at Heathrow. In these circumstances passengers will take advantage of connecting check-in and baggage transfer services as described above.

2 .47: Notwithstanding all of the above, the Environmental Statement is specifically in respect of Phase 1 of the proposed scheme, and the only airport on this section is Birmingham, which does not have any service to Heathrow, and furthermore Phase 1 has no plan to have a direct HS2 route into Heathrow airport from Birmingham.

2 .48: The disregard of these 'seamless' transfer services illustrates the lack of awareness by the 'independent consultants' of the true aviation structure in the UK, the lack of air service routes to Heathrow on Phase 1, plus the carbon emissions effect of replacing smaller short haul aircraft with larger long haul aircraft.

2.2.4 Environmental aspects

2 .49: **Section 7**, 'Environmental Review', (page 45/6) states that two Sites of Special Scientific Interest (SSSI) will be affected, HS2 Ltd will 'engage' with Natural England on mitigation or compensation for the effect on these sites. However there is no reference to AONBs, specifically the Chilterns AONB or engagement with the Government Appointed directors of the Chilterns Conservation Board, responsible for the AONB (established by Act of Parliament). This is either a failure on the part of the "independent environmental consultants' to recognise the AONB, or a deliberate attempt to avoid engagement with the AONB directors and management.

2 .50: This paragraph also lists the adverse effects on some protected species together with proposals for mitigating the level of destruction that HS2 will have, to a level where the loss is "*no longer significant'*" This level of significance is an irrelevance, as there is no indication of how it has been assessed.

2 .51: Furthermore the paragraph specifically omits any reference to the effect of HS2 in the Colne Valley area where corn bunting habitat will be permanently lost. (see section 3.1.4 below) HS2 Ltd's 'independent environmental consultants' have nothing to offer to avoid destruction of this habitat.

2 .52: Under Waste and Mineral Resources **Section 7** Page 50, it is noted that the proposed HS2 construction phase will generate 5,000,000 tonnes of waste to be disposed to landfill and that in operation there will be a further 4,150 tonnes per annum generated. Using the same periods used by HS2 Ltd in respect of design life of the proposed scheme -120 years (Paragraph 9.4 page 157) - this will mean that HS2 will generate 498,000 tonnes, making a total of 5,498,000 tonnes of waste to landfill over the construction and operation period of the proposal. This output is in conflict with the Department for the Environment target, and EU directives on landfill directives.

2 .53: **Section 2.4** Pages 10 and 11 appears to suggest that HS2 Ltd will need to resort to use of the European Union Emissions Trading System whereby companies can buy emission allowances to stay within the agreed emission targets. This does nothing to reduce emission from HS2, but at the same time it increases the operating cost.

2 .54: **Section 7.11** addresses noise and vibration effects, but only considers the effect of fixed receptors. It ignores non-resident receptors such as walkers, cyclists, leisure sports participants, etc, i.e. people, who will be numerous in the area in which these proposed trains will operate up to 36 times per hour (one train every 1m40sec).

An ES that ignores people in assessing the impact of noise not fit for purpose!

2.3 Chilterns Area of Natural Beauty

2 .55: This scheme, as currently proposed, passes through the Chilterns - a nationally designated Area of Outstanding Natural Beauty (AONB). This covers 324 Sq. Miles of countryside, stretching from the River Thames in South Oxfordshire through Buckinghamshire and Bedfordshire to Hitchin in Hertfordshire. It is one of 38 AONBs in England and Wales which belong to the same family as National Parks. Its designation as an AONB in 1965 recognised that the Chiltern Hills contained some of the finest landscapes in the country which are worthy of protection at the highest level, and current legislation requires that:

a) no activities that damage an AONB should be permitted if there are viable alternatives (which we know there are, such as the 51m alternative and that we argue require far more rigorous scrutiny);

b) any development should be "*in the national interest*".

c) Given the many highly reputable organisations (the IEA; Adam Smith Institute; CEBR; the IoD; Financial Times; The Wildlife Trusts; The Woodland Trust; Atkins, DfT Engineering Consultants; IET; Taxpayers' Alliance; RAC Foundation; Sustainable Development Commission; Countryside Alliance; nef) and people that are questioning this project -(Christian Wolmar; Rob Holden, Chair HS1; Prof John Tomaney; Peter Mandelson; Alistair Darling; Archie Norman, ITV Chairman; Frank Dobson MP; to name but a few), there is considerable doubt that there is sufficient agreement that building HS2 would be in the national interest; **the case for HS2 is simply not proven**.

d) if development does happen (if a thorough and independent review were to conclude there are no alternatives) then very 'Special Protection' should be put in place.

2 .56: **Section 7** paragraph 7.9 page 47, states that of the 20 km Chilterns Area of Outstanding Natural Beauty (AONB), only 12.1 km will be tunnelled, with the remaining 7.9 km (40%) in open track. This 'open track' includes two 500 metre long viaducts between 12 and 18 metres in height, plus two 500 metre viaducts.

2 .57: In addition to the above, **Section 9**, Paragraph 9.2 Page 156 of the Non-Technical Summary lists the most apparent changes to the Character of the AONB to include

a) new engineered landforms of two viaducts and associated infrastructure

b) the permanent severance of land

c) noise-fence barriers with man-made linear features

d) new highway infrastructure,

e) road bridges

f) overhead line equipment

g) loss of vegetation, opening up the landscape, and finally,

h) up to 36, 225 mph High Speed trains per hour

2 .58: It is therefore beyond reasonable credibility to conclude, in paragraph 3 of this page that the special characteristics of the Chilterns AONB "*will not be significantly affected"* by the above. Any completely independent environmental consultant would have been aware of the naivety of this conclusion, (which clearly has been reached from an engineering perspective) and would not have risked damaging their reputation by making this statement.

2 .59: **Section 7.9** page 47 states that of the 230 kilometre length of the proposed Phase 1 of HS2, 53 km is in tunnel. This represents 23%, less than one quarter of the total length of the track. This statement goes on to say that a further 65 km is in cuttings, and infers that this reduces landscape and visual aspects.

2 .60: **Why is there no definition of "a cutting"?** If this is not defined then any part of the track length that is below ground, even if only by 300 cm, can be described as "in a cutting". The only acceptable definition of a cutting is one where not only the track, not only the train

but every part of overhead electricity gantries are also below ground level. Unless that definition is used, then the use of the word "cutting" can be very misleading. Since "cuttings" are not defined, for example in at least three categories, shallow, medium and deep, then the impact cannot be measured or properly evaluated.

2 .61: By treating both tunnels and cuttings as being of equal value the statement seeks to justify the claim that "*HS2 Ltd has designed the project with the aim of avoiding or reducing landscape and visual aspects".* Tunnels are underground and not the same thing as cuttings which are in the open, and such a statement is on a par with treating the numbers of 'dead and wounded' as being in the same category. Clearly this is not justified.

2 .62: This paragraph then states that 84 km of the track is on bridges or embankments, but fails to include the number of kilometres which are on viaducts, thus understating the amount of track in open ground.

2 .63: Specifically referring to the Chilterns AONB, the second paragraph on Page 47 again draws attention to the amount of track in tunnel, plus the amount in cuttings, omitting to mention the presence of viaducts or embankments.

2 .64: Furthermore the following paragraph on Page 47 states that bridges and viaducts will be "designed to ensure that they are in keeping with the local landscape. The full page '*view looking towards the proposed 500 metre long Wendover Dean Viaduct*' on Page 155 of the NTS, clearly illustrates that this is not the case, discrediting the statement on Page 47. Put simply, long and dominant white concrete viaducts do not reduce landscape or visual intrusion; they do the exact opposite!

2 .65: Paragraph 7.11 Page 48 states that noise and vibration have been assessed using "*proven technology based upon the assessment of the HS1 project".*

2 .66: The HS1 trains operate at either 186 mph (section 1) or 140 mph (section 2) whereas the proposed HS2 trains will operate at 225 mph. There is no information or statement about the results of the HS1 noise and vibration levels to verify the actual levels forecast, and there is no explanation as to how the noise from HS1's 140 mph trains can be used to verify noise and vibration from trains operating at 225 mph, over 50% faster! Noise is a very serious issue for people: why has this ES not set out in clear detail how the noise levels have been calculated, what the forecast levels will be and how they will compare with the noise of a 186 mph train?

2 .67: There is incomplete information to determine the impact of this key environmental factor showing once more that the ES is not fit for purpose.

2.4 Conclusion

2 .68: The catalogue of the large number of errors, serious omissions and lack of knowledge in The Non-Technical Summary are such that it

a) is not fit for purpose

b) should be withdrawn

c) should be re-assessed by a truly independent environmental consultancy firm.

3 Construction of the Proposed Scheme

3.1 Impact of the construction compound at Chalfont Lane/ A412 Denham lane

3 .1: Although technically in CF Area 7, the construction compound will impact upon the residents in the CF Area 8, in particular the residents of Chalfont St Peter. Therefore local impacts are dealt with in this response.

3 .2: Volume 2 describes the various construction compounds and indicates the magnitude of this site – which will

a) Accommodate core management staff, (engineering, planning & construction delivery) commercial and administration staff

b) Provide space for storage of bulk materials (aggregates, structural steel, steel reinforcement)

c) Provide Space for receipt, storage, loading/unloading of excavated material onto or off the site

d) Support a huge centrifuge to "wash and dry" the substrate excavated spoil with various "washing lagoons"

e) Provide an area for fabrication of temporary works equipment and finished goods

f) Support a construction facility for Concrete ring segments (for the tunnel) be used for Fuel, plant & equipment storage

g) Provide Parking for workers

h) Provide overnight living accommodation, for 95 - 140 people for 5.5 years

i) Support approx. **255 workers** daily through civil engineering period, increasing to max. **310 per day during peak activity**; then during rail installation period 50 per day to max. 120 per day in peak

j) Support 24 hour working through the tunnel construction period

k) Be in place for 8 years – civil engineering works for approx. 5 yrs 9 months starting 2017 and railway installation works for 3 years starting 2021

l) Be accessed via the A412 Denham Way / North Orbital Road, A40 and M40 to the west and/or Chalfont Lane from the M25 via temporary M25 slip roads and A412 (and will potentially have a severe impact on traffic flows to A413, A404 and B4442

m) Be connected to the M25 by dedicated slip roads

***Vol 2(8), 2.3.18**: Movements between the construction compounds and the work sites will be on designated haul roads within the site, often along the line of the Proposed Scheme or running parallel to it.*

3 .3: This statement cannot be the correct for movements between this site and the vent shaft sites as there will be no haul road – and therefore means that there will be construction traffic on existing single carriageway roads. No direct indication is given as to how these sites are to be accessed from the main compound or the volume of vehicle movements.

3 .4: Vol 2 (8), 9.4.1 states the Chiltern Tunnel main compound will be there for 5 yrs 3 months but omits to mention the additional period of railway installation works – making a total of 8 years, thus understating the duration of the works.

3.1.1 Impact of Construction workers on the local community

3 .5: Vol 2 (7) 5.2.2 concludes that there will be no significant effects associated with construction worker accommodation and implies that the needs of these workers will be addressed "on site". It is difficult to understand how this is likely to work in practice.

3 .6: At the very least, the workers will travel to and from the site and this will have an impact on traffic flows. Those permanently resident are likely to wish to leave the work camp in their free time and it is fair to assume they will access local services and leisure facilities such as pubs, leisure centres etc. The size of this site and its residents equates to that of a small settlement and cannot fail to affect the local community.

3 .7: There is concern at the strain on local facilities and the associated increase in traffic movements, since the site is remote from all facilities and it is not easily accessed using public transport. There is also concern as to how a major incident at the site would impact on local hospitals, which are already at breaking point.

3.1.2 Movement of excavated material

Vol 2(8) 2.3.50 *The majority of excavated material generated across the Proposed Scheme will be reused as engineering fill material or in the environmental mitigation earthworks of the Proposed Scheme.*

3 .8: There is insufficient detail as to how the material excavated from the tunnel will be moved to alternative locations. Where is the estimate of vehicle movements for this transfer of excavated material?

3 .9: **Vol2(8) 2.3.68** refers to the surplus excavated material originating in the Colne Valley area – but what about material coming from the Chalfonts to Amersham area which will exit through the tunnel portal? It is unclear whether this is included and there is no indication where this will be used.

3 .10: Spoil is waste -

a) What measures will be taken to control its disposal?

b) What is the timescale for spoil to be used for landscaping

c) Where and how will it be stored and treated in the meantime?

3.1.3 Road Closures and Diversions

Vol 2(8) 2.3.25 *For the duration of the construction programme, temporary slip roads onto the M25 will be provided to serve this compound. Chalfont Lane will be temporarily closed to local traffic and a temporary alternative local road will be created to the west of the M25.*

3 .11: This will mean a road closure at Chalfont Lane for 6 months whilst the temporary access road is constructed, resulting in a 6.1 km diversion – described as having a **major adverse effect on vehicle occupants**. This will be followed by 6 years diversion of 1.6 km.

3 .12: The ES states that construction will result in substantial increases in traffic flows (more than 30% for HGVs or for all vehicles) This will be a huge effect not just on road users being diverted but also current users on the proposed diversion routes. Chalfont St Peter alone is a village of 13,000 people, a significant percentage of who use these routes to access Watford, Rickmansworth, Denham and the M25 on a daily basis to reach places of employment and education. It is also the most direct route to both Harefield and Mount Vernon Hospitals, which serve residents with essential specialist heart and cancer treatments.

3 .13: The proposal effectively diverts all this traffic along Horn Hill Road (a narrow road with passing places) and the junction with the new access will be dangerous for the number of vehicles expected to use it. Currently during peak times both roads often become stop/start routes with drivers having to give way at passing places.

3 .14: For a regular user (twice a day 5 days per week for 48 weeks per year) this equates to an additional 1,215 km over the period. No account of increased CO2 emissions would appear to have been made for this.

3 .15: Currently, if the M25 is closed due to an accident, large volumes of traffic use the adjacent minor roads. As a result of proposed construction activities, these roads will already be overloaded and any incident on the M25 will result in them becoming gridlocked.

3 .16: The ES concentrates on increases in travel distance but what is more important to people's daily lives is the increase in **journey times**, not only from the increase in distance but also the increase due to associated congestion. This also has socio-economic and health and wellbeing implications.

3 .17: **Vol 2(8) 12.4.15** *Construction of the Proposed Scheme is forecast to result in substantial increases in traffic flow … These will cause a significant increase in traffic related severance*

3 .18: These routes are small lanes which are used by pedestrians, cyclists and horse riders. They are already difficult and significant increases in motorised traffic will make them extremely dangerous. The proposals will have the effect of making these routes "no-go" areas for non-motorised road users, denying them access to commuting routes and also quiet enjoyment of the countryside.

3 .19: **V2(8) 12.4.2** *The draft CoCP includes measures that seek to reduce the impacts and effects of deliveries of construction materials and equipment, including reducing construction lorry trips during peak background traffic periods. The draft CoCP includes HGV management and control measures.*

3 .20: How will this be enforced – what action will be taken if these measures are ignored? The draft Code of Construction Practice will be finalised when the bill is enacted. (Non - Technical Summary 4.2) This is too late to address these concerns as the onus is on the contractor and not HS2 Ltd. What does "*reasonably practical*" mean? – All definitions should be clear and not ambiguous or woolly.

3.1.4 Impact on enjoyment of the countryside

3 .21: This area is currently enjoyed by many people as an area where they walk in open countryside, enjoying the associated flora and fauna

3 .22: Vol 2(7) section 9 (Landscape and Visual assessment) states that:

9.4.26 **"***Construction works will be audible"*

9.4.27 *"General Construction activity, cranes and significant earth moving activities .....will result in the introduction of elements which substantially alter the character of the setting. Magnitude of change is considered HIGH.*

9.4.28 *"The high magnitude of change, assessed alongside the medium sensitivity of the character area, will result in a* ***major adverse effect"***

9.4.36 *"Chalfont St Peter vent shaft satellite compound and associated cranes and plant will form the background of the view (approximately 270 m). During this time, the addition of new features such as plant and machinery will be clearly visible and greatly alter the existing view. The magnitude of change is considered to be high."*

9.4.37 *"The high magnitude of change assessed alongside the high sensitivity of the receptor will result in* ***a major adverse effect****."*

Vol 2(7) 9.4.91 – 9.4.94 *"Extensive temporary earthwork stockpiles (up to 5 metres high) will be seen from Old Shire Lane Circular walk… High magnitude of change – resulting* ***in major adverse effects"***

3 .23: No indication is given as to how long these stockpiles will exist and where they will be moved to.

Vol 2(7) 9.4.5 *"Extensive earthwork profiling adjacent to the M25 and Chiltern tunnel southern portal will result in a notable change in the landscape. The height of the construction plant and viaducts and the close proximity of construction activities coupled with the absence of intervening screening (apart from the site hoardings and temporary earthwork bunds) will result in significant visual effects during construction".*

3 .24: Clearly the landscape will be changed beyond recognition, and be quite unsuited to recreational use during the construction period.

3 .25: The ES implies that there will be a *moderate* or *negligible* impact on air quality that is not likely to be significant. There appears to be no evidence to support this. It is hard to understand this statement when this site (currently fields, visited a few times a year by the occasional agricultural machine used for ploughing or spraying) is to be used 24 hours a day with large numbers of vehicles arriving and leaving and major works, tunnel boring, treatment of spoil from the tunnel, fabrication of concrete, earthworks etc.

3 .26: What are the definitions of "*moderate*" and "*negligible*"?

3 .27: **Vol 2(7) 5.4.20** states that a section of Old Shire Lane Circular walk will be temporarily diverted adding 1.2 km to the route. Another section will be closed for 5.5 years. This is described as a moderate adverse effect on the Old Shire Lane Circular Walk and therefore its users. Users of remainder of the route are predicted to experience a change in amenity when using the alternative route, principally as a result of the views of and noise from the construction activity. **Vol 2(7) 5.4.**29 acknowledges that users of the walk will be significantly affected

3 .28: **Vol 2(7) 6.3.7** identifies Old Shire Lane (a possible Roman Road and associated hedgerows as non-designated assets of low value

3 .29: The proposed scheme will destroy the **circular** walk in that it will not be possible to use it in its entirety. The remaining sections are subject to a lengthy diversion, and the destruction of the visual, and audible environment which will result in it not being considered usable by those who currently enjoy it. No mention is made of any viable alternative.

3 .30: **Vol 2(7) 7.4.63** – *(Summary of likely residual significant effects)*

a) Corn bunting habitat will be lost from farmland between the M25 and the A412 Denham Way/North Orbital Road, resulting in a permanent adverse effect on the population.

3 .31: **The Corn Bunting is listed by the RSPB as a Red List species** due to its dramatic population decline in the UK. No mention is made of what measures will be taken to restore or replace this valuable habitat.

Vol2(7) 9.3.13 *"The presence of the M25, as well as prominent overhead power line, reduces levels of both audible and visual tranquillity resulting in an overall medium level of tranquillity within the LCA. The varying agricultural landscape is relatively well maintained and is therefore of fair condition."*

3 .32: The ES implies that as the area already has a motorway marring its tranquillity, any further intrusion therefore being less of an issue. This is disputed - there is even more reason to protect, preserve and enhance the quality of the environment that remains. The M25 is set low down in the landscape; the proposals for the construction site make it both visible and audible to users of the countryside.

Vol 2(7) 9.4.25 *Direct impacts upon the LCA will be confined to the distribution of excavated material adjacent to the M25. Elements of construction will be audible and visible from the northern edge of the LCA, introducing unfamiliar elements at odds with existing landscape character and decreasing levels of tranquillity.*

3 .33: **Vol 2(7) 9.4.95** Views from residential properties on Chalfont Lane - again high magnitude of change and major adverse effects. **Only** 10 metres from viewpoint - Earthwork re-profiling

3 .34: At night – construction lighting from M25 main construction compound and Chiltern tunnel main construction compound **within an otherwise predominantly dark landscape** Magnitude of impact is again high.

Vol 2(7) 9.4.105 *View from Hornhill Road – re-profiling of excavated material and lighting will have a high impact.*

3 .35: Whilst most sites are subject to time restrictions and this one is not, no mention of mitigation for the consequent light and noise pollution is made.

Vol 2(7) 9.5.31 *The proposed mitigation planting will not have had time to establish and integrate the Proposed Scheme into the receiving landscape by 2026*

Vol 2(7) 9.5.33 *By year 15 and beyond to year 60, the maturity of planting ….will help to integrate the Proposed Scheme into the landscape*

3 .36: This mitigation planting is too little and too late

3.2 Vent Shafts

3.2.1 Air Quality

3 .37: **Section 4** of Vol 2 CFA8 contains references to impacts on air quality from construction of the Vent shafts, and concludes that this will not be significant. **Vol 5 AQ-001-008 Paragraph 4.4** concludes that construction traffic along the A413 adjacent to the Amersham Vent shaft could affect local air quality, but concludes that this is not significant. At this site there will be over 400 extra vehicle journeys per day from construction works. The basis for this assessment relies on the effectiveness of the draft CoCP which is not yet proven.

3 .38: There is no statement of the carbon emissions from these vehicles, nor does there appear to be any process to include such emissions in the total for both construction and operation of the proposed scheme. Similarly there is no estimate of the additional carbon emissions of vehicles delayed as a result of these HS2 construction vehicles.

3 .39: Effects during construction (**Section 4.4**) – avoidance & mitigation measures are non-specific and use descriptors such as "where appropriate" and "reasonably practicable" and "has assumed".

3 .40: As the CoCP is merely a code which is still in draft form there is no certainty that this will be the final form and that it will in reality either be followed by contractors or be adequate for the purpose.

Vol 2(8) 4.4.8 *Examination of the changes in traffic flows for 2017 along the affected roads has identified that the M25, between junctions 16 and 17, meets the criteria set out in the SMR (Appendix CT-001-000/1, Volume 5) for assessment.*

3 .41: This paragraph refers to the M25 which is does not pass through this area.

3.2.2 Community

Vol 2(8) 5.4.14 *No significant temporary effects have been identified in the community assessment for Amersham Old Town.*

3 .42: This statement disregards the effect of road traffic increases around the Amersham Vent shaft for a period of six years, generating 400 vehicle movements a day. This will seriously affect 11 bus routes that use these roads throughout the day, thus disrupting community activities in social, educational, and business activities.

3 .43: Similarly it will affect community emergency vehicle progress through the area, putting lives at risk.

3 .44: The land shown as 'potentially required' abuts the entrance to the Chiltern Crematorium, on the southern edge of Amersham Old Town and the entrance to Amersham Hospital, the main Hospital in the area. The potential requirement also includes the A404 from Amersham to High Wycombe, plus a strip parallel to the A404 on the northern side of this road. This strip will require HGVs to cross the main A404 road access from the vent shaft site further increasing the delay and congestion at this point.

3 .45: The Crematorium has two chapels and is used for 3,114 funeral services per annum (2013). Delay and congestion at this point will have a serious effect on those managing and attending funeral services at the Crematorium.

3 .46: The ES does not appear to have a plan to address these community issues and describes them as 'insignificant'

3.2.3 Landscape and Visual Assessment

3 .47: Vol 2(8) paragraphs **9.4.47 to 9.4.53** relate to the viewpoints around the Amersham Vent Shafts.

3 .48: All the viewpoints refer to the removal of established trees and the clear visibility of vent shaft construction works, including high cranes, for the period of construction. Whilst the viewpoints text refers to high sensitivity, high magnitude of change, substantial change of view, the conclusion of each paragraph is that the magnitude of adverse effect is merely 'moderate'. This is clearly understating the true effect of this activity.

3 .49: The effect takes no account of the added traffic generated by the vent shaft construction (400 journeys per 10 hour working day). Such traffic generation clearly has a detrimental effect on Landscape and Visual Assessment, but is disregarded.

3 .50: **Vol 2(MB8)** Photomontage **LV-01-186**- Peak Construction Phase- shows a black lozenge shape mound above the road junction. What is this, how long will it be there and how many cubic metres does it represent?

3 .51: The timescale to replicate the established trees destroyed in year 1 of the proposed scheme would appear to be between 15 and 60 years. This is an exceptionally extended time frame and it is therefore fatuous to describe the effect as 'not significant'. Semi-mature trees should be planted. There is no reason apart from cost why this should not be done.

3.3 Amersham Vent Shaft

3.3.1 Overview

3 .52: **Vol 2(8)** paragraph **2.2.9** states that the headhouse building "*will be approximately 4 metres high"*, but the associated photo montage, operation Year 1 (2026) Ref **LV-01-035**, indicates a much lower headhouse height from comparison with vehicles on the adjacent road.

3 .53: In paragraph **9.5.53**- Landscape and Visual Assessment- page 119 it is stated that "*only 2 metres of the vent shaft headhouse will be above ground"*.

3 .54: **One of these statements must be incorrect**

3 .55: The viewpoint used for the photomontage is misleading since it is in the middle of a ploughed field. Therefore the public would rarely if ever see this viewpoint. The public are much more interested in the views they would normally see, namely from the A404 and A413 as well as from Whielden Street and especially Whielden Heights, which is also the access road for the hospital. This should be shown in the ES if the photomontage is to be taken seriously. Using this viewpoint therefore seems deliberately misleading.

3.3.2 Traffic

3 .56: The Amersham Vent shaft will create up to 400 single vehicle journeys per day (**Vol. 2 (8) Table 15**) - composed of cars, LGVs and HGV's. Note that this equates to over 40 additional vehicle movements per hour!

3 .57: The omission of this fact from the Non-Technical Summary is either a serious error or a deliberate attempt to understate the traffic position.

Yet again, vital information is excluded from the ES, either deliberately or by HS2 Ltd's incompetence?

3 .58: The draft ES published earlier in 2013 identified that there were only 20-40 HGV journeys per day. There is no information to explain this vast increase in journey numbers.

3 .59: The Draft Environmental Statement stated that these extra 20-40 journeys represented a 30% increase in HGV vehicles and described this as a '**significant**' increase.

3 .60: Despite the 9 fold increase in vehicle activity identified in the Environmental Statement, the effect is still only described as '**significant**' with no effect on the 11 bus service routes which use the area around the vent shaft and the adjacent road planned to be used by the construction vehicles.

3 .61: This is clearly inaccurate at best and misleading at worst and requires full explanation.

3 .62: There is no statement of the carbon emissions from these vehicles, nor does there appear to be any process to include such emissions in the total for both construction and operation of the proposed scheme. Similarly there is no estimate of the additional carbon emissions of vehicles delayed as a result of these HS2 construction vehicles.

3.3.3 Spoil

3 .63: **Vol2(8) 2.3.52** states that there will be a quantity of contaminated excavation material that is chemically unsuitable for re-use. Table 1 indicates that no excavation waste will be used as landfill as this will be taken down the tunnel which goes into the CFA7 area.

3 .64: Table 2 also states that over the construction period there will be 1717 tonnes of contaminated landfill waste generated. In addition Table 2 shows that the area (CFA8) will generate 34 tonnes per year equal to 2040 tonnes over the 60 year period which is used to illustrate the potential viability of the proposed scheme.

3 .65: In total this will be about **19,440 tonnes** of waste for disposal to landfill. This does not appear to feature in the carbon efficiency statements about HS2.

3.3.4 Noise and Vibration

3 .66: Around the Amersham Vent Shaft there will be Sound, Noise and Vibration, from construction activities over a period of six years, plus the vibration from the tunnel boring machines for a short period. In addition concreting activities will take place outside normal working hours -

Vol2(8) 11.3.3 ... *However, at certain times excavation and concrete supply for sprayed concrete lined cross passage tunnels will need to be undertaken during the evening and night-time for reasons of safety, and engineering practicability.*

3 .67: In particular the noise and vibration from works associated with the Amersham vent shaft will affect the Amersham Hospital (which is only 100 metres away) and its own Hospital Staff residential area, plus the homes in Whielden Street.

3 .68: Amersham Hospital carries out investigative and diagnostic procedures using highly sensitive and delicate equipment which may be affected by noise dust and traffic, as A413/A404 will be a major point of activity only 100 yards from the hospital.

3 .69: The additional 400 vehicle journeys per day around the vent shaft will also increase noise levels, particularly at peak times and many of these journeys are by LGV and HGV.

Added to this should be the other HGV movements across the traffic flow on the A404 to dump spoil on the northern side of this road, adjacent to the entrance to the Chiltern Crematorium

3 .70: Given all these noise and vibration increases it is not realistic to state in summary, that the -unspecified- 'mitigation measures' will render the overall effect '**insignificant**'

3.4 Chalfont St Giles Vent Shaft

3.4.1 Overview

3 .71: **Vol 2(8) 2.3.34** describes the construction of the Chalfont St Giles vent shaft satellite compound. It states that the compound will be in place for approximately 6 years and 9 months and will support 30 - 65 workers daily. There will be no overnight accommodation provided. This raises a number of questions that are not adequately addressed in the report:

3 .72: The report says that workers will be "*discouraged from bringing private cars to work*". Safeguards must be put in place to ensure that workers do **not** travel to work in private cars.

3 .73: Elsewhere the report refers to Chalfont St Giles **being served by** buses on Route A30, 335 and 580. This is misleading.

> Bus Route **A30** from Chesham to Heathrow via Uxbridge operates one bus per hour in each direction along the A413 and passes by the junction with Bottom House Farm Lane.
>
> Bus Route **580** operates 5 buses per day through Chalfont St Giles each way. The first bus of the day starts at High Wycombe bus garage at 7.20 am and runs to Uxbridge. Thereafter all buses run every two hours between Uxbridge and Beaconsfield. The last service of the day runs through Chalfont St Giles at 16.58 and finishes its journey at Gerrards Cross instead of Uxbridge. In the other direction the last service of the day passes through Chalfont St Giles at 17.37 and ends at High Wycombe at 18.17.
>
> Bus Route **335** does not run through Chalfont St Giles at all, it serves Chalfont St Peter, some 2 miles away.

3 .74: Given that the workforce is supposed to be at work from 0600 - 1800, they will have to access the site by road. The report states that these transport links are unlikely to change - but at the time of writing we have just received notice of a further reduction in available bus services.

3 .75: Paragraph **2.4.7** states that once operational, the railway maintenance, including cutting and grinding of rails, will be carried out via the shafts during the night when the railway is not operational. This means that workers will be travelling to or from the site during the night and there will be associated noise and light nuisance. There is no statement regarding the control and monitoring of this workforce to ensure that the local residents are protected from any disturbance.

3.4.2 Spoil

3 .76: **Vol2 (8) 2.3.34** further states that there will be a "roadhead" from Bottom House Farm Lane for the transfer of material excavated from the vent shaft. There is no stated plan or route for the transfer of spoil from the site.

3 .77: **Vol2 (8) 2.3.39** states that the installation of four new utilities will be required at the Chalfont St Giles satellite site. This presumably means that local roads will need to be dug up (again) to facilitate the laying of pipes and cables. We can find no mention of this in the report.

3.4.3 Traffic

3 .78: **Vol2(8) 4.5.4** confidently predicts that "No roads are predicted to have sufficiently large changes in traffic flows to meet the criteria for further assessment."

3 .79: This is a lazy and incorrect prediction and conclusion. Bottrells Lane can at best be described as a rural residential lane. It is the land of children on bicycles straying over the road, of hikers, joggers and horse riders. For some considerable length it has no footpaths, and in the area from Bottom House Farm Lane towards the junction with Back Lane/Mill Lane it is only the width of 1.5 family cars with two right-angle bends and no passing places.

3 .80: Yet this tiny, country lane has been designated as part of the traffic diversion caused by the closure of Bottom House Farm Lane. **Vol2(8) 12.4.15** includes Bottrells Lane amongst those local roads that will "*result in substantial increases in traffic flow (i.e. more than 30% increase for HGVs or all vehicles*)." This is a very substantial increase in HGV traffic that will have a significant and potentially dangerous impact on the local community. This lane is totally unsuitable for HGV use. HS2 Ltd must reconsider the proposed access and find alternatives.

3 .81: Additionally, the same paragraph states that there "*will be a major adverse effect on the A413 between the junctions of Bottom House Farm Lane and Joiners Lane*". This area already has a large number of traffic movements due to the proximity of the Local Authority Waste Site.

3 .82: **Vol2(8) 7.4.4** refers to part of Chalfont St Giles Churchyard having been identified for "access to allow possible precautionary risk-management measures to be undertaken. The extent of works would be limited."

3 .83: This land has been described as "*unimproved calcareous grassland*". We feel the need to point out to HS2 Ltd their ignorance in that this is a **consecrated graveyard** containing human remains. The possible use needs to be fully defined and controlled.

3 .84: **Vol2(8) 12.4.28** refers to increased traffic, particularly HGV traffic which will affect non-motorised users and people crossing the A413 London Road. There is currently one pedestrian crossing over the A413 at the junction with Vache Lane, Chalfont St Giles. A little further along, between the junctions of Kings Road and Turners Wood Drive, a well-used public footpath crosses the A413. There is insufficient road width for the installation of a pedestrian island in the middle of the road, and the users of the footpath (which is a shortcut from the village centre to the residential areas north of the A413) already have difficulties in crossing the road. This is very likely to become even more dangerous with increased traffic - particularly HGVs.

3 .85: Local people have already requested a pedestrian crossing at the location (the nearest current crossing being some 1/4 mile away) but have been told that there is not sufficient need to warrant the expenditure. Steps must be taken by HS2 Ltd to avoid the problems caused by the increased traffic.

3.4.4 Impact and Mitigation

3 .86: **Vol2(8) 13.4.39** states that the River Misbourne is frequently dry. **This is incorrect**. It has certainly not been the case at all for at least the past 3 years when its flow has been healthy and increasing due to heavy rainfall. We are concerned that this has not been taken into account in relation to the effect of tunnelling activities on the river bed and underlying aquifer. Section 7 discusses the steps which are required to allow tunneling to proceed safely in the chalk aquifer.

3 .87: Clearly Upper Bottom House Farm and Lower Bottom House Farm will be the most severely affected by this development since that is the location of the Chalfont St Giles vent shaft satellite site. They will be affected in terms of noise, light and dust pollution from the works and increased pollution and noise from increased vehicle movements – particularly HGVs. We are concerned about the loss of agricultural land to the road widening and to the shaft site itself. We are concerned that materials will be stored on agricultural land with unknown potential leakages with the potential to pollute the land and the water supply, which is **upstream of the pumping station** that abstracts water to the local water supply. We do not feel that sufficient consideration has been given to the protection of the soil and to water sources. The report does not adequately explain what measures will be taken, or how they will be monitored.

Vol2(8) 2.1.11 *"The village of Chalfont St Giles is located to the north of Chalfont St Peter on the edge of the Chilterns. The village has a **duck pond**, 18th century cottages, and a medieval high street and provides a range of local facilities including a library, a post office and the Crown public house."*

3 .88: This is the only mention of the duck pond in the entire document since it does not feature in any of the sections concerning ecology, water etc. This "duck pond" is fed from the River Misbourne and is a good sized area of water which is a central feature of the village which is widely used throughout the year for recreational purposes. It is within the area shown in pink on Map number CT-05-025 and is described as being "*Land potentially required during construction*". We can find no reference as to *how* the land may be required, or whether it will mean that the area is in some way fenced off and unusable by the local people. If this is to be the case, then consideration must be given as to how the residents are to be compensated for the loss of this amenity and to full restoration to its original state post construction.

3 .89: **Vol2(8) 2.1.12** - recreation, leisure and open space, describes several public parks and open spaces in the area, and elsewhere a number of public footpaths are referred to. One of the main areas of open space and recreation within Chalfont St Giles is Stone Meadow, which leads into Silsden meadow, and on following the River Misbourne to Chalfont St Peter. It is a flat flood plain containing dew ponds and habitat for newts and species of rare wild orchids, and is in part bordered by the Riverside Walk - a very popular **wheelchair accessible** nature walk that was opened last year and made possible partly with funding from the **National Lottery**. The fields along the flood plain are rented out to local farmers and provide grazing for sheep and some equestrian activity.

3 .90: Stone Meadow and Silsden Meadow are used every year for the Chalfont St Giles Country Show which attracts upwards of 5000 visitors every year. Other traditional village events take place here, including the village-organised firework display - again attracting several thousand. These events raise much-needed funding for village societies such as the

Guides and Scouts. The annual Show raises money that is ploughed back every year into community projects. Both are an important part of village life in a community that is relatively isolated from the surrounding area due to **poor public transport links**.

3 .91: The area described above is shown in pink on Map number **CT-05-025** and is described as being "*Land potentially required during construction*". We can find no reference as to ***how*** the land may be required, or whether it will mean that the area is in some way fenced off and unusable by the local people. If this will be the case, then consideration must be given as to how the residents are to be compensated a) for the loss of these amenity, and b) for the loss of the revenue that comes from the events that we currently enjoy annually.

3.5 Chalfont St Peter Vent Shaft

3.5.1 Overview

3 .92: This compound comprising a shaft with headhouse building and approx. 550 sq. metres of hard standing will be a permanent scarring of this countryside area, close to a large residential area of Chalfont Common, Chalfont St Peter. Landscaping must be designed to completely hide this blot on the landscape and must be effective within a year of the completion of the vent shaft headhouse, using semi-mature trees.

3 .93: Facilities and Buildings affected by this vent shaft:

a) Epilepsy Society - patients, residents and staff

b) Playing fields for youth football

c) Porthaven care home – in Chesham Lane, planning permission recently given

d) Open Air Museum – Gorelands Lane – charity relying on visitor numbers and accessed via Chesham Lane

e) Newland Park - currently used by Global Leisure but seeking planning permission for 300+ dwellings for families

f) Cricketfield Cottages

g) Ashwells Farm

h) Residents of Chesham Lane, Denham Lane, Joiners Lane and access roads

i) Robertswood School

Vol l 5.7.1 *"the design and external appearance of headhouses will be approved by relevant local authorities in order to fit into the local surroundings"*

3 .94: **Vol 2(8) 9.5.1** describes the vent shaft with a *headhouse building approx. 4 metres above ground level in height* – as does **2.2.7**.

3 .95: **Vol 2(8) 9.5.26** states "*the vent shaft is designed to integrate into the landscape by being set partially below ground level".*

3 .96: **Vol 2(8) 9.5.53** describes the Amersham vent shaft as "*partially below ground level with the top 2 m visible above ground"*

3 .97: We were told at the forums that all vent shafts would be designed to fit in with the local surroundings and landscape. It is not clear how this will be achieved as this headhouse is in a field with no "*local surroundings*". The headhouse should therefore be **completely**

below ground level with the roof grassed over to fit with the local landscape, or used as hard standing to reduce the total area of the site

3.5.2 Traffic

3 .98: We advised HS2 Ltd in our reply to the **draft** ES and in Community Forums that the route will have major implications for our residents. It will pass the entrance to the Epilepsy Centre in Chesham Lane and an infant/middle school in Denham Lane. This road is heavily congested in the mornings, lunchtimes and afternoons during school times and refuse-collection lorries have been advised to work around these times of the day. Denham Lane also has parked cars throughout the day associated with the school.

3 .99: There is very minimal public transport to and from Chesham Lane and none from the main compound. Construction lorries in this vicinity will have a severe impact in terms of safety and the condition of these country lanes. The A413 between Chalfont St. Peter and Amersham is also heavily congested at peak times morning and evening and Gorelands Lane/Chesham Lane often used to by-pass this congestion.

3 .100: No mention is made of (the Grade II listed) Gotts monument[9] which stands at the entrance to the Epilepsy Centre at the side of Chesham Lane and has recently been restored at great expense. This was pointed out in our response to the **draft** ES and has once again been completely ignored.

Vol 2 (8) 2.3.28 Chalfont St Peter vent shaft compound will *"support approx. 30 workers each day throughout much of the civil engineering works period but will increase to approx. 70 workers each day during the peak period of activity" and "be accessed via Chesham Lane, Denham Lane, Joiners Lane, A413 and A40"*

3 .101: The junction of Rickmansworth Lane, Chesham Lane, and Denham Lane is an accident black spot.

Vol 2 (8) 2.4.7 *"maintenance staff will access the tunnels via the vent shafts.....on a regular basis. This will be at night when the railway is not operating".*

Vol 2 (8) 2.4.2 *"Trains will be running from 5.00 am to midnight Monday-Saturday and 8.00 am to midnight on Sunday".*

3 .102: It is clear from the above that this work will take place after midnight in the early hours of the morning with associated noise and light pollution.

Vol 2(8) 2.3.6 *"General provisions that will guide the construction process are set out in more detail in Volume 1, Section 6.4 and the draft CoCP (see Volume 5: Appendix CT-003-000) including:*

- *the approach to environmental management during construction and the role of the Code of Construction Practice (draft CoCP, Sections 2 and 3);*
- *working hours (draft CoCP, Section 5);*
- *the management of construction traffic (draft CoCP, Section 14); and*
- *the handling of construction materials (draft CoCP, Section 15)."*

[9] http://www.britishlistedbuildings.co.uk/en-44772-gott-s-monument-at-the-national-society-f

3 .103: The CoCP will still be in draft when contracts awarded and can therefore be changed and adapted to suit HS2 Ltd and the contractors. Who will agree the finalised version of the CoCP, who will monitor that it is being adhered to? Will the LPA be guaranteed to have a decisive role in all of this?

3.5.3 Mitigation of impact

3 .104: We believe that the mitigation proposed will be ineffective given that the document admits that it will take between 15-60 years for landscaping to take full effect. How can it be acceptable to wait almost a lifetime for this ? Mitigation must include semi-mature trees to substantially reduce the time for effective mitigation.

3 .105: The ES does not make clear how much of the ancient hedgerow will be removed to construct the access.

3 .106: Vol 2(8) 2.2.7

- *"landscape earthworks curving along the northern and western side of the vent shaft to integrate it into the landscape"*
- *"areas of planting along the northern and western edges of the vent shaft to screen views from the surrounding residents"*

Vol 2(8) 2.3.50 *"the majority of excavated material .....will be re-used as engineering fill material or in the environmental mitigation earthworks....."*

3 .107: How long will excavated material remain on the site? There must be a clear statement about when the site will be cleared of excavated material.

Vol 2(8) 4.4.2 *The assessment has assumed that the general measures detailed in the draft CoCP will be implemented. These include: dust, air pollution, odour and exhaust emissions; cleaning of haul routes, keeping soil stockpiles away from sensitive receptors where practicable, using enclosures to contain dust emitted from construction activities.*

3 .108: Comments as per 2.3.6 ref CoCP still being in draft and subject to change

Vol 2(8) 4.4.6 *"With the implementation of mitigation measures contained within the draft CoCP the assessment of impacts arising from dust emissions has concluded that they will be negligible ..... and the effect will not be significant"*

Vol 2(8) 4.4.8 *- Impacts on air quality are also assessed as "being insignificant".*

Vol 2(8) 4.4.12 *"The methods outlined within the draft CoCP to control and manage potential air quality effects are considered effective in this location and no significant residual effects are considered likely"*

3 .109: What is the definition of "negligible" and "insignificant"? Again these statements in the ES are all relying upon a **draft** CoCP

4 Socio-economic Impact

4.1 Introduction

4 .1: This section deals with the likely significant economic and employment effects and the impact of proposed scheme on the CFA8 area during the construction and operational periods.

4 .2: This response seriously challenges the sweeping statements made by HS2 Ltd that this project will have little or no impact on the area. We contend that the day to day business, social, community, employment and education aspects of the lives of the 50,000 people living in the impacted areas, which equates to 10% of Buckinghamshire's population as a whole, will be extremely seriously impacted, in direct contradiction of HS2 Ltd..

4.1.1 Construction and Operational phases (10.1.4, 10.1.5)

4 .3: We find it incredible that the 7 years of disruption caused by this ill-conceived project will result in "no significant impact" on Amersham (a community that Bucks Business First recently confirmed was part of a surge in Business Production in Buckinghamshire). Amersham achieved 5th position in the whole of the UK for productivity.

4 .4: We contend that during both the construction and operational stages the proposed scheme will catastrophically impact on :

a) Our communities general health and well-being;

b) The area's ability to function economically (both on a personal and business level);

c) The ability of residents and visitors to pursue outdoor leisure pursuits (particularly the ability to enjoy the Chilterns Area of Outstanding Natural Beauty (AONB)).

4 .5: The impacts will take a number of forms:

a) Traffic disruption, congestion and potential gridlock due to three major construction sites on the main arterial routes to access Amersham Old Town and Amersham on the Hill (CFA8's main commercial hub) over the 7 years combined construction phase.

b) Air pollution resulting from the standing or slow-moving road traffic and 3 major construction sites during the 7-year construction phase.

c) Noise pollution in an area renowned for its calm and tranquillity, which will significantly harm its attractiveness to visitors and local people alike, resulting in a loss of reputation and income from tourism.

d) Disruption and potential irrevocable damage to our communities' tourism and commerce over 7 year's construction.

4 .6: Specific examples of impacts include:

4 .7: Peace and tranquillity has made Old Amersham, Amersham on the Hill and both of the Chalfonts a magnet for families with young children to raise them in clean, clear air of the surrounding Chilterns AONB and to avail themselves of some of the diverse leisure and sporting opportunities afforded locally, with Amersham Football Club located on School Lane.

4 .8: A short distance away is Shardeloes House, a Grade I listed building of special architectural and historic interest, set in 50 acres of grounds and gardens overlooking a lake

which is fed by and situated in the valley of the chalk stream river Misbourne. The Amersham Cricket Club pitch is situated in the grounds.

4 .9: The Equestrian Centre at Shardeloes Farm (a long established family run business) has equestrian facilities and a riding school for youngsters to Olympic team standards and rejoices in idyllic surroundings. The Equestrian Centre and Farm which boasts 500 acres of rolling countryside and spectacular views nestles in the Chilterns area of Outstanding Natural Beauty (AONB) above the picturesque town of Old Amersham.

4.1.2 Scope, assumptions and limitations

4 .10: Vol2(8) 10.2.1; 10.2.2

4 .11: The parameters used in this study are far too narrow and do not include any assessment of realistic and eminently viable alternatives such as those embodied within the proposals from the 51M Group of local authorities amongst others.

4.1.3 Environmental Baseline

4 .12: Existing Baseline Study Area description 10.3.1 to 10.3.4

Vol2(8) 10.3.2 *The Chalfonts and Amersham area, located within Chiltern District, is a predominantly rural area including agricultural land but also covers the residential areas of Chalfont Common, Chalfont St. Giles and the old town of Amersham.*

4 .13: This information is incorrect as it completely ignores Chalfont St Peter and **Amersham on the Hill,** which is located on the top of the hill approximately one mile from the old town on a plateau to the North side of the Misbourne Valley, and which seamlessly takes in Amersham Common and the important adjoining village of Chesham Bois. **This wider catchment area must be recognised and acknowledged along with the DCA's already defined by HS2 Ltd.**

4.1.4 Amersham as an Administrative Centre

4 .14: Amersham is the administrative centre for the area covered by CFA 8 and includes:

a) Offices for Buckinghamshire County Council

b) Chiltern District Council

c) The Chilterns Clinical Commissioning Group

d) Amersham Town Council (the Old Town)

These organisations employ 250 people (mainly in King George V House), many of whom travel into this office from out of the area. Disruptions to the road network as a result of the construction process will have a significant impact on the smooth and economic running of the area.

4.1.5 Amersham as a manufacturing and business centre

4 .15: Amersham is home to a wide range of small to medium sized manufacturing businesses specialising in highly skilled engineering as well as hosting a number of media, managerial and professional scientific and businesses.

4 .16: It is also home to GE Healthcare (formerly Amersham International) a major local employer providing a European hub for radiological and other health products.

4 .17: Amersham has been recognised in 2013 business studies as having an "Upper Middle Market" position in terms of its importance in the Business sector

4 .18: The town hosts more than a dozen separate and sizeable industrial and commercial trading estates with 165 Business Units of all types with 26,320 Sq Metres Floor Space with only less than half the national average of vacant units; giving it an upper middle market position as a sought after area to carry on a business or profession in the UK.

4 .19: Bucks Business First recently confirmed that Amersham was part of the important surge in Business Production in Buckinghamshire which saw it attaining 5th position in the whole of the UK for productivity.

4.2 Assessment of Impacts and Effects –Temporary effects

4.2.1 Change in business amenity value and Isolation (10.4.3,-.4)

Vol2(8) 10.4.3 *"No non-agricultural businesses are expected to experience significant isolation effects as a result of the Proposed Scheme have been identified within the area."*

4 .20: We are surprised to read that HS2 Ltd believes there will be no amenity or isolation effects of the proposed scheme. We reiterate our points made in relation to 10.3.13 – 10.3.4 as above.

Retail

4 .21: Amersham as whole has a total retail floor space of 9,500 sq. metres with a total turnover of £42.5 Million. This commercial heart of Amersham is vitally important to outlying hamlets, villages and communities from bordering CFA7 and CFA9 as well as the 14,500 local residents. Disruption to our roads will impact these businesses significantly as people choose to buy online or travel elsewhere rather than face the disruption caused by the construction process.

Public Transport

4 .22: Local public transport links (11 vital Bus Routes), will be severely disrupted during the Amersham Vent Shaft construction phase, with the resultant loss of public amenity and enjoyment by both the elderly population (26% are 60- 80+) and the young (25% are 0 – 19) alike. (The Bus Routes serve 2 local colleges).

4.3 Construction employment (10.4.5,-6)

4 .23: We find it incredible that HS2 Ltd believes that the 7 years construction phase in the CFA8 and bordering CFAs 7 and 9, will have little or no impact whatsoever on existing employment levels on Amersham, the Chalfonts and surrounding villages.

4 .24: HS2 Ltd takes no account on the effects on employment provided in existing CFA 8 community resources and services and their client end users which include:

- The Amersham Community Hospital, with the potential loss of amenity /access to hospital from vent shaft construction phase work site adjacent to the hospital entrance on Whielden Street with disruption to both patients and staff and outpatient appointments (50,000 annually); compromising not only their health but also their employment (missed appointment cancellations and need to take further time off work potentially),

- The Chilterns Crematorium whose entrance is adjacent to the Amersham Vent shaft work site on Wycombe Road and the traffic control which will be required by contractors to cross the A404 at this point will seriously impact the use of the two chapels on this valuable amenity site which provided cremation services for 3114 persons in 2013. Any further traffic delay at this point on the A404 will only serve to compound the existing traffic flow congestion in the wake of the funeral corteges as they travel along the A404 and all feeder routes to the roundabout at Old Amersham Vent Shaft site. This will have a detrimental effect on the employment of the Funeral directors, Crematorium staff, friends and relatives of the deceased who have ordinarily taken leave from their employment to attend the services and may now have to take a whole day rather than just a few hours.
- Bucks County Council's Household Waste and Recycling Centre on London Road East, HP7 9DT which is adjacent to the work site of the Chalfont St Giles vent shaft access road on Bottom House Farm Lane. The Amersham Fire and Rescue Service which provides protection for all of our CFA 8 communities will be severely disrupted, which could endanger life and health.
- The Chilterns AONB will also be affected as access roads are clogged and we can expect a significant drop in the 55 million visits (55,000,000)[10] that this vital natural resource, so close to London, receives each year.

Vol2(8) 10.4.7 *"Direct construction employment created by the scheme could also lead to opportunities for local businesses to supply the project or to benefit from expenditure of construction workers"*

4 .25: This appears to be a desparate attempt to find some local benefit from the project, despite the overwhelming evidence that the overall efect will be "major adverse".

4.4 Cumulative effects –Permanent effects

4.4.1 Businesses – 10.4.10-11

Vol2(8) 5.4.7 *Chalfont Valley Equestrian centre is situated on Bottom House Farm Lane, north of Chalfont St Giles. Its principal offer as an established business is stabling and it provides livery packages for 25 horses. It also has an outdoor equestrian centre, show-jumping and cross country fences, which are used by Hodgemoor Riding Association amongst others. The centre is used by approximately ten people, on a daily basis to exercise horses; other users can total up to 40 per week.*

4 .26: This business is located adjacent to Hodgemoor Woods, which is an important and valuable Site of Special Scientific Interest (SSSI). It forms part of our local Area of Outstanding Natural Beauty (AONB) and has rare flora and fauna with many great oak trees. The riding trails in Hodgemoor Wood are maintained by the Hodgemoor Riding Association for the Forestry Commission. Since 2000 the Hodgemoor Riding Association has raised close to £100,000 for renovating the paths in the woods and for off-road access.

[10] Visitor numbers are taken from Chiltern Conservation Board Visitor Survey – 2007

4 .27: It is expected that this community resource facility will have to close and with it the loss of staff employment; their livelihoods; and the decimation of this valuable community resource.

4 .28: For the owners and members of the Association, this centre is obviously irreplaceable. For our Nation, it is just one of the many important parts of our National Heritage that will be wiped out forever if this misguided and unnecessary Proposed Project goes ahead.

4.4.2 Community infrastructure

Amersham Hospital

4 .29: Old Amersham Hospital is a modern purpose-designed centre situated on the edge of the historic Amersham Old Town (very close to the proposed vent shaft). The hospital currently has good road links to High Wycombe and Aylesbury as well as the M25 and London Underground.. The hospital is our main base for the care of elderly people, and also offers inpatient services in dermatology and is home to the Buckinghamshire Neuro-rehabilitation Unit for people with neurological and rehabilitation needs. In addition it houses a range of outpatient clinics for the Buckinghamshire Healthcare network, seeing almost 50,000 outpatients a year.

4 .30: The Hospital has 75 beds, and provides:

- Outpatient care: Outpatients, diagnostics, therapies, older people's day hospital
- Planned and inpatient care: Rehabilitation
- Specialist care: Regional dermatology and skin cancer unit
- Clinical support services: Radiology suite, bone densitometry
- The hospital also has a vital ophthalmology unit specialising in Glaucoma and Diabetic Retinal screening; Physiotherapy department, Rheumatology, Cardiology, Podiatry and Phlebotomy.

Access to these facilities (particularly by public transport) will be restricted by the construction works adjacent to the hospital entrance.

4.4.3 Community infrastructure during construction phase:

4 .31: During 2012 there were 10,500 Emergency "Blue Light" admissions to the major Hospital trauma centres, e.g. Stoke Mandeville and High Wycombe (2012), from Amersham and Chalfonts CFA 8

4 .32: What price does HS2 Ltd. place on:

- Our communities' lives being potentially compromised by grid lock on single track roads to major trauma centres over 7 years construction phase?
- Loss of amenity /access to hospital from vent shaft construction phase with disruption to both patients and staff outpatient appointments (50,000 annually).

5 Impact on Health and Wellbeing

5.1 Introduction

5 .1: The impact of the Proposed Scheme impact on the health and wellbeing of the resident and non-resident population must be considered. It is useful to consider how this affects the population by considering it as a time-based problem because with the passage of time the nature of the effect on health and wellbeing changes.

5.2 Planning phase

5 .2: The planning stage for HS2 has already taken three years and may have another four years to run. During this period the main characteristic running as an acidic vein through the population affected, and those who are not, is worry. Seven years of worry will take its toll on even the stoutest constitution and most pragmatic mind. It is also a lot to expect from those affected to shoulder this burden. The subject of this worry falls under **four headings**.

5 .3: **Loss of familiarity and long-term** use or acquaintance with routines or objects might sound trivial but for many, and the elderly are not the only age group in this state, it can become an all-consuming thought. Not as all-consuming it could be argued as worry about loss of land and rights of ownership, loss of investment in fixed assets, and financial loss of property value caused by the Proposed Scheme which might not touch the property but by its very existence as proposed has the effect of diminishing values.

5 .4: **Anxiety brought about by uncertainty** is the second head. The main concern here in the first instance is uncertainty about the nature of the proposal and then the probability of it being built. The first of these it would be reasonable to expect to diminish over time as further and better particulars of the Scheme were developed and released. This seems not to have been the case. The probability of it being built waxes and wanes with each throw of the legal dice and the perception which those affected have of breaking political and other news. Again, seven years is a long time to bear this burden.

5 .5: Many residents and non-residents have become extremely well informed and have researched those aspects of the Proposed Scheme that will generate local effects. For many of them the primary expression of anxiety is a **deep and pervading frustration** at the many deficiencies in the government's HS2 proposal and its rambling manner of trying to convince the public that it will be beneficial. Coupled with this is the frustration that communicating an individual point of view has often been perceived as a complete waste of time because the government is simply not listening, at least not in the full meaning of that word.

5 .6: This leads into the last category of worry, which is **lack of understanding**. Understanding that is about subjects such as noise, disruption, scale, vibration and many others. For many this will never go away. It will continue to haunt and persist uppermost in people's minds not only for the first seven years but for some time after that until reality begins to take shape during construction.

5.3 Construction phase

5 .7: IF this project does go ahead then during construction worry will take a different turn. It will concentrate and be the focus of attention on the actual effects on life style, work and livelihood, access or lack of it. It will also be more depressing because by then it will be beyond control because it is actually happening. The idea will gradually become a reality, and

in the minds of many the reality of what is being built will be there far in excess of their life span especially given the ageing resident population.

5.4 Operation phase

5 .8: During operation, and probably sometime before, this reality will be a thing of the present and for all time. Worry will then turn to the unavoidable and unchangeable. This will cover a wide range of concerns including noise, visibility of the working route and loss. In a way the worries at the outset over loss, uncertainty, effects and understanding will continue but in a different form and with different degrees of severity and concern depending on the effect of the Proposed Scheme on each individual.

5 .9: A reasonable assertion which can be made on the basis of this discussion is that the effect of the planning, construction and operation of the Proposed Scheme will have an impact on the health and wellbeing of those affected. For the purposes of this report the effect of noise is used to illustrate the point.

5.5 Health Impact Assessment

5 .10: The contents of the Environmental Statement are determined by EU regulation and it is for this reason that details of the Health Impact Assessment (HIA) and Equality Impact Assessment will not be available until the Hybrid Bill is deposited. They will not be part of the final Environmental Statement, but will be additional reports. The HIA should include an assessment of stress, anxiety and other mental wellbeing impacts of the proposed scheme, as well as a review of research-based evidence to underpin the assessment of likely effects of the scheme on health and wellbeing. Sound research must form the basis of the HIA, which presumably is now being prepared or has already been completed.

5.6 Noise

5 .11: Noise is broadly defined as any unwanted sound, and to some extent it is an inevitable consequence of living in a mature and vibrant society. Most noise is generated as a by-product of economic activity, from the production and consumption of goods and services, and in the case of the Proposed Scheme by the intermittent but frequent sound of high-speed trains. In managing noise the aim should be to strike a balance between the demand for noise making goods and services and the detrimental effect that noise has on the population exposed. In this case the effect on the populations living in and visiting a protected landscape.

5 .12: Defra has recently reported that the social cost of environmental noise has been estimated at £7-10 Bn per annum and its Noise Policy Statement for England sets out the government's position and key responsibilities for the management of noise, which are to:

a) Avoid significant adverse impacts on health and quality of life;

b) Mitigate and minimise adverse impacts on health and quality of life; and

c) Where possible, contribute to the improvement of health and quality of life

6 Traffic and transport

6 .1: The main impact of HS2 on transport in CFA8 will be felt during the Civil Engineering phase (2018-21), 4 years, followed by Rail fit out (2023-25), 3 years. Note that due to the extended nature of the project, 7 years in total, any resulting problems cannot be dismissed as 'temporary'.

6.1 The ES Transport Assessment

6 .2: HS2 Ltd failed to place Traffic and Transport on the agenda for **any** meeting of CFA8, since the Transport Studies were incomplete. Like so many other things, we were told that all of this information would be revealed in the Environmental Statement. Apart from the deliberately chosen inadequate amount of time initially allowed for detailed review, not changed by HS2 Ltd or the DfT but overruled by the House of Lords, the documents that have been presented are extremely unsatisfactory on several grounds.

6.1.1 Road Capacity

6 .3: Although the traffic projections for various roads have been published, these merely indicate that traffic will increase. The DfT have published a formula that relates the amount of traffic, the percentage of HGVs and the road width to road capacity – but these formula calculations have not been included in the ES, so no-one can check for errors or challenge the calculations.

6 .4: We believe therefore that the projected flows will exceed the calculated road capacity in some cases.

6 .5: The "*increase in traffic-related severance for non-motorised users*" has been reported (Vol 2 CFA8 12.4.15), but the impact on road users themselves has not. This is an unacceptable omission.

6.1.2 Junction Capacity

6 .6: Vol 5 part 6b contains junction capacity assessments for a small number of road junctions in CFA9 & 10. However, the results of some of these assessments are ludicrously inaccurate, with predictions of queue lengths in 2021 **far below what is currently observed on the average working day at present**.

6 .7: CFA8 contains the two busiest junctions on the A413 (meeting with the A404 Harrow Road & A355 Slough Road respectively). Both these roads are north-south feeder roads to the M4, but despite this there are no junction capacity assessments in this area (Vol 5 part 6, 7.4.59-80). This indicates either a staggering degree of incompetence, or a desire to hide the full impact of the construction programprogramme.

6.1.3 Peak Traffic Flows

6 .8: Projected morning and evening peak traffic flows (for 2021) are shown in Vol 5 TA (part 6) Tables T7 31-34. These purport to show the total and HGV traffic flows on different sections of road. However, only roads that are intended to carry HS2 construction traffic have been included (but even these have several omissions).

6 .9: Much more shocking is the fact that for junctions where all roads are included, so that they can be cross-checked for accuracy and reality, the numbers are incorrect as they do not add up. For example, the document numbers provided state that there will be 60 more HGVs

entering the A404-A413 junction (immediately adjacent to the Amersham vent shaft) than leaving it – a discrepancy of 30%.

6 .10: It is impossible to place any reliance on these projections, particularly where they cannot be checked for consistency, in the light of these errors

6.1.4 Summary

6 .11: The deficiencies of the Transport Assessment are analysed in more detail in the submission of the Chesham Society to this consultation[11] and this is there provided herewith as an appendix.

6 .12: We regard the Transport assessment in the ES as unreliable and incomplete – a fact which severely compromises the ES consultation as a whole. We believe that traffic congestion will increase considerably, but that HS2 Ltd are unable or unwilling to provide any more specific information about the severity of the effect in different locations.

6.2 The Non-Technical Summary

6 .13: During construction of vent shafts and their associated headhouses, satellite construction compounds and auto transformer station, the Non-Technical Summary states that (only) Cyclists and pedestrians will be affected at a number of 'local roads'.

6 .14: Most of these roads are not "local" roads but **major route A class roads**, and the respective paragraph (NTS page 85 – 'Traffic and Transport') **makes no mention of the effect on other key forms of transport**, namely cars, lorries, public transport such as buses and coaches, and emergency vehicles etc. This is pathetically and unacceptably inadequate. These forms of transport are vital for the functioning of the area, and the extra traffic created, which will continue over a large number of years, will have a serious detrimental effect on all road traffic.

6 .15: Construction activity at the Amersham Vent shaft was discussed in section 3.3.2 .

6.3 Other Transport Users

6.3.1 Bus Travel

6 .16: The inevitable delays to the 11 bus routes using the A413 and intersecting roads are described merely as intermittent (**12.4.2** page 146) This is clearly inaccurate at best and misleadingly incorrect at worst and requires further detailed investigation and assessment. The Amersham Hospital is a prime destination for bus passengers, and the placement of the Amersham vent shaft in close proximity appears designed to cause maximum disruption to services.

6 .17: The extensive **school bus service** operates during 'peak' congestion times and will also face delays – extending throughout the secondary school career of the classes starting in 2018. Note that there are 2 secondary schools in Amersham, 2 in Chesham, 1 in Little Chalfont and 1 in Chalfont St Peter, all of which will have pupils travelling to them by bus, coach or car.

[11] http://www.cheshamsociety.org.uk/HS2/CheshamSoc_ES_2.10.pdf , see appendix 1

6.3.2 Rail Travel

6 .18: The Chiltern Line is a major commuter route to London (including Harrow, Marylebone and Baker Street Stations). If disrupted, either directly by engineering works in the Wendover area (where the Small Dean viaduct crosses the line), or indirectly should traffic congestion restrict access to stations (Wendover and Great Missenden in particular), some traffic may be displaced onto the Metropolitan Line (Chesham and Amersham branches). This will increase congestion near the stations, and increase demand for parking, to the detriment of existing commuters from these stations.

6.3.3 Walkers, cyclists and Horse Riders

6 .19: While there is some detail regarding closure and diversion of footpaths, and extensive references to Chalfont Valley Equestrian centre (none of which suggest the obvious method of preserving the current facilities), there is almost nothing regarding the needs of walkers, cyclists and horse riders – this despite the extensive impact on bridleways, national cycle routes and footpaths.

6 .20: As usual, the negative economic impacts – in this case on the contribution of leisure activities to the economy of the Chilterns AONB – are entirely ignored.

6.4 Mitigation

6 .21: The only mitigation offered by HS2 Ltd is to "encourage" car-sharing schemes for workers. I.e. no proper mitigation whatsoever! This is pathetically inadequate and this will have serious consequences if this problem continues to be treated as unimportant.

6 .22: We will petition for any parking provided at compounds for workers transport to be expensive and limited. The contractors are to set up a park and ride scheme, running along the trace where possible

6.4.1 Spoil

6 .23: Movement and dumping of spoil in the AONB will be a major contributor to HGV traffic. No consideration has been given to removing spoil using the Chiltern Line, which could be done overnight. See section 9.2 of the Chesham Society submission, for further discussion of this point.

6.5 Roads and Compounds

6 .24: The following sections discuss issues related to particular roads and construction compounds. As in CFA9, HS2 Ltd have taken the easy option of using existing roads to access their construction compounds, no matter how narrow, winding or generally unsuitable the roads, and with no regard for the risks to residents. This will be discussed in detail in the following sections.

6.5.1 A413

6 .25: The A413 is the principle road through the Misbourne Valley, linking the Chalfonts, Amersham, Wendover and Aylesbury Vale to the M25 & M40. While it carries substantial commuter traffic, the section between the Wendover and Great Missenden bypasses is unimproved single carriageway. At peak hours the narrower sections will be operating **beyond the calculated peak capacity**, and considerable congestion may be expected. This is

likely to result in commuter traffic leaving the A413 before the major construction works (in CFA9), and a consequent increase in traffic through Amersham and Chesham.

6 .26: Both the A413 and A404 are on the main route for emergency ambulances heading for Stoke Mandeville Hospital regional A & E Unit, and for Fire and rescue vehicles. The delays identified in the report as a result of the extra traffic associated on these roads will put lives at risk

6.5.2 Amersham Old Town

6 .27: The section of road between the A404 (Whielden Street) and the A355, which will carry much of the construction traffic to the M40 via Beaconsfield, is predicted to carry more traffic than any other section of the A413, but (as noted above) no assessment of the road section or the junctions is available.

6 .28: The A404/A413 junction was clearly not modelled, quote: "as turning count and/or side road baseline traffic data is not available" (i.e. HS2 Ltd forgot to measure it - Vol 5 part 6, 7.4.71).

6 .29: This junction is a strong candidate for being the busiest junction on the A413 and must be properly assessed.

6 .30: Four of the six roads out of Amersham Old Town connect with routes which would be used by HS2 construction traffic, leaving unfettered access only via Rectory Hill (an unsuitable and narrow, steep road with no footpaths) and Station Road towards Amersham on the Hill. This is likely to result in severe congestion in the Old Town, with resulting inconvenience to residents, and economic losses to businesses. Traffic displaced from the A413 onto the A404-A4154-A416 route through the new town will also increase congestion there.

6.5.3 Amersham Vent Shaft

6 .31: The site is surrounded by very busy main roads used by commuters and all major services. It is constricted – which may well cause a problem for the contractor. It is also immediately adjacent to a major access road to the Amersham Hospital. For all these reasons it is clear that this is a case of choosing the least worst option. Any sensible engineer would have sited this vent shaft at a completely different site, well away from this busy junction and the Hospital. We believe that the choice of this site is a major error and alternatives should be considered.

6 .32: **Map Book 8 – CT-05-028** There is a serious problem with the sitting of the 'Roadhead', which is on wrong side of A404. This means that all construction traffic from the vent shaft compound to roadhead **will have to cross the A404** within yards of a very busy junction, causing substantial delays. The authors do not appear to have been aware of this problem and it therefore seems they have not attempted to measure or calculate its impact.

6.5.4 Chalfont St Giles Vent Shaft

6 .33: **Map Book 8** – CT-05-26 & 27 (p28, 30), & **Vol2(8) 2.2.8** proposes

- Permanent widening of Bottom House Farm Lane generally along the south side, to achieve a 4 m wide road; including the provision of passing bays to allow for

permanent access to the vent shaft compound. Improvement works will be carried out to the junction of Bottom House Farm Lane with the A413 Amersham Road;

- Strips of planting on both sides of the widened Bottom House Farm Lane to replace the existing hedgerows along the road where required

6 .34: Bottom House Farm Lane is evidently totally unsuitable as an access road, being far too narrow, so HS2 Ltd proposes building a new road over it. This is gratuitously destructive.

6 .35: The existing access road with substantial hedges and in part sunken, constitutes an obstacle to the construction of an adequate site access road, rather than an aid. The close proximity to farm buildings and the riding school make it unsuitable for subsequent use as an emergency access road.

6 .36: HS2 Ltd must find an alternative access route.

6.5.5 Chalfont St Giles

6 .37: CT-05-25 shows a stretch of the Misbourne either side of the tunnel under Pheasant Hill as "Land potentially required during construction" and labelled 'River Misbourne monitoring area'. What activities will take place here, and what access is required?

6.5.6 Chalfont St Peter Vent Shaft

6 .38: CT-05-24: The proposed access (Joiners, Denham, and Chesham Lanes) is along 1.8 miles of residential roads, passing Robertswood School; grade II listed Gotts monument and the National Epilepsy Centre, to reach a site only 300 m from the A413. This is unsatisfactory, due to the long duration of the work (2 years civil engineering, 2 years rail), and the non-provision of suitable emergency service access to the Vent Shaft once construction has been completed.

6 .39: The land between the Vent Shaft compound and A413 is already marked as "*potentially required during construction*" on the plan.

7 Water Resources

7.1 Introduction and Scope

7 .1: This section deals with the impact of tunnelling on the water resources of the Misbourne valley due to the proposed HS2 scheme on the CFA8 area from the boundary of CFA7 (Colne Valley) at Chalfont St. Peter to the west of Amersham and the boundary of CFA9 (Central Chilterns) to the north of Amersham Old Town at Little Missenden..

7 .2: In all the reams of documentation that form the Environmental Impact Statement, we have been horrified by the superficiality of the majority of this vital study. We have also found little or no evidence that a detailed risk assessment has been carried out and no evidence at all that a realistic and practical mitigation strategy has been devised and is in place. On that basis we find that **this ES is not fit for purpose**.

7.2 General Concerns

7 .3: Designation as an AONB in 1965 recognised that the Chiltern Hills contained some of the finest landscapes in the country which are worthy of protection at the highest level, and current legislation requires that if development does happen (after a thorough and independent review concluded there are no alternatives) then very 'Special Protection' should be put in place.

7 .4: Whilst it could be argued that the very existence of the Amersham Tunnel constitutes some small level of 'Special Protection', the location of this tunnel in itself poses very serious threats to the aquifer, the river Misbourne, and both the human and natural environments.

7 .5: In effect, this ES gives the **illusion** of "Special Protection" whilst permanently blighting a great deal of the AONB at the Chilterns Tunnel portal exit (included in CFA9 and beyond), without the ultimate upside of complete protection for one of our Nation's most valuable Environmental resources – an AONB.

7 .6: Perhaps of most concern is the following comment in the Non-technical summary (Section 7.14) where it states that,

> *"Where there is a potential risk to groundwater abstractions, HS2 Ltd will agree a management strategy with the Environment Agency in consultation with the relevant water company to effectively manage this risk "*

7 .7: And from volume 3 (Route wide effects)

Vol3 15.4.3 *"Potential impacts on groundwater resources due to construction of excavations to form cuttings or tunnels, including green tunnels, will be mitigated locally wherever possible."*

7 .8: We have however seen very little mitigation proposed, and what if mitigation is "not possible"? What will the DfT and HS2 Ltd. do then? "*Wherever possible*" is a woolly, indeterminate phrase with no precise definition: the ES is therefore **incomplete and unacceptable** in its current form.

7 .9: The tunnel element of the HS2 project scheme poses many real risks to both the natural environment and the water supply in the Chilterns and we see no evidence of a detailed evaluation of those risks, let alone a strategic approach to mitigating both foreseen and unforeseen consequences.

7 .10: We would also add that at several points in the CFA report it states that particular features (for example the river, lake, ponds) are of local or regional value (or not). We feel it important to state clearly that all these features are in the Chilterns Area of Outstanding Natural Beauty and therefore, by definition, of **National Importance**. This key point appears lost on HS2 Ltd and its consultants.

7.3 The principle of tunnelling in a valley and Hydrology Concerns

7.3.1 The locations of the tunnel

7 .11: We understand that tunnels are not usually constructed under valleys, which are normally selected as surface transport corridors (e.g. the Watford Gap with roads rail and canals all passing through it). In order to alleviate the visual impact of HS2 it is proposed to enclose it in a tunnel **under the Misbourne valley** which appears to be a totally illogical concept and therefore a high-risk route.

7 .12: We are particularly concerned with the tunnel as it passes close to the surface in Chalfont St Giles and under the neck of Shardeloes Lake.

a) At **Chalfont St Giles** the tunnel will pass below the area most adversely affected by **the original route of the (pre-glacial) proto-Thames river**. The chalk in this area is extremely weathered with clay filled pipes and swallow-holes deeply eroded into the chalk surface.

b) At Shardeloes Lake (and **grade II listed gardens**)[12] the proposed tunnel route will pass less than 30 metres below the lake surface. It is difficult to envisage the lake surviving under these circumstances. The lake sits on the New Pit chalk Formation which is relatively clay rich and therefore of low porosity and permeability; however this chalk formation is known regionally to be crossed by numerous sub-vertical and sub-horizontal joints and fractures, meaning that it will still act as a ground water pathway. We have very real concerns that disturbance of such a structure both during and after tunnel construction must impact on the very existence of this historic and protected site.

7 .13: Both sites are vulnerable to 'ground settlement' and we refer to Vol 5 WR-002 where it states:

Vol5(8) WR-002 4.2.8 *The extent to which the tunnelling could cause settlement has been determined using predicted settlement contours. The extent of impact has been defined based on the minimum settlement contours (i.e. 5mm) and the spatial distribution of the surface water feature (River Misbourne or Shardeloes Lake). The contours indicate that the potential settlement will not extend laterally more than approximately 20m either side of either tunnel … Figure 5 indicates the potential extent of settlement at the Chalfont St Giles crossing under the River Misbourne. The figure suggests that there could be settlement from* ***5-30mm*** *where the tunnel crosses under the River Misbourne, with an extent of impact of approximately* ***255m*** *along the course of the river. The greatest settlement would occur where the Misbourne flows under the bridge by Pheasant Hill.*

[12] https://ubp.buckscc.gov.uk/SingleResult.aspx?uid=MBC24715

Vol5(8) WR-002 4.2.9 *Figure 6 shows the potential extent of settlement at the crossing upstream of Shardeloes Lake. The figure indicates that the River Misbourne alone could be impacted along a stretch of up to **275m**, with settlement from 5mm at the outer edges of the twin tunnels to **30mm** close to the centre. The figure also indicates that a small pond, which is 24m in length, could be impacted together with a part of Shardeloes Lake which is closest to the route. The overall length that could be impacted (including the River Misbourne, the small pond and Shardeloes Lake) could be approximately **535m**.*

7 .14: This could have a devastating impact at both locations.

7.3.2 The quality of the data and analysis

7 .15: The proposed tunnel through the Chilterns will pass through a complex and little understood pattern of fractured and frail limestones (mainly Seaford and Lewes Nodular formations) and will bore directly though the water bearing layers of rock (**20 – 30 m below** peak water levels - **Vol2(8) 13.3.15**) – Something that we understand **most tunnels try to avoid**.

7 .16: We find it extremely hard to believe that this tunnel, a major aspect of the proposed HS2 project, with the potential to do so much harm to the natural environment and water resources, can have reached this advanced stage without establishing the basic structure of the geology and hydrology through detailed survey.

7 .17: Specifically, we note in CFA8 (The Chalfonts and Amersham) that **no** reference to such detailed data collection and analysis work has been done. We therefore make the following specific observations:

- It is clear from the text that no detailed survey of the geology of the tunnel route has been undertaken;
- no project specific survey of groundwater levels and flows has been undertaken (**Vol2(8) 13.2.5**) and the data that is being used for this study dates back to 2000/2001 (fourteen years old in a time of generally accepted climate change);

7 .18: and unbelievably:

- the tunnelling methodology has not been selected (**Vol2(8) 13.2.6**);

7 .19: Given the above we are horrified to read the following contradictory comments:

Vol 3 15.4.9 *"Until such monitoring and any necessary agreed measures have been carried out, a likely **significant temporary adverse effect** is reported on the groundwater resources in the CFA identified above, and is therefore a likely **significant effect on a regional scale** during construction."*

Vol 3 15.5.28 *It is concluded that:*

- *in light of the work carried out by HS2 Ltd in liaison with the Environment Agency, all practicable measures to mitigate adverse impacts on surface water bodies and groundwater have been identified, and those measures will continue to be reviewed;*

***Vol 5 WR-002-008 5.2.10** It is concluded that there will be a negligible impact on groundwater quality in the Chalk and a neutral effect. A programme of groundwater*

monitoring, in coordination with monitoring at Affinity Water's PWS boreholes, will, however, be implemented to confirm this.

7 .20: This is therefore incomplete and as such completely unacceptable! In essence such an appalling lack of proper environmental study and research shows **a complete disregard for the potential risks** and **completely invalidates the ES**.

7 .21: To highlight just a few questions

a) Have detailed and specific surveys been carried out?

b) What measures have been identified to mitigate adverse impacts?

c) What constitutes and defines 'practical measures'?

d) What constitutes and defines 'negligible impacts'?

e) What mitigation is being considered?

7 .22: It is a sad indictment of the DfT, HS2 Ltd, and its armies of consultants that this project has reached this stage with so many unanswered questions, uncertainties and potentially disastrous risks.

7.4 Impact on the River Misbourne and surface water resources

7 .23: The river Misbourne is a 'perch' stream, flowing over a bed of impermeable material on top of a porous substrate. This state is only quasi-stable, since in periods of low rainfall the water table drops below the level of the impermeable layer. Any damage to the land (for example damage caused by ground surface collapse as a result of tunnelling) could have a devastating impact on the river.

7 .24: Given the fractured and very weak nature of the rocks throughout the Chilterns, the potential for Ground Surface Collapse cannot be underestimated so tunnelling here cannot proceed without a very detailed survey, which if the ES had been done properly, would already have been completed. Any collapse would obviously have a significant impact on the river (and Lake at Shardeloes), as well as the aquifer itself (not to mention the residents of Chalfont St Giles and people using the A413).

7 .25: The possible impacts of the tunnel on the hydrology of the Misbourne valley are several and significant. They include:

a) changed flow to the river Misbourne in the Old Amersham area with (currently) unknown impacts to surrounding countryside and communities (including flooding) which has been experienced in recent weeks.

b) potential impacts to Shardeloes lake, including the possibilities of it both flooding and drying out;

c) the possibility of surface water flooding in the Chalfont St Peter area which has already had severe flooding this year;

d) the possible requirement to fence off the pond in Chalfont St Giles as a result of possible subsidence as a result of the tunnelling process.

7.5 The aquifer

7 .26: Consultations with a range of stakeholders, some highly knowledgeable on these matters, has led the HS2 Amersham and Chalfonts Action Groups to be concerned that any damage to the aquifer (particularly, but not limited to the construction process) could very easily lead to the pollution, or even worse, of water currently used for local agriculture, businesses and residents.

7 .27: These negative impacts however may not only be local. The chalk formations that underlie the whole of the London Basin have long provided the capital with much of its water supply. **Any pollution or damage to the aquifer in the Chiltern area, unless isolated rapidly by complex, and expensive, ground engineering, could potentially cause long-term damage to London's own water supply (including the Victoria area and Westminster).**

7.6 Impact on water resources of the Vent Shafts

7 .28: We also note that the vent shafts will need to discharge water back into the natural environment:

Vol2(8) 13.4.9 *"groundwater from dewatering at vent shafts will be discharged back into the groundwater via recharge wells within the vicinity of the vent shaft. As a precaution in the event that a technical constraint is identified in detailed design, provision has been made to transfer some discharge from dewatering by pipeline into the River"*

7 .29: This statement poses a number of questions:

a) What will be the impact of returning water from the vent shaft to the aquifer

b) Where are the plans for the proposed pipelines to the river and what is the anticipated impact of the construction process

c) What is the anticipated impact of returning water to the Misbourne river

7.7 Potential Disruption to water services

7 .30: It is clear from the CFA8 report that disruption to water supplies to local residents is anticipated:

Vol2(8) 13.4.52 *"Until a management strategy is agreed with the Environment Agency in consultation with Affinity Water, as described above, there is the potential for* ***a likely significant temporary residual effect on the Affinity Water groundwater abstractions."***

7 .31: This sweeping and non-specific statement is totally unacceptable **i**n any circumstances and particularly when this statement forms part of what is supposed to be the definitive document designed to protect and preserve our nation's natural resources and environment during the construction and operation of this ill-conceived HS2 project. This just serves to prove yet again that it is not fit for purpose.

7 .32: At the very least there needs to be an unqualified guarantee that arrangements will be put in place to ensure that there will be no disruption to domestic and commercial water supplies to residents in the Chilterns and that any additional costs to supply will be fully covered by the DfT /HS2 Ltd – not the customers of Affinity Water or other water providers.

Appendix 1. The increasing burden of rail tolls.[13]

[Translation from Le Parisien 26 Dec 2013.]

"For the SNCF this is the main reason for the bad figures registered with the TGVs. These tolls, which are paid to the French Railway Organisation for the maintenance of the tracks, are constantly increasing.

Maintenance cost increase for the TGV, France [**35%** since 2009, just 4 years!]

2010	2011	2012	2013
11%	11.7%	1.5%	7.4%

Overall a dramatic rise which is expected to continue in 2014

According to the SNCF, about 30 % of the TGV lines would not be profitable, a figure which the FNAUT disputes as under-estimated. "Five years ago 10 % of the lines were not profitable, two years ago it was 30 % and now according to the figures given by the SNCF management 50 % would not be profitable.

[13] Charges paid for Track maintenance