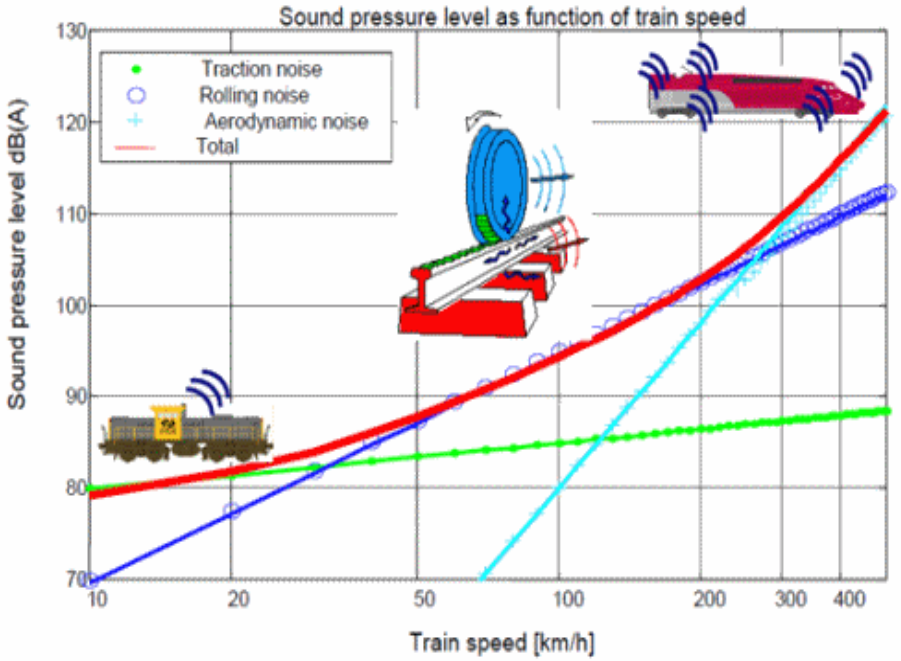
HS2AA PETITION

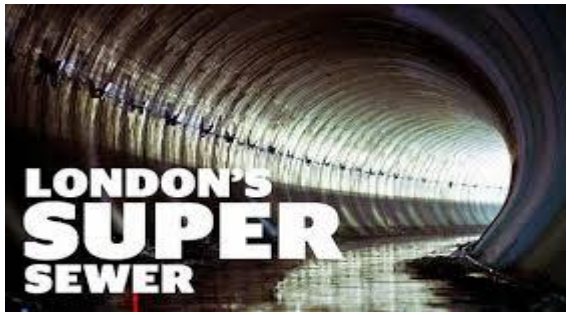
Noise impacts



		Proposed Scheme Only				Do Nothing			Do Something		Change				calc
	Source: SV-004					green for quieter areas eg									red =+20db
						green =	green=				pink =1db to 10db worse				HS2 over
				(HS2)	(TSI)	<45	<35				red ='+10dB or more				do nothing
CFA #	Area Represented	PDay	PNigh	PMax (	PMax (	Day	Nigh	Max	SDay	SNig	CDay	CNigh	Type Effe	# Impac	max incr
CFA16	Ufton Vale Farmlands B	52	43	67	70	30	22	29	52	43	22	21	-	-	41
CFA16	Wormleighton, Southam	40	30	51	54	35	17	41	41	30	5	14	NA	1	13
CFA17	The Grange, Cubbington	42	35	53	56	37	33	43	42	35	5	2	NA	19	13
CFA20	Vicarage Hill, Middleton	43	36	61	63	38	34	38	43	36	6	3	A	3	25
CFA20	Vicarage Hill Farm, Vicarage Hill (Equestrian Training)	43	36	61	63	38	34	38	43	36	6	3	B	1	25
CFA11	Haddenham Vale 4	51	42	63	66	41	30	31	51	42	10	12	-	-	35
CFA15	Edgcote, Banbury	46	37	62	65	41	33	45	48	38	6	6	NA	1	20
CFA15	Edgcote, Banbury	47	38	63	66	41	33	45	48	39	7	6	NA	7	21
CFA15	Home Farm, Edgecote	47	38	58	61	41	33	45	48	39	7	6	NA	1	16
CFA15	St. James Church, Edgcote, (Church)	46	37	62	65	41	33	45	48	38	6	6	B	1	20
CFA15	Edgcote House Stables, Edgcote (Stables)	47	38	63	66	41	33	45	48	39	7	6	B	1	21
CFA16	Leamington Road, Ufton	53	44	68	71	41	33	38	54	44	12	12	A	2	33
CFA16	Wood Farm, Leamington Road (General Commercial)	53	44	68	71	41	33	38	54	44	12	12	B	1	33
CFA17	Hunningham Road, Offchurch	48	39	61	64	41	31	39	48	39	8	8	NA	2	25
CFA17	Manor Farm, Hunningham Road (General Commercial	48	39	61	64	41	31	39	48	39	8	8	B	2	25
CFA13	Chetwode, Buckingham	59	50	72	75	42	33	41	59	50	17	17	A	1	34
CFA13	Committed Development CFA13/4	76	67	91	94	42	33	41	76	67	34	33	U	1	53
CFA13	St Mary's Church Twyford (Church)	51	42	66	70	42	32	35	52	42	9	11	B	1	35
CFA16	Ladbroke, Southam	48	39	61	64	42	34	43	49	40	8	6	NA	1	21
CFA16	Upper Radbourne, Southam	42	33	54	57	42	34	43	45	36	3	2	NA	3	14
CFA16	Windmill Lane, Ladbroke	57	48	69	73	42	34	43	58	48	16	14	A	2	30
CFA16	Lady Hill	47	38	59	62	42	34	43	48	39	7	5	-	-	19
CFA18	Frythe Close, Kenilworth	46	37	62	64	42	33	48	46	37	4	4	NA	10	16
CFA18	National Agricultural Centre, (General Commercial)	50	40	61	65	42	31	38	50	40	7	9	B	10	27
CFA18	National Agricultural Centre, Stoneleigh Park (Office	59	49	71	74	42	31	43	59	49	16	18	B	2	31
CFA12	Quainton Road, Waddesdon	47	38	61	64	43	33	40	47	38	5	5	NA	15	24
CFA12	The Mill, Quainton Road (General Commercial)	47	38	61	64	43	33	40	47	38	5	5	B	1	24
CFA13	Chetwode, Buckingham	69	60	84	87	43	31	35	69	60	26	29	S	2	52
CFA17	Austen Court, Cubbington	45	36	57	60	43	33	37	45	36	3	3	NA	14	23
CFA18	National Agricultural Centre, Stoneleigh Park (Office	60	50	71	73	43	32	40	60	50	16	18	B	2	33
CFA18	Federation House, National Commercial)	60	50	71	73	43	32	40	60	50	16	18	B	1	33
CFA20	Coppice Lane, Middleton	49	40	66	68	43	32	49	50	40	7	8	A	1	19
CFA20	Upper House Farm, Coppice Lane, Middleton, (Office	49	40	66	68	43	32	49	50	40	7	8	B	1	19
CFA22	Handsacre Crescent, Rugeley	42	35	55	0	43	33	43	45	35	2	2	NA	46	-43
CFA22	Hill Top View, Rugeley	42	34	55	0	43	33	49	44	34	1	1	NA	47	-49
CFA15	Thorpe Mandeville, Banbury	63	53	75	78	44	34	42	63	53	18	19	A	1	36

Doug Sharps

- Member of Institute of Acoustics since its inception; Fellow for 30 years.
- Chartered engineer and Fellow of Institution of Mechanical Engineers.
- Expert witness at over 300 planning inquiries and court cases.
- Advised on many major projects from Concorde, airports, ports, Thames Tunnel, Channel tunnel.



HS2AA – Scope of Presentation

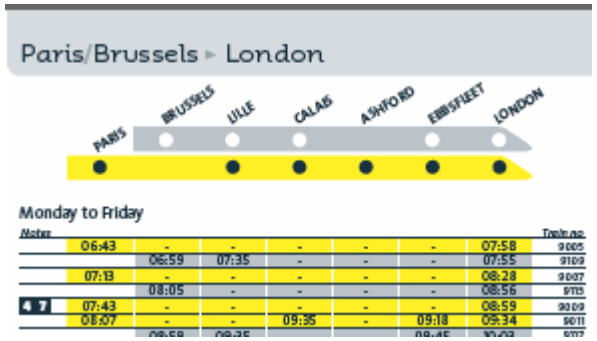
- Not taking every point in Petition to avoid duplication.
- Numerous points regarding defects in EIA process could be taken not least:
    - The inability of an individual to be able to identify the residual noise impact on their property (a fundamental requirement of EIA Regs).
    - The absence of LAMAX noise contours and any LAMAX LOAEL.
- Central theme:

HS2 proposed noise controls do not protect health and quality of life or the amenity of residents sufficiently during construction or operation of the railway. They require amendment.

Differences between HS2 and HS1

- HS1 route follows transport corridors – HS2 does not.
- Train frequency – HS2 much greater.
- Train times of day – HS2 more trains earlier and later.
- Speed – HS2 faster.
- Noise implications – HS2 more invasive.

HS1 is a poor template or model for HS2.



LOAEL and SOAEL

- Effect threshold levels based on noise “dose-response”.
- How people will behave if exposed to certain “total” noise levels.
- Levels above SOAEL to be avoided.
- Levels above LOAEL and below SOAEL to be mitigated and minimised.
- LOAELs serve as HS2 design target (LAeqT and LAMAX).
- If LOAEL or SOAEL too high, unacceptable impacts will result and insufficient mitigation will be adopted to protect health, quality of life and amenity.

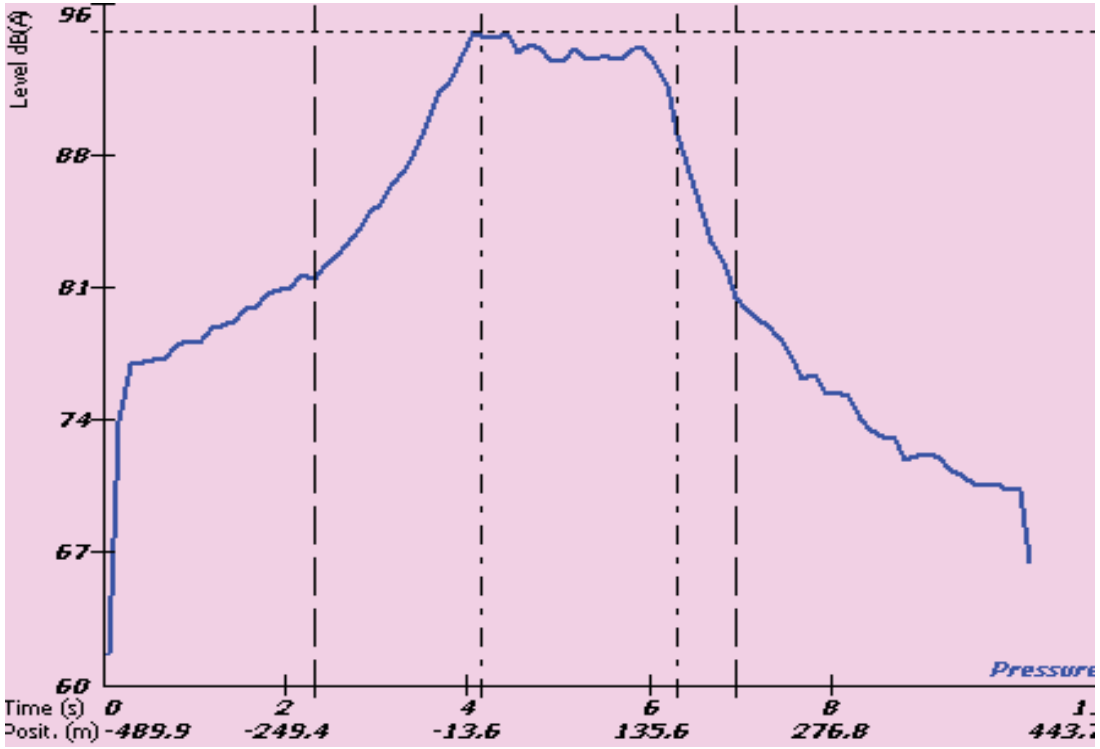
Total Noise

- WHO guidelines and Night Noise Guidelines provide “guideline values” for total noise.
- Total noise is noise from all sources – all-encompassing.
- But HS2 adopts LOAEL and SOAEL thresholds for rail operations in isolation (and only uses total noise for assessing increases).
- If HS2 is designed to LOAEL thresholds then total noise at receptors could exceed WHO guideline values.
- Need appropriate criteria to take this into account.

Character of Noise

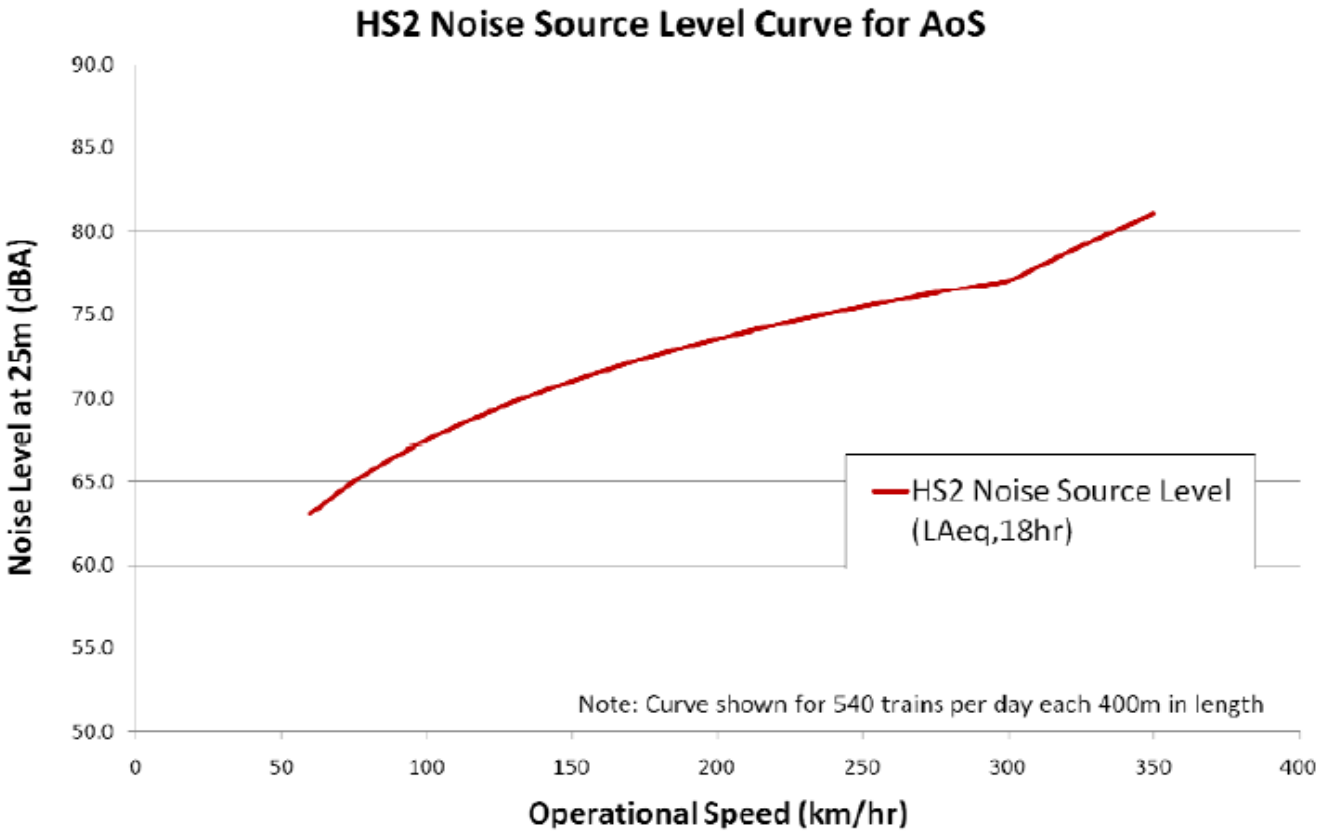
- The noise controls proposed for rail noise do not take account of the character of the noise of a high speed train:
  - Different characteristics of noise result in marked differences of impact.
  - Noise will arrive very quickly (rise-time) due to train speed (100 metres/second), resulting in abrupt increase in sound (particularly exiting tunnels).
  - The acoustic frequency of high speed train is relatively high.
  - The LOAEL values used by HS2 not derived from dose-response studies of high speed rail noise.
  - A correction to LOAEL/SOAEL must be made to allow for the characteristics of HS2 noise – particularly in quiet areas.

Character of Noise



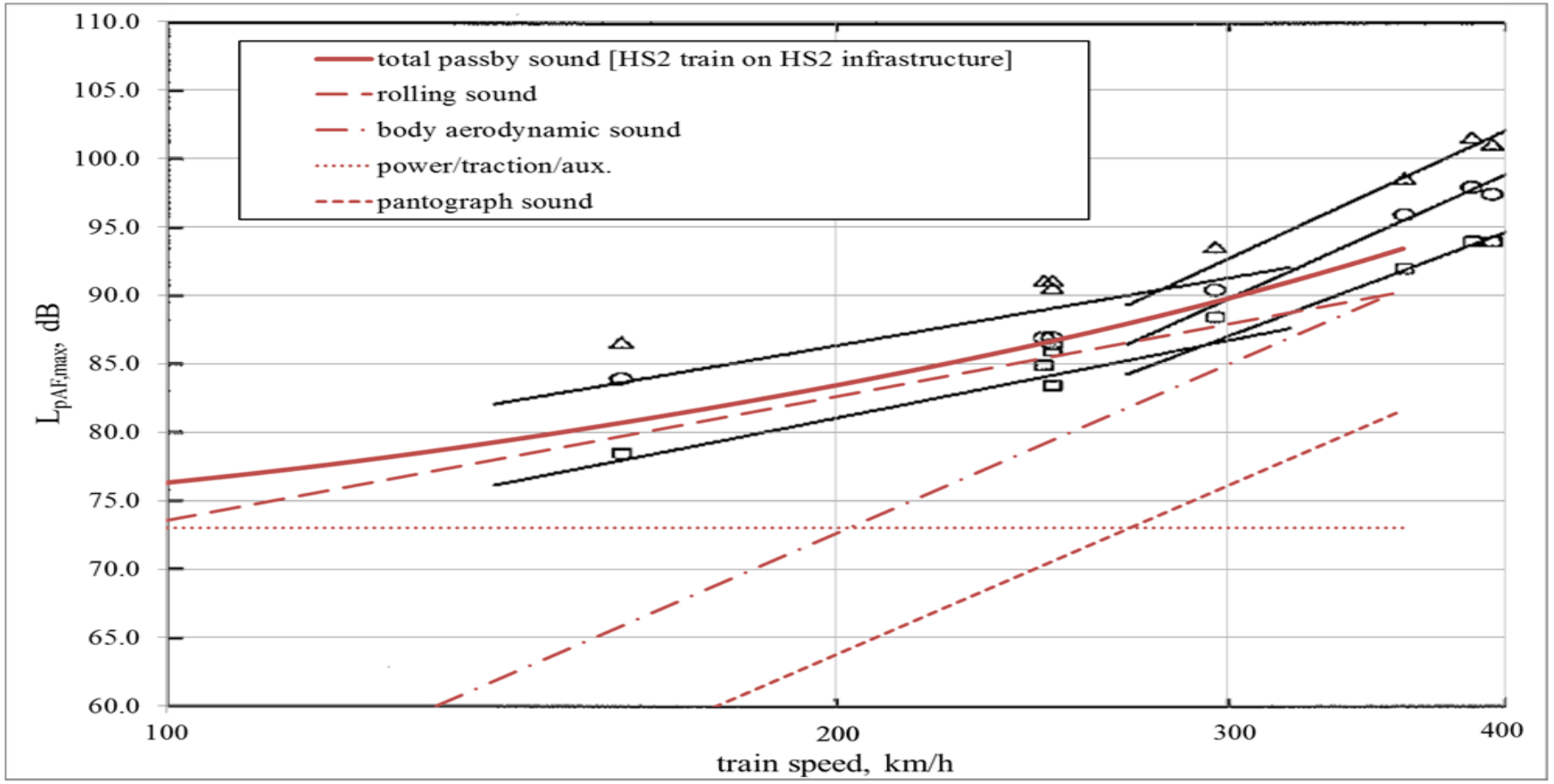
High speed trains external noise: a review of measurements and source models for the TGV case up to 360 kph Gautier et al. Slide shows TGV at 320 kph at 25 metres from track. Undated.

Character of Noise



From a response by HS2 under Freedom of Information legislation. May 2010

Character of Noise



HS2 ES Appendix SV-oo1-000Annex D2 Fig 5. Level at 25 metres from track.

Daytime and Evening

- There is greater sensitivity to noise in the evening period than during the day as many more people are at home and relaxing (young sleeping).
- The distinction between day and evening is recognised by UK Government and WHO.
- Evening thresholds should be 5 to 10 dB below daytime.
- HS2 itself has separate, lower, evening LOAEL values in the construction impact assessment but none for rail noise.
- It is necessary to have separate, lower, LOAEL and SOAEL for the evening period.

Noise controls at Night

- Noise needs to be controlled at night to protect sleep.
- HS2 proposed noise controls at night adopt an 8 hour averaging period which is inappropriate.
  - Trains will only operate during part of the 8 hour period.
  - It is wrong to average over the full period in such case.
  - Trains will operate in the particularly sensitive “shoulder” night periods - not deep sleep.
- WHO NNG says choose the assessment index that best reflects impact - LAMAX better indicator of sleep impact from HS trains than LAeqT.
  - LAMAX levels vs background matter as do number of events.
- HS2 propose a 60 LAMAX as LOAEL - NNG intimates this is too high – but used here.

Impact of HS2 LAMAX at Night

- HS2 contend: the highest LAMAX baseline level recorded overnight should be compared to HS2 LAMAX.
- However, it is wrong to compare one highest overnight baseline LAMAX against lots of HS2 LAMAXs.
- Comparison between the average LAMAX baseline level and HS2 LAMAX (HS2/TSI) level is reasonable.
  - 10 dB or more difference (twice as loud) @ 7,223/10,970 properties
  - 20 dB or more difference (4 times as loud) @ 1,120/1,908 properties
  - 30 dB or more difference (8 times as loud) @ 82/165 properties
- The ES and HS2AA analysis simply show that, at night, the LAMAX generated by HS2 will be well above the prevailing (i.e. average) LAMAX experienced at many properties.

Quiet Areas

- Proposed noise controls do not make a distinction between quiet rural areas and noisier urban areas – they should.
  - 87% of HS2 between M25 & M42 is in rural areas and not a transport corridor (54.5 miles).
- Policy seeks to minimise impact upon health and quality of life.
  - UK Government recognises that effect levels will be different for different kinds of acoustic environments.
  - Nature of the rural noise climate is markedly different from urban.
  - The same level of noise will have markedly different impact in rural areas than urban areas - lack of masking sound.
- It is necessary to have noise controls that recognise the difference between quiet areas and other areas.
- Quiet areas are LAeq16hr = 45 dB or lower during day and LAeq8hr = 35 dB or lower at night. But also need a common-sense approach to defining quiet areas.

Uncontrolled noise

- How people use outdoor space is an important consideration. If noise results in a change in behaviour, the noise should be managed.
- Currently omitted places
  - Gardens – only patio/BBQ area.
  - Footpaths.

SOAEL

- SOAEL should be defined at a level of 10 dB above LOAEL, not +15 dB (for LAeqT) or +20/25 dB (for LAMAX) as HS2 propose.
- National Physical Laboratory advise that significant impacts (SOAEL) occur at much higher levels than low impact (LOAEL).
- 10 dB is double the loudness = much higher level.
- HS2 adopts this +10 dB approach for construction noise in IP E23.

Proposed Noise levels

HS2AA propose different noise levels to replace those in E20 Appendix B Table 1.

LOAEL and SOAEL must reflect the impact of HS2 noise character in quiet areas.

Two sets of LOAEL and SOAEL are required – to reflect the difference in impacts in areas with different noise climates.

HS2 proposed Noise levels

Table 1

Period	Noise index	LOAEL	SOAEL	Provenance
Day	LAeq16hr	50 dB		The WHO Guidelines for Community Noise
Day	LAeq16hr		65 dB	The Noise insulation Regulation (railways)
Night	LAeq8hr	40 dB		The WHO Night Noise Guidelines' guideline value
Night	LAeq8hr		55 dB	The WHO Night Noise Guidelines "Interim Target"
Night	LAMAX	60 dB		The WHO Guidelines for Community Noise
Night	LAMAX		80/85 dB	The findings of 3 research papers

HS2 apply LOAEL and SOAEL to HS2 noise alone

HS2AA proposed Noise levels

Table 2 For areas not designated as “quiet”.

Period	Noise index	LOAEL	SOAEL	Provenance
Day	LAeq12hr	50 dB		WHO guideline value
Day	LAeq12hr		60 dB	As above + 10 dB
Evening	LAeq4hr	45 dB		Daytime level minus 5 dB for addition impact during the evening
Evening	LAeq4hr		55 dB	As above + 10 dB
Night	LAMAX	60 dB		WHO guideline value
Night	LAMAX		70 dB	As above + 10 dB

LOAEL and SOAEL apply to total noise

HS2AA proposed Noise levels

Table 3 For areas designated as “quiet”.

Period	Noise index	LOAEL	SOAEL	Provenance
Day	LAeq12hr	40 dB		Table above minus 10 dB.
Day	LAeq12hr		50 dB	Table above minus 10 dB.
Evening	LAeq4hr	35 dB		Table above minus 10 dB.
Evening	LAeq4hr		45 dB	Table above minus 10 dB.
Night	LAMAX	50 dB		Table above minus 10 dB.
Night	LAMAX		60 dB	Table above minus 10 dB.

LOAEL and SOAEL apply to total noise

Crossrail change criteria

Table 4

Predicted noise change (LAeq16hr day or 8hr night)		
Decrease more than 3 dB	Significant decrease	Significant positive impact
Decrease/increase less than 3 dB	No significant change	(But still minimise and mitigate if above LOAEL)
Increase 3 to 5 dB	Slight increase	Significant negative impact.
Increase 6 to 10 dB	Moderate increase	Significant negative impact.
Increase more than 10 dB	Substantial increase	Significant negative impact.

Assessment method

Table 5

Threshold (re "do something")*	Noise change ("do something" versus "do nothing"	Scale rating	Action
Total noise < LOAEL	NA	NA	Do nothing
Total noise > LOAEL but < SOAEL	Increase in noise > 0 < 3 dB		Take reasonable measures
	Increase in noise 3 dB or more	"Significant" negative impact	Avoid the increase
Total noise > SOAEL			Avoid any increase
***Note: HS2 apply thresholds to HS2 noise only.**			

IP E20 – “Reasonably practicable”

- Noise controls in IPE20 are limited to that which is reasonably practicable.
- Reduction in the speed of trains in a given location should be considered.
- Currently the nominated undertaker alone to make a judgment that includes balancing cost against environmental benefit.
- Crossrail gave undertaking involving local authorities in the design process, including provision of how the obligation to meet a design standard using steps which were reasonably practicable was met.
- In present case, the design steps should at minimum be ratified by a local authority working group to ensure democratic accountability.
- For HS2, where many LAs, judgment must also be ratified by independent third party.

Construction Noise

- BS5228 method 2 – “5dB change” should be used
- This method allows identification of potential “significant” effects.
- Crossrail adopted a similar approach.
- Mineral planning limits appropriate for long term earth works.
- HS2 approach inappropriate in a number of ways not least:
    - Its method identifies noise insulation thresholds – not significant impact.
    - LOAEL is also wrongly identified as a result
    - It would permit very significant changes in noise levels in quieter areas.

Tie nominated undertaker to assessment

- An undertaking is required to ensure that the project is tied to the assumptions on which the noise assessment has been undertaken in the ES and they are adhered to. These include
  - A limit on **maximum speed** to 360 kph;
  - A maximum of **10% of trains** will operate at speeds above 330 kph;
  - **No greater numbers of trains per hour** than is shown in Figure 6 of SV-001-000 noise, sound and vibration technical appendix shall operate on the parts of the route shown;
  - **No trains** in passenger service shall operate on the line **between 0000 hours and 0500**;
  - **No freight** or cargo trains shall operate on the line;
  - Only trains of **400m or less** shall operate on the line;
  - The **aerodynamic noise** from the pantograph together with the track specification and maintenance regime shall ensure that at all times noise emissions from an HS2 train will be **at least 3dB less** than if a current European high speed train were operating on the HS2 track;
  - **No train** operating on the line shall have **cast iron tread brakes**;
  - **Only articulated bogies** shall be used on the line.
- An undertaking is also required to ensure that
  - **rails are ground regularly** to the specification assumed in the ES impact assessment
  - **wheels are maintained to the roughness** specification assumed in the ES impact assessment.
- These two undertakings sought were required of Crossrail and the Northern Line extension.

the above, it is suggested that the limit of 55 dB LAeq1h is adopted for daytime construction noise for these types of activities but only where the works are likely to occur for a period in excess of six months. Precedent for this type of approach has been set within a number of landmark appeal decisions associated with the construction of ports."

4.0 The assessment of noise impact from rail operations

Introduction

4.1 My comments below relate to matters set out in Technical Appendix SV-001-000 and its Annex A since this offers the most comprehensive and comprehensible advice on the issues which I wish to discuss.

4.2 I do not understand HS2's approach to the setting of LOAEL and SOAEL values in Appendix SV-001-000 Annex A.

4.3 In a section which considers impact on "communities", HS2 make the following comment:

"Forecast operational sound levels from the Proposed Scheme of between 50 dB and 65 dB daytime, or 40 dB and 55 dB night-time (i.e. between HS2's LOAELs and SOAELS) may be perceived as a change in quality of life for occupants of dwellings or a perceived change in the acoustic character of an area. When considered collectively for groups of dwellings and their shared community open areas, such effects may be significant." (emphasis added)

4.4 This appears to say that if, as a result of HS2, there is a change in the acoustic character of an area, SOAEL may result at levels below the stated SOAEL values.

4.5 This is not logical and indicates a problem with the selected SOAEL values in quieter areas.

4.6 In my view it is inappropriate for HS2 to seek to add a caveat to the chosen SOAEL for the character of the source relative to the character of the area. Instead, the SOAEL should be modified (i.e. made more stringent) to reflect the inherent difference between the character of HS2 rail traffic and the character of the quieter areas through which this rail traffic will pass. This indicates the need for different LOAEL and SOAEL in areas which currently experience different noise climates.

4.7 The provenance and noise emission levels of the LOAEL and SOAEL values adopted by HS2 in Technical Appendix SV-001-000 Annex A and presented in its Information Paper E20 - are summarised in Table 2 below:

5.10 However, probably the biggest problem with HS2's proposed E23 assessment method is that it does not accommodate the assessment of impacts in areas which currently have different noise climates. This is a critical error because, as discussed in Sections 2.0 and 3.0 above, policy and technical guidance advises that, for a given noise, impact will be higher in quieter areas.

5.11 What HS2 should have done is:

- Adopt BS 5228 assessment method 1 or 2 – both allow the determination of potential significant effects. In my opinion, assessment method 2 is preferable and should be used.
- Adopt these as a matrix of SOAEL for areas with different noise climates (both the ABC method and the 5 dB change method do this).
- Set LOAEL values 10 dB lower (as it has in E23).
- Set assessment criteria for long-term earth moving activity in accordance with advice in mineral planning guidance.

5.12 In summary, the E23 approach to setting construction noise impact criteria is simply wrong. It does not reflect the fact that significant effects will vary in areas having different noise climates. HS2 should have used BS 5228 assessment method 2 to establish SOAEL values. HS2 should have considered long-term earth moving activity separately.

5.13 I commend this approach to the Select Committee.

6.0 Summary

Operational noise

6.1 The aims and objectives of Government policy can be reasonably summarised as follows:

- Separate noise sources from noise sensitive receptors – NPSE's stated "broad aim of noise management".
- NPSE states that it is not possible to have a single objective noise-based measure that defines SOAEL and acknowledges that SOAEL is likely to be different for different noise sources, for different receptors and at different times. Although NPSE has not made the same statements in relation to LOAEL, it is reasonable to assume that the same advice applies.
- SOAEL and LOAEL values must, therefore, be set which reflect the character of the noise source being assessed, the level and character of noise within the area into which the noise is to be introduced and at different times (including the evening).
- Avoid adverse noise impacts at SOAEL.

- Between LOAEL and SOAEL: mitigate and minimise, “taking all reasonable steps” and “as far as is reasonably practical”.

6.2 Although the NPSE and other Government policy advice does not recommend a means of determining noise-based measures that reflect SOAEL and LOAEL it does refer to the WHO Guidelines for Community Noise (the Guidelines). These Guidelines provide “guideline values”.

6.3 The WHO guideline values are aligned to LOAEL. SOAEL will occur at higher noise levels than LOAEL. In my opinion there will be a fixed relationship of 10 dB between LOAEL and SOAEL. This is the difference indicated by technical advice and is the difference that HS2 has used in E23 for its construction LOAEL and SOAEL.

6.4 LOAELs and SOAELs must be based on total noise. Recommended values are provided in Tables 3 and 4.

6.5 It is also necessary to consider the change in noise level that results from the HS2 proposal. The Crossrail assessment criteria have been employed in this respect (Table 6).

6.6 Required actions to manage HS2 generated noise dependent on the level of total noise for LAeqT and the scale of increase. Required actions are set out in Table 7.

6.7 In relation to LAMAX levels, the required actions depend on level of HS2 generated noise against LOAELs and SOAELs provided in Tables 3 and 4.

Construction

6.8 In summary, the E23 approach to setting construction noise impact criteria is simply wrong. It does not reflect the fact that significant effects will vary in areas having different noise climates. HS2 should have used BS 5228 assessment method 2 to establish SOAEL values.

6.9 LOAEL values should be 10 dB lower as HS2 has indicated in its E23.

6.10 HS2 should have considered long-term earth moving activity separately.

"***Promote good health and good quality of life"***

2.15 This statement expresses the long term desired policy outcome, but in the use of "promote" and "good" recognises that it is not possible to have a single objective noise-based measure that is mandatory and applicable to all sources of noise in all situations.

"***Effective management of noise"***

2.16 This concept confirms that the policy applies to all types of "noise" (environmental, neighbour and neighbourhood) and that the solution could be more than simply minimising the noise.

"***Within the context of Government policy on sustainable development"***

2.17 Sustainable development is a core principle underpinning all government policy. For the UK Government the goal of sustainable development is being pursued in an integrated way through a sustainable, innovative and productive economy that delivers high levels of employment and a just society that promotes social inclusion, sustainable communities and personal wellbeing. The goal is pursued in ways that protect and enhance the physical and natural environment, and that use resources and energy as efficiently as possible.

2.18 There is a need to integrate consideration of the economic and social benefit of the activity or policy under examination with proper consideration of the adverse environmental effects, including the impact of noise on health and quality of life. This should avoid noise being treated in isolation in any particular situation, i.e. not focussing solely on the noise impact without taking into account other related factors.

What do the aims of the Noise Policy Statement for England mean?

2.19 There are several key phrases within the NPSE aims and these are discussed below.

"*Significant adverse" and "adverse"*

2.20 There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:

<u>NOEL – No Observed Effect Level</u>

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

<u>LOAEL – Lowest Observed Adverse Effect Level</u>

This is the level above which adverse effects on health and quality of life can be detected.

2.21 Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

2.22 It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available.

The first aim of the Noise Policy Statement for England

Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

2.23 The first aim of the NPSE states that significant adverse effects on health and quality of life should be avoided while also taking into account the guiding principles of sustainable development (paragraph 1.8).

The second aim of the Noise Policy Statement for England

Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

2.24 The second aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur.

The third aim of the Noise Policy Statement for England

Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

2.25 This aim seeks, where possible, positively to improve health and quality of life through the pro-active management of noise while also taking into account the guiding principles of sustainable development (paragraph 1.8), recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim.

the SOAEL is likely to be different for different noise sources, for different receptors and at different times".

Planning Practice Guidance - Noise (2014)

7. Government's Planning Practice Guidance on noise (PPG) provides guidance on the effects of noise exposure, relating these to people's perception of noise, and linking them to the NOEL and, as exposure increases, the LOAEL and SOAEL.

8. As exposure increases above the LOAEL, the noise begins to have an adverse effect and consideration needs to be given to mitigating and minimising those effects, taking account of the economic and social benefits being derived from the activity causing the noise. As the noise exposure increases, it will then at some point cross the SOAEL boundary.

9. The LOAEL is described in PPG as the level above which "noise starts to cause small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life."

10. PPG identifies the SOAEL as the level above which "noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area."

HS2 Sustainability Policy (2013)

11. HS2's sustainability policy sets out HS2 Ltd's commitment to be an exemplar project. It states that HS2 "will promote high speed rail and balance community, environmental and economic issues". The key theme identified that relates to noise impact is "Environmental change: seek to avoid significant adverse effects on communities, business and the natural, historic and built environment. Minimise impacts where they occur and deliver enhancements as far as practicable to ensure there is no net loss to the natural environment". This reflects the Noise Policy Statement for England's three aims and the need to avoid HS2 Phase One's noise impact being treated in isolation.

LOAELs for operational airborne noise from altered roads and the operational railway

12. Outdoor sound levels of 50 dB $L_{pAeq,day}$ and 40 dB $L_{pAeq,night}$ are considered the LOAELs for operational airborne noise from altered roads and the operational railway.

13. In the WHO Night Noise Guidelines for Europe[6] a level of 40 dB L_{night} outdoors is said to be "equivalent to the LOAEL for night noise".

[6] World Health Organisation, Night Noise Guidelines for Europe 2009

14. For the daytime level, the information used to support the WHO Guidelines for Community Noise[7] indicate that daytime sound levels of less than 50 dB L_{pAeq} cause little or no serious annoyance in the community.

15. The WHO Guidelines for Community Noise also identify 60 dB L_{pAFMax} outside as the guideline value for sleep disturbance with windows open. For this reason, sound levels of 60 dB L_{pAFMax} at the façade is also considered the LOAEL for operational railway noise at night.

SOAELs for operational airborne noise from altered roads and the operational railway

16. Sound levels of 65 dB $L_{pAeq,day}$ and 55 dB $L_{pAeq,night}$ are considered the SOAELs for operational airborne noise from altered roads and the operational railway.

17. The daytime SOAEL is consistent with the daytime trigger level in the UK's Noise Insulation (Railways and Other Guided Transport Systems) Regulations[8]. The WHO Night Noise Guidelines for Europe sets the Interim Target at 55 dB $L_{pAeq,8hr}$ outside dwellings. This noise threshold has been taken to be the night-time SOAEL.

18. HS2 Ltd has considered research findings on adverse effects on nonrestorative sleep which indicate that adverse effects on sleep can be avoided if the maximum noise level inside the bedroom do not exceed 65 dB when more than 20 discreet events occur. For this reason, a sound level of 80 dB L_{pAFMax} at the façade when more than 20 train passbys occur and 85 dB L_{pAFMax} at the façade when 20 or fewer train passbys occur are considered the SOAELs for operational railway noise at night.

[7] World Health Organisation (1999) Guidelines for Community Noise. World Health Organisation, Geneva
[8] Statutory Instrument 1996 No. 428. The Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996. HMSO.

HS2 implementation of government policy

- Achieve Noise Policy aims
- Set LOAEL and SOAEL values having due regard to
  - Established practice
  - Research results
  - Guidance in national and international standards
  - Guidance from national and international agencies
  - Independent review by academic, industry and government employees on the Acoustics Review Group

measures in the form of "guideline values". The provisions of these documents are discussed below.

2.43 As is discussed below, the WHO guideline values indicate levels below which certain effects may be considered to be negligible. As such, they are aligned to LOAEL. It follows that "significant" adverse impact (SOAEL) will occur at higher noise levels than "low" adverse impacts (LOAEL).

2.44 In my opinion there will be a fixed relationship between LOAEL and SOAEL for a given noise source, at a given receptor(s) and at a given time(s). This matter is discussed below.

2.45 The NPSE also does not specify a "single objective noise-based measure" on how to assess impacts in tranquil areas whereas the NPPF advises that "Planning policies and decisions" should "aim to…identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."

2.46 The NPS reinforces the objective of the NPPF to carefully consider the impact of noise in quiet and tranquil areas (including Areas of Outstanding Beauty).

3.0 Technical guidance

World Health Organisation - Guidelines for Community Noise

3.1 As discussed in Section 2.0 above, although Government policy guidance does not recommend a means of determining noise-based measures that reflect LOAEL it does refer to the WHO Guidelines for Community Noise (the Guidelines).

3.2 These Guidelines and associated guidance within later WHO Night Noise Guidelines for Europe (NNG) – discussed below - do provide noise-based measures in the form of "guideline values".

3.3 The WHO Guidelines and the WHO Night Noise Guidelines for Europe (NNG) have been used by HS2 to establish LOAEL values. I agree that this is the correct approach.

3.4 However, HS2 has used the WHO guideline values as LOAEL for rail operations alone. This is not the correct approach. The WHO guideline values must be aligned with the total noise level not just the component of noise from rail operations.

3.5 The Preface to the WHO Guidelines states: "*Community noise (also called environmental noise, residential noise or domestic noise) is defined as noise emitted from all sources except noise at the industrial workplace. Main sources of community noise include road, rail and air traffic, industries, construction and public work, and the neighbourhood.*"

3.6 The WHO Guidelines for Community Noise provide "guideline values" for these "community noise" sources, taken together. To compare one source of this community noise (i.e. rail noise) with the guideline values, as has HS2, is not correct. I readily appreciate that HS2 cannot control sources of noise other than from rail operations. This is the reason why a

of sleep stages or depth; increased blood pressure, heart rate and finger pulse amplitude; vasoconstriction; changes in respiration; cardiac arrhythmia; and increased body movements. The difference between the sound levels of a noise event and background sound levels, rather than the absolute noise level, may determine the reaction probability. The probability of being awakened increases with the number of events per night. The secondary, or after-effects, the following morning or day(s) are: reduced perceived sleep quality; increase fatigue; depressed mood or well-being, and decreased performance.

For a good night's sleep, the equivalent sound level should not exceed 30 dB(A) for continuous background noise, and individual noise events exceeding 45 dB(A) should be avoided. In setting limits for single night-time noise exposures, the intermittent character of the noise has to be taken into account. This can be achieved, for example, by measuring the number of noise events, as well as the difference between the maximum sound level and the background sound level. Special attention should be given to: noise sources in an environment with low background sound levels; combinations of noise and vibrations; and to noise sources with low-frequency components." (emphasis added).

3.13 In a section entitled "Guideline values – specific environments" the Guideline advise:

"In dwellings. The effects of noise in dwellings, typically, are sleep disturbance, annoyance, and speech interference. For bedrooms the critical effect is sleep disturbance. Indoor guideline values from bedrooms are 30 dB LAeq for continuous noise and 45 dB LAmax for single sound events. Lower noise levels may be disturbing depending on the nature of the noise source. At night-time, outside sound levels about 1 metre from facades of living spaces should not exceed 45 dB LAeq, so that people may sleep with bedroom windows open. This value was obtained by assuming that the noise reduction from outside to inside with the window open is 15 dB. …"

3.14 Later in this section, the Guidelines advise:

"The time base for LAeq for "daytime" and "night-time" is 12-16 hours and 8 hours, respectively. No time base is given for evenings, but typically the guideline value should be 5-10 dB lower than in the daytime. …"

"Supplementary to the guideline values given in Table 1 precautions should be taken for vulnerable groups and for noise of certain character (e.g. low-frequency components, low background noise)."

3.15 These extracts from the WHO Guidelines reflect Government policy, in particular, the necessity to carefully consider: i) the character of the noise being assessed, ii) the noise environment (level and character) of the area into which the noise is to be introduced, iii) impact in different periods including the evening.

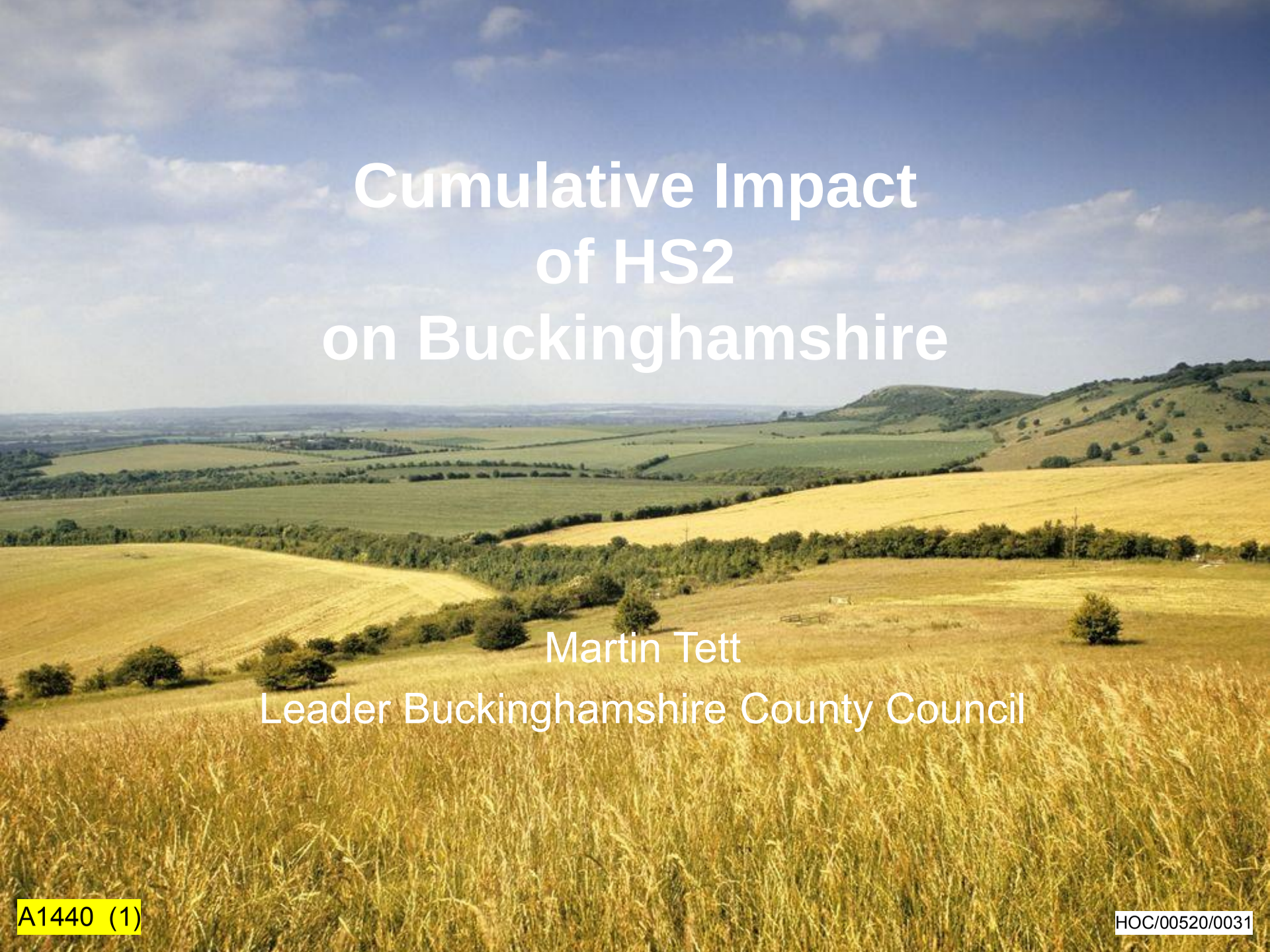
3.16 Although the WHO Guidelines do not state what "precautions" need to be taken when the noise is of a certain character and/or the background noise is low, in my opinion this can

True additional cost of options

	gPS	CLT	CLTi	CRAG T3i
Difference in construction costs (using HS2 figures where available)	£0m	£532m	£465m	£396m
BUT				
Acquisition of land costs	£50m	£3m	£3.3m	£3.3m
AND				
Non market effects	£510m	£56m	£56m	£56m
AND				
Direct economic effects in the Chiltern District	£170m	-	-	-
Consequent likely additional cost	£730m	£591m	£524.3m	£455.3m

A1436

HOC/00520/0003



Cumulative Impact of HS2 on Buckinghamshire

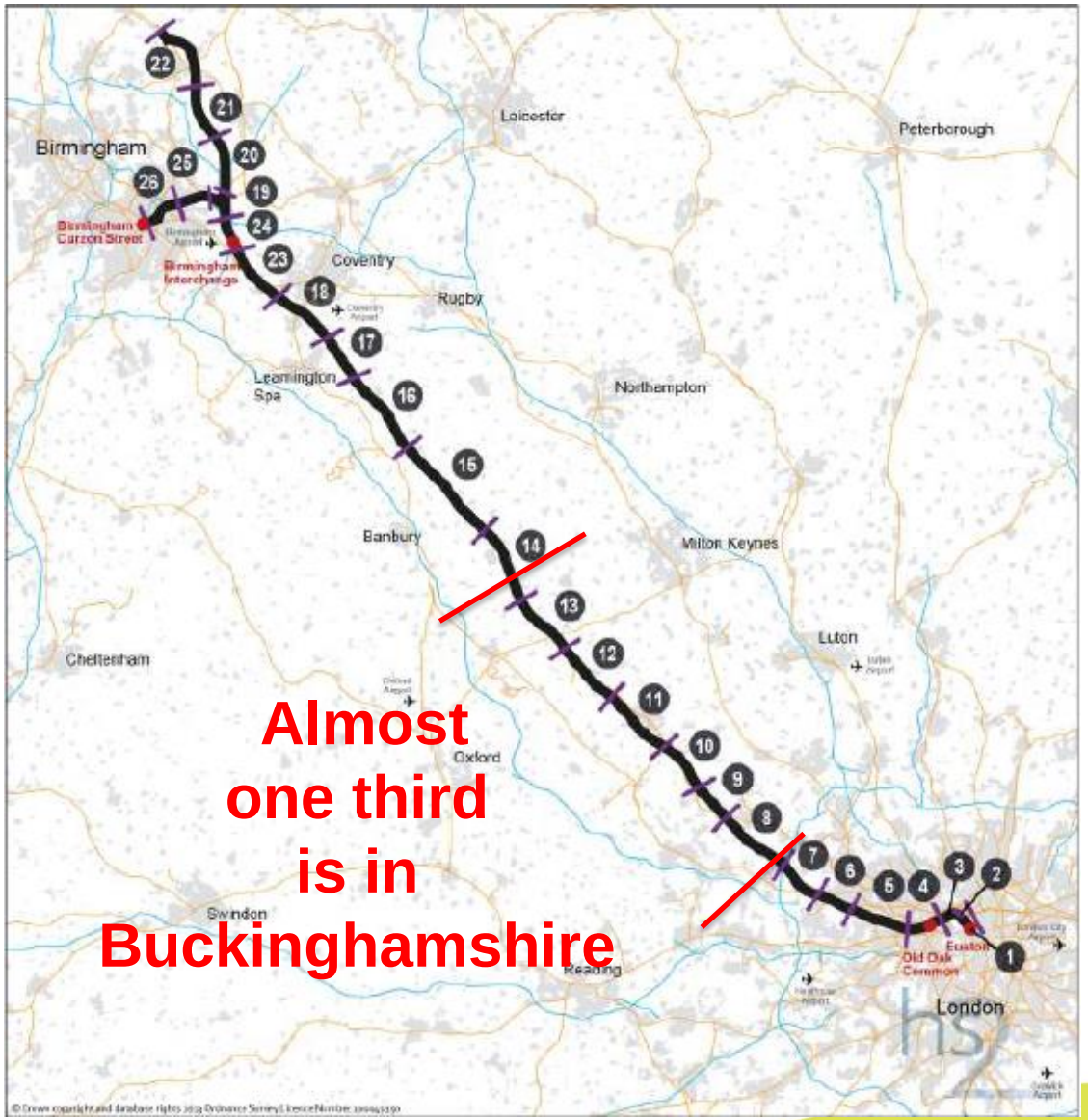
Martin Tett
Leader Buckinghamshire County Council

A1440 (1)

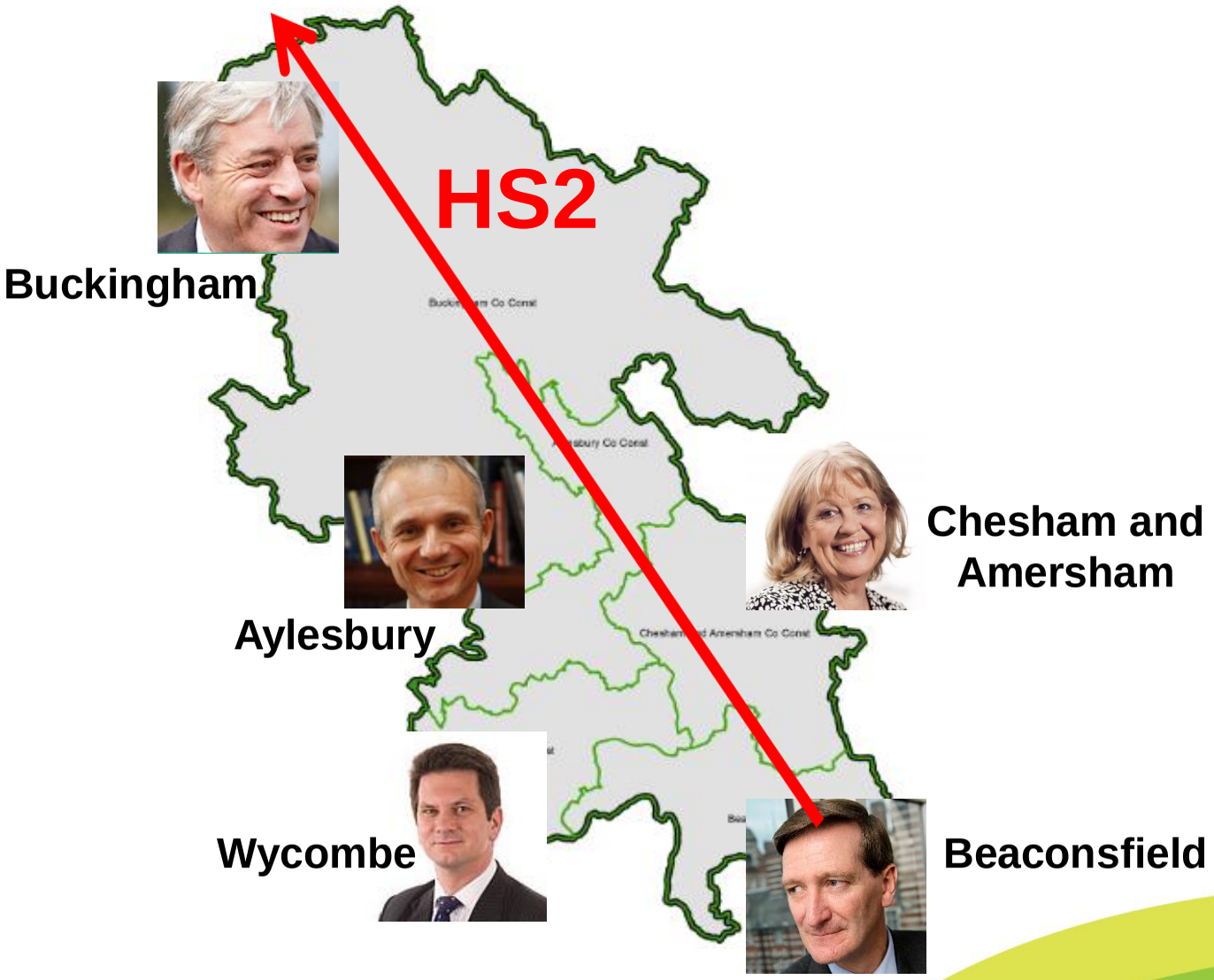
HOC/00520/0031

HS2 PHASE 1

- Length 225 km
- Across 25Local Authorities
- 65km in Buckinghamshire
- 8 CFAs in Buckinghamshire



Buckinghamshire Constituencies

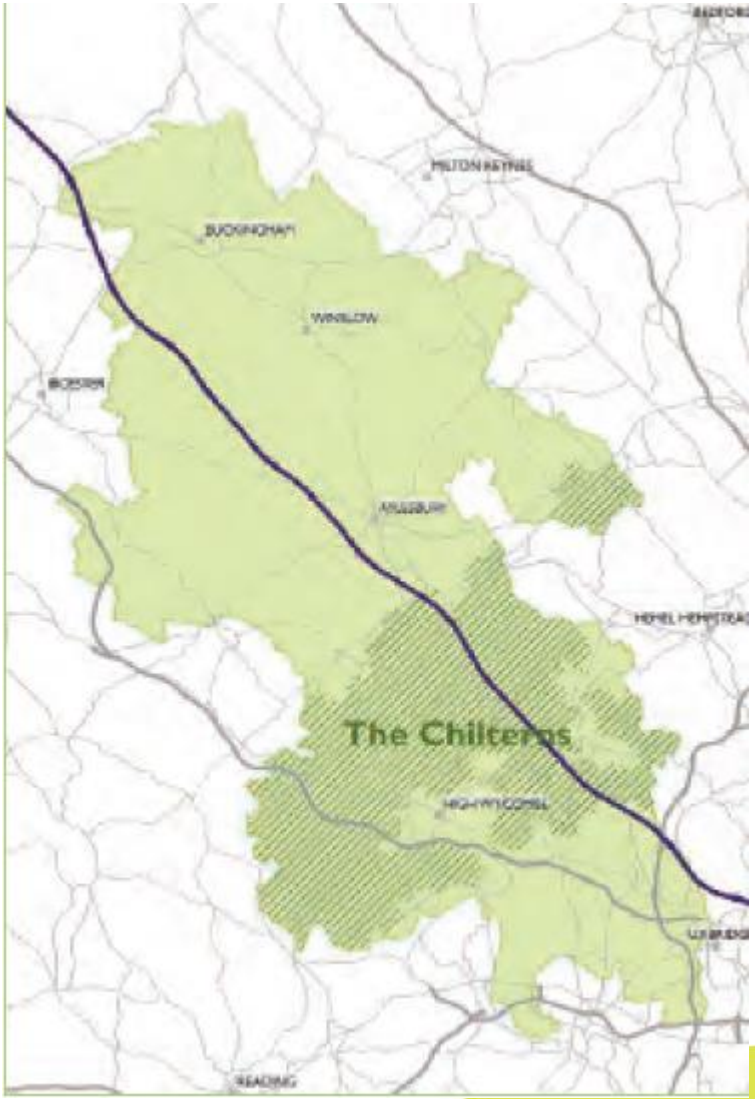


A1440 (3)

HOC/00520/0033

HS2 SCALE OF IMPACT

- Bucks bisected by 65km of route
- Up to 10 years of construction
- Up to 70% increase in HGVs
- Over 20 communities affected
- 3,100 businesses within 3 kms of route
- Significant number of businesses impacted by construction routes

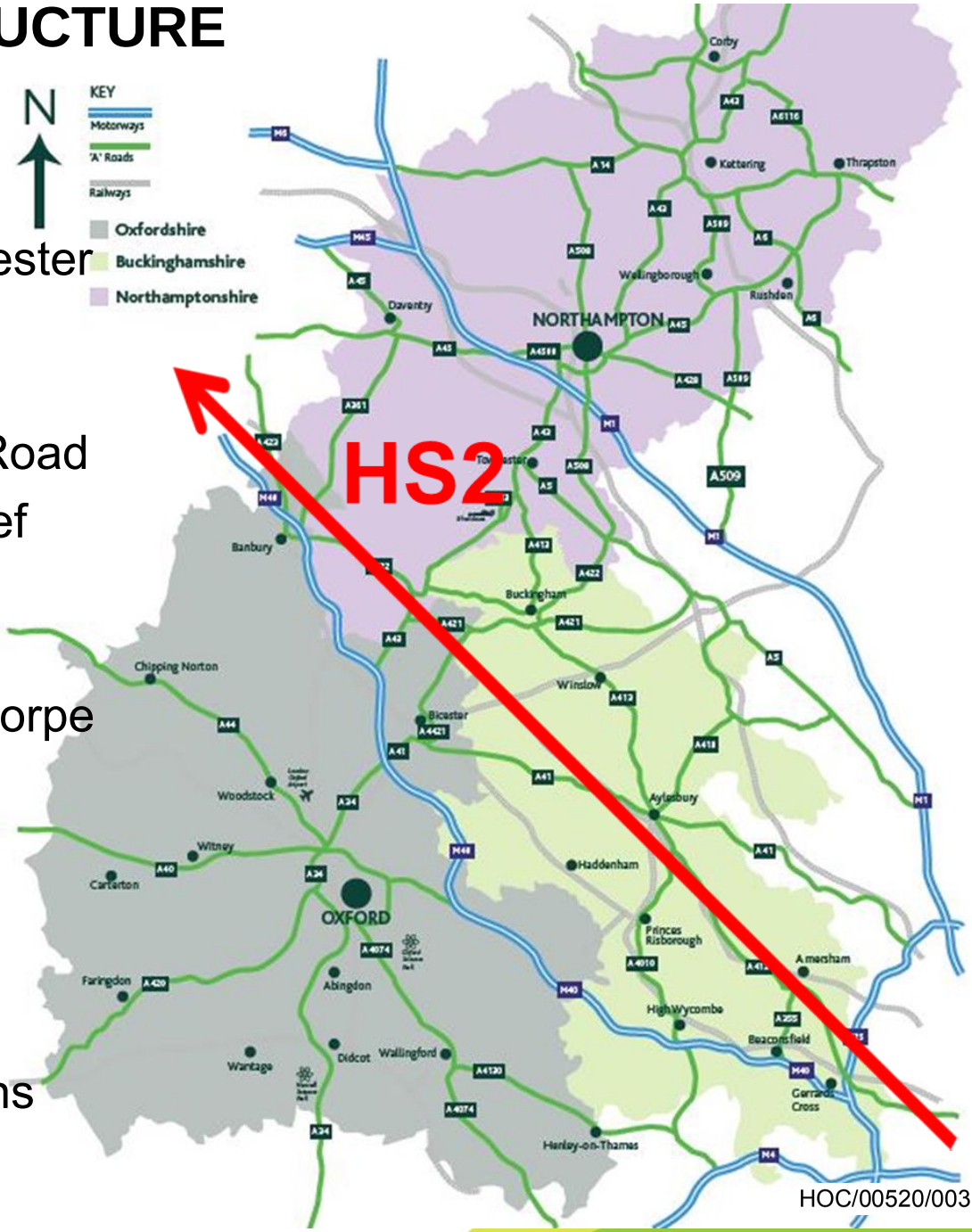


VISUAL AND NOISE IMPACT

Authority	Length of Phase 1 Line - Km	No of new Highway Bridges	No of new PROW bridges	No of Viaducts	No. of Accommodation Bridges	Minor culverts	No. of tunnels
Bucks	65	21	28	10	9	132	2

STRATEGIC INFRASTRUCTURE

- A421 Expressway
- New M40 junction at Bicester
- East West Rail (Winslow station)
- Aylesbury Eastern Link Road
- Princes Risborough Relief Road
- M40 Jn 3A (Wycombe)
- A404 upgrades at Westhorpe & Bisham
- Western Rail Access to Heathrow
- A355 Link Road in Beaconsfield
- Crossrail and new stations
- HS2



A1440 (6)

HOC/00520/0036

NATIONAL IMPLICATIONS

- 228,500 jobs in Buckinghamshire, growing economy
- Significant dislocation of economy risks slowing growth.
- Critical that HS2 is sensitively managed and mitigated
- Bucks businesses get nothing unique from HS2 ‘all pain-no gain’
- 185 businesses within 500m line of HS2 are impacted

A1440 (7)

HOC/00520/0037

ENGAGEMENT WITH HS2

- ‘Bucks Blueprint’ produced and distributed to senior Ministers and HS2 over two years ago
- 120 community engagement events and forums held in past two years
- Small ‘Team Bucks’ has worked to gain maximum mitigation on all aspects including roads, landscape, noise etc.
- Proactive engagement with HS2 has been sought but ‘difficult’ and intermittent.
- Significant community frustration

AGREEMENTS	OUTSTANDING
Good progress on rights of way and secured 13 assurances across the county in 8 County Councillor constituencies	Waste although limited assurance on waste management, mineral requirements; “sustainable placement”
3 assurances on ecology and transport	Ecology
2 assurances seek to protect Ancient Woodland in Colne Valley	Community and Environment Fund & Business and Local Economy Fund
Significant assurance ensures slip roads off M25 put in place for construction in Colne Valley	Water Resources and Flood Risk
Upgrade of signals on A412 means HS2 construction traffic shouldn’t make congestion worse in South Bucks (Colne Valley)	Transport – Route Wide (Jointly with Warwickshire & Camden) and Local Transport Issues affecting residents and businesses in Bucks including Sensitive Junctions, A413 Denham to Wendover, A355 Beaconsfield and the Aylesbury road network)
Assurances offered on heritage (now subject to local consultation)	Landscape
Verbal offers of assurances on waste, rights of way, ecology, landscape, flood, water, transport resulted in incomplete, last minute written offers	Rights of Way
	Impact on Council Services and Property
	Steeple Claydon & Calvert Mitigation Plan
A1440 (9)	South West Aylesbury Linear Park and Princes Risborough Line underpass

HS2 in Buckinghamshire

Ecology

Dr Ian Thornhill MSc BA(hons) MCIEEM
Ecology Advisor

Issues

1. The biodiversity offsetting calculation has a) not been published as promised, and b) will not demonstrate the target of no net loss in biodiversity at a local scale
2. The current proposals do not adequately demonstrate that *'more, bigger, better* ***and joined up****'* habitats will result in line with national policy. Specifically a) Route-wide ecological connectivity analyses have not been carried out and b) Green bridge specifications for ecological connectivity have not been disclosed
3. Terms of Reference for the Ecology Review Group have not been published

Issues

4. An opportunity may be missed to fully research the successes and/or failures of ancient woodland translocation and impacts to bats e.g. Bechstein's from the scheme
5. Concerns have not been fully addressed regarding specific sites including:
    - Calvert, Calvert Jubilee and the Bernwood Forest
    - Grendon and Doddershall Local Wildlife Site
    - Bacombe and Coombe Hill SSSI
    - Mid Colne Valley SSSI

1. Biodiversity offsetting calculation

Demonstrating no-net loss in biodiversity

'A modified version of the Defra offsetting pilot methodology will be utilised to compare the habitats present pre- and post- construction, ***and inform the level of compensation provision required to achieve this goal [of no net loss]' (ES Volume 5 Scope and methodology report addendum, 9.2.3)***

DEFRA guidance methodology for developers suggests that using the offsetting calculation:

- Simplifies the discussion about how much compensation is needed…
- Is transparent: the information about how the amount of loss involved, and the amount of compensation that will be required, is open and available to all from the start of the process

This is not the process being followed by HS2 Ltd.

1. Biodiversity offsetting calculation

HS2 Ltd have confirmed on multiple occasions that the calculation has been carried out, however, the results have not been shared - the process has not been transparent:

4th June 2015 – *'…The Promoter is currently quality assuring the data and will make it publicly available once this process is complete.'* – Bucks County Council PRD

26th January 2015 – *'The output from the metric calculation will be published prior to completion of the Select Committee process'* – Royal Society of Wildlife Trusts PRD

1st December 2014 – *'The calculation will be published prior to completion of Select Committee'* – Warwickshire Wildlife Trust PRD

22nd October 2014 – *'I think that the no-net-loss calculation should be brought back as part of the additional provision later on in these proceedings, so that we can see how this route is performing at that point in time'* – Mr. Miller, HS2 Select Committee

18th March 2014 – *'Calculation nearing completion'* – CIEEM Spring Conference

1. Biodiversity offsetting calculation

Biodiversity offsets should be kept local

- HS2 Ltd. have taken a routewide approach to demonstrating no-net loss. This may mean that biodiversity loss in Buckinghamshire could be compensated for elsewhere.
- A potential imbalance between Community Forum Areas e.g. Colne Valley has been acknowledged by HS2 Ltd (Mr. Miller, HS2 Select Committee, 8th June 2015).
- Broad calculations attempted using the HS2 Ltd methodology indicate an overall loss within Buckinghamshire and other Buckinghamshire localities e.g. Colne Valley (CFA 7)

1. Biodiversity offsetting calculation

Biodiversity offsets should be kept local, for the benefit of nature and local communities

'whilst there is a rationale for providing biodiversity compensation along the HS2 route… …the requirement for biodiversity compensation to be provided directly alongside the HS2 route ***may lead to missed opportunities for better offsetting measures****.'* (Recommendation 5)

'*the Government* ***take explicit account of local communities well-being***' (Recommendation 10)

Environment Audit Committee, HS2 and The Environment, April 2014

'94. It would go some way toward creating better relations with communities if the aggravation they will experience from construction were mitigated by moderate ***community and ecological improvements.*** *This would help create* ***positive local legacies*** *from the project and at the same time help redress some of the grievances resulting from initial failure to engage or communicate helpfully…'*

High Speed Rail Select Committee, First Special Report, March 2015

1. Biodiversity offsetting calculation Our ask:

The latest iteration of the biodiversity offsetting calculation is made available to local authorities and environmental organisations **in time for them to respond before conclusion of the House of Commons Select Committee.** Calculations are provided at both a route-wide and Community Forum Area level.

2. Connectivity of habitats

HS2 Ltd have taken into account the UK Government's Biodiversity 2020 strategy and Making Space for Nature, a.k.a the 'Lawton Report'. They seek ***'more, bigger, better and joined up'*** habitats.

To ensure that this is the case, best practice recommends:

- Connectivity modelling to inform the location of *'pinch points'* for movement of wildlife along the proposed route
- The provision of fit for purpose green infrastructure to facilitate wildlife movement e.g. green bridges / tunnels

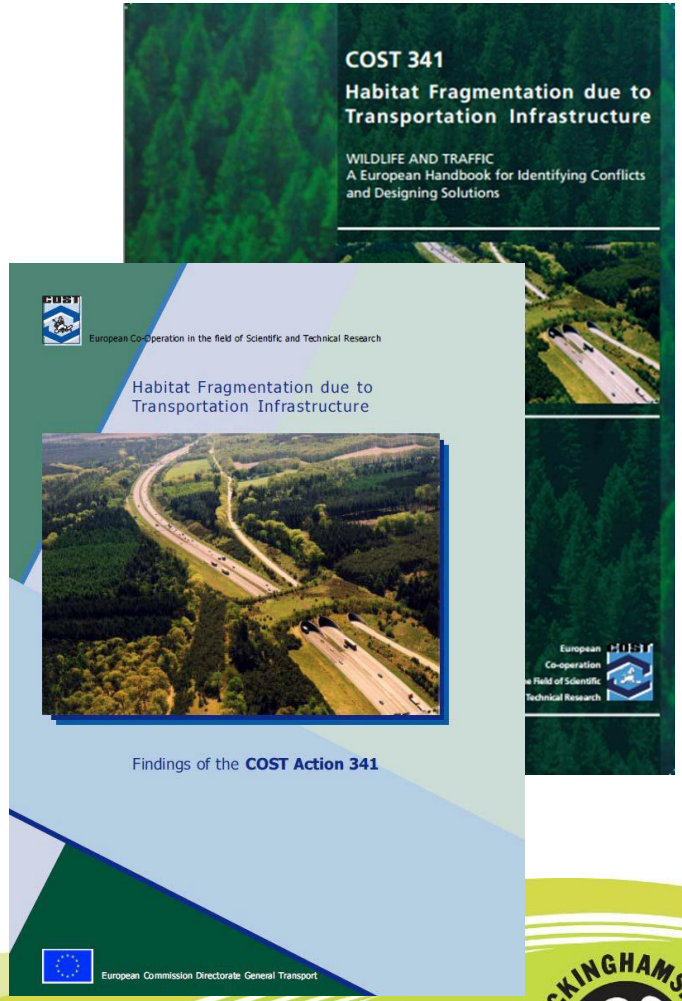
Objective: To reduce the risk of wildlife/high speed rail collisions

2. Connectivity of habitats

EU and UK Best Practice guidance

'All efforts must be made to maintain ecological structures connecting habitats and populations. Particular attention has to be paid to rivers, streams, riparian forests, wooded corridors, networks of hedges, and dikes, which can often be the last refuge for many species in intensively used landscapes.'

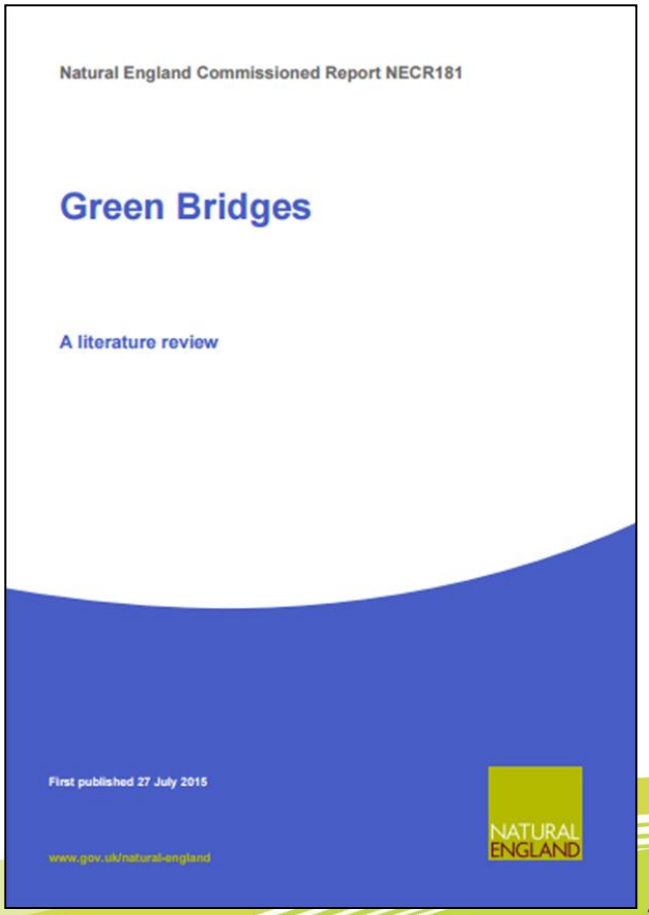
'To study possible conflicts between nature conservation interests and infrastructure development, new tools such as computer simulations and spatial modelling are increasingly being used.'



2. Connectivity of habitats

Recent Natural England research (July 2015)

Objective	Width	Reference
Landscape	>80m	Iuell, B et al. (2003)
Landscape	70-100m	Clevenger and Huijser (2011)
Landscape	100m	EuroNatur Foundation (2010)
Wildlife	**40-50m**	Iuell, B et al. (2003)
Wildlife	**40-50m**	Clevenger and Huijser (2011)
Wildlife	**50-70m**	U.S Department of Transportation – Federal Highway Administration (2008)
Wildlife	**25-80m**	EuroNatur Foundation (2010)
Mixed use	15-25m	Clevenger and Huijser (2011)
Mixed use	Wildlife +human	Van der Grift et al. (2011)

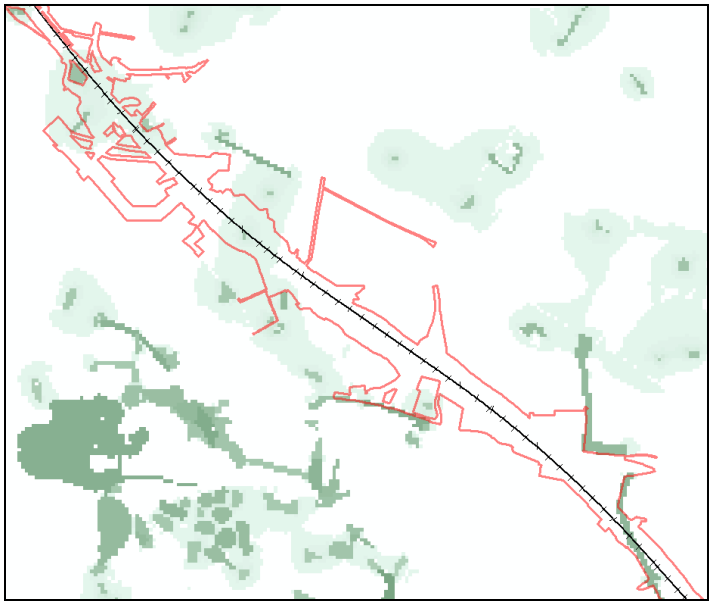


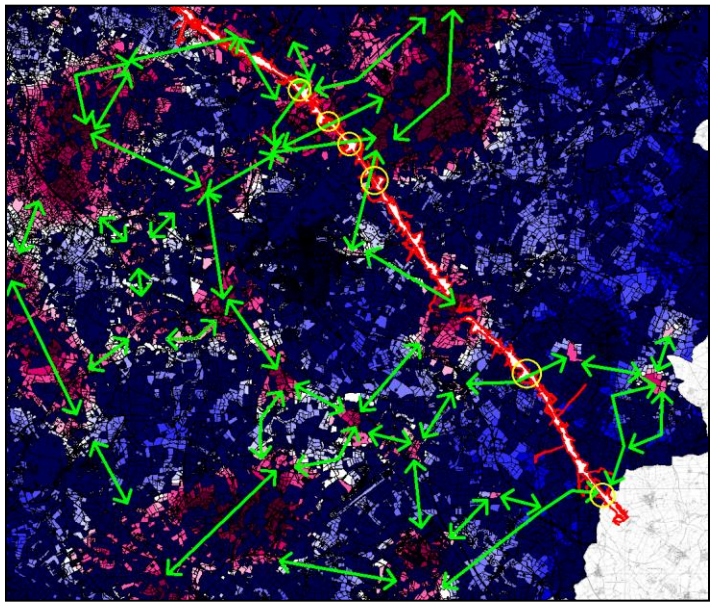
A1454 (11)

HOC/00520/0293

2. Connectivity of habitats

Local authorities have undertaken preliminary analyses





UNIVERSITY OF BIRMINGHAM

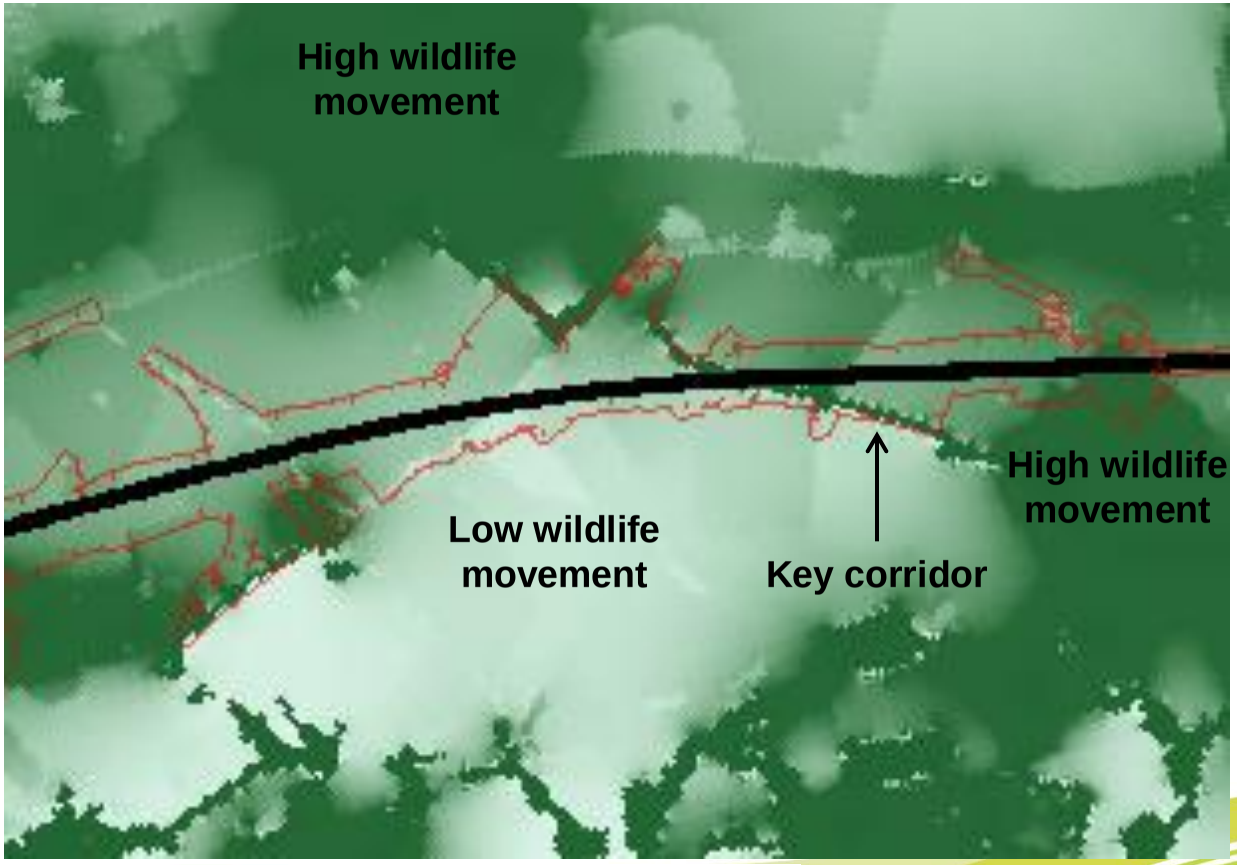
UNIVERSITY of York

Buckinghamshire County Council

Warwickshire County Council

2. Connectivity of habitats

Connectivity analyses visualise wildlife movement



UNIVERSITY OF BIRMINGHAM

A1454 (13)

HOC/00520/0295

2. Connectivity of habitats

We undertook an assessment of current HS2 Ltd green bridge provisions against best practice guidance:

1. **Location**
    - Assessed against connectivity analysis
2. **Green width** i.e. for the passage of wildlife
    - Assessed against COST 341 findings and Natural England Green Bridge review
    - A width of between 40-50m is generally recommended
3. **Length:Width ratio**
    - A width:length ratio should be greater than 0.8 i.e. avoiding long and thin structures

2. Connectivity of habitats

Buckinghamshire County Council have assessed the location and indicative design of HS2 Ltd green overbridge provision

No.	Community Forum Area	Bridge Name	Bridge function
1	CFA12 – Waddesdon and Quainton	Bridleway QUA/36 Accommodation Green Overbridge	Bridleway/farm access
2	CFA12 – Waddesdon and Quainton	Bridleway GUN/28 Accommodation Green Overbridge	Bridleway/farm access
3	CFA13 – Calvert, Steeple Claydon, Twyford and Chetwode	Footpath SCL/13 Green Overbridge	Footpath
4	CFA13 – Calvert, Steeple Claydon, Twyford and Chetwode	Calvert Green Overbridge	Private access to waste management sidings
5	CFA13 – Calvert, Steeple Claydon, Twyford and Chetwode	School Hill Green Overbridge	Road
6	CFA14 – Newton Purcell to Brackley	Turweston Green Overbridge	Road/bridleway

There are no green bridges proposed by HS2 Ltd specifically for wildlife.

2. Connectivity of habitats

Indicative measurements (from HS2 Ltd GIS data) suggest sub-optimal compliance with best practice

Best practice
Sub-optimal
Fail

No.	Total width	Green width	L:W ratio	Green Component (details to be confirmed)	Location relative to connectivity analysis
1	32m	30m	0.81	Tree planting	Connects Finemere Wood with the surrounding landscape.
2	36m	32m	0.84	Tree planting	Connects an area of woodland with surrounding the landscape.
3	32m	32m	1.00	Tree planting	Adjacent to Sheephouse Wood mitigation structure.
4	40m	28m	0.56	Tree planting	Will help join two areas of woodland.
5	36m	28m	0.44	Tree planting	Will join hedgerow and lake with the surrounding landscape.
6	102 m	100m	1.13	Unknown	Connects an area of woodland with the surrounding landscape.

2. Connectivity of habitats

Our preliminary analysis indicates several additional ‘pinch points’ that require suitable green infrastructure

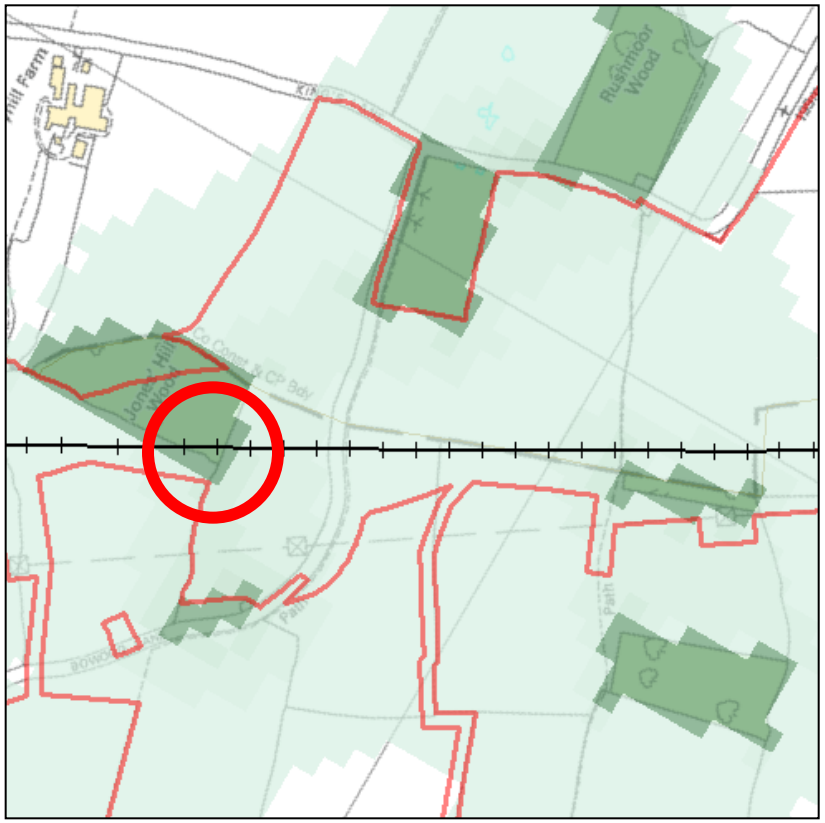
No.	Community Forum Area	Proposed bridge Name	Bridge function
A1	CFA10 – Dunsmore, Wendover and Halton	Jones Hill Wood Green Overbridge	Wildlife / landscape
A2	CFA11 – Stoke Mandeville and Aylesbury	Footpath SBH/32 Green Overbridge	Footpath
A3	CFA11 – Stoke Mandeville and Aylesbury	Footpath SBH/2 Green Overbridge	Footpath
A4	CFA11 – Stoke Mandeville and Aylesbury	Bridleway FMA/1 Green Underbridge	Bridleway
A5	CFA12 – Waddesdon and Quainton	Footpath WAD/4 Accommodation Green Overbridge	Footpath / access
A6	CFA13 – Calvert, Steeple Claydon, Twyford and Chetwode	Barton Hartshorn Green Overbridge	Wildlife

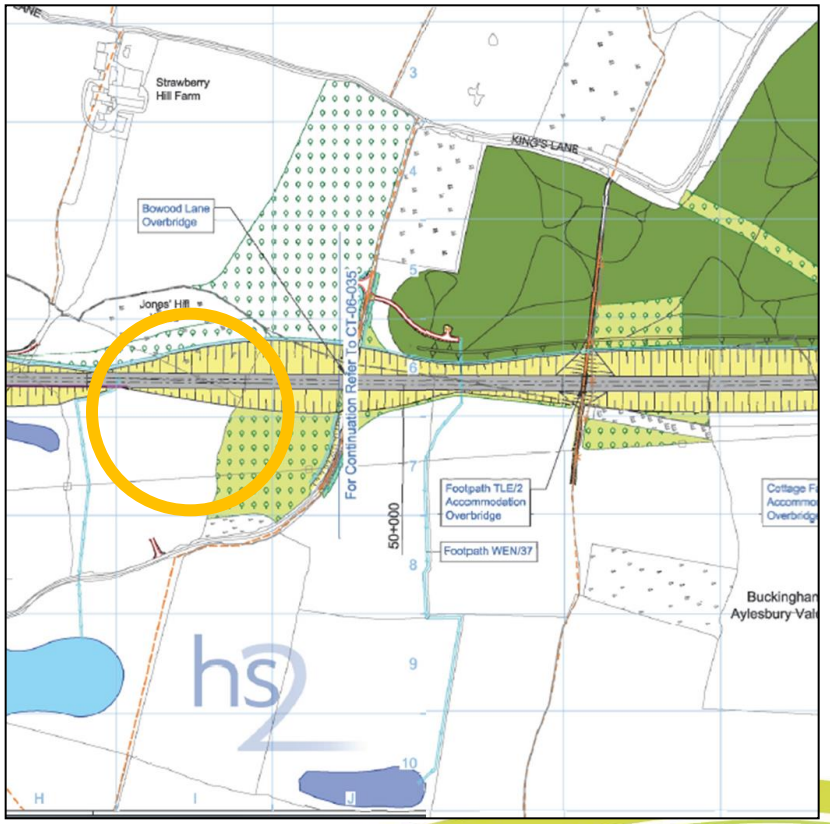
2. Connectivity of habitats

Severance

Opportunity

A1: Jones's Hill Wood Green Overbridge



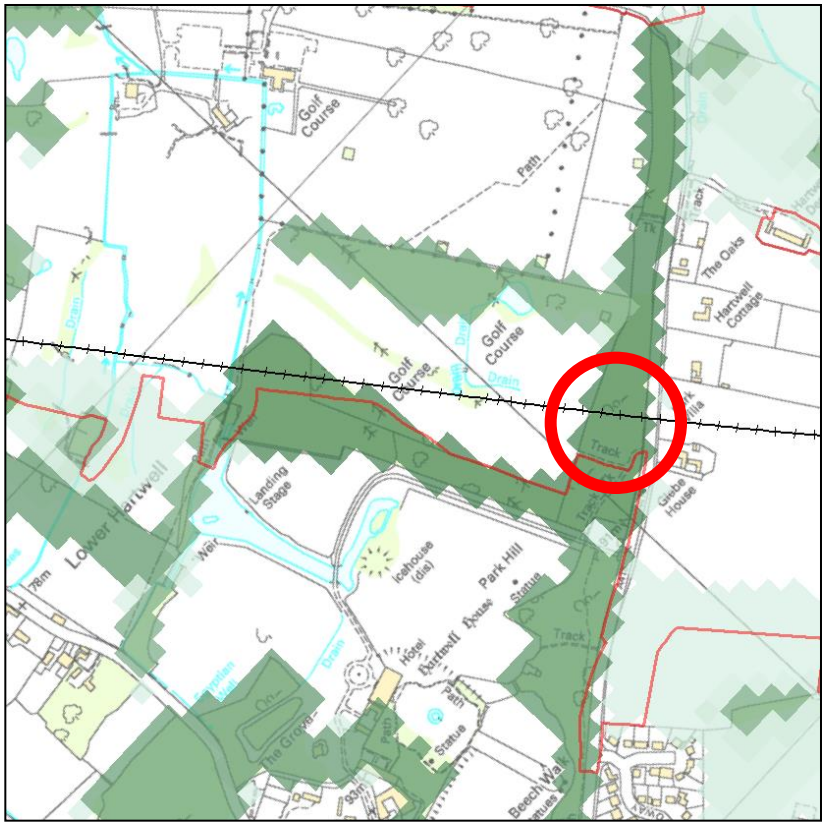


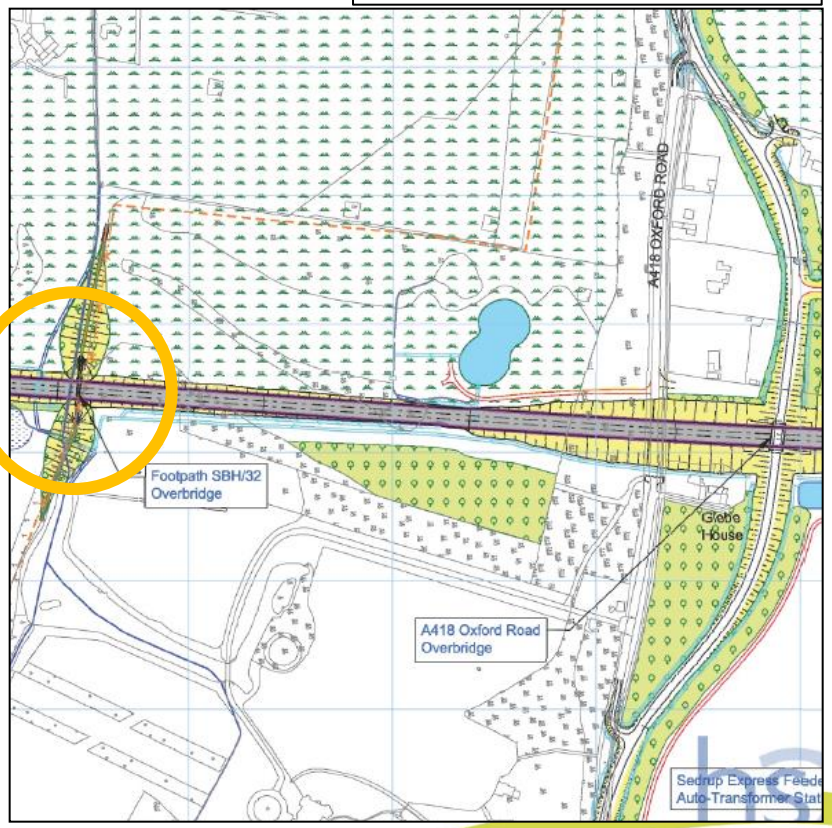
2. Connectivity of habitats

Severance

Opportunity

A2: Footpath SBH/32 Green Overbridge



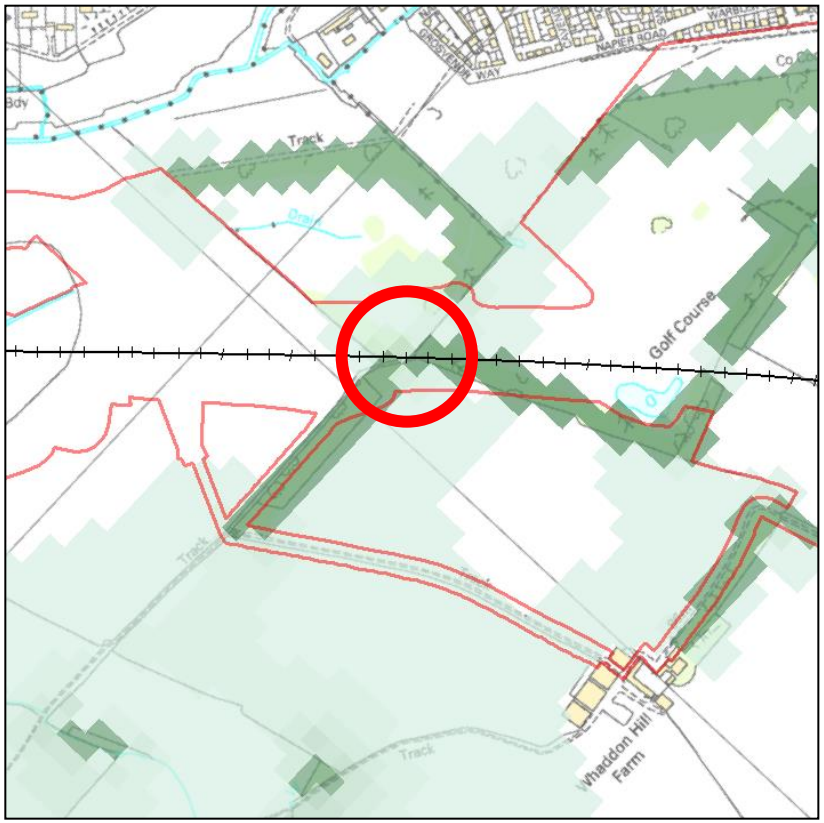


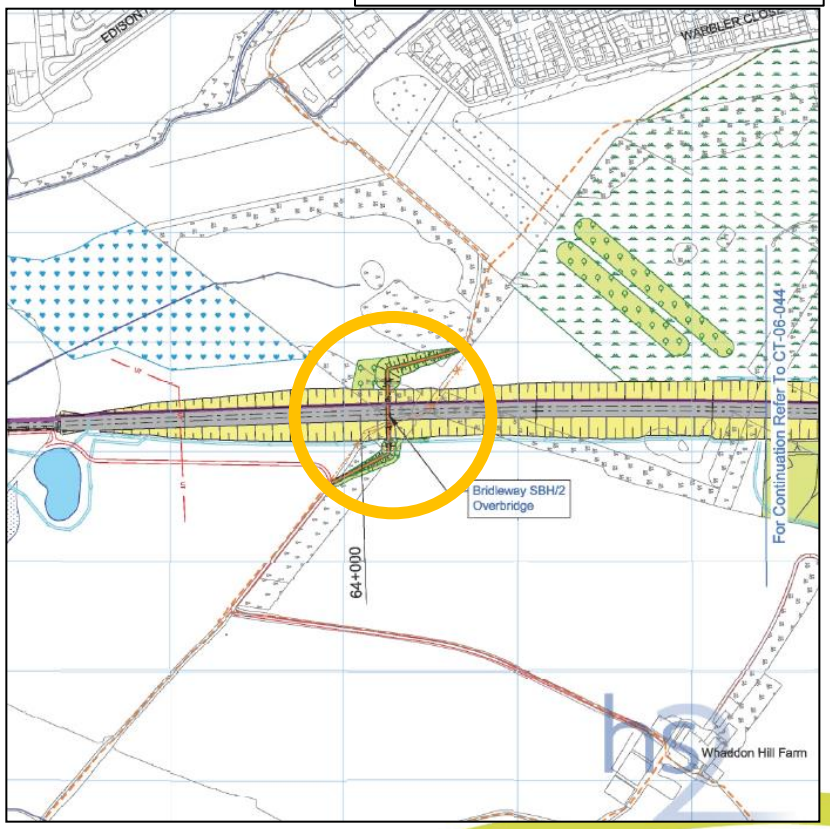
2. Connectivity of habitats

Severance

Opportunity

A3: Footpath SBH/2 Green Overbridge



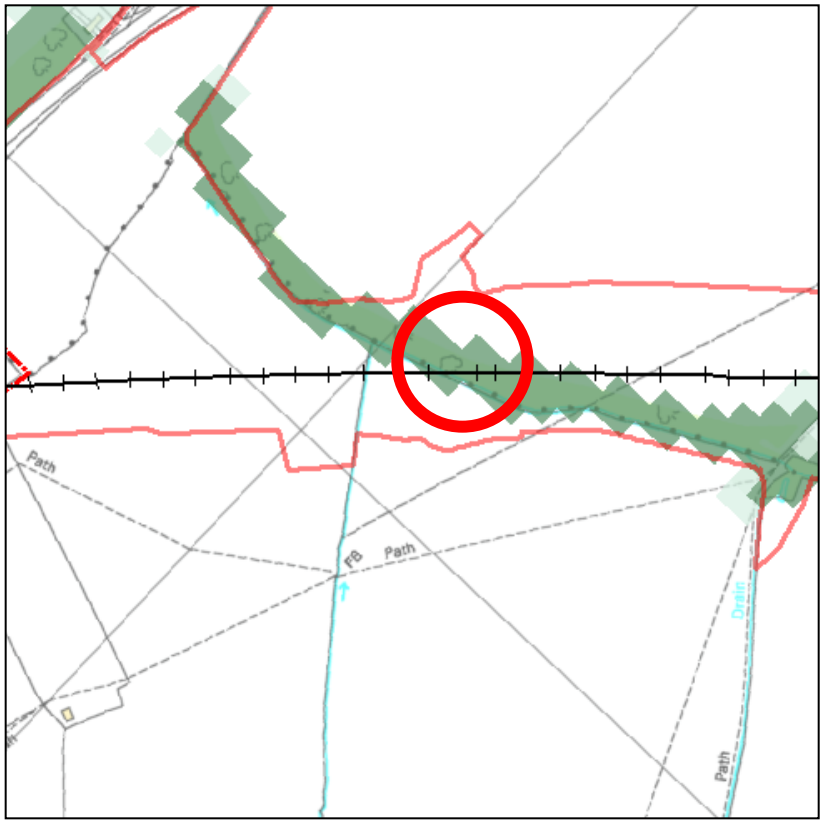


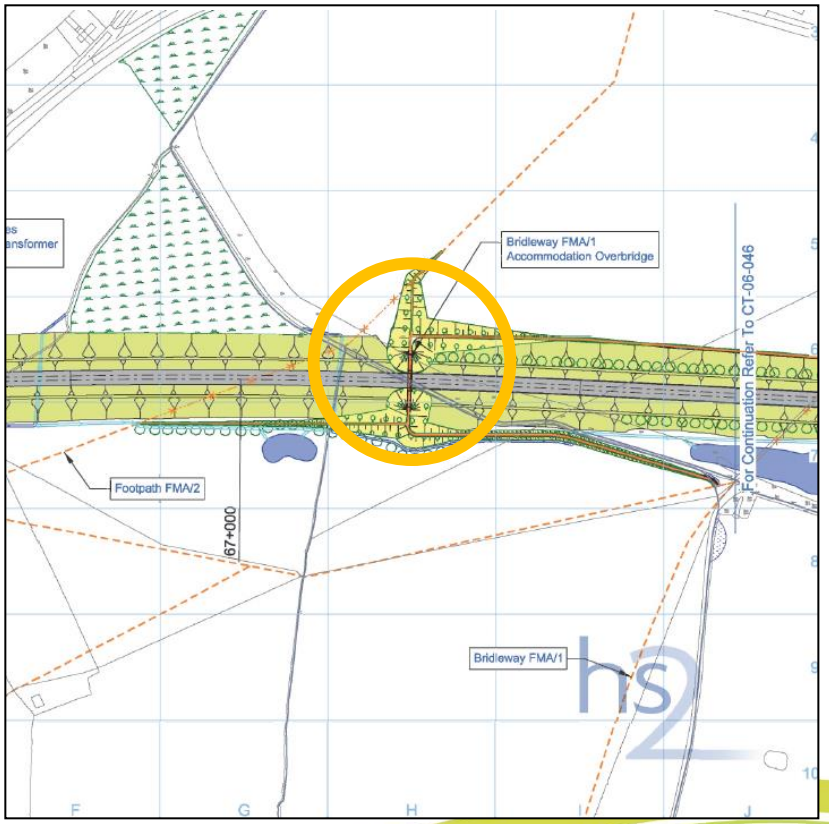
2. Connectivity of habitats

Severance

Opportunity

A4: Bridleway FMA/1 Green Underbridge



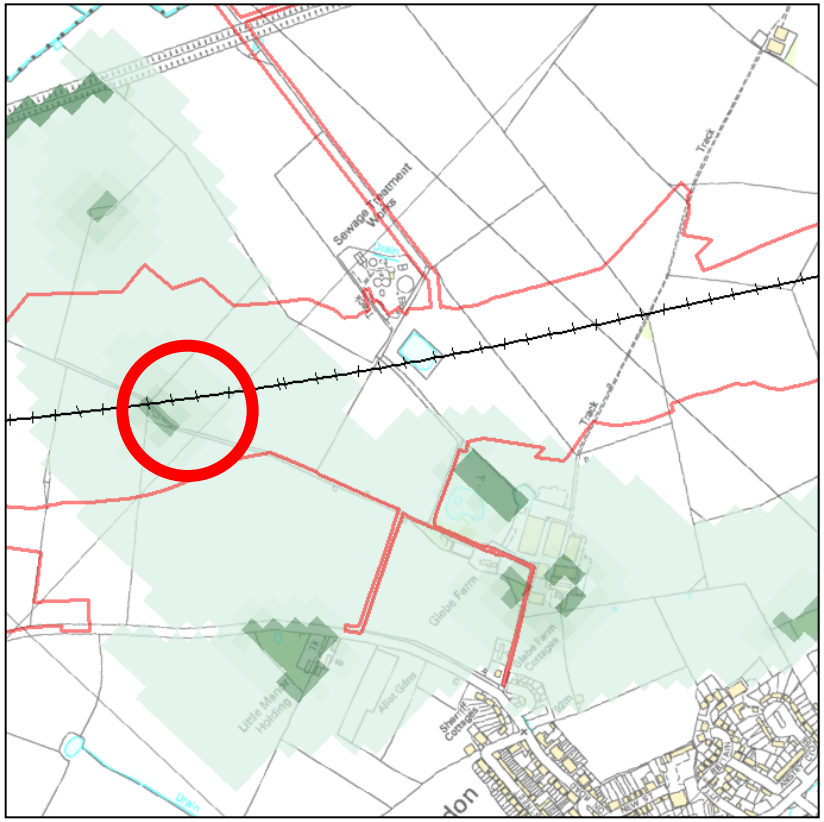


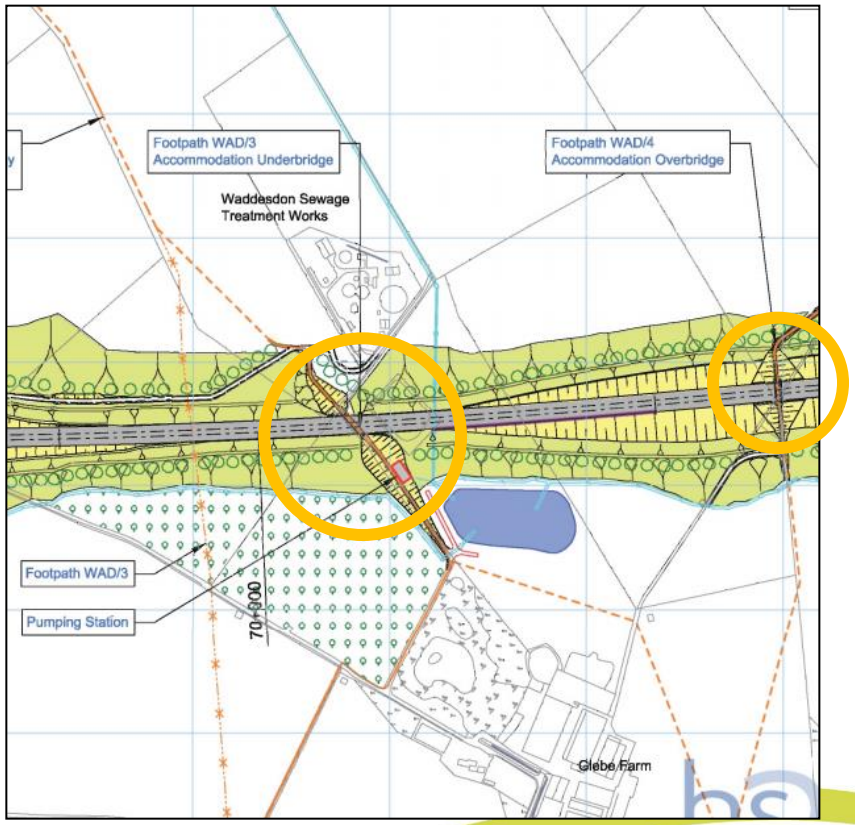
2. Connectivity of habitats

Severance

Opportunity

A5: Footpath WAD/4 Accommodation Green Overbridge



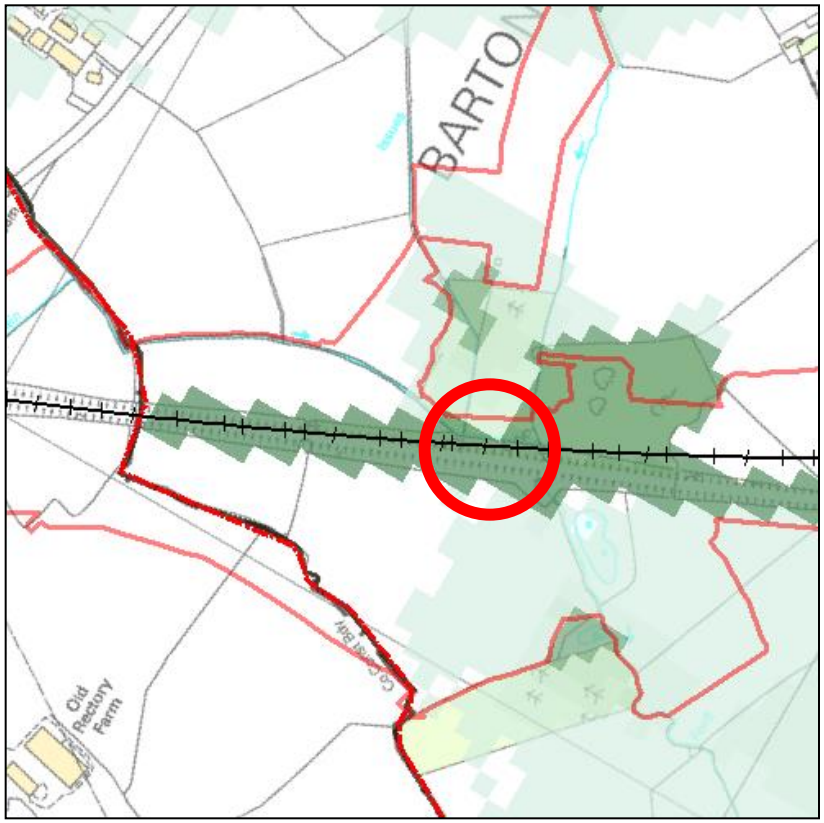


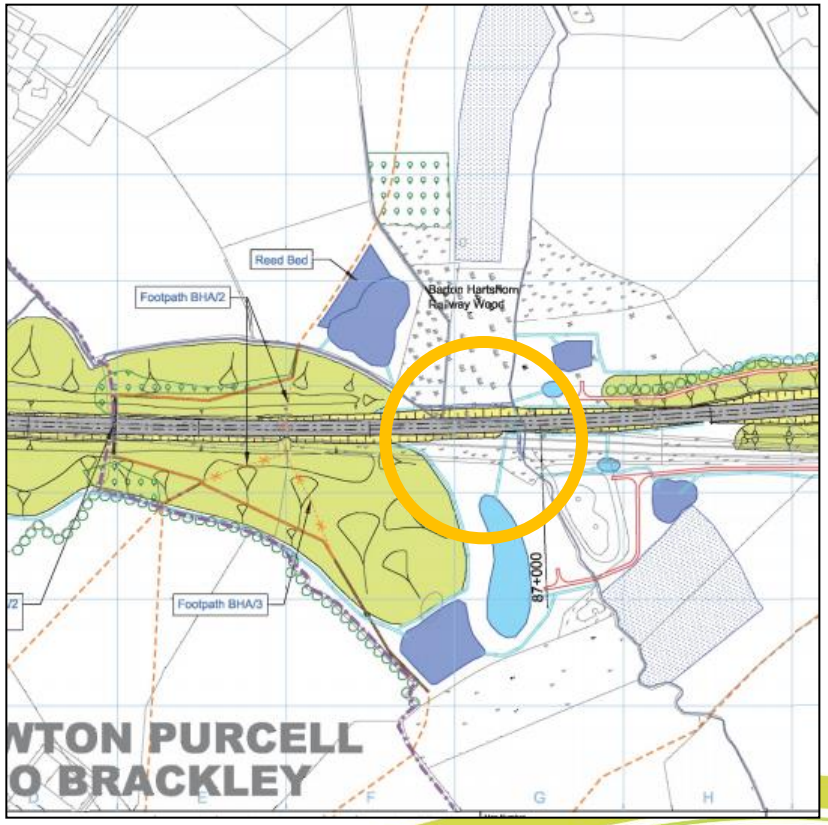
2. Connectivity of habitats

A6: Barton Hartshorn Green Underbridge

Severance

Opportunity

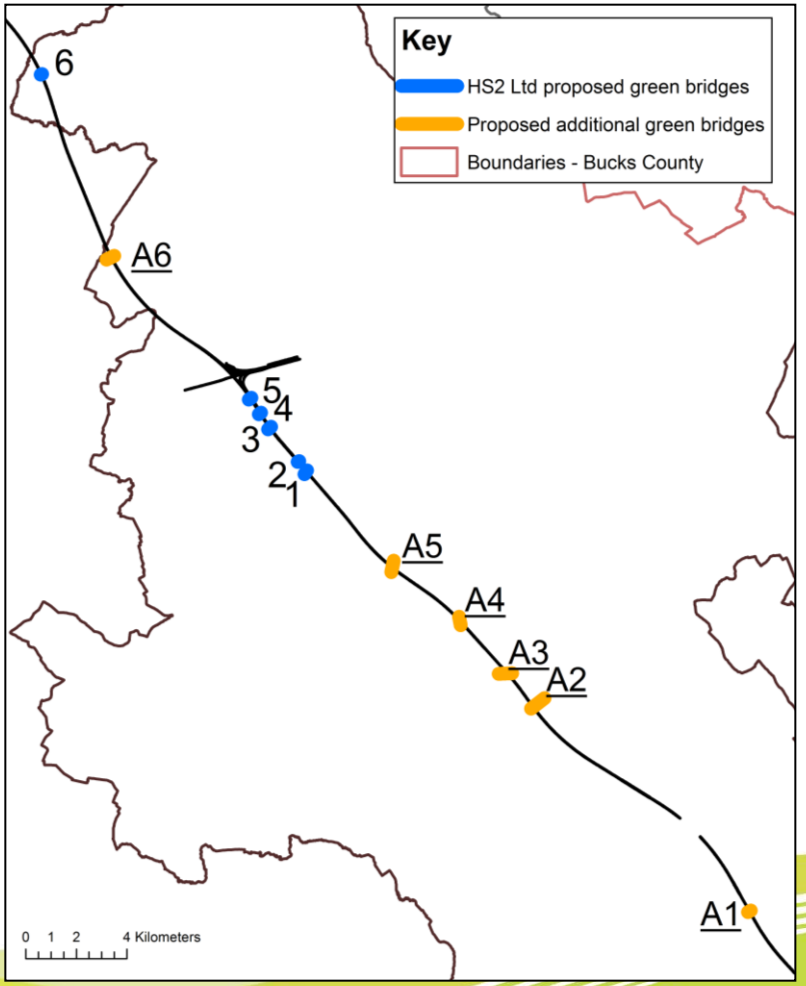




2. Connectivity of habitats

Locations of proposed additional green bridges in Buckinghamshire

- The analysis shows a lack of green bridges in central Buckinghamshire



2. Connectivity of habitats

Will the proposed green overbridges function for wildlife?

'Green [over]bridges are footbridges, road bridges or agricultural access bridges which have been adapted to allow wildlife to cross the railway safely.'

HS2 Ltd Information Paper E15:Green Bridges

No green bridges provided specifically for wildlife. Best practice recommends that ***'There are no alternatives to specific wildlife overpasses' (COST 341)***

The HS2 Ltd Information Paper E15:Green Bridges does not deliver the detail of green bridges that is required. The indicative measurements suggest low levels of best practice compliance. No green bridges have been provided by HS2 specifically for wildlife.

2. Connectivity of habitats
Our ask:

That HS2 Ltd demonstrate compliance with national policy and guidance towards *'more, bigger, better and joined up'* habitats by:

a) Undertaking connectivity analyses in collaboration with local authorities and wildlife trusts to inform the locations of green bridges or similar structures for the purposes of wildlife and to demonstrate how compensatory habitat will maintain or improve connectivity in the future. This analyses should be completed by the end of the Commons Select Committee process.

b) Producing an agreed Technical Note that specifies adopted green bridge standards e.g. width, planting, access and configuration, for each use proposed. Dimensions to reflect best practice.

c) New green bridges to be added as recommended in consultation with local authorities.

3. Ecology Review Group remit

HS2 Ltd are committed to the formation of an Ecology Review Group:

'The Secretary of State will require the Nominated Undertaker to form an Ecology Review Group for the specific purpose of reviewing the outputs from the ecology monitoring programme. The Ecology Review Group will ***receive reports on an annual basis and will be asked to make recommendations for remedial measures to the nominated undertaker where progress against objectives is considered not to be sufficient.*** *The composition of this group will include Natural England, local authority representation, appropriate nature conservation NGOs and relevant specialists as necessary.'*

Assurance offered to Warwickshire County Council - Public Register of Assurances

'If, at the moment, we can get it [Ecology Review Group] set up perhaps earlier, as you're [Select Committee Chair] suggesting, and the ecological review group can perhaps look at some of the ideas that Warwickshire Wildlife Trust has just put forward in light of resolving some of these local conflicts, then I think that there is real scope for us to move forward with an effective plan which may benefit a lot of people along the line of the route.'

Warwickshire Wildlife Trust - Tuesday 3 February 2015 (am), p.67 – 69

3. Ecology Review Group remit
Our ask:

That HS2 Ltd publish Terms of Reference for the Group as soon as possible and no later than the end of October 2015 that include:

a) An independent chair from an organisation not financially engaged with the proposal
b) A robust mechanism by which it can impress action on the Nominated Undertaker where it is apparent that the objective of no net loss in biodiversity will not be met
c) To be engaged proactively on route-wide approaches to mitigation and compensation, as well as technical components that have route-wide implications such as biodiversity offsetting, monitoring and connectivity.

4. Scientific research

The HS2 proposal would be an unprecedented learning opportunity.

Ancient woodland

- There are over 50 ancient woodlands being impacted by the proposal route-wide, a number of which benefit from statutory and non-statutory designation.
- Many of the mitigation techniques are, to a degree, experimental.

Bernwood Forest

- The Bernwood Forest area in north Buckinghamshire includes a number of ancient woodlands, three of which are designated as Sites of Special Scientific Interest (SSSI), and five are designated as Local Wildlife Sites (LWS). The area is of ecological importance for a range of species and a diverse assemblage of bats, including Bechstein's bat.

4. Scientific research
Our ask:

HS2 Ltd commit the funds to fully research and contribute to future best practice, in collaboration with an internationally recognised research institution:

a) The successes and/or failures of ancient woodland translocation as a consequence of the development, in order to inform future developments with impacts upon ancient woodland

b) The impact (positive or negative) of the scheme upon local bat populations in the region of the Bernwood Forest (e.g. Bechstein's) and associated SSSI's and the successes and/or failures of proposed mitigation measures

5. Specific sites. Our Asks

- Calvert, Calvert Jubilee and the Bernwood Forest
  - We continue to support the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) and Aylesbury Vale District Council in mitigating the potential impacts of the HS2 Ltd proposal on this area of national significance for ecology
- Grendon and Doddershall Local Wildlife Site
  - HS2 Ltd are to provide a written justification for the final scheme design at Grendon and Doddsershall Local Wildlife Site
- Bacombe and Coombe Hill SSSI
  - We are seeking clarity with HS2 Ltd and Natural England as to why ecological surveys were not pursued for this SSSI which is approximately 25m west of the Bill Limits
- Mid Colne Valley SSSI and the Colne Valley Regional Park
  - We continue to support the Herts and Middlesex Wildlife Trust as presented on 6th June 2015

Appendix 1: Discussions and correspondence with HS2 Ltd

Meeting/ Correspondence	Outcome
BCC Ecology table sent to HS2 Ltd on the 13/06/2014	HS2 acknowledged 18/06/2014 and stated a response would be sent July/ early August 2014
BCC chased Ecology response at the 21/08/2014 bi-lateral and the 27/11/2014 bi-lateral.	HS2 sent response to BCC Ecology table 06/02/2015 **(almost 8 months after receiving)**
BCC responded to HS2 Ecology response on 01/04/2015	HS2 and BCC arranged meeting to discuss points
First Meeting on Ecology points took place 10/04/2015	BCC decided to focus on Colne Valley points ahead of appearance. Sent through CV specific points 15/05/15
25/08/2015 Meeting on Ecology with HS2 ltd	HS2 set out their response to our 8 points, agreed to provide a written response on a number of issues. Yet to receive as of 24/09/15

Jackie Copcutt
HS2 Project Officer
Buckinghamshire County Council
County Hall
Walton Street
Aylesbury
HP20 1UA

09 October 2015

By email only

Dear Ms Copcutt

High Speed Rail (London – West Midlands) Bill ("the Bill")
Petition No. 0520 – Buckinghamshire County Council – Ecology issues

I am the Director of Hybrid Bill Delivery at HS2 Ltd, which is acting on behalf of the Promoter of the High Speed Rail (London – West Midlands) Bill ('the Bill') currently before Parliament. I am writing to you on behalf of the Secretary of State for Transport to set out the assurances that the Secretary of State is willing to give in order to address some of Buckinghamshire County Council's ('the Council') concerns regarding the impact of Phase One of HS2 (known as 'the Proposed Scheme').

I refer to your email of 28 August 2015 attaching the draft assurances and further information that the Council is seeking in relation to ecology matters. I understand that it was useful for the petition management team discuss these with Dr Ian Thornhill, Ecology Advisor to the Council, in the meeting on 1 September 2015. I wrote to you previously on 5 October 2015 to respond to the draft assurances. This letter is intended to offer further assurance on the ecological specification of green bridges in the Calvert area.

The specification for the green bridges in Bernwood Forest is undergoing final approvals. A check has been made and the specifications are deliverable within the Bill as written. The designs in this area are specifically to maintain favourable conservation status of rare and vulnerable bats in the Bernwood Forest area and are not applicable outside this area. We propose the following assurance on the ecological specification of the bridges in this area.

In the assurances proposed by HS2 Ltd in this letter, the nominated undertaker means the relevant nominated undertaker appointed under the Bill as enacted and, in the period prior to the Secretary of State appointing a nominated undertaker and imposing the requirements on it referred to in these assurances, HS2 Ltd.

1. *The Secretary of State will require the nominated undertaker to design the green bridges within the Bernwood Forest area in Buckinghamshire such that these bridges*

    (i) are specifically designed to maintain favourable conservation status of important populations of rare and vulnerable bats;

(ii) *have a vegetated zone with a minimum width of 12m across each bridge. This vegetated zone would typically comprise a wide double hedgerow with a gap of at least 3m between the two hedge lines designed to maintain connectivity for bats; and*

(iii) *would include blackthorn to provide connectivity for black hairstreak*

notwithstanding any decision taken by the local planning authority under powers conferred to it under Schedule 16 to the Bill.

I trust that the above information and assurances accurately reflect recent discussions on this matter. HS2 Ltd will continue to work with Buckinghamshire County Council in developing the scheme and addressing other matters.

I have copied this letter to Dr Ian Thornhill, Ecology Advisor at the Council and to Alastair Lewis (Sharpe Pritchard), who I understand is acting as your appointed Parliamentary Agent.

Yours sincerely

Roger Hargreaves
Director, Hybrid Bill Delivery
High Speed Two (HS2) Limited

Cc. Dr Ian Thornhill (Buckinghamshire County Council) ithornhill@buckscc.gov.uk
Alastair Lewis (Sharpe Pritchard) alewis@sharpepritchard.co.uk

7.4.13 If present in the area, reptiles within and around the Wendover Rifle Range BNS would be adversely affected. Loss of grassland, scrub, road verges and scattered trees to the construction of the Proposed Scheme will directly reduce the extent of habitat available for reptiles. The direct loss of populations or a large reduction and fragmentation of habitat would render any populations non-viable in the long-term. These impacts could therefore result in a permanent adverse effect on the conservation status of reptile populations that could be significant at up to the county/metropolitan level.

7.4.14 As part of a precautionary assessment, it is assumed that a medium population size class of great crested newts will be affected when a pond is removed to the north-west of Wendover. The conservation status of great crested newt is dependent on such ponds for breeding. Loss of this pond would result in an adverse effect on conservation status of this population that is significant at up to the county/metropolitan level.

7.4.15 No significant effects are expected on the terrestrial invertebrate assemblage at the orchard north of Nash Lee Road. There are few trees and little suitable deadwood habitat for notable invertebrates in the 0.8ha (8%) of the orchard that will be removed.

7.4.16 The removal or disturbance of habitat features that are used by bats during breeding and hibernation, or migrating between roosts, is considered to have the potential to result in adverse effects on the bat populations and species assemblages during construction. However, the point at which such impacts are considered likely to result in a significant adverse effect on conservation status will differ according to the species concerned.

7.4.17 No significant effects are expected on the small whiskered bat roost and the small brown long-eared bat roost at Ellesborough Road. The demolition of two residential buildings during the construction of the Wendover green tunnel will remove these roosts. However, both are used by low numbers of bats, are unlikely to be maternity roosts, the wider landscape provides an abundance of possible alternative roosting locations and these species utilise several such roosts within their range.

7.4.18 Loss of other habitat within the land required for the construction of the Proposed Scheme may require some bats to travel further, and expend more energy during foraging and movement throughout their home range for the duration of construction. However, the loss of habitat is considered unlikely to result in sufficient disturbance of the populations concerned to result in an adverse effect on their conservation status.

7.4.19 No significant effects are expected on the bat assemblage associated with mature hedges, trees and tree-lined lanes at the southern end of the area. The construction of the South Heath cutting, the Rocky Lane south cutting and the Small Dean viaduct southern approach embankment will remove mature hedges, trees and tree-lined lanes, particularly from Rocky Lane, Bowood Lane, King's Lane and Leather Lane. These features are used by common and soprano pipistrelles, a Myotis species, noctules and serotines. The width of the land required for the construction of the Proposed Scheme (that ranges between 60m and 550m) is therefore likely to reduce

R206 (122)

the frequency with which this assemblage crosses the land required for the construction of the Proposed Scheme. However, no known roosts will be removed and extensive foraging sites (predominantly woodland) will be retained on either side of the route, as such loss of habitat is unlikely to result in an adverse effect on the assemblages' conservation status.

7.4.20 No significant effects are expected on the noctule population at the orchard north of Nash Lee Road and the common pipistrelle population west of Wendover as no roosts will be lost and extensive foraging habitat will remain outside of land required for construction of the Proposed Scheme for these populations to use.

7.4.21 The other known bat roosts will be retained, and will remain connected to suitable foraging habitat sites. Therefore, no significant adverse effects are expected.

7.4.22 No significant effects are expected on the great crested newt populations at Wellwick Farm. The breeding pond will not be removed and the temporary removal of less than 1ha of grassland (for up to three years) within an area of extensive suitable habitat to the north of the farm will not affect the viability of the population. The conservation status of this population will therefore remain unaffected.

7.4.23 No significant effects are expected on the potential population of great crested newts near Strawberry Hill Farm as the ponds will remain and little or no terrestrial habitat will be removed.

7.4.24 No significant effects are expected on the native black poplar population. As so few trees (less than 0.5% of the Aylesbury Vale population) will be removed the conservation status of the local population is likely to remain unaffected.

7.4.25 No impacts are expected on otter because the southern branch of the Stoke Brook, which the species utilises, will not be affected. Disturbance of otter in the northern reaches of the Stoke Brook is described in the Volume 2 CFA report for the Stoke Mandeville and Aylesbury area (CFA11).

7.4.26 It is considered unlikely that any other effects on species at more than the local/parish level will occur. Local/parish level effects are reported in Volume 5: Appendix EC-005-002.

Other mitigation measures

7.4.27 This section describes additional measures designed to reduce or compensate for significant ecological effects. These include habitat creation, linking existing habitats and providing crossing points to enable bats to cross the Proposed Scheme.

7.4.28 Four ecological compensation areas have been incorporated into the land required for construction of the Proposed Scheme, these are:

- land to the east of Jones' Hill Wood adjacent to Bowood Lane (approximately 5ha) will consist of mainly of woodland;
- land west of Jones' Hill Wood (approximately 2.0ha) will consist of grassland with scrub and trees;
- land to the south of the orchard at Nash Lee Road (approximately 2ha) will

consist of grassland with scrub; and

- land to the north of orchard at Nash Lee Road (approximately 1ha) will consist of grassland with scrub.

7.4.29 Other habitat will be created primarily for landscape screening or compensation. It is likely that these measures will indirectly provide ecological benefits, for example foraging and sheltering opportunities for wildlife.

7.4.30 Ancient woodland is irreplaceable. However, the loss of 1ha of ancient woodland from Jones' Hill Wood will be compensated through a range of measures. Ancient woodland soil with its associated seed bank will be salvaged and translocated to the ecological compensation area east of Jones' Hill Wood and planted with broad-leaved trees so as to increase the extent of woodland and increase connectivity across the landscape. This new planting will provide connection between Jones' Hill Wood, and the un-named wood 180m to the south-east. In turn, this will provide a good habitat connection between Jones' Hill Wood and Rushmoor Wood, the ancient woodlands in this district. Other measures such as planting native tree and shrub species of local provenance and translocation of coppice stools and dead wood will be undertaken in accordance with the ecological principles of mitigation (Volume 5: Appendix CT-001-000/2).

7.4.31 After the translocation of ancient woodland soils the ecological compensation area east of Jones' Hill Wood will be planted with approximately 5ha of lowland mixed deciduous woodland (a habitat of principal importance). The new woodland will include rides and glades to help maintain the identity of the adjacent retained woodland. While not fully replicating the ancient woodland that will be lost, the large increase in woodland extent will maintain the conservation status of woodland in the area, and when mature (approximately 50 years) it will result in a separate beneficial effect that is significant at the district/borough level.

7.4.32 New hedgerow creation will be undertaken and connected habitat is provided within the landscape scheme to compensate for losses of wildlife corridors that hedgerows provide. The species composition of the new hedges will be tailored to match that of those in the surrounding area and planting will be in accordance with the ecological principles of mitigation (Volume 5: Appendix CT-001-000/2). There will be temporary adverse effects whilst the new hedges become established and mature. Following establishment and maturation of planting it is anticipated that any adverse impacts on hedgerows and the wildlife corridors they create will be reduced to a level which will not result in any significant effect on the conservation status.

7.4.33 Although no significant effects are expected the landscape planting at the South Heath Cutting, Small Dean Viaduct Southern Approach Embankment and the Wendover North Cutting will encourage bats away from the route (particularly north of Upper Wendoverdean Farm and north of Wellwick Farm). The covering of the Wendover Green Tunnel will also provide continuous habitat between Wendover and the foraging sites in and around the Bacombe Hill SSSI. In addition, the Wendover Dean Viaduct and the Small Dean Viaduct will provide opportunity for bats to fly under the route, particularly the brown longed-bat population at Grove Farm.

R206 (124)

7.4.34 Planting on the embankments of the over- and underbridges at Leather Lane, the footpath leading to King's Lane (TLE/2), and the Nash Lee Orchard footpath will be designed to encourage bats to fly at a safe height over the Proposed Scheme, thus reducing any severance created during construction. The planting on the embankments of Bowood Lane will be important in linking the existing woodland at and around Jones' Hill Wood with the new precautionary ecological compensation area on the western side of the route, thus connecting the locally available foraging habitat across the route. The planting around the Nash Lee Road diversion will be important in maintaining connectivity between the nearby orchard and the Stoke Brook to the north, Wellwick Farm and the foraging habitat at Bacombe Hill to the south.

7.4.35 Although no significant adverse effects are expected on any bat population due to the loss of two bat roosts at Ellesborough Lane, they will be compensated for through the provision of new artificial roosts in accordance with the ecological principles of mitigation provided in Volume 5: Appendix CT-001-000/2.

7.4.36 There will be an adverse effect on the conservation status of barn owl at the district/borough level due to loss of one territory. To offset the likely loss of barn owls from the vicinity of the Proposed Scheme, opportunities to provide barn owl nesting boxes in areas greater than 1.5 km from the route will be explored with local landowners. As the availability of nesting sites is a limiting factor for this species the implementation of these measures would be likely to increase numbers of barn owls within the wider landscape and thus offset the adverse effect.

7.4.37 If the presence of reptiles is confirmed during surveys to be conducted prior to construction then they will be moved to one of the ecological compensation areas. All such areas will comprise terrestrial habitat suitable for breeding and hibernating reptiles, and will be created and managed in accordance with the ecological principles of mitigation provided Volume 5: Appendix CT-001-000/2. These measures will ensure the anticipated effects on the reptile population concerned to a level where they are not expected to be significant.

7.4.38 If the presence of great crested newts is confirmed during surveys to be conducted prior to construction then mitigation will be provided in line with the ecological principles of mitigation (Volume 5: Appendix CT-001-000/2) and the animals will be translocated to one of the nearby ecological compensation areas. This will include the provision of replacement ponds and terrestrial habitat sufficient to ensure that the favourable conservation status of this species is maintained.

7.4.39 Terrestrial invertebrates associated with dead-wood and mosaic grassland will not be significantly affected. However, habitat suitable for these species, such as dead wood or mosaic grasslands will be provided in accordance with the ecological principles of mitigation (Volume 5: Appendix CT-001-000/2).

7.4.40 Although no significant effects are expected and where reasonably practicable, cuttings will be taken from native black poplar trees that are to be felled and used to propagate and plant new trees throughout the area. This planting will compensate for the loss of this species and as such there will be no significant ecological effects to native black poplar trees.

2. Connectivity of habitats

'We require an assurance that a connectivity analysis of the proposal will be carried out in consultation with LAs who have undertaken such exercises in their efforts to appreciate the likelihood of the proposal to comply with the Lawton Principles and the Biodiversity 2020 Strategy. The results of connectivity analyses will indicate key pinch points along the route and enable a thorough assessment of the current proposals provision of connectivity measures and may indicate where further work is required.'

In designing habitat creation and landscape planting, providing more, bigger, better and joined up habitats was a consideration (see the mitigation approach and principles set out in Annex D: Ecological Principles of Mitigation in the Environmental Statement (ES) Scope and Methodology Report Addendum). The introduction of a metric within the biodiversity offsetting calculation to assess the position in the landscape of the habitats both lost and created further demonstrates the project's commitment to the 'Lawton principle'.

Sections 9.4 and 9.5 of the ES Scope and Methodology Report explain that connectivity and habitat severance are issues that are considered in the ES. Paragraph 9.5.6 confirms that the assessment included the effects on landscape-scale ecological features, including habitat connectivity.

The ES has identified the areas where connectivity is a particular issue and has included the appropriate measures to mitigate these effects. HS2 Ltd does not believe that connectivity mapping would have made any difference to the outcomes of the ES.

Consistent with the Lawton review, the Promoter has sought to increase the size of areas of existing priority habitat by creating new areas of habitat adjacent to them, and sought to join up fragments of habitat wherever practicable.

3. Ecology Review Group and its remit

The purpose of the Ecology Review Group, as established through assurances already given to a number of potential members, will be to review the monitoring outputs. Membership will include local authorities as well as wildlife NGOs and other relevant bodies and experts as appropriate. Draft Terms of Reference will be sent to prospective members when the Group is established, and the views of the prospective members will be considered before they are finalised. The Group will be established at an appropriate time after Royal Assent when results from monitoring work start to become available for its consideration.

It is envisaged that the Terms of Reference will include consideration of route wide approaches to mitigation and compensation, biodiversity offsetting and connectivity considerations.

For the Council's reference we have included the wording of the assurance offered to the RSPB:

'The Secretary of State will require the nominated undertaker to establish an ecological review group to provide independent advice on the monitoring of ecological mitigation measures. The terms of reference for the ecological review group shall include:

- *Receiving annual reports from the nominated undertaker detailing the results of monitoring of the ecological mitigation measures for an appropriate period of time to be agree with Natural England;*
- *Scrutinising relevant data gathered for the purpose of these reports; and*
- *Recommending reasonable remedial action where ecological mitigation measures are not meeting the ecological objectives.'*

Community and Environment Fund (CEF) and Business and Local Economy Fund (BLEF)

Martin Tett, Leader
Buckinghamshire County Council

12 October 2015

Route-wide issue

Buckinghamshire County Council is leading on this issue on behalf of:

- LB Camden (76)
- LB Hillingdon (199)
- Chiltern DC (185)
- Aylesbury Vale DC (75)
- South Northants Council (51)
- Warwickshire CC (111)
- Stratford DC (96)
- North Warwickshire BC (101)
- Staffs CC (54)
- Lichfield DC (35)
- Solihull MDC (481)
- Also other local organisations

A1442 (2)

HOC/00520/0057

Establishment of an HS2 Community Fund

- On 26 August 2014, local authorities wrote to the Prime Minister to ask for a Community and Environment Benefit Fund to be established

- We asked to work with the government to bring this about

- Then on 10 October 2014, government announced £30m to cover both a Community and Environment Fund **and** a Business and Local Economy Fund combined

How was £30m arrived at?

- Demand is unquantified
- Allocation between the 2 funds not clear
- 25 local authorities on Phase 1 so barely £1m each area
- 27 directly affected towns and villages in Bucks alone
- Based on knowledge and experience, demand will massively exceed supply

Buckinghamshire Petition Response Document (PRD) – examples of demand from HS2 Ltd

Buckinghamshire's and Warwickshire's PRD contain references where applications to CEF could be made:

- Linking of two footpaths on a 40m stretch
- Steeple Claydon and Calvert Mitigation Plan
  - Including extended screening and better visual mitigation
- Improvements to the River Tame in Warks

Examples of adverse community impacts

- Severance of communities in the Calvert and Steeple Claydon areas
- Proximity to the line of large numbers of residents in South West Aylesbury
- Impacts on southern Wendover
- Colne Valley Park and Denham Country Park
- Travel delays in Chiltern District alone will cost an estimated £89.8m

Unhelpful comparisons with HS1

- Government based proposed funds on HS1, But…
- HS1 a third the length of HS2
- HS1 was c.20 years ago and the fund was solely environmental
- HS1 fund had much narrower terms of reference
- HS1 fund was negligible compared to the impact of the scheme
- An exercise identified a fund 10x greater than the value of HS1 fund was needed

More unhelpful comparisons with HS1

- HS1 provided local economic benefits (stations at Ebbsfleet and Ashford)
- HS2 routed through sensitive areas and not a major transport corridor

HS1 and M20

HS2 and A413

Our rationale

- Funds should lessen the burden of hosting national infrastructure and leave a legacy
- Funds should reflect the length and scale of HS2
- Funds should be comparable to other funds compensating for national infrastructure

HS2 – 'The largest infrastructure project in Europe' however…

- Gatwick airport - £256m being offered for second runway
- Davies Commission have recommended £1b community compensation for Heathrow
- Hinkley Point C £128m

Current government thinking

- Administration costs will be provided for separately (Jul 2015)
- Likely to be centrally controlled and managed

- Funds only available 2017-2026 (during construction)
- *'Grants to be awarded on quality of projects'* – so competition between communities

Our key funding principles

- Be locally influenced
- Be distributed by an independent body, able to draw on local knowledge and expertise
- Offer grants up to 100% - LAs should not have to match fund (businesses not expected to)
- Prioritise projects in areas with greatest detriment

Lifetime of the funds

- Stopping funds at 2026 does not recognise disturbance of operation
- Other schemes recognise the long-term nature of impacts
- Only £3m per year?

Select Committee Interim Report

'We want the Promoter to brief our successor committee on the scale and scope of the Community and Environment Fund and the Business and Local Economy Fund, on what real schemes they might cover, on the criteria for applying to them, and on how they will be distributed, so that we can assess whether they should be extended'

A fairer fund

- £775m *'contractor administration costs'*
- £435m *'project overheads'*
- £913m HS2 Ltd actual spend to end Jan 2015
- A fairer fund of at least £150m

Buckinghamshire and Warwickshire – project ideas

- BCC and WCC have developed lists of potential projects, in conjunction with parish councils and others
- Without criteria it is difficult to know which projects might be eligible
- These are illustrative and not costed or worked up in any detail

HIGH SPEED TWO

INFORMATION PAPER

C12: THE COMMUNITY AND ENVIRONMENT FUND AND BUSINESS AND LOCAL ECONOMY FUND

This paper outlines information relating to The Community and Environment Fund (CEF) and the Business and Local Economy Fund (BLEF).

It will be of particular interest to those potentially affected by the Government's proposals for high speed rail.

This paper will be updated as required. If you have any queries about this paper or about how it might apply to you, please contact the HS2 Helpdesk in the first instance.

The Helpdesk can be reached at:

High Speed Two (HS2) Limited
One Canada Square
London E14 5AB

by email: HS2enquiries@hs2.org.uk

or by phone: 020 7944 4908 (lines are open Monday to Friday 9am-5pm)

Version 1.0
Last update 04 December 2014

C12: THE COMMUNITY AND ENVIRONMENT FUND AND BUSINESS AND LOCAL ECONOMY FUND

1. Introduction

1.1. High Speed Two (HS2) is the Government's proposal for a new, high speed north-south railway. The proposal is being taken forward in two phases: Phase One will connect London with Birmingham and the West Midlands; and Phase Two will extend the route to Manchester, Leeds and beyond.

1.2. HS2 Ltd is the non-departmental public body responsible for developing and promoting these proposals. The company works to a remit set by the Secretary of State for Transport.

1.3. In November 2013, HS2 Ltd deposited a hybrid Bill[1] with Parliament to seek powers for the construction and operation of Phase One of HS2 (sometimes referred to as 'the Proposed Scheme'). The Bill is the culmination of nearly five years of work, including an Environmental Impact Assessment (EIA), the results of which were reported in an Environmental Statement (ES) submitted alongside the Bill. The Secretary of State has also published draft Environmental Minimum Requirements (EMRs), which set out the environmental and sustainability commitments that will be observed in the construction of the Proposed Scheme.

1.4. The Bill will be promoted through Parliament by the Secretary of State for Transport (the 'Promoter'). The Secretary of State will also appoint a body responsible for delivering the Proposed Scheme under the powers granted by the Bill.

1.5. This body is known as the 'nominated undertaker'. There may well be more than one nominated undertaker – for example, HS2 Ltd could become the nominated undertaker for the main railway works, while Network Rail could become the nominated undertaker for works to an existing station, such as Euston. But whoever they are, all nominated undertakers will be bound by the obligations contained in the Bill and the policies established in the EMRs.

1.6. These information papers have been produced to explain the commitments made in the Bill and the EMRs and how they will be applied to the design and construction of the Proposed Scheme. They also provide information about the Proposed Scheme itself, the powers contained in the Bill and how particular decisions about the project have been reached.

[1] The High Speed Rail (London – West Midlands) Bill, hereafter 'the Bill'.

2. Overview

2.1. This information paper provides details of the Community and Environment Fund (CEF) and the Business and Local Economy Fund (BLEF), which were announced by the Government in October 2014.

2.2. A total of £30m has been made available for these two funds. This is in addition to the comprehensive mitigation outlined in the Bill and ES to address the environmental impacts of Phase One. The ES also sets out wide-ranging measures which will enable local people and businesses to obtain employment and contracts arising from the construction and operation of Phase One.

3. The Community and Environment Fund

3.1. The objective of this fund is to help offset the impacts on communities along the route as a result of disturbance associated with the construction and initial operation of the railway. The aim is to maintain local quality of life and, wherever possible, leave a sustainable legacy.

3.2. There will be two types of CEF grant:

- Local – these projects will benefit individual communities; and
- Strategic – these larger projects will provide a legacy across larger areas by supporting multiple communities along the Phase One route.

3.3. It is envisaged that applications will be invited from community-based voluntary organisations, charitable bodies, and local authorities.

3.4. Initiatives might include:

- improved pedestrian, equestrian, or cycle access;
- landscape and nature conservation enhancement projects which increase biodiversity;
- enhancement or replacement of sports and recreational facilities;
- improved access and enhancements to public open space;
- provision of enhanced or new community facilities; and
- refurbishment/re-use of historic buildings and monuments.

4. The Business and Local Economy Fund

4.1. The objective of this fund is to help offset the impacts on business from disturbances associated with construction of the railway.

4.2. It will be for local business support organisations, including local authorities, to work with their local enterprise partnerships to identify appropriate projects which will help maintain business activity in local communities.

4.3. Initiatives might include:

- schemes to improve the local public realm, especially in retail and tourist areas;
- improved local cycling and pedestrian access to local economic centres;
- general promotional activity;
- creating and running events that increase footfall or promote business activity during seasonal periods; and
- projects that aim to increase tourist visits to an area.

5. Eligibility and administration

5.1. The detailed eligibility criteria and administration arrangement are being developed through engagement with local authorities, local enterprise partnerships and environmental NGOs. HS2 Ltd expects to announce the full eligibility criteria, application and decision making arrangements in Spring 2015

5.2. However, it is clear that all applicants will be required to demonstrate temporary or permanent disturbance, arising from construction works.

6. Timing

6.1. The first grants from both funds will be awarded once the Bill has received Royal Assent.

6.2. Our expectation is that both the CEF and BLEF grants will need to be fully spent by the end of the first year of operation of Phase One.

7. More information

7.1. Further information on the funds will be published as the detail is developed and will be found at www.gov.uk/hs2

July 22th 2015

Dear Colleague,

Update on the Community & Environment and Business & Local Economy Funds

I would like to update you on progress with the establishment of the £30m Community (CEF) and Business (BLEF) Funds, announced by Robert Goodwill Parliamentary Under Secretary of State at the Department for Transport in October 2014.

Many of you attended the stakeholder workshops, which were facilitated by New Philanthropy Capital (NPC), in December 2014. I would like to thank you for your participation at these events and for the subsequent written submissions received. These were taken on board by NPC in the preparation of their advice to HS2 Ltd, I am pleased to enclose for your information a summary of these recommendations.

We have now received ministerial approval for the following features of the funds:

- The full £30m fund will be available for grants. Administration costs will be provided for separately.
- The objectives of the fund will be to add benefit over and above committed mitigation and statutory compensation to communities and local economies along the route that are demonstrably disrupted by the construction of HS2.
- Local authorities and community organisations will be eligible to apply for both CEF Local and CEF Strategic. Local authorities and business support organisations (e.g. LEPs, Chambers of Commerce, Business Improvement Districts, and Tourist Boards) will be eligible to apply for BLEF.
- An Independent CEF and BLEF Panel will have responsibility for the governance of the fund. The Panel will comprise four independent members (including the Chair) and one representative from HS2 Ltd. The Panel will make recommendations to the Secretary of State on whether eligible applications should be accepted for grant awards above a certain threshold. The final decision will be made by a senior civil servant with delegated authority from the Secretary of State.
- Stakeholder representatives will be invited to participate in the selection process for the Panel.
- Members will be selected so the Panel has the following areas of expertise:
    - Experience in delivery of successful community led environmental projects;
    - Track record in providing advice and support to small and medium size businesses, particularly in the service and tourism sectors; and

High Speed Two (HS2) Limited One Canada Square, London E14 5AB
T: 020 7944 4908 E: hs2enquiries@hs2.org.uk www.hs2.org.uk