EWR CONSORTIUM RESPONSE TO SCOPING REPORT

The Consortium has reviewed the Scoping report. The approach taken was to identify 'Lead' Authorities to review and draft the initial response to each Chapter. The Consortium then reviewed these drafts to ensure the stated response is representative of all members and the results are contained within this document.

The 'Lead' Authorities are identified below for your information / should any queries arise. For Chapter 8 please direct any queries to John Disley or Steve Davis.

Chapter	Lead Authority
4. Draft Structure of ES	Planning Ahead Working Group (EWR Consortium members)
5. Land Use and Agriculture	Bedford Borough Council
6. Cultural Heritage (incl Archaeology)	Oxfordshire County Council and Cherwell District Council
7. Air Quality	Milton Keynes Council
8. Sound, Noise and Vibration	Chiltern District Council (Steve Braund, experience from HS2) and Bedford Borough Council
9. Ecology	Oxfordshire County Council
10. Landscape and Visual Impacts	Aylesbury Vale District Council
11. Water Quality and Hydrology	Oxfordshire County Council
12. Geology, Soils and Land Contamination	Oxfordshire County Council and Cherwell District Council
13. Traffic and Transport	Oxfordshire County Council and Buckinghamshire County Council
14. Electromagnetic Interference	Consortium agreed no specific review required at this stage.
15. Cumulative Effects	Central Bedfordshire Council

Contact details for Consortium members are provided in Appendix 1.

General comment.

The Consortium notes that the consultation time allowed to review and comment on the Scoping report was short, although was focused on the methodology, rather than detailed specifics. With this in mind the Consortium or its individual authorities reserve the right to respond on specific detail at an appropriate time in the future, for example on baseline conditions, once more detailed information is provided.

Chapter 4 - Draft Structure of ES

The Consortium supports a structure based on topic areas corresponding to authority boundaries.

Chapter 5. Land Use and Agriculture

1. The Consortium is satisfied that the proposed range of likely significant effects and the methodology proposed by the author seems thorough and pragmatic. Permanent and temporary, direct and indirect effects will be considered. The proposed thresholds for assessing the magnitude of impact seem appropriate.

2. The baseline information includes a desk based assessment of agricultural land quality (Appendix 3.1, section 1.2). We have noted that the sub-grades within Grade 3 land have not been differentiated as of yet (i.e. sub-grades 3a and 3b) however the methodology does explain that soil sampling will be undertaken at the shortlisted sites to enable the distinction to be made. Within the ALC grading baseline information tables there is also a category entitled 'Other / Not surveyed'. We would like an explanation of what land this refers to.

3. Finally, on a very small matter, there appears to be a typo in paragraph 5.4.2: "The approach that ~~it~~ is proposed will focus….."

Chapter 6. Cultural Heritage (including Archaeology)

1. The Consortium is overall satisfied that the proposed range of likely significant effects and the methodology proposed by the authors seems thorough and pragmatic. Permanent and temporary, direct and indirect effects will be considered. The proposed thresholds for assessing the magnitude of impact seem appropriate.

At a more detailed critical approach our comments are restricted to:

2. Para 6.1.2 first sentence - should refer to non-designated heritage assets (as specified in the NPPF) should be included in the list of what cultural heritage comprises

3. Para 6.2.4 to 6.2.6 - individual authorities need to examine whether there are any other assets that lie outside of the standard 1km outer study area that should be specifically named as needed especial assessment. We reserve our position on the detail associated with any such identified assets.

4. Para 6.4.5 - there is no mention of an assessment of existing aerial photographs for the route and study area. It is suggested the National Mapping Programme records and other photographic records be added to the sources consulted. For example, English Heritage holds aerial photographs which should be available for at least some of the route, which would assist in identifying where cropmarks and other features exist.

5. Para 6.4.7 - reference to locally listed buildings should actually be to locally listed heritage assets

6. Table 6.3 - reference to locally listed buildings in medium and low sensitivity categories should actually be to locally listed heritage assets

Chapter 7. Air Quality

1. Subject to the following comments the Consortium believes this is a well-considered scoping report and the methodology proposed is in line with the most recent guidance available:

2. The dust assessment methodology for construction impacts is based on that provided by the Institute of Air Quality Management (IAQM) "Guidance on the assessment of dust from demolition and construction", Feb 2014 and is the most up to date and authoritative guidance available.

3. Dispersion modelling using the latest emission factors will be used to assess the impact from vehicle exhausts along haulage routes and verified using monitoring data. It is a sensible approach to use impact specific study areas with sub-sections for the overall scheme as described for scoping purposes. More specific investigation may be required for certain locations as the scheme develops.

4. Operational effects will be assessed using modal shift data arising from the scheme

5. With regard to monitoring data the proposed field surveys to augment local authority and AURN data are welcomed. The monitoring will provide additional ambient concentrations of NO_2 and PM_{10} at sensitive receptors and background locations. Paragraph 7.4.9 states that there is no background monitoring data available for particulate matter, however, Network Rail should contact the individual local authorities to check if they have particle analysers, for example, Milton Keynes has a Team analyser at the Civic Offices. The type of optical particle analyser to be used in the survey should be specified.

6. Network Rail should contact local authority Environmental Health Departments to discuss the selection or locations of sensitive receptors in their area.

7. The method for assessing the significance of effects is stated as being in line with IAQM guidance for construction dust and EPUK for traffic impacts. We are uncertain as to which EPUK document(s) this refers, however "Planning for Air Quality, 2010 Update" has been replaced with a joint EPUK/IAQM version "Planning for air quality 2015".

8. Table 7.4 Criteria for the Assessment of Significance *of Significance* – typo. Also further to the above point, Table 7.4 differs from the table within the finalised EPUK guidance (table 6.3 of the guidance). We would expect that the actual assessment will reflect the finalised guidance, rather than the criteria within the scoping report.

9. The report does not mention the preparation of a Dust Management Plan or Code of Construction Practice that will need to be approved by the local authorities.

Chapter 8 - Sound, Noise and Vibration

The consortium has undertaken the following review of the Network Rail (East West Rail Phase 2) Order Scheme Scoping Report (SSR) Part 8 Noise and Vibration.

It is worth noting that the document title doesn't include "methodology" although the EIA methodology proposed is covered in part 3 of the SSR.

Structure of the review

Part A – Executive Summary

Part B – National Networks NPS

Part C – Interrelationships between chapters

Part D - Detailed Comment on Chapter 8

Part E - Evaluation matrix against NPF NN criteria.

Part A Executive Summary

Getting a good understanding of how an EIA will be carried out at the scoping stage is very important to the final delivery of a project.

After reviewing the scheme scoping report the following observations are made.

The SSR is weak against national policy requirements. The applicant should be asked how the EIA and ES will address national policy (National Networks NPS and the Noise Policy Statement for England 2010).

The structure of Chapter 8 is confused, constructional and operational phases are difficult to separate out The chapter should be restructured. If it is proposed to use a construction code of practice (CoCP) perhaps this could be incorporated.

Work needs to be done on the vibration assessment It is suggested LOAEL and SOAELS be defined. The levels suggested are primarily intended to protect structures and set to the applicant's advantage.

The SSR has scoped out ground borne noise it should be included at this stage for completeness.

The SSR is not specific on reporting work done and works to be carried out which will eventually inform the EIA and ES relating to baseline in particular. It would be helpful if a plan of engagement with stakeholders could be included.

Part B

National Networks NPS

The designation of National Networks NPS was made on 14 January 2015. It provides a useful evaluation framework for the SSR suggesting what should be done at the EIA stage. Although the Planning Inspectorate is impartial and does not comment on Government policy it does make recommendations within the framework provided by NPSs. For that reason the NPS has considerable weight. Furthermore the NPS references the Noise Policy Statement for England 2010 (NPSE) which ties together national noise policy written to cater for many different types of noise.

It is worth re-stating the NPSE aims:

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.

It is also worth setting this in context. The NPSE sets guiding principles of sustainable development.

- Ensuring a Strong Healthy and Just Society – Meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion and inclusion, and creating equal opportunity for all.
- Using Sound Science Responsibly – Ensuring policy is developed and implemented on the basis of strong scientific evidence, whilst taking into account.
- Living Within Environmental Limits – Respecting the limits of the planet's environment, resources and biodiversity – to improve our environment and ensure that the natural resources needed for life are unimpaired and remain so for future generations.
- Achieving a Sustainable Economy – Building a strong, stable and sustainable economy which provides prosperity and opportunities for all, and in which environmental and social costs fall on those who impose them (polluter pays), and efficient resource use is incentivised.

Returning to the NPS NN, some of the key paragraphs against which the SSR can be evaluated are reproduced below.

5.144 Part, Where the development is subject to EIA the applicant should undertake an assessment of any likely significant landscape and visual impacts in the environmental impact assessment and describe these in the environmental assessment.

5.146 Part, The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include any noise and light pollution effects, including on local amenity, tranquillity and nature conservation.

5.186 Excessive noise can have wide-ranging impacts on the quality of human life and health (e.g. owing to annoyance or sleep disturbance), use and enjoyment of areas of value (such as quiet places) and areas with high landscape quality. The Government's policy is set out in the Noise Policy Statement for England. It promotes good health and good quality of life through effective noise management. Similar considerations apply to vibration, which can also cause

damage to buildings. In this section, in line with current legislation, references below to "noise" apply equally to assessment of impacts of vibration.

5.189 Where a development is subject to EIA and significant noise impacts are likely to arise from the proposed development, the applicant should include the following in the noise assessment, which should form part of the environment statement:

- a description of the noise sources including likely usage in terms of number of movements, fleet mix and diurnal pattern. For any associated fixed structures, such as ventilation fans for tunnels, information about the noise sources including the identification of any distinctive tonal, impulsive or low frequency characteristics of the noise.
- identification of noise sensitive premises and noise sensitive areas that may be affected.
- the characteristics of the existing noise environment.
- a prediction on how the noise environment will change with the proposed development:
- In the shorter term such as during the construction period; also in the longer term during the operating life of the infrastructure;
- at particular times of the day, evening and night as appropriate.
- an assessment of the effect of predicted changes in the noise environment on any noise sensitive premises and noise sensitive areas.
- measures to be employed in mitigating the effects of noise. Applicants should consider using best available techniques to reduce noise impacts.
- the nature and extent of the noise assessment should be proportionate to the likely noise impact.

5.190 The potential noise impact elsewhere that is directly associated with the development, such as changes in road and rail traffic movements elsewhere on the national networks, should be considered as appropriate.

5.191 Operational noise, with respect to human receptors, should be assessed using the principles of the relevant British Standards and other guidance. The prediction of road traffic noise should be based on the method described in Calculation of Road Traffic Noise. The prediction of noise from new railways should be based on the method described in Calculation of Railway Noise. For the prediction, assessment and management of construction noise, reference should be made to any relevant British Standards and other guidance which also give examples of mitigation strategies

5.192 The applicant should consult Natural England with regard to assessment of noise on designated nature conservation sites, protected landscapes, protected species or other wildlife. The results of any noise surveys and predictions may inform the ecological assessment. The seasonality of potentially affected species in nearby sites may also need to be taken into account.

The SSR is silent on most of the above.

Part C Interrelationships

Exploration of the relationship between the noise and vibration theme and other chapter headings in the introduction, including other themes where an environmental impact assessment is required follows:

1. INTRODUCTION
2. THE SCHEME
3. EIA METHODOLOGY

The document states that, in accord with best practice, and consistent with the Calculation of Railway Noise (CRN) Technical Memorandum and current guidance, the operational effects will be assessed from the year of opening to year 15 of operation (calendar years 2019 to 2034). Although this is satisfactory for the first aim of the NPSE it does not meet the second aim. We could ask how this will be met.

Human Health will not be assessed as a separate topic chapter in the ES. Chapters 7 (Air Quality), 8 (Noise and Vibration), 12 (Geology, Soil and Land Contamination) and 14 (Electromagnetic Interference) will consider potential risk to human health. Human health is of importance to the setting of LOAELs and SOAELs and the second aim of the NPSE.

4. DRAFT STRUCTURE OF THE ES

5. LAND USE AND AGRICULTURE

Noise from construction effects will be considered here. The potential for likely significant effects on agriculture are identified.
The SSR promises an assessment of the in-combination effects with other topic areas including noise.

6. CULTURAL HERITAGE

The change in frequency of operational rail traffic along the line and the associated change in noise and vibration on the setting of heritage assets adjacent to the rail corridor is recorded as adding to the potential for likely significant effects.
The SSR promises an assessment of the in-combination effects with other topic areas including noise.

7. AIR QUALITY

None

8. NOISE AND VIBRATION

See Part D following.

9. ECOLOGY

The SSR points to possible indirect effects such as habitat and species disturbance from construction activities in the proximity which including noise.
The SSR promises an assessment of the in-combination effects with other topic areas including noise.

10. LANDSCAPE AND VISUAL IMPACTS

None.

11. WATER QUALITY AND FLOOD RISK

None.

12. GEOLOGY, SOILS AND LAND CONTAMINATION

None.

13. TRAFFIC AND TRANSPORT

This section identifies the noise and vibration chapter as helpful when defining key receptors. The SSR promises an assessment of the in-combination effects with other topic areas including noise but confines it within the scheme.
The Design Manual for Road and Bridges (DMRB) will inform the noise and vibration chapter.

14. ELECTROMAGNETIC INTERFERENCE

None.

15. CUMULATIVE EFFECTS

APPENDIX 3.1 – BASELINE CONDITIONS AND LEGISLATION, POLICY AND GOOD PRACTICE
Section 1.5 gives a cursory overview of matters relating to the title and points to the IEMA 'Guidelines for Environmental Noise Impact Assessment' October 2014. This could be a useful yardstick later.

Part D Detailed Comment

8. NOISE AND VIBRATION

Comments in italic

8.1 Introduction

8.1.1 A study of the likely significant effects from noise and vibration will be undertaken as part of the EIA. This will consider the likely significant effects on noise and vibration receptors during the construction and operational phases. This chapter includes a discussion of baseline conditions, identification of likely significant noise and vibration effects and possible mitigation measures. The proposed methodology for the assessment of the construction and operational stages of the Scheme are set out in this chapter.

No mention of NPS NN or NPSE.

The use of the words "likely significant noise and vibration effects" should be qualified in terms of adverse impacts and significant adverse impacts as used in the NPSE. The introduction should, even at this stage make a commitment to following Government policy.

For information:

- *Noise impact – the difference in the acoustic environment before and after implementation of the proposals*
- *Noise effect – the effect of the noise changes e.g. a change in intrusion or annoyance resulting in behavioural changes*
- *Significance of the effect – ranking of the noise effect and if part of an EIA, deciding whether that impact is significant or not*

8.2 Study Area

8.2.1 A large proportion of the Scheme runs through open countryside, as a consequence the likely significant effects from construction noise will be assessed up to 1 km from the Scheme Area boundary in areas of open countryside, where existing noise sources may be fewer and more distant. For urban areas the assessment of construction noise will be up to 500 m from the Scheme Area boundary. The selection of these study areas was made using professional judgement.

What does "up to" mean in practise.

Professional Judgement needs to be checked. Are there maps?

Would prefer to see construction separated.

8.2.2 Likely significant effects from operational noise will be assessed up to 300 m from either side of the outer most railway tracks, following guidance given in The Calculation of Railway Noise (CRN) Technical Memorandum.

Again "up to"

CRN

This was 1km for the HS2 study

8.2.3 Likely significant effects from vibration will be assessed up to 30 m from the Scheme Area boundary during construction and 15 m from the closest running rail during operation.

Again "up to"

8.3 Potential for Likely Significant Effects

8.3.1 It is possible for both noise and vibration effects to come from construction activities, including earth moving, vehicles and traffic, and operational activities such as rail traffic, fixed plant and station PA systems in new or upgraded stations.

This is confusing construction sources and fixed permanent sources.

8.3.2 The key sources of railway related noise are:

· Rolling noise, including rail transition points;

· Curve squeal;

· Aerodynamic noise; and

· Traction noise, especially diesel engines.

It may be worth enquiring about the possible operation of freight trains on the railway which are typically noisier than passenger trains. Freight is often run on night time train paths, another important consideration.

8.3.3 The key sources of railway related vibration are:

· Piling;

· Tamping of ballast;

· Construction vehicles; and

· Rolling stock movements.

No mention of ground borne noise.

Will noise from maintenance regimes be scoped in?

8.3.4 It is possible for adverse noise impacts to arise during operation as a result of the change to the existing or the addition of a new service pattern as a result of the Scheme and installation of new railway line in specific areas.

The words "adverse noise impacts" have been used here for the first time.

8.4 Proposed Assessment Methodology

Overview

8.4.1 The approach to the assessment for noise and vibration during the construction and operational phases of the Scheme will follow the industry standard practice and guidance.

There are many more details needed.

Desk Based Studies

8.4.2 Noise modelling software will be used to produce a model of the existing environment in order to evaluate the changes in noise arising from both construction and operational activities.

It is assumed that the model will be used to predict impacts although this is not explicit.

8.4.3 GIS analysis will be used to identify whether there are vibration sensitive receptors that are likely to be affected by the Scheme i.e. within 30 m of the Scheme Area boundary during construction and within 15 m of the closest running rail during operation.

Conflicts with 8.4.7

Field Surveys

8.4.4 Baseline noise monitoring will be carried out in order to assess the current noise environment at certain pre-determined points along the route. The location for survey locations will be identified through desk based research and site visits where necessary taking into account professional judgement and a series of factors, including distance from the Scheme Area, the presence of other noise sources in the area and the level of existing noise levels.

What input will the LPAs have into the selection of these?

8.4.5 All noise monitoring will be undertaken in accordance with guidance set out in BS 7445-2: 1991 'Description and measurement of environmental noise Part 2: Guide to the acquisition of data pertinent to land use'. This standard details information that should be

recorded in addition to the actual measured noise levels such as meteorological data and a description of the noise source itself.

8.4.6 Baseline vibration monitoring will not be undertaken as there are no receptors known to currently experience high levels of vibration.

How can this be known if the baseline has not yet been established? Are absolute levels going to be used?

Identification of Sensitive Receptors

8.4.7 Noise and vibration sensitive receptors will be identified through desk based research. Noise sensitive receptors will include all properties within the study area for modelling purposes. Vibration sensitive receptors will include properties within 20 m of the Scheme Area boundary during construction and within 15 m of the closest running rail during operation. Additional information on certain receptors may be assessed during field surveys where required.

Would like to see a wide corridor from the centre of the railway, not scheme boundary.

Assessing Significance of Effect

Construction Phase

8.4.8 Based on guidance given in BS 5228, an overview of the relevant criteria for the assessment of the likely significant effects of construction noise is presented in Table 8.1. The noise levels presented below are free-field - a factor of 3 dB should be added to obtain façade levels.

Table 8.1 Noise Criteria – Construction

Period	Building/Location	Criteria for Assessment L_{Aeq}	Purpose
Daytime (0700-1900)	Dwellings/Offices	To maintain speech intelligibility	
		67 dB $L_{Aeq,12hr}$	For quieter areas away from major noise sources
		72 dB $L_{Aeq,12hr}$	For higher noise areas
	Hospitals/Schools	To maintain speech intelligibility in classrooms and quiet conditions in hospitals	
		57 dB L_{Aeq1hr}	For quieter rural areas away from major noise sources
		62 dB L_{Aeq1hr}	For higher noise areas
Evening (1900-2300)	Dwellings	57 dB $L_{Aeq,4hr}$	To avoid disturbance
Night Time (2300-0700)	Dwellings	42 dB $L_{Aeq,8hr}$	To avoid sleep disturbance

Which method of BS5228 assessment will be used?

Part 8.4.8 of the scoping report presents the noise criteria to be used for construction phase; it states this is based on the guidance within BS5228.

BS5228-1:2009 has a number of different criteria for the assessment and limits to be applied to construction noise. The methodology chosen seems to be a mix of methodologies, including that from the 1976 advisory leaflet from the Wilson Report referred to in E.2 of the standard.

The ABC methodology as outlined in E.3.2 is often used. This chosen methodology gives a 5dB increase over the target levels within the ABC methodology for daytime and evening works; it also treats evening at 19:00-23:00 whereas within part E.2 the evening is taken as being 19:00-22:00. The mixing and matching of methodologies would not usually be acceptable. Consideration should be given to the ExAs comments made during the Thames Tideway hearings.

8.4.9 The pre-existing ambient noise level will be established at representative receptors, and noise limits developed as a combination of existing levels and the limits detailed in Table 8.1. The significance criteria for construction noise effects will be developed, taking into account the magnitude and duration of the levels exceeded.

8.4.10 Guidance on the significance of vibration levels related to construction activity can be found in BS5228-2:2009. The standard suggests significance criteria in terms of Peak Particle Velocity (PPV) as this parameter is routinely measured where potential building damage is of concern. An overview of these criteria is presented in Table 8.2. Thresholds for humans will also depend on duration, whereas the criteria for building damage are absolute.

Table 8.2 Vibration Criteria

Period	Building/Location	Criteria for Assessment, PPV	Purpose
Anytime	Inside Dwelling	0.3 mms-1	Threshold of perception (Negligible Effect below 0.3mms-1) (from 0.3 to 1.0 mms-1 slight effect which is insignificant)
Anytime	Inside Dwelling	1.0 mms-1	Complaints likely in residential area, but can be tolerated if prior warning and explanation has been given to residents (above 1.0 mms-1 = Moderate Effect)
Anytime	Inside Dwelling	10.0mms-1	Vibration is likely to be intolerable for any more than a very brief exposure to this level (Major Effect)
Anytime	Reinforced of framed structures and heavy commercial buildings	50 mms-1	Protection of building structure. Levels above are Major Effects, and levels below these are Negligible.
Anytime	Un-reinforced or light framed structures. Residential or light commercial buildings.	15 mms-1	Protection of building structure. Levels above are Major Effects, and levels below these are Negligible.

The vibration criteria set out are taken from BS5228-2:2009, they seek to set limits based on the PPV.

The criteria seem to band anything between 1.0mms-1 and 10.0mms-1 as a moderate effect. At 10mms-1 the impact of the vibration is very severe; within other major construction works the limit is frequently set significantly below 10.0mms-1. Crossrail for example had a limit of 5.0mms-1 for the potential onset of cosmetic damage to buildings.

It would be useful for the applicant to set this out in terms of LOAEL and SOAEL normally as VDV values

Operational Vibration

Operational vibration is mentioned and will be assessed where appropriate, however there is no criteria proposed for what may or may not be significant. It is suggested Table 1 of BS6472-1:2008 be used as a reference.

Operational Phase

8.4.11 The assessment of likely significant effects for the operational phase of the Scheme will be primarily based on the expected change in existing ambient noise levels during the day and night time periods as a direct result of the Scheme. The significance can be adverse or beneficial depending on whether the change represents an increase or decrease in railway noise level. As an example, the significance criteria for a long term change in noise levels are set out in Table 8.3. Additional development of the significance criteria will be undertaken during the assessment.

Table 8.3 Indicative Significance Assessment Criteria

Significance	Criteria
Negligible Impact – not significant	Less than 1 dB change in LAeq,T
Slight Impact – not significant	1-3 dB in LAeq,T
Minor Significance	Change of 3-5 dB in LAeq,T
Moderate Significance	Change of 5-9 dB in LAeq,T
Major Significance	Change of 10 dB or more in LAeq,T

Here the Change of >10dB is probably SOAEL

Change of 5-9 dB is likely to be LOAEL

Noise change needs to be watched carefully. It is particularly difficult to apply if the project is constructed through both urban and rural settings.

For information," How to recognise when noise could be a concern" From the planning portal

Perception	***Examples of Outcomes***	***Increasing Effect Level***	***Action***
Not noticeable	*No Effect*	***No Observed Effect***	*No specific measures required*
Noticeable and not intrusive	*Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.*	*No Observed Adverse Effect*	*No specific measures required*
		Lowest Observed Adverse Effect Level	
Noticeable and intrusive	*Noise can be heard and causes 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.*	*Observed Adverse Effect*	*Mitigate and reduce to a minimum*
		Significant Observed Adverse Effect Level	
Noticeable and disruptive	*The 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.*	*Significant Observed Adverse Effect*	*Avoid*
Noticeable and very disruptive	*Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory*	*Unacceptable Adverse Effect*	*Prevent*

8.4.12 Residential properties will also be assessed during the operational phase against the eligibility criteria for sound insulation as detailed in the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (NIR). Properties that are found to be eligible for noise insulation under the scheme will identified within the EIA. The NIR make provisions for secondary glazing and ventilation for qualifying facades on eligible properties.

See previous comment on CRN.

8.4.13 An assessment of fixed plant and station PA systems in new or upgraded stations will be undertaken following guidance given in BS4142:2014, in order to assess the magnitude of effect.

8.4.14 Modern overground railway systems (such as the Scheme) are not expected to generate significant levels of ground borne vibration, but an assessment will be made for properties within 15 m of the closest running rail, and mitigation considered where likely significant effects could occur.

8.4.15 As described in section 8.3, the movement of rolling stock (trains) is a source of operational ground borne vibration, which can also produce noise. However, noise levels from the ground borne vibration are generally lower, and therefore masked by, the airborne noise also produced by trains. For this reason, it is very unlikely that significant negative effects will arise as a result of ground borne noise only. It has therefore been scoped out of the assessment.

Assume this is where ground borne noise is scoped out.

8.5 Proposed Cumulative Assessment: In-combination Effects

8.5.1 An assessment of the in-combination effects between topic areas within the Scheme will be undertaken. This will include the following topic areas:

· Ecology;

· Cultural Heritage; and

· Traffic and Transport.

How will this be reported?

8.6 Proposed Mitigation and Residual Effects

8.6.1 The Scheme will follow the principle of the mitigation hierarchy which will first optimise the railway alignment away from sensitive receptors where possible. It will then mitigate noise at source where practicable and finally apply secondary mitigation in the form of barriers where necessary. These measures will be considered throughout the design process.

This is sensible but how will the model reflect this?

Are any residual significant adverse effects expected?

8.6.2 Noise and vibration can be mitigated at source, along the transmission path and at the receiver or receptor. In general, the most effective mitigation is that carried out 'at source' as this benefits multiple receptors. Network Rail is committed to the principle of reducing noise at source wherever possible and this has been applied during the design process. The design will endeavour to locate signals, switches and crossings, and lineside plant equipment away from noise and vibration sensitive receptors, where possible. Plant equipment and public address and voice alarm (PAVA) systems on stations will also be assessed and mitigated to minimise likely significant effects.

What input will the LPAs have during the design stage?

8.6.3 Where it is not practical to mitigate the sound at its source, noise may be mitigated through the use of noise barriers or enclosures. Construction noise may be attenuated through the careful selection of equipment and by employing Best Practical Means (BPM)

It would be preferred if operational noise and construction noise were separated during the EIA.

Part E Evaluation matrix against NPF NN criteria.

A description of the noise sources including likely usage in terms of number of movements, fleet mix and diurnal pattern. For any associated fixed structures, such as ventilation fans for tunnels, information about the noise sources including the identification of any distinctive tonal, impulsive or low frequency characteristics of the noise.	Little evidence
identification of noise sensitive premises and noise sensitive areas that may be affected.	Some evidence, desk top survey
the characteristics of the existing noise environment.	Not planned
a prediction on how the noise environment will change with the proposed development:	Some evidence, computer model CaDNA
In the shorter term such as during the construction period; or in the longer term during the operating life of the infrastructure;	
• at particular times of the day, evening and night as appropriate.	No evidence
• an assessment of the effect of predicted changes in the noise environment on any noise sensitive premises and noise sensitive areas.	No evidence
• measures to be employed in mitigating the effects of noise. Applicants should consider using best available techniques to reduce noise impacts.	No evidence
• the nature and extent of the noise assessment should be proportionate to the likely noise impact.	No evidence

The consultants should be asked how they intend to meet these requirements.

Chapter 9 – Ecology

The Consortium has reviewed this Chapter and has the following comments:

1. Network Rail will need to check whether or not there are statutory or non-statutory sites for nature conservancy adjoining the route, and records of protected and priority species and UK Priority Habitat. These should be checked for in all authority areas.

2. It is important that data from each of the Local Environmental Records Centres is used, not NBN data, which is not suitable for this purpose.

3. Support the aim for "measurable net biodiversity gain" in the report (paragraph 9.6.2). The proposals for East West Rail should provide details of the method used to calculate this.

4. Related to this, it is understood that, as part of Great Western electrification and a national programme to reduce delays and improve safety, there will be a fairly wide area either side of tracks cleared of trees and scrub. It is therefore assumed that the East West Rail proposals would also result in substantial habitat loss either side of the tracks (often scrub and woodland) and that offsetting for the habitats that would be lost as part of this will be required. Therefore, it will be important that the "no net loss in biodiversity" that Network Rail is committing to would be delivered through suitable habitat creation, maintaining connectivity. At the moment, rail corridors can act as linear habitat corridors, therefore compensatory habitat should be very close to the habitat that is lost and must be located to maintain connectivity through the landscape (i.e. not isolated pockets of habitat creation that are not linked). Compensatory/offset habitat should also be of a similar type to the habitat that is lost and Network Rail should ensure that appropriate management for biodiversity is secured.

5. The line crosses various watercourses, so these need to be taken account of and may well have UK Priority Habitats associated with them.

6. There will need to be full assessment of potential impacts of locating sidings, site compounds and route electrification – including alterations to bridges, felling of wooded areas and other loss of vegetation and land-take.

7. Consideration needs to be given to Ancient and Veteran Trees (limited desk-top data may be available from Ancient Tree Forum, field survey will be more reliable)

8. It is considered very unlikely that much desk study work can substitute for field surveys for this scheme (paragraph 9.4.4)

Chapter 10 - Landscape and Visual Impacts

The Consortium has reviewed this Chapter and has the following comments:

1. Para 10.1.2. Changes in visual impacts during operation 'may' therefore be limited…'.

2. Para 10.2.2. For a scheme that extends across (just for the western section) in excess of 70km of countryside, it seems implausible to generalize that the 'scheme' is 'visually contained'. The rationale behind the decision to 'cut off' at 5km needs to be explained and justified particularly when there is the potential for structures of considerable scale (e.g. over-bridges, embankments, stations, sidings etc.) in designated landscape areas occupying high ground overlooking the line.

3. Para 10.3.1. Please add 'and dark (unlit) landscapes to the end of the first bullet point and '(local and national) to the end of the second bullet point.

4. Para 10.4.2. Please add 'ensuring that the full range of potentially affected receptors are covered and the 'worst case scenario' anticipated' to the end of this point.

5. Para 10.4.4. Please add 'following consultation with the appointed LPA landscape advisors' to the end of this point.

6. Para 10.4.6. Please insert 'and residential' after 'amenity' in the fourth bullet point.

7. Table 10.2. In the column headed 'Visual receptors':

    1. The term 'long term' needs to be defined.
    2. The term 'Reduced risk' is ambiguous and needs to be defined / explained. It is believed to be hard to quantify and thus unsuitable as there would be a danger that (contrary to the guidance in the GLVIA3) anyone seeking to follow or replicate the assessment would be unable to do so.
    3. The term 'v long distances' needs to be defined / explained.

8. Table 10.3. in the column headed 'Landscape / Townscape receptors':
    1. In addition to being recognised by national or regional designation, this category should include locally designated landscapes (e.g. Areas of Attractive Landscapes). This applies to high and medium sensitivity.
    2. Please replace 'and' with 'and / or' ahead of 'visited by large numbers of visitors..'
    3. Please replace 'Not recognised by any form of designation and' with 'Landscape'.

9. Table 10.3. in the column headed 'Visual receptors':
    1. Please replace 'Important and highly utilised views from within …' with 'Important views particularly from within locally, …'
    2. Please replace 'residents and users of widely known and well used recreational facilities.' with 'residents, walkers and users of recreational facilities.'
    3. In the medium sensitivity box, please delete 'and numbers of'. Also move 'residents experiencing views from dwellings' into the high sensitivity category.
    4. In the low sensitivity box, please replace 'would include' with 'might include'
    5. In the very low sensitivity box, please insert 'might' after 'Such receptors'.

10. Table 10.4
    1. This table is missing a column for 'Very Low' sensitivity (see Table 10.3 above). Column should read (from top) Moderate or Minor, Minor or Negligible, Negligible, Negligible, None.
    2. Please replace 'Minor' under the High Sensitivity column with 'Moderate or minor'

3. Please replace 'Negligible' under the Medium Sensitivity column with 'Minor or Negligible'
4. Please replace 'Moderate or minor' under the Medium Sensitivity column with 'Moderate'

11. Section 10.6. This section must refer to and reflect the Mitigation Strategy set out Section 3.8 (page 18) of the Scoping Report. In particular this section must set out the 'mitigation hierarchy' starting with 'avoidance' etc.

12. A general point on visual receptors- along the line of the route, we would like to see zones of actual visual sensitivity encompassing PRoW and residential receptors shown.

Chapter 11 – Water Quality and Hydrology

The Consortium has reviewed this Chapter and has the following comments:

1. The proposed methodology should require surface and ground water monitoring and flood modelling at locations where flood risk is identified.

2. The scoping report only includes a requirement for desk study work which is likely to be insufficient to determine the flood risk of the scheme.

3. Internal Drainage Boards within the area will need to be consulted.

Chapter 12, Geology, Soils & Land Contamination

The Consortium has reviewed this Chapter and has the following comments:

1. The report does not mention local geological sites, and data should be sought via each of the Local Environmental Records Centres. These should be added to the list of sensitive receptors in 12.4.8.

2. The report states that a desk study, incorporating a walkover of the site, will be conducted along the route of the rail line. This report will be submitted as a technical appendix to the relevant Environmental Statement Chapter once completed. Analysis of made ground and shallow soil samples will be undertaken as part of a geotechnical site investigation and this information will also be incorporated into the desk study and Environmental Impact Assessment for the scheme.

3. The report goes on to state in section 12.6.2 that best practice encompasses a detailed desk study and, where data gaps are identified, possible intrusive investigation. This will determine whether the site is suitable for use and if remedial works are required to make the land fit for purpose.

4. It appears that the intended methodology on land contamination is sound and the approach outlined within the report meets our approval. Once completed if the desk study has identified any potential sources of contamination along the route an investigation and possible remedial works must be completed as outlined within the report. If a planning application is submitted for East West Rail, depending on the contents of the desk study it may be recommend that contaminated land conditions are be placed on the application. .

Chapter 13 – Highways & Transport

The Consortium has reviewed this Chapter and has the following comments:

1. The structure proposed includes technical chapters by Local Authority, however cumulative impact and mitigation are to be considered as scheme wide chapters. In terms of transport, cumulative impact and mitigation will need to be addressed at a local level.

2. The ES states that a Transport Assessment will be produced as a standalone document, in line with the DfT 'Guidance on Transport Assessments' – this approach is supported. The Study area is to be agreed in consultation with the local highway authorities based on change in traffic flows, journey times and access arrangements on the transport network during both construction and operational phases, which is welcome. **It is important that the TA takes account of all proposed growth built into Local Plans such that the impact of the East West Rail development is assessed against the future growth position; the local authorities would need the opportunity to comment on this data. The Local Authorities would expect full scoping of the Transport Assessment for each Local Authority area.**

3. The proposed methodology includes using modelling software to understand the impact of the construction and operation. This is welcome, but it would be useful to know what kind of modelling software is envisaged and what happens if a local authority doesn't have an up to date model that is capable of developing a robust understanding of the impact of construction or operation of the line. Impact will need to be considered at a strategic level (e.g. using strategic county-wide models) and locally (using town based models e.g. for Aylesbury) and individual junction assessments. This would best be dealt with at a local level during scoping of the Transport Assessment.

4. Highway authorities will be consulted during the development of the TA – alongside Highways England, local cycling groups affiliated with the LHA (for Oxfordshire, this would be the Oxfordshire Cycling Network) and Sustrans. This should include Countryside Access Officers (PRoW). Given that the line is frequently crossed by footpaths and Bridleways, the Ramblers Association and British Horse Society should be included as well. Horse riders don't get a mention, but where bridleways and other rights of way that horses can use are affected, the impact will need to be assessed.

5. There appears only to be very passing reference to people with mobility impairments in table 13, but no recognition of people with other visual or sensory impairments. Involvement of local access groups (such as OXTRAG in Oxfordshire) would help.

6. In terms of the potential impacts of the construction phase it is essential that changes in road safety, road traffic levels, road journey times and link/junction capacity are considered in relation to diversions, road closures and construction traffic. Currently the ES only focuses on 'changes in road traffic levels. In assessing the impact of construction vehicles and staff we would expect a clear methodology to be provided in terms of the trip generation (daily and in the am/pm peak) and a desk based accident analysis to be undertaken as part of the TA on roads affected by the proposal, as part of construction traffic routing or diversions/closures.

7. Construction compounds are to be linear along the route, providing access to the rail corridor and the public highway. The TA will need to assess the location of these compounds and suitability of access arrangements/construction routing in terms of highway safety and capacity. It should be noted that during initial discussion Network Rail have indicated that they are looking to utilise the railway where possible.

8. Operational effects should considered changes in road safety, road traffic levels, road journey times and link/junction capacity in relation to closures of highway level crossings and provision of alternative crossing points. Whilst there is mention of impact on (road) journey times, there is only passing reference to congestion under the removal of level crossings (13.3.4) – this won't be the only instance when congestion (and journey times) is worsened. Developing a clear understanding of the impact of the project on congestion is very important and should be emphasised much more. The potential knock on impact on the economy must not be underestimated.

9. In terms of the potential impacts during operational phase it is essential that the impact of increased patronage at affected train stations are considered in relation to all modes of transport (not just road traffic). The TA will need to identify what the proposals are for each station within the local authority area and consider the impact of increased patronage on all modes of transport, not just demand for parking (e.g. pedestrian access, cycle parking). The assessment should include information on the impacts on local public transport routes (not just necessarily changes. When assessing changes to existing routes and safe crossing points for cyclists and pedestrians, I would expect 'quality' to be considered (perhaps through a Quality Audit) not just journey times. Proposals should be identified that complement planned improvements at or around stations along the route (for example, the investments around Bletchley Station to improve access between the train station, bus station and town centre.)

10. It is likely that traffic surveys will need to be undertaken at certain locations. Field surveys should include, however not be limited to

- Automatic and Manual Traffic Counts
- Speed Surveys
- Parking Accumulation Surveys

11. Section 13.6 – proposed mitigation and residual effects - is very thin. While this will be developed more as the TA emerges, at this stage it should be given more attention in terms of the scope of what may be needed. There will be junctions and other parts of the highway network where alterations will be needed to mitigate the impact of the works and the operation – not just entrances to construction sites. Mitigation in the broadest sense is only mentioned under the 'operation' heading but given no elaboration – it is simply referred to as "mitigation measures for all road users". A list of some things that might include would be appropriate i.e. alterations to junctions, speed limit changes, relocated bus stops etc. This ought also be listed under the construction heading – as it stands it looks like only 'soft' options to mitigate the impact during construction are being considered.

12. There may not be a lot of physical and regulatory changes needed during construction but it mustn't be ignored completely they may be necessary. This very much depends on the location of compounds and the number of trips associated with transporting materials, waste and staff (particularly considering other major transport projects being delivered during the same period). We would expect the impact of the proposal to be adequately mitigated both during the construction and operational phases. Mitigation should include, but not be limited to:
    - Highway and junction improvements
    - Speed limit changes
    - Traffic Regulation Orders (e.g. waiting restrictions)
    - Relocation of bus stops
    - Pedestrian/cycle infrastructure improvements
    - Provision of haul roads
    - Consolidation of crossing points and provision of improved infrastructure

13. Assessing Significance of Effect. Magnitude of effect – we are happy with the descriptions which deal directly with traffic flows, journey time and journey quality. Sensitivity of receptor – Sensitivity of receptors would be unlikely to have international or national impacts. It is therefore likely to be 'medium or low'; as such the magnitude of impact is likely to be low.

14. The assessment of effects is based on the Guidelines for Environmental Assessment of Road Traffic. We would rely on the Transport Assessment to assess the local impact of the proposal and provide appropriate mitigation where there is shown to be a significant effects

15. The Transport Assessment will need to address the cumulative impact of other planned major transport and other infrastructure schemes. In particular, the impacts and interactions between HS2 and East-West Rail will need to be considered in some detail, both in terms of the construction and operational phases. It will also need to consider the Bedford & Milton Keynes Waterway - a new 26km link between the River Great Ouse at Kempston in Bedford and the Grand Union Canal at Newlands in Milton Keynes.

16. In addition we would expect that assessment to take into account committed development – those under construction/consented/submitted for consent/safeguarded in a development plan or programme. The level of committed development to be included should be agreed for each local authority area with the relevant highway authority/planning authority. Some of this information will already be contained in county operated models.

14 - Electromagnetic Interference

The Consortium has no comments to make on this Chapter at this time.

15 – Cumulative Effects

1. The Consortium has reviewed this Chapter and is content, in principle, that the scoping report provides a satisfactory methodology for assessing the Cumulative Effects as part of an EIA and ES, notwithstanding the comments below.

2. There may be impacts from different technical topics, as set out in this Scoping Report that combines to affect a single receptor. For example a residential area may be impacted by: increased traffic emissions; traffic noise; construction traffic and visual intrusion that individually may not be significant but when considered together could lead to a significant environmental effect on that receptor.

3. Each topic area identifies 'in-combination' effects with other topic areas and outlines those which are 'likely to be of relevance'. It is very important to cross reference related points. We would suggest that all topics are included in any cumulative effect matrix – rather than only identifying certain topic areas. Specific comments on the 'cumulative assessment for each topic are outlined below.

4. Chapter 5. LAND USE AND AGRICULTURE. At 5.5.1 should include Landscape and Visual Impact as a specifically identified 'other topic'.

5. Chapter 7. Air Quality. At 7.5.1 should include Landscape and Visual Impact as a specifically identified 'other topic'.

6. Section 7.3.3 – all settlements with 50+ properties and/or a school and/or any other sensitive location within 1 km of the line should be identified as an urban area which is in the higher risk category.

7. Chapter 8. NOISE AND VIBRATION. Section 7.5.1 should include Air Quality as a specifically identified 'other topic'.

8. Chapter 9. Ecology. Section 9.5.1 should include Land Use as a specifically identified 'other topic'.

9. Chapter 10. LANDSCAPE AND VISUAL IMPACTS. Section 10.5.1 should include Land Use and Agriculture, Traffic and Transport and Cultural Heritage.

10. The EIA should consider views from residential uses which may incur direct change along with wider landscape views. Potential cumulative landscape and visual impact also needs to be taken in to consideration especially with regard to existing railway infrastructure, pylons, wind turbines, existing development, major road structures, etc.

11. Chapter 11. WATER QUALITY AND FLOOD RISK. Section 11.5.1 should include Land Use

12. Chapter 12. GEOLOGY, SOILS AND LAND CONTAMINATION. Section 12.5.1 should include Landscape and Visual Impacts.

13. Chapter 13. TRAFFIC AND TRANSPORT. Section 13.5.1 should include Landscape and Visual Impacts.

14. Content with the Construction and Operational assessment methodology. PROW and their crossings do need full consideration and consultation on the TA should include PROW Officers (13.4.5).

15. Table 13.1. Horse Riders are not included as users or 'receptors' – but there are many users who use the road and PROW network and should be considered as 'sensitive'.

Appendix 1 - Contact details for Consortium members

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