HS2

High Speed Rail (London – West Midlands)

Supplementary environmental information report

Princes Risborough to Aylesbury (PRA) Rail Line

August 2024

Department for Transport

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Contents

List of figures

List of tables

1 Introduction

1.1 Background to High Speed Two

1.1.1 The hybrid Bill for High Speed Rail between London and the West Midlands ('the Bill') was submitted to Parliament together with an Environmental Statement (ES) in November 2013 ('the main ES'). The Bill was amended a number of times following its submission resulting in five Additional Provisions (APs) which were each accompanied by Supplementary Environmental Statements (SES).

1.1.2 Any new or different significant effects that were likely to result from changes to the design which did not require amendments to the Bill; changes to construction assumptions, new environmental baseline information and corrections to the main ES were reported in Supplementary Environmental Statements (SESs). These were deposited alongside the APs.

1.1.3 The Bill was enacted in February 2017 to become the High Speed Rail (London – West Midlands) Act 2017 ('the HS2 Act'). The HS2 Act confers the necessary powers required to construct, maintain and operate the HS2 railway from London to the West Midlands.

1.1.4 HS2 comprises the construction of a new railway approximately 230km (143 miles) in length between London and the West Midlands. Passenger services will be provided by new high speed trains from 2026, which will travel at speeds of up to 360kph (225 mph).

1.2 Introduction to this SEI and its purpose

1.2.1 This Supplementary Environmental Information (SEI) report describes new or different likely significant effects (NSE) relating to the HS2 interface with the Princes Risborough to Aylesbury (PRA) Rail Line (within Community Forum Area 11). The NSE have arisen as a result of changes to design and construction methodology that could not reasonably have been anticipated at the time the HS2 ES (as amended) was written. The effects exceed those reported in the ES (as amended) and, despite the implementation of the controls set out in the Environmental Minimum Requirements (EMRs), are predicted to remain as new significant effects.

1.3 The Environmental Minimum Requirements

1.3.1 The HS2 EMRs set out the high-level environmental and sustainability commitments that the Government has entered into through the hybrid Bill process.

1.3.2 The EMRs consist of a suite of framework documents which: (i) define the mechanisms by which the nominated undertaker will engage with communities and other key stakeholders; and (ii) implement environmental and sustainability management measures designed to protect communities and the environment during detailed design development and construction. The nominated undertaker is the body, appointed by the Secretary of State for Transport (SoS), responsible for delivering Phase One of HS2.

1.3.3 The nominated undertaker, taking forward the detailed design and implementation of Phase One of HS2, is required by the SoS to comply with the EMRs. The components of the EMRs are described in the EMR General Principles (CS755 02/17, February 2017).

1.3.4 The controls contained in the EMRs, along with powers contained in the HS2 Act and the Undertakings given by the Secretary of State, will ensure that impacts which have been assessed in the ES (as amended) will not be exceeded, unless any new impact or impacts in excess of those assessed in the ES:

- results from a change in circumstances which was not likely at the time of the ES;
- would not be likely to do be environmentally significant;
- results from a change or extension to the project, where that change or extension does not itself require environmental impact assessment (EIA) under either (i) article 4(1) of and paragraph 24 of Annex 1 to the EIA Directive ; or (ii) article 4(2) of and paragraph 13 of Annex 2 to the EIA Directive; or
- would be considered as part of a separate consent process (and therefore further EIA if required).

2 Scope

2.1.1 Section 63(3) of the High Speed Rail (London – West Midlands) Act 2017 Act ("the Act") amends Regulation 9 (relating to subsequent applications) of the Environmental Impact Assessment Regulations. In particular Regulation 9, paragraph (1)(b)(ii) of the Environmental Impact Assessment Regulations is amended to specifically reference the Act.

2.1.2 Regulation 9(3) allows the relevant planning authority to request further environmental information (under Regulation 25) where they believe environmental information currently provided is deemed not adequate to assess the significant effects of the development on the environment.

2.1.3 In anticipation of a Schedule 25 Notice under the EIA Regs by Buckinghamshire Council this Supplementary Environmental Information (SEI) report has been written to provide such further environmental information to the ES (as amended) as is required.

2.1.4 Additionally, Paragraph 1.1.3 of the High Speed Rail (London – West Midlands) Environmental Minimum Requirements (EMR) General Principles states that:

"The controls contained within the Environmental Minimum Requirements (EMRs) [...] will ensure that impacts which have been assessed in the ES will not be exceeded, unless any new impact in excess of those assessed in the ES results from a change in circumstances which was not likely at the time of the ES..."

2.1.5 Furthermore paragraph 3.1.8 states:

"In the circumstances in the first bullet point of paragraph 1.1.3, if the significant adverse impacts identified in the ES are likely to be exceeded, the nominated undertaker will take all reasonable steps to minimise or eliminate those additional impacts. If despite these reasonable steps, significant impacts remain the nominated undertaker will report them."

2.1.6 Consequently, this document also provides a report to meet the requirements of paragraph 3.1.8 of the EMR General Principles.

3 Site and works description

3.1.1 The Princes Risborough to Aylesbury (PRA) Rail Line ('the Site') is in Buckinghamshire and links the town of Princes Risborough with the town of Aylesbury (via Monks Risborough and Little Kimble), and forms part of the Aylesbury to London Marylebone Rail service which is run by Chiltern Railways. The service runs 1-2 trains per hour in each direction on a single line during weekdays and the typical travel time between Princes Risborough and Aylesbury is 18-19 minutes by rail.

3.1.2 The site interfaces with the HS2 works south of Aylesbury in Community Forum Area (CFA) 11, at an approximate chainage of 59+500. The total interface is approximately 1.8 km in length and involves a permanent railway line diversion, overbridge, culvert and underpass as well as associated earthworks and tie-ins to the existing PRA line.

3.1.3 The site is located in a semi-rural setting, but is in close proximity to a number of noise sensitive receptors and communities including residential properties and Booker Park School in the vicinity of the northern tie-in. Booker Park School is an educational provision for children with severe mental disabilities (SMD) as well as individuals with profound and multiple learning disabilities (PMLD).

3.1.4 The interface area of HS2 and the PRA line, showing the location of Booker Park School is shown in Figure 1.

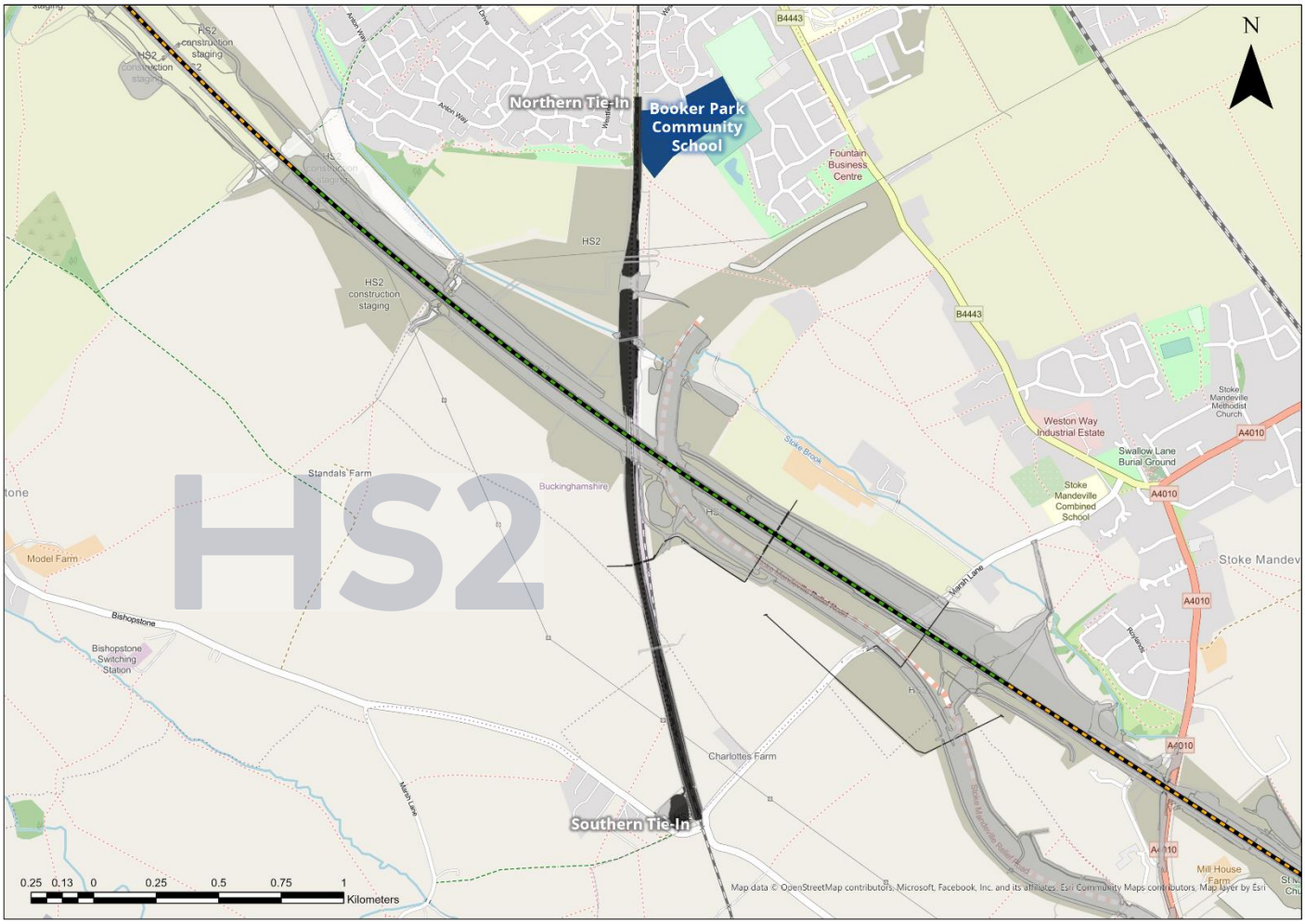

Figure 1: Interface area of HS2/PRA line

The PRA realignment will allow HS2 to pass south of Aylesbury, with the PRA Overbridge providing the infrastructure to carry the Network Rail line over the HS2 line, which in this area runs below existing ground level along the Aylesbury South Cutting. The realignment will run approximately 20m to the west of the existing line (which runs north to south), and at the point of the PRA Overbridge will be 5m higher track to track than the existing to facilitate the crossing of the two lines.

3.1.5 The PRA realignment works includes the following:

- PRA Line Embankment and drainage;
- PRA Overbridge;
- PRA Underpass;
- PRA Culvert;
- related flood mitigations;
- related utilities diversions;

- PRA line rail systems install (ballast, track, signalling, signage and service diversions); and
- the portion of the Aylesbury South Cutting directly under the PRA Overbridge, including drainage connections to the PRA embankment drainage.

3.1.6 The works assessed in this report comprise a temporary (10 week) closure of a section of the PRA line to enable the safe and efficient construction of the PRA Line permanent diversion, PRA Overbridge and associated works, whilst mitigating impacts on receptors. The elements of work for which the blockade is required comprise:

- PRA Line Embankment and drainage – north and south tie-ins; and
- PRA line rail systems install (ballast, track, signalling, signage and service diversions) .

4 Summary of changes from the ES (as amended)

4.1 Changes to the engineering design and construction methodology from the ES (as amended)

4.1.1 Since the submission of the ES (as amended), it has been necessary to make changes to engineering design and construction methodology for works related to the Princes Risborough to Aylesbury Rail Line realignment. These changes are described below.

Engineered Design and Construction Methodology as described in the ES (as amended)

4.1.2 The ES (as amended) assumed that the PRA Line diversion and associated works would be carried out during a combination of core hours, night-time, and weekend possessions.

4.1.3 According to the ES (as amended), only weekend possessions would be required to connect the existing PRA line at either end of the realignment works. The connections will be made in order that at the end of the series of weekend possessions, the operational rail traffic will use the new alignment, following testing and commissioning.

4.1.4 Additionally, it was assumed that the tie-in works for the PRA realignment would connect with the existing PRA line at in the north spanning approximately 150 m, and spanning 300m in the south. It was assumed that these tie-in works would not require extensive earthworks and could be accomplished within a weekend possession lasting 54 hours.

Engineering and design changes since the time of the ES (as amended)

4.1.5 During design development an agreement was made with Buckinghamshire Council to construct an underpass beneath the realigned PRA Road in the overlap zone (U&A 1847). This undertaking requires an increase in embankment height at this section of track to accommodate the underpass beneath it. The increased embankment height has resulted in a necessary increase in the length of the tie-ins to the existing PRA line. The length of the north tie-in is approximately 350m while the south tie-in is 600m long.

4.1.6 As the detailed design work progressed for the embankment and drainage, the rail systems design was upgraded to support a higher line speed of 90mph, and provisions were made for potential future expansion with a second line. These changes have resulted in a wider footprint and deeper excavation for the realignment.

4.1.7 Additional considerations for Booker Park School and its noise sensitivities led to restrictions on working hours at the northern tie-in section, resulting in an increase in nighttime and evening work.

4.1.8 As a result of these factors, there will be more overnight works than initially expected in the ES. The rail line cannot be reopened during daytime periods due to safety concerns, leading to a 24/7 blockade of the PRA Line for 10 weeks.

4.2 Topics impacted

4.2.1 Following a review of the combined changes in circumstances detailed in the preceding paragraphs new significant effects have been identified with respect to the following:

- community;
- sound, noise and vibration; and
- traffic and transport.

4.2.2 Effects for other environmental topics assessed in the ES (as amended) because of the changes are not assessed to be significant and are not considered further in this report.

4.2.3 A review of the environmental topics identified above is reported in Chapter 5.

5 Assessment of changes

5.1 Community

5.1.1 This section of the report describes the environmental baseline in relation to community that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in compared to those of the SES scheme.

5.1.2 The assessment draws on information gathered from a combination of desktop studies, site surveys and through engagement with local organisations.

Scope, assumptions and limitation

Methodology

5.1.3 The assessment scope, key assumptions and limitations for the community assessment are set out in Volume 1, the SMR (see Volume 5: Appendix CT-001-000/1) and the SMR Addendum (see Volume 5: Appendix CT-001-000/2). This report follows the standard assessment methodology.

Assumptions and limitations

5.1.4 Local assumptions and limitations four community are set out in the main ES (Volume 2, CFA11, Section 5).

Environmental baseline

5.1.5 The existing baseline for sound and vibration information for this area is described in the main ES (Volume 2, CFA11, Section 5).

Effects arising during construction

Avoidance and mitigation measures

5.1.6 The Code of Construction Practice (CoCP) includes a range of provisions that will help mitigate community effects associated with construction within this area, including the following (see Volume 5, Appendix: CT-003-000/1):

- appointment of community relations personnel (CoCP, Section 5);
- community helpline to handle enquires from the public (CoCP, Section 5);
- sensitive layout of construction sites to minimise nuisance (CoCP, Section 5);

- where reasonably practicable, maintenance of Public Rights of Way (PRoW) for pedestrians, cyclists and equestrians around the perimeter of construction sites and across entry and exit points (CoCP, Section 5);
- a requirement for contractors to pay due consideration to the impacts of extreme weather events and related conditions which may affect community resources during construction (CoCP, Section 5);
- specific measures in relation to air quality and noise will also serve to reduce impacts for the neighbouring communities including discretionary noise insulation for sensitive community resources and, in special circumstances, temporary rehousing (CoCP Sections 7 and 13); and
- where reasonably practicable, the avoidance of large goods vehicles operating adjacent to schools during drop off and pick up periods. (CoCP, Section 14).

Assessment of impacts and effect

Temporary effects

5.1.7 Evening and night time works associated with the creation of the northern tie-in, associated earthworks and track laying have been identified as resulting in noise impacts that are significant when considered on a community basis as detailed in Section 5.1.

5.1.8 There will be localised but significant noise effects to communities on and around Westfield, Aylesbury (48 residential units affected), Mentmore Green Aylesbury (12 residential units affected) and Parslow Close, Aylesbury (15 residential units affected). These communities may also be affected by the increased public transport journey times detailed in Section 5.2. The effects will be temporary with a duration of up to three months and are therefore considered to be of low magnitude, resulting in a new significant effect in respect of community amenity.

5.1.9 Noise levels predicted at a few residential units on and around Westfield, Aylesbury (23 residential units) and Mentmore Green Aylesbury (5 residential units) are of sufficient magnitude to qualify for installation of noise insulation. In view of the timescales of the blockade it is not possible to offer and install noise insulation at the affected properties. A package of mitigation measures that includes temporary re-housing will be offered to residents as mitigation for significant noise effects. This has potential to result in the temporary displacement of residents from some of these properties depending on the uptake of the rehousing offer. The impact will be temporary, with a duration of up to three months. The effect is predicted to be medium, resulting in the potential for a new significant effect.

Permanent effects

5.1.10 No permanent effects on residential or community facilities have been identified in this area as a result of changes to engineering design and/or construction methodology.

Other mitigation

5.1.11 Continual efforts will be made by EKFB to develop construction methodologies and mitigation measures to minimise the noise impacts of the works. Additionally, local solutions will be implemented to partially alleviate the impact on the affected communities.

5.2 Sound, noise and vibration

5.2.1 This section reports on the likely significant effects from construction noise and vibration impacts on:

- people, primarily where they live ('residential receptors') in terms of a) individual dwellings and b) on a wider community basis, including any shared community open areas;
- non-residential receptors, including Booker Park School;

resulting from the changes to the engineering design, construction methodology and working hours reported in Section 4.

5.2.2 Any new or different likely significant environmental effects as a result of change summarised in Section 4 are identified and compared to the ES (as amended).

5.2.3 In this section 'sound' is used to describe the acoustic conditions which people experience as a part of their everyday lives. The assessment considers how those conditions may change through time and how sound levels and the acoustic character of community areas is likely to be modified through the changes outlined in Section 4. Noise is taken as unwanted sound and hence adverse effects are noise effects and mitigation is, for example, by noise barriers.

5.2.4 Effects can either be temporary from construction or permanent from the operation of HS2. These effects may be direct, resulting from the construction or operation of HS2, and/or indirect e.g. resulting from changes in traffic patterns on existing roads or railways that result from the construction or operation of HS2.

5.2.5 Based on the impacts from changes described in Section 4 only temporary, direct effects from construction are assessed in this report.

Scope, assumptions and limitations

Methodology

5.2.6 The assessment set out in this section has been undertaken in accordance with the relevant methodologies (relating to construction) set out in the Scope and Methodology Report (SMR) - (Volume 5, Appendix: CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the ES (as amended). This report follows the standard assessment methodology.

Assumptions and limitations

5.2.7 Local assumptions and limitations associated with sound, noise and vibration are set out in the main ES (Volume 2, CFA11, Section 11).

Environmental baseline

5.2.8 The existing baseline for sound and vibration information for this area is described in the main ES (Volume 2, CFA11, Section 11).

5.2.9 Baseline sound level data collected and reported as part of the HS2 ES has been used in this assessment. This baseline sound level data was collected at locations representative of the airborne sound - sensitive receptors. Details of the baseline airborne sound levels can be found in HS2 Environmental Statement, Volume 5: Appendix SV-002-011; CFA11 Baseline Report: Stoke Mandeville and Aylesbury.

Effects arising from construction

Avoidance and mitigation measures

5.2.10 The assessment assumes the implementation of the principles and management processes set out in the HS2 CoCP – (Annex 1 of the Environmental Minimum Requirements), which are:

- best practicable means (BPM) as defined by the Control of Pollution Act 1974 (CoPA) and Environmental Protection Act 1990 (EPA) will be applied during construction activities to minimise noise (including vibration) at neighbouring residential properties;
- as part of BPM, mitigation measures are applied in the following order:
  - noise and vibration control at source: for example, the selection of quiet and low vibration equipment, review of construction methodology to consider quieter methods, location of equipment on site, control of working hours, the provision of acoustic enclosures and the use of less intrusive alarms, such as broadband vehicle reversing warnings; and then

  - screening: for example, local screening of equipment or perimeter hoarding;
- where, despite the implementation of BPM, the noise exposure exceeds the criteria defined in the CoCP, noise insulation or ultimately temporary rehousing will be offered in accordance with the HS2 Noise Insulation and Temporary Re - Housing Policy described in the CoCP;
- lead contractors will seek to obtain prior consent from the relevant local authority under Section 61 of CoPA for the proposed construction works. The consent application will set out BPM measures to minimise construction noise, including control of working hours, and provide a further assessment of construction noise and vibration including confirmation of noise insulation/temporary re-housing provision;
- contractors will undertake and report such monitoring as is necessary to assure and demonstrate compliance with all noise and vibration commitments. Monitoring data will be provided regularly to and be reviewed by the HS2 Ltd and will be made available to the local authorities; and
- contractors will be required to comply with the terms of the CoCP and appropriate action will be taken by HS2 Ltd as required to ensure compliance.

5.2.11 In addition to this mitigation, taller acoustics screens in the vicinity of the southern tie-in works, except where close to the overhead electricity line where shorter barriers may be necessary for safety reasons. Temporary screening, in the form of bunds and barriers, have also been assumed at the northern extent of the works in the vicinity of Westfield and Batt Furlong.

Quantitative identification of impacts and effects

5.2.12 Activities associated with the changes set out in Section 4 will generate airborne noise and vibration. The assessment of the likely impacts and significant effects as a result of the construction noise and vibration has considered the effects on residential receptors, both as individual dwellings and communities.

5.2.13 Based upon supplied plant information from engineers, the typical and highest monthly $L_{pAeq,T}$ noise levels from construction activities have been calculated at the façade of all assessment locations, which are representative of a number of receptors in the study area.

Ground-borne vibration

5.2.14 Vibration impacts arising from the use of rollers to compact earthworks and ballast are likely to result at receptors close to the works. Based on the construction information from engineers, the duration of activities involving vibratory plant close to receptors will be short term (less than 1 month). Vibration impacts at receptors closest to the works will be transient, with the greatest impacts experienced when

works are being undertaken directly opposite them. Therefore, any adverse vibration effects from the use of vibratory equipment for the PRA works are considered unlikely to be significant.

Airborne sound impacts and effects

5.2.15 The assessment results, impact criteria and significance criteria for the assessment of the scheme at residential and non-residential receptors are presented in Table 3 and Table 4 respectively. These are presented in Appendix A.

5.2.16 Figure 2 provides a map showing the location of all residential and non-residential receptors in the vicinity of the Princes Risborough to Aylesbury Rail Line.

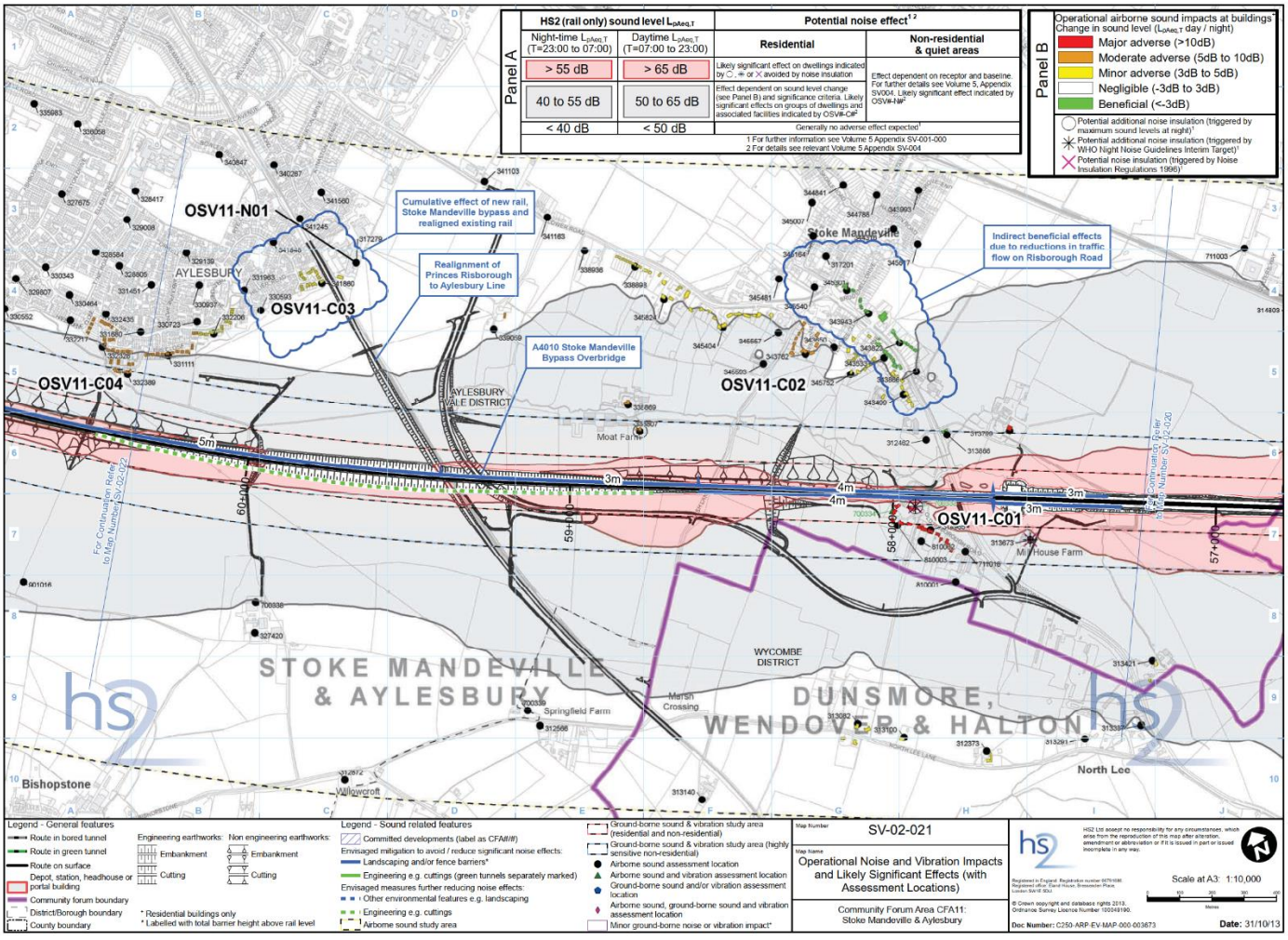

Figure 2: Location of residential and non-residential Noise Receptors (Receptor ID) (Extract from London – West Midlands Environmental Statement (Volume 5 - Map Book ES 3.5.1.9.2) SV-03-021)

Assessment of impacts and effects

Residential receptors: direct effects – individual dwellings

5.2.17 Taking account of the construction methodology changes in Section 4 and the avoidance and mitigation measures set out in this section, the following individual residential properties in the vicinity of Westfield (Assessment ID 341860) and Mentmore Green (Assessment ID 341860) are forecast to experience night-time noise levels higher than the noise insulation trigger levels, as defined in the CoCP, that were not identified in the main ES. For daytime construction the trigger level is an equivalent continuous noise level of 75dB measured outdoors, for evening 65dB and for night 55dB, or the existing ambient if already above these levels:

- 23 properties within Assessment ID 341 860 located on Westfield and Batt Furlong, directly adjacent to the PRA line (CSV11-C01); and
- Five properties within Assessment ID 341860 located on Claydon Path, directly adjacent to the PRA line (CSV11-C02).

5.2.18 A package of mitigation measures that includes temporary rehousing, will reduce noise impact such that it will not significantly affect residents.

Residential receptors: direct effects – communities

5.2.19 With regard to noise outside dwellings, the assessment of temporary effects takes account of construction noise relative to existing sound levels.

5.2.20 In locations with lower existing sound levels, construction noise effects are likely to be caused by changes to noise levels outside dwellings. These may be considered by the local community as an effect on the acoustic character of the area and hence be perceived as a change in the quality of life. These effects are considered to be significant when assessed on a community basis taking account of the local context.

5.2.21 Taking account of the construction methodology changes in Section 4 and the avoidance and mitigation measures set out in this section, projected noise levels resulting from the evening and night-time works during the blockade of the PRA line are expected to cause direct adverse noise effects which are considered significant when assessed on a community basis. These are presented in Table 1.

Table 1: Direct adverse effects on residential communities and shared open areas that are considered to be significant on a community basis

Significant effect number	Type of significant effect	Time of day	Location	Cause (construction activities)	Assumed approximate duration of impact and details
CSV11-C01	Construction noise	Evening and night	Westfield, Aylesbury. Approximately 48 properties on Westfield and Batt Furlong within the ES assessment location 341860 are affected during the evening and night.	Evening and night: embankment and drainage works associated with PRA diversion to north of HS2 line (2 months). Night only: track laying and associated activities (1 month). Typical and highest noise levels (evening and night) of around 60dB and 65dB.	Evening: 2 months Night: 3 months
CSV11-C02	Construction noise	Night	Parslow Close, Aylesbury. Approximately 15 properties within the ES assessment location 330593, located on Parslow Close, Sheridan Close and Westfield.	Night: embankment and drainage works associated with PRA diversion to north of HS2 line (1 month). Typical and highest noise levels (night) of around 50dB.	Night: 1 month
CSV11-C03	Construction noise	Evening and night	Mentmore Green, Aylesbury. Approximately 12 properties within the ES assessment location 341860, located on Mentmore Green and Claydon Path, are affected during the evening and night.	Evening and night: embankment and drainage works associated with PRA diversion to north of HS2 line (1 month). Night only: track laying and associated activities (1 month); embankment and drainage works associated with PRA diversion to the north of HS2 line (1 month) Typical and highest noise levels (evening and night) of around 55dB and 60dB.	Evening: 1 month Night: 3 months

Non-residential receptors: direct effects

5.2.22 Taking account of the construction methodology changes in Section 4 and the avoidance and mitigation measures set out in this section then no significant effects are predicted to occur to non-residential receptors.

5.2.23 The assessment has identified that the impact criteria associated with Booker Park School (Assessment ID reference 317279) is predicted to be exceeded during the day, evening and night periods. However, the construction noise levels predicted during the daytime are associated with works that are scheduled to occur during the summer school holidays when the school will not be operational. However, no daytime construction works are scheduled to be undertaken during school hours within term time. In addition, the school will not be occupied during evening nor night-time hours. Therefore, when considering these factors, no significant effects are predicted occur at the Booker Park School site due to the PRA works.

5.3 Traffic and transport

Introduction

5.3.1 This section of the report describes the environmental baseline in relation traffic and transport that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 4, compared to the ES (as amended).

Scope, assumptions and limitations

Methodology

5.3.2 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2). This report follows the standard assessment methodology.

5.3.3 Definitions as defined in the Scope and Methodology Report Addendum (CT-001-000/2), Annex I, Section 3, as:

"**Public Transport – Delay on Public Transport Users between Princes Risborough and Aylesbury**

A significant impact on journeys by bus, heavy and light rail, and the London Underground effected by the Proposed Scheme will be identified from the traffic and transport assessment and the transport modelling results; and is defined as any of the following where this lasts for more than four consecutive weeks in any 12-month period:

- Changes of more than 10% in a majority of journey times by rail or the Underground;
- Changes in journey distance by bus of more than 400m in urban areas and 1km in rural areas;
- A relevant delay, disruption or overcrowding impact affecting the public transport network over a wide area; and
- A relevant change to service frequency, capacity, loss of through connections or reduction in hours of operation."

Assumptions and limitations

5.3.4 The existing baseline for traffic and transport is as set out in the main ES (Volume 2, CFA11, Section 12).

Environmental baseline

5.3.5 The existing baseline for traffic and transport is as set out in Volume 2, CFA11, Section 12 of the main ES, updated by the additional traffic surveys.

Effects arising during construction

Avoidance and mitigation measures

5.3.6 The CoCP (see Volume 5: Appendix CT-003-000/1) will include measures which seek to reduce the impacts and effects of deliveries of construction materials and equipment, including construction lorry trips during peak background traffic periods. The CoCP includes HGV management and control measures.

5.3.7 Other measures in the CoCP include clear controls on vehicle types, hours of site operation, and routes for heavy goods vehicles, to reduce the impacts of road-based construction traffic. In order to achieve this, generic and site-specific management measures will be implemented during the construction of the Proposed Scheme on or adjacent to public roads, bridleways, footpaths and other PRoW affected by the Proposed Scheme as necessary.

Assessment of significant effects

5.3.8 Delay on public transport – Princes Risborough and Aylesbury The temporary blockade of the PRA Line will last for 10 weeks.

5.3.9 During the blockade, Chiltern Railways will provide a replacement bus service from Princes Risborough to Aylesbury. The bus will travel on public highways and make stops in Monks Risborough and Little Kimble. The journey time between Princes Risborough and Aylesbury will increase by approximately 9 minutes, or 50%, from around 18 minutes to around 27 minutes. This increase is of Major magnitude and

will result in a Moderate Adverse new significant effect on affected travellers that was not identified in the ES (as amended).

Other mitigation measures

5.3.10 An assessment has determined that the blockade of the PRA Line cannot be adequately mitigated using best practicable means (BPM) or any other bespoke solutions (BPM+) that have been considered. Consequently, the implementation of the works will result in the blockade remaining a new significant effect (NSE) according to the assessment.

6 Conclusions

6.1.1 The mitigation and avoidance measures to reduce any adverse effects associated with communities, sound, noise and vibrations and traffic and transport is such that the following effects are anticipated:

- public transport delay – Moderate Significant Effect;
- construction noise: communities – Significant Adverse Effect at 75 residential dwellings;
- construction noise: individual dwelling – Significant Adverse Effect at 28 residential dwellings;
- community – Displacement – Significant Adverse Effect to the community to the west of the northern tie-in works.

6.1.2 Additional, and reasonably practicable measures, to further reduce these new or likely significant effects have been proposed and will be implemented.

7 List of acronyms and abbreviations

Table 2: Acronyms and abbreviations

Acronym	Description
BPM	Best Practical Means
CFA	Community Forum Area
CoCP	Code of Construction Practice (Annex 1 of the EMRs)
CoPA	Control of Pollution Act
EIA	Environmental Impact Assessment
EMR	Environmental Minimum Requirements
ES	Environmental Statement
NSE	New Significant Effect
PMLD	Profound and Multiple Learning Disabilities
PRA	Princes Risborough to Aylesbury
SEI	Supplementary Environmental Information Report
SMD	Severe Mental Disabilities
SMR	Scope and Methodology Report
SoS	Secretary of State for Transport
U&A	Undertakings and Assurances

8 References

HS2 Environmental Statement, Volume 5: Appendix CT-001-000/1); Scope and Methodology Report (SMR).

HS2 Environmental Statement, Volume 5: Appendix CT-001-000/2); Scope and Methodology Report (SMR) Addendum.

HS2 Environmental Statement, Volume 2, Community Forum Area Report: CFA11 I Stoke Mandeville and Aylesbury.

HS2 Environmental Statement, Volume 5, Sound, Noise and Vibration Map Book.

High Speed Rail (London West Midlands), Environmental Minimum Requirements General Principles.

9 Appendix A

Information sheet provided in the HS2 ES, Volume 5: Appendix SV-001-000.

	Where the significant effect column is highlighted in pink, then a significant effect is identified at the referenced community, or individual non-residential receptor.
*	* Significant effect – the quantitative impact methodology has identified either: 1) no impact at this receptor but further information (see assessment) has identified that a significant effect is nonetheless likely; or 2) an impact at this receptor which, based upon further qualitative receptor information, (see assessment text) does not gives rise to a significant effect.
-	Significant effect - impacted dwellings which are either spatially remote from larger defined residential areas, or a small number of dwellings whose impact is not considered to represent the larger defined residential area, and as such are not considered to be part of a community significant effect.
A	Type of effect – annoyance
D	Type of effect – disturbance
Sd	Type of effect – sleep disturbance
Q	Type of effect – deterioration of acoustic quality
R	Type of receptor – residential
G	Type of receptor: (G1) theatres, large auditoria and concert halls; (G2) sound recording and broadcast studios; (G3) places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls; (G4) schools, colleges, hospitals, hotels and libraries; or (G5) offices and general commercial premises
T	T Receptor design – typical
S	S Receptor design - special
H	Existing environment – high existing ambient noise levels: daytime level more than 75dB, evening- time level more than 65dB or night-time level more than 55dB LpAeq at the façade.
Ni	Mitigation effect - identified as likely to qualify for noise insulation under the Construction Code of Practice (CoCP).
D, E, NI	Impact duration (months) – duration of impact during the day (D), evening (E) or night (N)

Table 3: Assessment of construction noise at residential receptors

Assessment location		Impact criteria				Significance criteria									
ID	Area represented	Typical/highest monthly outdoor			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration (months)	Mitigation effect	Significant effect
		Day 0700 - 1900	Evening 1900 - 2300	Night 2300 - 0700											
341860	Westfield, Aylesbury	61/65 (A)	61/65 (B)	61/65 (B)	Earthworks & Drainage – northern tie in; track laying	A	55	R	T	-	-	-	E2 N3	NI	CSV11-C01
330593	Parslow Close, Aylesbury	48/52 (A)	48/52 (A)	48/52 (B)	Earthworks & Drainage	A	78	R	T	-	-	-	N2	-	CSV11-C02
341245	Mentmore Green, Aylesbury	57/61 (A)	57/61 (B)	56/60 (B)	Earthworks & Drainage – northern tie in; track laying	A	17	R	T	-	-	-	E1 N2	NI	CSV11-C03
327420	Bishopstone, Aylesbury	41/45 (A)	41/45 (B)	41/45 (C)	Earthworks & Drainage	A	2	R	T	-	-	-	-	-	
338869	Marsh Lane, Stoke Mandeville	45/49 (A)	45/49 (B)	45/49 (C)	Earthworks & Drainage	A	2	R	T	H	-	-	-	-	
339059	Lower Road, Stoke Mandeville	51/54 (A)	51/54 (A)	50/54 (B)	Earthworks & Drainage	A	1	R	T	H	-	-	N2	-	~
338936	Lower Road, Stoke Mandeville	45/49 (A)	45/49 (A)	45/49 (B)	Earthworks & Drainage	A	2	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									
338898	Lower Road, Stoke Mandeville	43/47 (A)	43/47 (A)	43/47 (B)	Earthworks & Drainage	A	14	R	T	-	-	-	-	-	
345593	Marsh Lane, Stoke Mandeville	42/45 (A)	42/45 (C)	41/45 (C)	Earthworks & Drainage	A	1	R	T	-	-	-	-	-	
343650	Yew Tree Close, Stoke Mandeville	38/41 (A)	38/41 (B)	37/40 (B)	Earthworks & Drainage	A	8	R	T	-	-	-	-	-	
345752	Chapel Lane, Stoke Mandeville	42/45 (A)	42/45 (B)	41/45 (B)	Earthworks & Drainage	A	18	R	T	-	-	-	-	-	
313799	Risborough Road, Stoke Mandeville	38/39 (A)	38/39 (A)	38/39 (B)	Earthworks & Drainage	A	1	R	T	-	-	-	-	-	
700334	Whitehorn Close, Stoke Mandeville	42/45 (A)	42/45 (A)	41/44 (B)	Earthworks & Drainage	A	4	R	T	-	-	-	-	-	
343499	Risborough Road, Stoke Mandeville	39/41 (A)	39/41 (B)	40/41 (C)	Earthworks & Drainage	A	9	R	T	-	-	-	-	-	
314965	Old Risborough Road, Stoke Mandeville	41/44 (A)	41/44 (B)	41/44 (C)	Earthworks & Drainage	A	7	R	T	-	-	-	-	-	
313673	Risborough Road, Stoke Mandeville	35/36 (A)	35/36 (A)	35/36 (B)	Earthworks & Drainage	A	1	R	T	-	-	-	-	-	
313082	North Lee Lane, Terrick	43/46 (A)	43/46 (A)	43/45 (C)	Earthworks & Drainage	A	1	R	T	-	-	-	-	-	
313140	North Lee Lane, Terrick	45/47 (A)	45/47 (A)	44/47 (A)	Earthworks & Drainage	A	1	R	T	-	-	-	N1	-	~
312566	Unnamed Road, Stone with	52/54 (A)	52/54 (B)	52/54 (C)	Earthworks & Drainage	A	2	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									
	Bishopstone and Hartwell														
317279	Stoke Leys Close, Aylesbury	59/60 (A)	59/60 (B)	58/60 (B)	Earthworks & Drainage	A	24	R	T	-	-	-	-	-	

Table 4: Assessment of construction noise at non-residential receptors

Assessment location		Impact criteria				Significance criteria									
ID	Area represented	Typical/highest monthly outdoor			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration (months)	Mitigation effect	Significant effect
		Day 0700 - 1900	Evening 1900 - 2300	Night 2300 - 0700											
314965	Old Risborough Road, Stoke Mandeville	41/44	41/44	41/44	Earthworks & Drainage	A	3	G5	T	-	-	-	-	-	
317279	Stoke Leys Close, Aylesbury	59/60 (A)	59/60 (B)	58/60 (B)	Earthworks & Drainage	A	1	G3	T	-	-	-	-	-	*
317279	Stoke Leys Close, Aylesbury	59/60 (A)	59/60 (B)	58/60 (B)	Earthworks & Drainage	A	1	G4	T	-	-	-	-	-	*