

HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement and
Additional Provision 2 Environmental Statement

Volume 5 | Technical appendices

Wider effects (CT-005-000)

July 2015

SES and AP2 ES 3.5.7



HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement and
Additional Provision 2 Environmental Statement

Volume 5 | Technical appendices

Wider effects (CT-005-000)

July 2015

SES and AP2 ES 3.5.7



Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

A report prepared for High Speed Two (HS2) Limited:

AECOM

ARUP

ATKINS

CAPITA



ineco



**PARSONS
BRINCKERHOFF**



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

Details of how to obtain further copies are available from HS2 Ltd.

Telephone: 020 7944 4908

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.gov.uk/hs2

Copyright © High Speed Two (HS2) Limited, 2015, except where otherwise stated.

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full via the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact High Speed Two (HS2) Limited.



Printed in Great Britain on paper
containing at least 75% recycled fibre.

SES and AP2 ES Appendix CT-005-000

Environmental topic:	Cross-topic	CT
Appendix name:	Wider effects report	005
Community forum area:	Routewide	000

Contents

1	Introduction	1
2	Assessment of likely significant effects	3
2.1	CFA9 - Central Chilterns	3
2.2	CFA21 - Drayton Bassett, Hints and Weeford	3
2.3	CFA22 - Whittington to Handsacre	4
2.4	CFA23 - Balsall Common and Hampton-in-Arden	4

1 Introduction

Overview

- 1.1.1 This document is an appendix which forms part of Volume 5 of the Supplementary Environmental Statement (SES) and Additional Provision 2 Environmental Statement (AP2 ES). The purpose of this document is to provide a commentary on the likely significant environmental effects which could result from a change in the scheme within the statutory limits of deviation for the AP2 amendments. This document should be read in conjunction with the Volume 2 CFA reports and map books of the SES and AP2 ES, and the corresponding Volume 5 Appendix of the main ES (CT-005-000).
- 1.1.2 The powers provided by the hybrid Bill ('the Bill') allow for changes within the statutory limits of deviation to occur where it is found that the spatial position of the HS2 scheme may need to be adjusted, mainly for reasons of engineering practicability.
- 1.1.3 In essence these comprise lateral limits within the lines shown on the Parliamentary plans and vertical limits not exceeding 3m upwards, and downwards to any extent, from the levels shown on the deposited sections, except for certain buildings such as stations, depots and ventilation shafts where an upper limit is specified. The limits of deviation for the tunnels allow for the tunnels to deviate so that a clearance of one tunnel diameter from any unexpected obstruction in the ground can be provided.

Analysis and assessment

- 1.1.4 A sensitivity analysis has been undertaken for each of the AP2 amendments described in the Volume 2 community forum area (CFA) reports and shown in the CFA map books in order to identify where such spatial changes are feasible, and assess the environmental implications of such changes, taking account of the reported assessment of likely significant effects described for the amendments in the Volume 2 CFA reports.
- 1.1.5 The following sections describe locations within relevant CFAs which have been subject to further assessment. A commentary is provided on the likely significant environmental effects which could result from a change in the scheme within the statutory limits of deviation.
- 1.1.6 Areas where amendments to the alignment within the statutory limits of deviation are judged not to give rise to likely significant environmental effects are not considered further.
- 1.1.7 Where appropriate, references have been made to potential mitigation which could be considered in specific locations. Such mitigation could only be confirmed following further assessment and discussion with relevant stakeholders as part of the detailed design process for any alignment modifications.

Environmental minimum requirements

- 1.1.8 In order to ensure that the environmental effects of the revised scheme will not exceed those assessed in the SES and AP2 ES, the Secretary of State will establish a

set of controls known as Environmental Minimum Requirements (EMR). The EMR will be contained in a suite of documents that will sit alongside the provisions set out in the hybrid Bill itself. The nominated undertaker is the body to be appointed to take forward the detailed design and implementation of the revised scheme after the hybrid Bill has been enacted. The nominated undertaker will be required to comply with the EMR and the other hybrid Bill controls.

- 1.1.9 During the passage of the hybrid Bill, the Secretary of State will confirm to Parliament the scope of, and the documents forming, the EMR; and will make a commitment to Parliament to take whatever steps he/she considers reasonable and necessary to secure compliance with them.
- 1.1.10 The EMR, together with the controls in the hybrid Bill, will ensure that the impacts assessed in the SES and AP2 ES will not be exceeded, unless this results from a change in circumstances that was not foreseeable at the time the SES and AP2 ES was prepared; or any such changes will be unlikely to have significant adverse environmental effects; or will be subject to a separate consent process and further environmental impact assessment.
- 1.1.11 The EMR will also impose a general requirement on the nominated undertaker to use reasonable endeavours to adopt measures to reduce the reported adverse environmental effects, provided that this does not add unreasonable cost or delay to the construction or operation of the revised scheme.

Operational sound, noise and vibration considerations

- 1.1.12 For surface sections, to avoid or reduce significant airborne noise effects, the HS2 scheme incorporates noise barriers in the form of landscape earthworks, noise fence barriers and / or 'low-level' barriers on viaducts. Noise barrier locations are shown on Volume 2: Map Book - Sound, noise and vibration map series SV-05 of the main ES. Where there have been amendments these are shown in the Volume 2: Map Book, Sound, noise and vibration Map series SV-05 of the SES and AP2 ES. The noise barriers identified in these maps also include engineering cuttings and retaining walls where they avoid or reduce significant adverse noise effects.
- 1.1.13 The height of the noise barriers are described relative to the rail level. Therefore any amendment to the vertical rail level will equally move the noise barrier so that its noise reduction is maintained.
- 1.1.14 Some landscape earthworks are not provided primarily for noise purposes and therefore removal of these features, or reducing their attenuation by raising the vertical alignment, would not materially alter the assessment presented here.
- 1.1.15 There are locations where existing features such as hills, roads and railways currently provide mitigation to the HS2 scheme which if the alignment was raised vertically could be reduced and may result in a new significant effect(s).
- 1.1.16 Following any change in alignment within the limits of deviation, further detailed modelling would be undertaken to confirm the predicted significant noise effects reported here. If these significant effects are confirmed suitable mitigation in the form of noise barriers would be provided within the limits. The introduction of new noise barriers may require additional visual mitigation in the form of earthworks, planting or

external finish. With this mitigation in place no additional residual significant effects are considered to be likely.

- 1.1.17 For tunnelled sections, following any change in alignment within the limits of deviation, detailed modelling would be undertaken to confirm the predicted significant noise effects reported here. If these significant effects are confirmed, suitable mitigation in the form of a further acoustically enhanced track system could be provided to mitigate this significant effect and with this mitigation in place no additional residual significant effects are likely.

2 Assessment of likely significant effects

2.1 CFA9 - Central Chilterns

Change to land required in Mantle's Wood for the Chiltern tunnel north portal (AP2-009-001)

- 2.1.1 Under the AP2 revised scheme, the porous portal will be increased by 120m in length and will require the relocation of the north portal building and associated access track. This will result in a net reduction in the area of ancient woodland required within Mantle's Wood by 0.26ha from that reported in the main ES. However, although ancient woodland is irreplaceable, additional woodland will be created to compensate for the loss of ancient woodland caused by the extension of the tunnel portal.
- 2.1.2 The scope for raising the route alignment at this location is restricted by the gradient of the Chiltern tunnel at the northern end. Some lateral movement is possible horizontally, but the extent is restricted by track geometry as the alignment makes the transition from tunnel to surface and by existing topography.
- 2.1.3 As reported in the assessment of wider effects in the main ES, a lowering of the vertical alignment at this location may require ground stabilisation works in the vicinity of the portal, which could give rise to an increased loss of habitat from Mantles Wood. This conclusion remains unchanged from what was reported previously (see main ES Appendix CT-005-000, Assessment of likely significant effects, Para 2.9.1).

2.2 CFA21 - Drayton Bassett, Hints and Weeford

Drayton Bassett to Hints area amendments (AP2-021-001)

- 2.2.1 The amendments within the Drayton Bassett to Hints area include a lowering of the route. If the route of the AP2 revised scheme was raised this would return the height towards that of the original scheme. This would also return the reported effects to those discussed in the main ES. The visual effects would be difficult to mitigate until the mitigation tree planting had matured. For some properties in Drayton Lane, including Oak Farm, adverse visual effects would still be apparent at year 15 and beyond.

2.3 CFA22 - Whittington to Handsacre

Whittington to Handsacre realignment

- 2.3.1 If the vertical alignment of the Manchester spur was raised by 3m, retaining walls would be required. Increased visual effects would result for properties in the area including Highfields Bungalow, Gorse Farm and users of public rights of ways in the area including the Trent and Mersey Canal close to Wood End Lock Cottage. The visual effects would be difficult to mitigate until the mitigation tree planting had matured.

2.4 CFA23 - Balsall Common and Hampton-in-Arden

Extension of the River Blythe viaduct (AP2-023-004)

- 2.4.1 Raising the vertical alignment of the River Blythe viaduct by up to 3m would increase the visual impact on residents in Hampton-in-Arden. It may also introduce visual impacts and significant adverse effects to new residents who would not currently experience such effects with the original scheme. The visual effects due to the increased height would be difficult to mitigate as the viaduct does not present a structure which could accommodate additional tree planting.

Realignment of Diddington Lane (AP2-023-005)

- 2.4.2 Lowering the vertical alignment of the realigned Diddington Lane is constrained by the level of the HS2 route, while amending its horizontal alignment is restricted by the requisite geometry for the highway. However, it would be feasible to raise the vertical alignment of Diddington Lane, which would likely also result in an increased footprint for the associated embankments.
- 2.4.3 Raising the vertical alignment would potentially increase the visual impact and lead to increased significant effects for residents on the edge of Hampton-in-Arden on Diddington Lane.
- 2.4.4 The increased earthworks required to increase vertical alignment could result in adverse flood risk effects as a result of loss of flood storage within the floodplain of the Shadow Brook.
- 2.4.5 The visual effects due to the increased height could potentially be mitigated by additional planting, though this would take time to mature and reduce the effect. The impact of the increased earthworks on the Shadow Brook floodplain could be offset by the provision of an appropriate replacement flood storage area within the land required to construct the realignment.

High Speed Two (HS2) Limited

One Canada Square
London E14 5AB

T 020 7944 4908

E hs2enquiries@hs2.org.uk

X75