

High Speed Rail (West Midlands - Crewe)

Supplementary Environmental Statement 2 and
Additional Provision 2 Environmental Statement

Volume 2: Community Area report

CA2: Colwich to Yarlet

High Speed Rail (West Midlands - Crewe)

Supplementary Environmental Statement 2 and
Additional Provision 2 Environmental Statement

Volume 2: Community Area report

CA2: Colwich to Yarlet



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.

High Speed Two (HS2) Limited,
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

Telephone: 08081 434 434

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.hs2.org.uk

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

ARUP



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 on 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.

© High Speed Two (HS2) Limited, 2019, except where otherwise stated.

Copyright in the typographical arrangement rests with High Speed Two (HS2) Limited.

This information is licensed under the Open Government Licence v2.0. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/version/2 **OGL** or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: psi@nationalarchives.gsi.gov.uk. Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.



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

Contents

Structure of the HS2 Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement	v
Structure of this report	viii
1 Introduction	1
Part 1: Supplementary Environmental Statement 2	4
2 Summary of changes in the Colwich to Yarlet area	4
2.1 New environmental baseline information	4
2.2 Changes to the design or construction assumptions not requiring a change to the Bill	5
2.3 Corrections to the main ES and SES1	31
3 Assessment of SES2 changes in the Colwich to Yarlet area	37
3.1 Introduction	37
3.2 Community	37
3.3 Ecology and biodiversity	40
3.4 Health	44
3.5 Landscape and visual	46
3.6 Sound, noise and vibration	49
3.7 Summary of new or different likely residual significant effects as a result of the SES2 changes	54
Part 2: Additional Provision 2 Environmental Statement	55
4 Summary of AP2 amendments in the Colwich to Yarlet area	55
4.1 Introduction	55
4.2 Engineering amendments	55
4.3 Minor utility amendments	66
4.4 Other amendments requiring changes to Bill powers	71
5 Assessment of engineering amendments in the Colwich to Yarlet area	72
5.1 Additional land required for the provision of a replacement facility for Mayfield Children's Home (AP2-002-001)	72

5.2	Additional land and a change to Bill powers required for the removal of Moreton retaining wall and to realign the access track to Moreton House and Moreton House Farm (AP2-002-002)	87
5.3	Additional land required during construction for the movement of surplus excavated material at Moreton, Ingestre, Hopton and Marston (AP2-002-003)	99
5.4	Additional land required for the diversion of a National Grid gas pipeline and a new utility compound, west of Colwich Bridleway 35 accommodation overbridge (AP2-002-004)	100
5.5	Additional land required for the diversion of a Cadent gas pipeline, east of Colwich Bridleway 58 accommodation overbridge (AP2-002-005)	119
5.6	Additional land and a change to Bill powers required for HS2 maintenance access to Colwich Bridleway 58 accommodation underbridge (AP2-002-006)	124
5.7	Change to Bill powers required for the diversion of a British Pipeline Agency fuel pipeline and a new utility compound, A51 Lichfield Road (AP2-002-007)	125
5.8	Additional land and a change to Bill powers required for construction activities at Great Haywood (AP2-002-008)	129
5.9	Additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline and a new utility compound, north-west of Great Haywood Marina (AP2-002-009)	134
5.10	Additional land permanently required for the reconfiguration of Ingestre Park Golf Club (AP2-002-010)	148
5.11	Change to Bill powers required for HS2 maintenance access to Ingestre underbridge (AP2-002-011)	172
5.12	Additional land and a change to Bill Powers required for the diversion of a Cadent gas pipeline and a new utility compound, east of Ingestre green overbridge (AP2-002-012)	173
5.13	Additional land required for replacement car parking, east of Staffordshire County Showground (AP2-002-013)	183
5.14	Additional land and a change to Bill powers required for the lowering of Trent Walk beneath the HS2 route via Trent Walk underbridge (AP2-002-014)	190
5.15	Additional land and a change to Bill powers required for HS2 maintenance access to Trent Walk underbridge (AP2-002-015)	191
5.16	Additional land required for modifications to the A513 Beaconside/A518 Weston Road/Hydrant Way junction (AP2-002-016)	192
5.17	Additional land required for the relocation of stockpiles and realignment of Hopton and Coton Footpath 6 (AP2-002-017)	196
5.18	Additional land required for HS2 maintenance access to Hopton and Coton Footpath 24 accommodation overbridge (AP2-002-018)	198
5.19	Additional land and a change to Bill powers required for the realignment of the B5066 Sandon Road, diversion of Hopton Lane, extension of Hopton Lane and increased non-motorised user provision across the HS2 route between Hopton and Mount Edge (AP2-002-019)	199
5.20	Additional land required for construction activities around B5066 Sandon Road, Hopton (AP2-002-020)	216
5.21	Additional land required for modifications to A513 Beaconside and B5066 Sandon Road junction (AP2-002-021)	218
5.22	Additional land required for a British Pipeline Agency construction working area and a new utility compound, west of B5066 Sandon Road (AP2-002-022)	221

5.23	Additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline and a new utility compound, south-east of Marston Bridleway 8 accommodation underbridge (AP2-002-023)	226
5.24	Additional land required for modifications to A513 Beaconside/Marston Lane junction (AP2-002-024)	232
5.25	Additional land required to relocate a temporary material stockpile and for a new transfer node, east of the Yarlet South cutting (AP2-002-025)	236
5.26	Additional land required within the grounds of Yarlet School during construction of utility works (AP2-002-026)	241
5.27	Additional land and a change to Bill powers required along the A34 Stone Road for the provision of a new access to Yarlet School (AP2-002-027)	242
5.28	Additional land required for a revised high pressure National Grid Gas Transmission Line diversion under Yarlet Central cutting and a new temporary utility compound (AP2-003-001)	257
6	Assessment of minor utility amendments in the Colwich to Yarlet area	259
6.1	Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line near Moreton Brook (AP2-002-101)	259
6.2	Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line, west of Tithebarn Farm (AP2-002-102)	259
6.3	Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line, west of Great Haywood Marina (AP2-002-103)	260
6.4	Additional land for the removal of a Western Power Distribution 11kV overhead line and associated infrastructure, west of Upper Hanyards Farm (AP2-002-104)	261
6.5	Additional land and a change to Bill powers for a new temporary Severn Trent Water water mains supply to the Brancote South cutting satellite compound (AP2-002-105)	262
6.6	Additional land for the underground diversion of a Western Power Distribution low voltage overhead line, west of Trent Walk underbridge (AP2-002-106)	262
6.7	Additional land for the diversion of two Severn Trent Water sewers, south of Hopton (AP2-002-107)	263
6.8	Additional land for the underground diversion of a Western Power Distribution 11kV overhead line, east of Mount Edge (AP2-002-108)	263
6.9	Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line, south-west of Hopton (AP2-002-109)	264
6.10	Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution low voltage overhead line crossing Hopton Lane (AP2-002-110)	265
6.11	Additional land for the underground diversion of a Western Power Distribution 11kV overhead line to the north and west of Sandon Road auto-transformer station (AP2-002-111)	265
6.12	Additional land and a change to Bill powers for the underground diversion of Western Power Distribution 11kV overhead line, west of the B5066 Sandon Road (AP2-002-112)	266
6.13	Change to Bill powers for the diversion of a Cadent medium pressure gas main, west of Kents Barn Farm (AP2-002-113)	267
6.14	Additional land and a change to Bill powers for the underground diversion of Western Power Distribution 11kV overhead line, at Marston Bridleway 8 accommodation underbridge (AP2-002-114)	268
6.15	Additional land for the revised underground Openreach telecommunications cable to Yarlet South cutting satellite compound (AP2-002-115)	269

6.16	Additional land for the underground and overhead diversion of Western Power Distribution low voltage overhead line from near Grove Farm to Hilltop Farm (AP2-002-116)	269
6.17	Additional land and a change to Bill powers for the underground and overhead diversion of Western Power Distribution 11kV overhead lines from Yarlet House to south-west of Yarlet auto-transformer station (AP2-002-117)	270
7	Combined effects of changes and amendments in the Colwich to Yarlet area due to changes in construction traffic flows	272
7.1	Introduction	272
7.2	SES2 changes and AP2 amendments of relevance to this assessment	272
7.3	Traffic and transport	273
7.4	Air quality	284
7.5	Sound, noise and vibration	287
7.6	Community	288
7.7	Socio-economics	291
7.8	Summary of new or different likely residual significant effects as a result of combined effects due to changes in traffic flows	292

List of figures

Figure 1:	Structure of the SES2 and AP2 ES	vii
Figure 2:	Indicative construction programme	8
Figure 3:	Locations of SES2 engineering design changes not requiring a change to the Bill in the Colwich to Yarlet area	19
Figure 4:	Location of SES2 minor utility design change not requiring a change to the Bill in the Colwich to Yarlet area	30
Figure 5:	Locations of AP2 engineering amendments in the Colwich to Yarlet area	65
Figure 6:	Locations of AP2 minor utility amendments in the Colwich to Yarlet area	70
Figure 7:	Indicative layout for the reconfigured Ingestre Park Golf Club	150

List of tables

Table 1:	Scheme definitions	1
Table 2:	Summary of changes to the construction assumptions within the existing powers of the Bill in the Colwich to Yarlet area	14
Table 3:	Summary of changes to the engineering design not requiring a change to the Bill in the Colwich to Yarlet area	17
Table 4:	Summary of changes to the minor utility design not requiring a change to the Bill in the Colwich to Yarlet area	29
Table 5:	Summary of corrections to the main ES and SES1 in the Colwich to Yarlet area	32
Table 6:	Summary of AP2 engineering amendments in the Colwich to Yarlet area	55
Table 7:	Summary of AP2 minor utility amendments in the Colwich to Yarlet area	66
Table 8:	Summary of other amendments requiring changes to Bill powers in the Colwich to Yarlet area	71
Table 9:	Typical vehicle trip generation for construction sites in the Colwich to Yarlet area	275

Structure of the HS2 Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement

This report is part of the suite of documents that make up the Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES) for Phase 2a of the High Speed Two (HS2) rail network between the West Midlands and Crewe. The SES2 and the AP2 ES are separate documents, however, they are bound together and presented in a number of volumes as described below and shown in Figure 1.

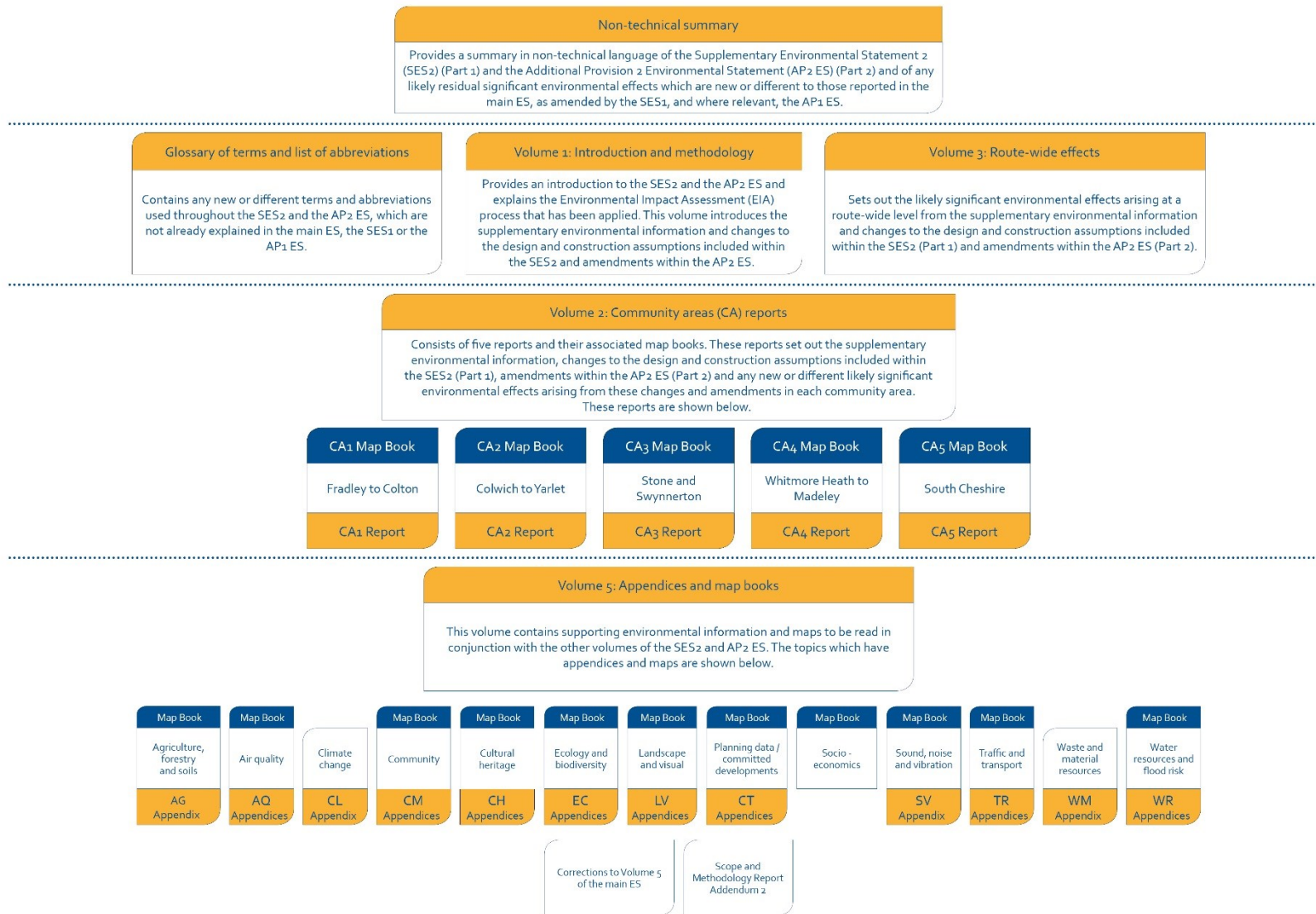
- Non-technical summary (NTS). This provides a summary in non-technical language of the SES2 (Part 1) and the AP2 ES (Part 2). It presents a summary of any likely residual significant environmental effects (i.e. effects which are likely to remain after mitigation measures are put in place), both beneficial and adverse, which are new or different to those reported in the Environmental Statement (ES) submitted to Parliament in July 2017 in support of the hybrid Bill for Phase 2a of HS2 ('the main ES'), as amended by the Supplementary Environmental Statement 1 (SES1) submitted in March 2018 (and by SES2 for the AP2 amendments). The AP1 amendments described in the AP1 ES submitted in March 2018 are also taken into account where relevant;
- Glossary of terms and list of abbreviations. This contains any new or different terms and abbreviations used throughout the SES2 and the AP2 ES which are not already explained in the main ES or SES1 and AP1 ES;
- Volume 1: Introduction to the SES2 and the AP2 ES. This introduces the supplementary environmental information and changes to the design and construction assumptions included within the SES2 and amendments within the AP2 ES. The report explains the environmental impact assessment (EIA) process that has been applied;
- Volume 2: Community area reports and map books. These report the supplementary environmental information and changes to the design and construction assumptions included within the SES2 (Part 1), amendments within the AP2 ES (Part 2) and any new or different likely significant relevant. The maps relevant to each community area are provided in separate Volume 2 map books and should be read in conjunction with the relevant community area report;
- Volume 3: Route-wide effects. This describes any new or different likely significant environmental effects arising at a route-wide level from the supplementary environmental information and changes to the design and construction assumptions included within the SES2 (Part 1) and the amendments within the AP2 ES (Part 2) compared to those reported in the main ES, as amended by SES1 (and by SES2 for the AP2 amendments). The AP1 amendments are also taken into account where relevant; and

- Volume 5: Appendices and map book. These contain supporting environmental information and associated maps.

A Volume 4: Off-route effects report was produced as part of the main ES. This assessed the likely significant effects of the scheme at locations beyond the Phase 2a route corridor and its immediate environment. A separate Volume 4 has not been produced as part of the SES2 and AP2 ES. Any new or different significant off-route effects arising from the SES2 changes and AP2 amendments are reported in the most relevant Volume 2 Community area report.

Certain reports and maps containing background information and data (BID) have been produced, which do not form part of the SES2 and AP2 ES. These documents are available online at www.gov.uk/hs2. The BID documents and maps present background survey information and other relevant background material.

Figure 1: Structure of the SES2 and AP2 ES



Structure of this report

This volume of the SES2 and AP2 ES is divided into five community area (CA) reports, which are in turn divided into two parts.

Part 1 provides supplementary environmental information, where relevant, relating to:

- new baseline information with respect to environmental surveys completed and additional information received since the production of the SES1 and AP1 ES;
- changes to the design and construction assumptions that do not require changes to the Bill; and
- corrections to the main ES, SES1 and the AP1 ES.

Part 2 provides environmental assessment information relating to proposed amendments to the design, which have resulted in the need to alter the powers conferred by the Bill.

Parts 1 and 2 include, where relevant:

- a description of the SES2 changes (Part 1) or the proposed AP2 amendments (Part 2) within the community area that have triggered the need for reassessment;
- an assessment of the environmental effects of the SES2 changes (Part 1) or the proposed AP2 amendments (Part 2) for relevant environmental topics considering the:
 - scope, assumptions and limitations of the assessment;
 - environmental baseline;
 - effects arising during construction;
 - effects arising from operation;
 - mitigation and residual effects; and
- a summary of any new or different likely residual significant effects as a result of the SES2 changes (Part 1) and the proposed AP2 amendments (Part 2).

1 Introduction

- 1.1.1 The High Speed Rail (West Midlands - Crewe) Bill was submitted to Parliament together with the main ES in July 2017. The SES1 and AP1 ES, which was submitted in March 2018, updated the main ES and contained a number of changes and amendments to the design of the original scheme (i.e. the scheme submitted in July 2017).
- 1.1.2 Since the submission of the main ES, SES1 and AP1 ES, updates to environmental baseline information and changes to the scheme design or assumptions have occurred, which may lead to new or different significant effects. These effects, depending on the type of change, are reported in the SES2 (Part 1) or AP2 ES (Part 2).
- 1.1.3 The Bill and associated Additional Provisions (APs) to the Bill described above, if enacted by Parliament, will provide the powers to construct, operate and maintain Phase 2a of HS2.
- 1.1.4 In order to differentiate between the original scheme and the subsequent changes, the terms set out in Table 1 are used.

Table 1: Scheme definitions

Scheme name	Definition	Relevant CAs
the original scheme	the Bill scheme submitted to Parliament in July 2017, which was assessed in the main ES	1 - 5
the SES1 scheme	the original scheme with the changes described in the SES1 submitted in March 2018	1 - 5
the AP1 revised scheme	the SES1 scheme as amended by the AP1 submitted in March 2018	1 - 3, 5
the SES2 scheme	the SES1 scheme with the changes described in the SES2	1 - 5
the AP2 revised scheme	the SES2 scheme as amended by the AP2	1 - 5

- 1.1.5 The following terms are used to differentiate between changes included in the SES2 and those included in the AP2 ES:
- ‘SES2 design changes’ – changes to the scheme design reported in the SES2 that do not require additional powers. In this report, the term ‘design change’ is also used;
 - ‘SES2 changes’ – all changes reported in the SES2 that do not require additional powers. This may include new baseline information, changes to the design and construction assumptions, and corrections; and
 - ‘AP2 amendments’ – amendments to the scheme reported in the AP2 ES that include requirements for additional powers in the Bill. In this report, the term ‘amendment’ is also used.
- 1.1.6 In addition, the following terms are also used in the SES2 and AP2 ES, where relevant:
- ‘SES1 design changes’ – changes to the scheme design reported in the SES1 that do not require additional powers;

- ‘SES1 changes’ – all changes reported in the SES1 that do not require additional powers. These may include new baseline information, changes to the design and construction assumptions, and corrections; and
- ‘AP1 amendments’ – amendments to the scheme reported in the AP1 ES that include requirements for additional powers in the Bill.

- 1.1.7 The SES2 (Part 1 of this report) contains updated environmental baseline information and scheme information relating to changes within the current limits and powers of the Bill, and therefore do not require an AP to the Bill. The SES2 changes within the Colwich to Yarlet area include:
- additional environmental baseline information for air quality; cultural heritage; ecology and biodiversity; and traffic and transport;
 - changes to the design and construction assumptions that do not require changes to the Bill; and
 - corrections to the main ES and the SES1.
- 1.1.8 These changes are described in Part 1 and are assessed on a topic by topic basis where relevant using the same approach adopted in the main ES, SES1 and AP1 ES.
- 1.1.9 The purpose of SES2 is to provide an assessment of any new or different likely significant environmental effects arising from the changes described. As there were SES1 changes in the Colwich to Yarlet area, the environmental effects of the SES2 changes are compared to those reported in the main ES as amended by SES1, and with the AP1 amendments taken into account as appropriate.
- 1.1.10 The AP2 ES (Part 2 of this report) describes the likely significant effects of amendments to the design of the scheme, which require the use of land outside the original limits of the Bill, additional access rights, and/or other extensions to the powers conferred by the Bill, making it necessary to submit an AP to the Bill.
- 1.1.11 The AP2 ES reports the assessment of each amendment separately for all relevant topics. The purpose of the AP2 ES is to provide an assessment of any new or different likely significant environmental effects arising from the amendments, compared to those reported in the main ES, as amended by SES1 and SES2, taking into account AP1 amendments where relevant.
- 1.1.12 A combined assessment of new or different significant construction traffic effects, as a result of changes in construction traffic flows, is reported in Section 7. This is because alterations in construction traffic flows cannot generally be directly attributed to particular SES2 changes or AP2 amendments. Traffic and transport effects are reported first, since the effects arise from changes in construction traffic flows, and then other topics which are affected by traffic and transport changes are reported as necessary.
- 1.1.13 All other new or different significant traffic and transport effects are reported with the relevant SES2 change or AP2 amendment.
- 1.1.14 The standard measure that will be used to mitigate likely significant adverse environmental effects during construction and operation of the scheme are described in the main ES, Volume 1, Section 9 and the draft Code of Construction Practice

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

(CoCP)¹ submitted in support of the Bill. Implementation of these measures has been assumed in this SES2 and AP2 ES.

¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Part 1: Supplementary Environmental Statement 2

2 Summary of changes in the Colwich to Yarlet area

2.1 New environmental baseline information

2.1.1 Since the production of the main ES, SES1 and AP1 ES, updates to the environmental baseline information have occurred which may lead to new or different significant effects for the following environmental topics.

Air quality

2.1.2 Air quality measurements for the baseline year of 2016 have become available in the Colwich to Yarlet area. These 2016 air quality measurements have been used to verify the air quality models for the assessment of traffic emissions which is presented in Section 7. This is done by comparing predicted pollutant concentrations against air quality measurements. Details of the 2016 air quality measurements and monitoring sites that are relevant to the assessment are provided in the SES2 and AP2 ES Volume 5: Appendix AQ-001-002 and Map Series AQ-01.

2.1.3 Since the assessment of the original scheme, the Department for Environment, Food and Rural Affairs (Defra) has issued updated tools for undertaking air quality assessments, for example background pollutant concentrations and road vehicle emission factors. Further explanation is presented in Volume 1. The air quality assessment undertaken for the SES2 changes and AP2 amendments uses these updated tools and is reported in Section 7.

Cultural heritage

2.1.4 Additional geophysical surveys have been undertaken in the Colwich to Yarlet area.

2.1.5 Details of surveys completed and the additional desk based information obtained is provided in Background Information and Data (BID) document CH-004-000, which accompanies the SES2 and AP2 ES, and Map Series CH-01, CH-02 and CH-03 in the SES2 and AP2 ES Volume 5: Cultural heritage Map Book.

Ecology and biodiversity

2.1.6 Additional Phase 1 habitat surveys have been undertaken in the Colwich to Yarlet area. Details of these surveys are provided BID document BID-EC-019-000, which accompanies the SES2 and AP2 ES.

2.1.7 SES2 and AP2 ES Volume 5: Appendix EC-018-000 provides a summary of additional ecological survey data, which has resulted in no change to the conclusions of the main ES and SES1. SES2 and AP2 ES Volume 5: Appendix EC-016-000 identifies additional local/parish level effects that are likely to occur as a consequence of SES2 changes and AP2 amendments, but which will not be significant.

Traffic and transport

- 2.1.8 Additional information on traffic flows on 15 roads and/or junctions in the Colwich to Yarlet area has been collected. In addition, a non-motorised user survey of one footpath in the area has been undertaken. Details of these are provided in BID document BID TR-001-000, which accompanies the SES2 and AP2 ES.
- 2.1.9 SES2 and AP2 ES Volume 5: Appendix TR-001-000 provides an assessment of the survey data, which has resulted in no change to the conclusions of the main ES and SES1.

2.2 Changes to the design or construction assumptions not requiring a change to the Bill

- 2.2.1 Since the production of the SES1 and AP1 ES, the need to make changes to the design and construction assumptions has been identified. The changes in the Colwich to Yarlet area are as follows and are described in the following sections:
- construction programme;
 - railway systems compounds;
 - SES2 engineering design changes; and
 - SES2 minor utility design changes.

- 2.2.2 These changes do not require a change to the Bill.

Changes to construction programme in the Colwich to Yarlet area

- 2.2.3 The main ES provided indicative details of the construction works to be managed from the construction compounds in the Colwich to Yarlet area, including duration of works, number of workers and a summary of the works to be undertaken.
- 2.2.4 In addition, a construction programme illustrating indicative periods for each of the core construction activities was also provided. See Volume 2: CA2, Section 2 of the main ES².
- 2.2.5 Since submission of the SES1 and AP1 ES, changes to the design and construction assumptions, including a route-wide review of the earthworks and movement of materials, have resulted in the need to make alterations to the indicative construction programme, shown in Figure 2 and reported in Section 3 of the SES2 and Section 5 of the AP2 ES.
- 2.2.6 The main SES2 design changes and AP2 amendments which give rise to changes to the construction programme are listed below and identified in Figure 2, which provides a revised indicative construction programme³. AP2 amendments which give

² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe), Environmental Statement*, Volume 2, CA2, Figure 6 Indicative construction programme between 2020 and 2027. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627562/E14_Volume_2_Community_Area_report_CA2.pdf

³ Site reinstatement shown on the construction programme is phased; phase one includes reinstatement of civils construction compounds and following completion of civils construction activities. The second phase includes reinstatement of haul routes, which remain until completion of track installation construction activities.

rise to changes to the construction programme are included in this section for completeness, but the assessment of those amendments is reported in Section 5 of the AP2 ES.

2.2.7 The following SES2 design changes give rise to changes to the construction programme:

- Local placement of surplus excavated material to the north of Moreton cutting (SES2-002-003);
- Three new working areas and a new utility compound for the British Pipeline Agency diversion works at the Trent North embankment and Brancote South cutting (SES2-002-005); and
- Local placement of surplus excavated material to the north of Marston North embankment (SES2-002-008).

2.2.8 The SES2 design changes above are considered to require a reassessment of the likely significant environmental effects and any mitigation and these are reported in Section 3 or Section 7, where relevant.

2.2.9 The following AP2 amendments give rise to changes to the construction programme:

- Additional land required for the diversion of a National Grid gas pipeline and a new utility compound, west of Colwich Bridleway 35 accommodation overbridge (AP2-002-004);
- Change to Bill powers required for the diversion of a British Pipeline Agency fuel pipeline and a new utility compound, A51 Lichfield Road (AP2-002-007);
- Additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline and a new utility compound, north-west of Great Haywood Marina (AP2-002-009);
- Additional land required for the reconfiguration of Ingestre Park Golf Club (AP2-002-010);
- Change to Bill powers for HS2 maintenance access to Ingestre underbridge (AP2-002-011);
- Additional land and a change to Bill powers required for the diversion of a Cadent gas pipeline and a new utility compound, east of Ingestre green overbridge (AP2-002-012);
- Additional land required for modifications to the A513 Beaconside/A518 Weston Road/Hydrant Way junction (AP2-002-016);
- Additional land required for modifications to A513 Beaconside and B5066 Sandon Road junction (AP2-002-021);
- Additional land required for a British Pipeline Agency construction working area and a new utility compound, west of B5066 Sandon Road (AP2-002-022);

- Additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline and a new utility compound, south-east of Marston Bridleway 8 accommodation underbridge (AP2-002-023); and
- Additional land required for modifications to A513 Beaconside/Marston Lane junction (AP2-002-024).

2.2.10 The AP2 amendments above are considered to require a reassessment of the likely significant effects and any mitigation and these are and reported in Section 5 or Section 7, where relevant.

2.2.11 Other AP2 amendments give rise to changes to the construction programme but are not of a scale to be shown in Figure 2. These AP2 amendments are also reported in Section 5 and the construction programme is as described in the relevant scheme descriptions.

Colwich to Yarlet	2020 Quarters				2021 Quarters				2022 Quarters				2023 Quarters				2024 Quarters				2025 Quarters				2026 Quarters				2027 Quarters			
Construction activity	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Yarlet express feeder auto-transformer station satellite compound																																
Site preparation and set-up																																
Yarlet express feeder auto-transformer station installation																																
Site reinstatement																																
Railway systems																																
Overhead line electrification, communications and traction power																																
Testing and commissioning																																

Key	
	Compound duration showing start and end of mobilisation. Activities below will be managed from the above compound. Second phase site reinstatement can occur post the compound demobilisation.
	Activity duration (indicates where there is no change from the main ES taking into consideration SES1 changes and AP1 amendments).
	Increase in duration as a result of a SES2 change or AP2 amendment.
	Decrease in duration as a result of a SES2 change or AP2 amendment (A yellow box indicates that works are no longer taking place in the quarter indicated).
	New element of the programme (compound or associated works) as a result of a SES2 change or an AP2 amendment.

Railway systems compounds

- 2.2.15 The Bill provides for land to be acquired for a number of railway systems compounds from which railway installation works will be managed. These works include: installation of the hydraulically bound layer⁴ and pre-cast slab, rails (including crossovers) and overhead line equipment, installation of auto-transformer stations and changes to the existing rail network.
- 2.2.16 Since the submission of the SES₁ and AP₁ ES, refinement of the construction methodology and access requirements for the installation of slab track⁵ has led to changes in the operational period (duration and start/end date) of one railway systems compound in the Colwich to Yarlet area.
- 2.2.17 In addition, in this area there is a need for three new railway systems compounds which will be located within land included in the Bill for the provision of civil engineering compounds.
- 2.2.18 To further support this refinement in construction methodology and wherever practicable, site haul routes have been retained on completion of the civil engineering phase to support the access to railway systems compounds for slab track installation from the main roads network and to reduce the reliance on access from the local road network.
- 2.2.19 The change to the operational characteristics of the existing compound in this area does not require a change to the Bill and is not considered to require in isolation a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.
- 2.2.20 Whilst the changes to the construction methodology and access requirements for the installation of a slab track formation will increase the number of railway systems heavy goods vehicles (HGV) movements, these will be later in the construction programme than civil engineering HGV movements and will, wherever practicable, utilise access via site haul routes from the main road network. In these locations, any increase in traffic on the road network associated with slab track installation will be relatively small. Therefore, there will be no new or different significant traffic effects as a result of these changes in isolation, compared to those reported in the main ES or SES₁. This change, in combination with other SES₂ changes and AP₂ amendments, is reported for traffic, and other topics which are affected by changes to traffic flows, in Section 7.

⁴ Aggregate mixture incorporating cement or lime based or other binders, which harden in-situ by a chemical/hydraulic reaction.

⁵ HS₂ Ltd (2018). *High Speed Rail (West Midlands - Crewe), Supplementary Environmental Statement and Additional Provision Environmental Statement*, Volume 1, Section 7. Available online at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692614/G7_Volume_1_WEB.pdf

- 2.2.21 Table 2 provides details of the changes to the operational characteristics of the existing railway systems compound and the provision of the new railway systems compound in this area. Figure 3 shows the location of the new railway systems compounds.

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Table 2: Summary of changes to the construction assumptions within the existing powers of the Bill in the Colwich to Yarlet area

Details of changes to construction assumptions	Description of the SES1 scheme	Description of the SES2 scheme	Change to significant effects
<p>Provision of a new railway systems compound at Trent South embankment main compound</p> <p>SES2-002-004</p>	<p>Provision of a civil engineering compound only.</p> <p>The main ES reported that this compound would be operational for a total of six years, commencing during 2021, and would be used to manage the civil engineering works only.</p> <p>The main ES reported that this compound would support an average of 250 civil engineering workers per day (350 workers at peak times).</p> <p>The main ES reported that this compound would generate 204-279 civil engineering HGV trips per day during busy periods⁶ and within the peak month of activity.</p> <p>Map CT-05-212, G4 to F4, in the main ES, Volume 2: CA2 Map Book</p>	<p>There are no changes to the operational characteristics for the Trent South embankment main compound related to civil engineering works.</p> <p>A new railway systems compound will be provided within the footprint of the Trent South embankment main compound, included in the original scheme for civil engineering works. This railway systems compound will:</p> <ul style="list-style-type: none"> • be operational for nine months, commencing during 2025; • support an average of 25 railway system workers per day (40 workers at peak times); • be accessed via the A51 Lichfield Road; • generate 158-160 railway systems HGV trips per day during the busy periods and within the peak month of activity; • generate 37-51 railway systems car/light goods vehicle (LGV) trips per day during busy periods and within the peak month of activity; • be managed from the Stone railhead main compound (in the Stone and Swynnerton area (CA3)); and • support the installation of track works. <p>Map CT-05-212, F3 to F4, in the SES2 and AP2 ES, Volume 2: CA2 Map Book</p>	<p>Although there will be an increase in peak HGV and worker trips to this compound as a result of the change, this will not lead to any new or different significant effects in isolation, as the change to overall traffic levels on the road network is relatively small.</p> <p>The assessment of the changes in railway systems HGV and worker trips is considered in combination with other SES2 changes and AP2 amendments and reported in Section 7.</p>

⁶ The busy period is the period during which HGV traffic serving that compound will be greater than 50% of the HGV traffic in the peak month. The average daily combined two-way vehicle trips for the busy period is the lower end of the range and for the peak month is the upper end of the range.

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Details of changes to construction assumptions	Description of the SES1 scheme	Description of the SES2 scheme	Change to significant effects
<p>Provision of a new railway systems compound at Brancote South cutting satellite compound</p> <p>SES2-002-006</p>	<p>Provision of a civil engineering compound only.</p> <p>The main ES reported that this compound would be operational for a total of four years and three months, commencing during 2021, and would be used to manage the civil engineering works only.</p> <p>The main ES reported that this compound would support an average of 25 civil engineering workers per day (35 workers at peak times).</p> <p>The main ES reported that this compound would generate 80-90 civil engineering HGV trips per day during busy periods and within the peak month of activity.</p> <p>Map CT-05-214, F7, in the main ES, Volume 2: CA2 Map Book</p>	<p>There are no changes to the operational characteristics for the Brancote South cutting satellite compound related to civil engineering works.</p> <p>A new railway systems compound will be provided within the footprint of the Brancote South cutting satellite compound, included in the original scheme for civil engineering works. This railway systems compound will:</p> <ul style="list-style-type: none"> • be operational for nine months, commencing during 2024; • support an average of 25 railway system workers per day (40 workers at peak times); • be accessed via a site haul route connecting to the A518 Weston Road; • generate 158-160 railway systems HGV trips per day during the busy periods and within the peak month of activity; • generate 37-51 railway systems car/LGV trips per day during busy periods and within the peak month of activity; • be managed from the Stone railhead main compound (in the Stone and Swynnerton area (CA3)); and • support the installation of track works. <p>Map CT-05-214, F8 to E7, in the SES2 and AP2 ES, Volume 2: CA2 Map Book</p>	<p>Although there will be an increase in peak HGV and worker trips to this compound as a result of the change, this will not lead to any new or different significant effects in isolation, as the change to overall traffic levels on the road network is relatively small.</p> <p>The assessment of the changes in railway systems HGV and worker trips is considered in combination with other SES2 changes and AP2 amendments and reported in Section 7.</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Details of changes to construction assumptions	Description of the SES1 scheme	Description of the SES2 scheme	Change to significant effects
<p>Change to the operational duration⁷ for the Sandon Road auto-transformer station satellite compound</p>	<p>SES1 reported that this compound would be operational for a total of one year and six months, commencing during 2024.</p> <p>Map CT-05-216, C6 to B5, in the main ES, Volume 2: CA2 Map Book</p>	<p>The compound will be operational for a total of one year and nine months, an increase in duration of three months from that reported in SES1.</p>	<p>The increase in duration of the compound to support railway systems works is small in comparison to the overall duration of the compound. The assessment of the change in operational duration is considered in combination with other SES2 changes and AP2 amendments and reported in Section 7.</p>
<p>Provision of a new railway systems compound at Marston North embankment satellite compound</p> <p>SES2-002-009</p>	<p>Provision of a civil engineering compound only.</p> <p>The main ES reported that this compound would be operational for a total of three years and six months, commencing during 2021, and would be used to manage the civil engineering works only.</p> <p>The main ES reported that this compound would support an average of 10 civil engineering workers per day (15 workers at peak times).</p> <p>The main ES reported that this compound would generate 108-144 civil engineering HGV trips per day during busy periods and within the peak month of activity.</p> <p>Map CT-05-219a, H6, in the main ES, Volume 2: CA2 Map Book</p>	<p>There are no changes to the operational characteristics for the Marston North embankment satellite compound related to civil engineering works.</p> <p>A new railway systems compound will be provided within the footprint of the Marston North embankment satellite compound, included in the original scheme for civil engineering works. This railway systems compound will:</p> <ul style="list-style-type: none"> • be operational for nine months, commencing during 2025; • support an average of 25 railway system workers per day (40 workers at peak times); • be accessed via the A34 Stone Road; • generate 158-160 railway systems HGV trips per day during the busy periods and within the peak month of activity; • generate 37-51 railway systems car/LGV trips per day during busy periods and within the peak month of activity; • be managed from the Stone railhead main compound (in the Stone 	<p>Although there will be an increase in peak HGV and worker trips to this compound as a result of the change, this will not lead to any new or different significant effects in isolation, as the change to overall traffic levels on the road network is relatively small.</p> <p>The assessment of the changes in railway systems HGV and worker trips is considered in combination with other SES2 changes and AP2 amendments and reported in Section 7.</p>

⁷ The Volume 2 scheme description of the construction phase represents the duration of works in a different way to the Volume 5: Transport Assessment addendum (SES2 and AP2 ES Volume 5: Appendix TR-001-000). The Volume 2 scheme description is based on quarters (each representing three months), e.g. December (Quarter 4) to February (Quarter 1) is rounded to six months, whereas the Volume 5: Transport Assessment addendum counts the absolute duration e.g. three months.

Details of changes to construction assumptions	Description of the SES1 scheme	Description of the SES2 scheme	Change to significant effects
		<p>and Swynnerton area (CA3)); and</p> <ul style="list-style-type: none"> support the installation of track works. <p>Map CT-05-219a, H6, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.</p>	

SES2 engineering design changes

2.2.22 Table 3 provides a summary of the SES2 engineering design changes not requiring a change to the Bill which result in new or different significant effects in the Colwich to Yarlet area. Figure 3 shows the locations of these changes.

2.2.23 All dimensions in the following sections are approximate.

Table 3: Summary of changes to the engineering design not requiring a change to the Bill in the Colwich to Yarlet area

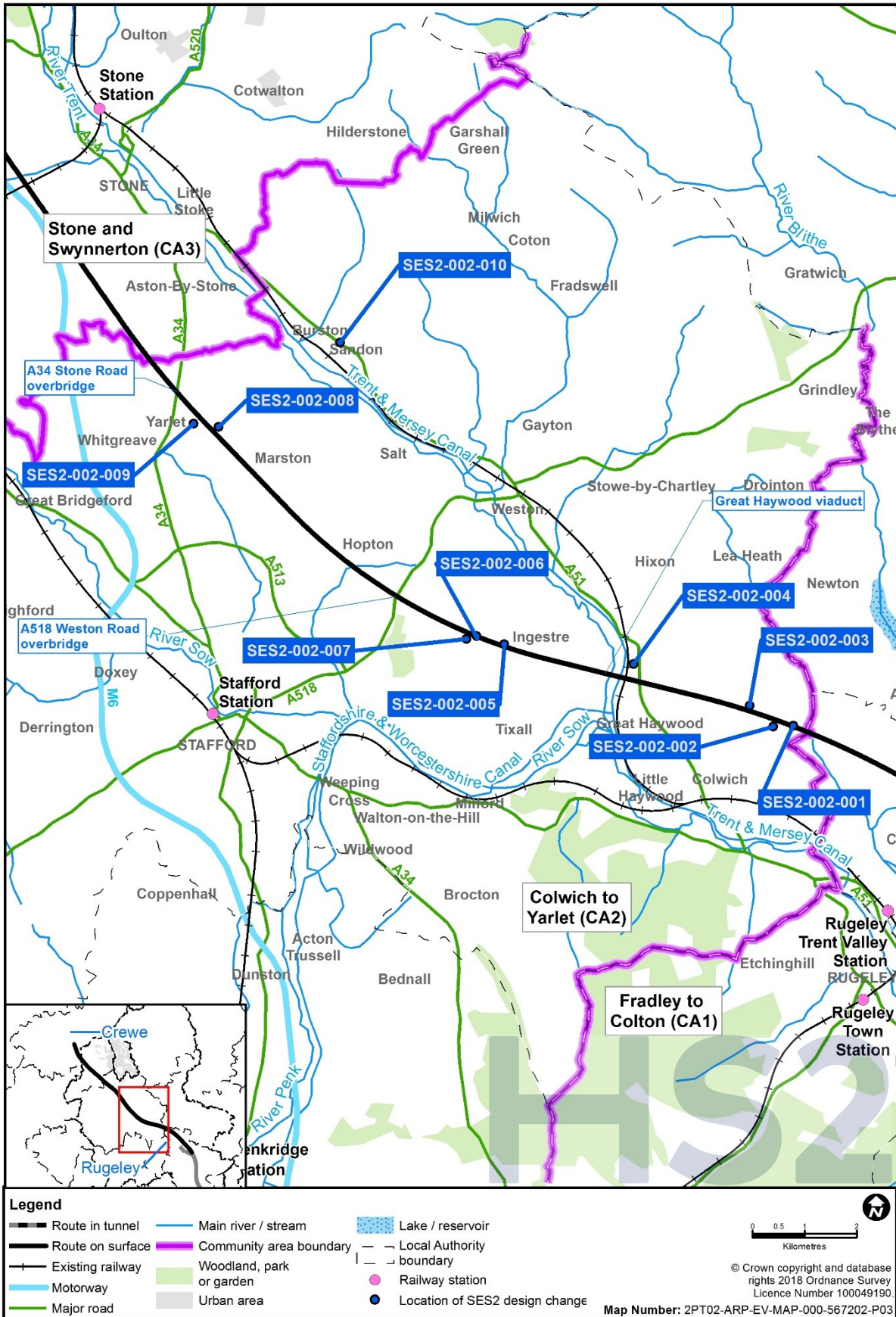
Name of SES2 engineering design change	Description of the SES1 scheme (and AP1 revised scheme where relevant)	Description of the SES2 scheme
<p>Extension of a noise fence barrier from Moreton North embankment to Moreton South embankment</p> <p>SES2-002-001</p> <p>Map CT-06-209, E5 to A5, in the SES2 and AP2 ES Volume 2: CA1 Map Book and Map CT-06-210, J6 to G5, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Noise fence barriers, 1km in length and up to 3m in height, would be located along the southern and northern sides of Moreton North embankment, continuing on to Moreton cutting. The barrier on the southern side would provide acoustic screening for properties at Moreton Grange Farm and the barrier on the northern side would provide acoustic screening for properties at Moreton Farm</p>	<p>The noise fence barrier on the southern side of the Moreton North embankment will be extended to the east by approximately 1km, at a height of up to 3m. The noise fence barrier will provide acoustic screening for Upper Moreton Farm.</p> <p>Part of this SES2 design change lies within the Fradley to Colton area (CA1). A detailed description of the SES2 design change within the Fradley to Colton area is reported in SES2 and AP2 ES Volume 2, Community area 1, Fradley to Colton.</p>
<p>Local placement of surplus excavated material to the south of Moreton cutting</p> <p>SES2-002-002</p> <p>Map CT-06-210, E7 to C6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>A temporary material stockpile would be located to the south of Moreton cutting, immediately south-west of Colwich Bridleway 23 accommodation green overbridge.</p> <p>Following construction, the land would be returned to agricultural use.</p>	<p>Surplus excavated material will be placed permanently to the south of Moreton cutting, immediately south-west of Colwich Bridleway 23 accommodation green overbridge.</p> <p>The material will be graded so that the land can be returned to agricultural use.</p>
<p>Local placement of surplus excavated material to the north of Moreton cutting</p> <p>SES2-002-003</p> <p>Map CT-06-211, I5 and G5, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>A temporary material stockpile would be located to the north of Moreton cutting, immediately north of Colwich Bridleway 35 accommodation overbridge.</p> <p>Following construction, the land would be returned to agricultural use.</p>	<p>Surplus excavated material will be placed permanently to the north of Moreton cutting, immediately north of Colwich Bridleway 35 accommodation overbridge.</p> <p>The material will be graded so that the land can be returned to agricultural use.</p>
<p>Three new working areas and a new utility compound for the British Pipeline Agency (BPA) diversion works at Trent North embankment and Brancote South cutting</p>	<p>Land would be required permanently for the diversion of an underground BPA 10-inch diameter fuel pipeline, which would</p>	<p>Three new temporary working areas for the construction of a BPA 10-inch diameter fuel pipeline diversion,</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of SES2 engineering design change	Description of the SES1 scheme (and AP1 revised scheme where relevant)	Description of the SES2 scheme
<p>SES2-002-005</p> <p>Map CT-05-213, G7 to A5, and CT-05-214, J4 to F5, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>cross beneath the HS2 route at Trent North embankment.</p>	<p>adjacent to Trent North embankment and Brancote South cutting.</p> <p>A new temporary utility compound will be provided for the management of the BPA fuel pipeline diversion works. It will be provided within land required permanently for Trent North embankment.</p>
<p>Local placement of surplus excavated material to the south of Brancote North cutting</p> <p>SES2-002-007</p> <p>Map CT-06-214, C6 to A6, and CT-06-215, J6 and H6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Two temporary material stockpiles would be located to the south of Brancote North cutting, west of Tixall Bridleway 0.1628 accommodation overbridge and east of Trent Walk underbridge.</p> <p>Existing hedgerow field boundaries separate the temporary material stockpiles.</p> <p>Following construction, the land would be returned to agricultural use.</p>	<p>Surplus excavated material will be placed permanently to the south of Brancote North cutting, west of Tixall Bridleway 0.1628 accommodation overbridge and east of Trent Walk underbridge.</p> <p>Existing hedgerow, which separate the temporary material stockpiles, will be lost as a result of the placement of surplus excavated material; this will be re-provided along its existing alignment.</p> <p>The material will be graded so that the land can be returned to agricultural use.</p>
<p>Local placement of surplus excavated material to the north of Marston North embankment</p> <p>SES2-002-008</p> <p>Map CT-06-218, E4 to B5, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Four temporary material stockpiles would be located to the north of Marston North embankment, north-east of Park Farm, Marston.</p> <p>Existing hedgerow field boundaries and a redundant field access track separate the temporary material stockpiles.</p> <p>Following construction, the land would be returned to agricultural use.</p>	<p>Surplus excavated material will be placed permanently to the north of Marston North embankment, north-east of Park Farm, Marston.</p> <p>Existing hedgerow, which separates the temporary material stockpiles, will be lost as a result of the placement of surplus excavated material; this will be re-provided along its existing alignment.</p> <p>The material will be graded so that the land can be returned to agricultural use.</p>
<p>New construction traffic route along the A51 from Stone to Weston via Sandon</p> <p>SES2-002-010</p> <p>Maps TR-03-207-R1, TR-03-208-R1, and TR-03-209a-R1 in the SES2 and AP2 ES Volume 5: Traffic and transport Map Book</p>	<p>Construction traffic would enter onto the A34 Stone Road at Yarlet and travel south to the A513 Beaconside before crossing to the north of the HS2 route along the A518 Weston Road/Weston Bank/Stafford Road, and joining the A51 London Road at Weston.</p>	<p>A new construction traffic route will be provided for HGVs entering onto the A34 Stone Road at Yarlet then north towards Stone via the A34 and then via the A51 to Weston via Sandon. This route will improve the distribution of construction traffic within the existing road network.</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Figure 3: Locations of SES2 engineering design changes not requiring a change to the Bill in the Colwich to Yarlet area



Extension of a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001)

- 2.2.24 Part of this SES2 design change and relevant potential receptors lie within the Fradley to Colton area (CA1). A detailed description of the SES2 design change and assessment of effects within the Fradley to Colton area is reported in SES2 and AP2 ES Volume 2, Community area 1, Fradley to Colton. Part of this amendment lies within the Colwich to Yarlet area and the works associated with this amendment and assessment of effects on receptors within the Colwich to Yarlet area are described below.
- 2.2.25 The Bill provides for noise fence barriers, up to 3m in height, located along the southern and northern sides of Moreton North embankment, continuing on to Moreton cutting. The noise fence barrier on the southern side would be 1km in length and would provide acoustic screening for properties at Moreton Grange Farm. The noise fence barrier on the northern side would be 1km in length and would provide acoustic screening for properties at Moreton Farm. See Map CT-06-210, G6 to E6, in the main ES Volume 2: CA2 Map Book.
- 2.2.26 Upper Moreton Farm is a Community Interest Company (CIC) that provides care services, alongside being a working farm, and is part of the Care Farming UK initiative. The main ES reported, on a precautionary basis, Upper Moreton Farm as being subject to a likely significant adverse operational noise effect (denoted by OSV02-No1 on the Map SV-05-105b in the main ES, Volume 2: CA2 Map Book).
- 2.2.27 Since submission of the Bill, further consideration has been given to noise mitigation measures to reduce operational noise effects at Upper Moreton Farm. The noise fence barrier on the southern side of the Moreton North embankment will be extended to the east along the south of Moreton North embankment, Moreton Brook viaduct and Moreton South embankment, by approximately 1km in length, of which approximately 500m will be within the Colwich to Yarlet area, and up to 3m in height. See Map CT-06-209, E5 to A5, in the SES2 and AP2 Volume 2: CA1 Map Book and Map CT-06-210, J6 to G5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 2.2.28 There is no requirement to alter Moreton Brook viaduct or Moreton South and Moreton North embankments in order to construct the noise fence barrier.
- 2.2.29 The SES2 design change will be constructed over a period of nine months commencing in 2024. Works will be managed from the Trent South embankment main compound.

Topics included in the SES2 assessment

- 2.2.30 Within the Colwich to Yarlet area, this SES2 design change is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: community; health; landscape and visual; and sound, noise and vibration. This is reported in Section 3.
- 2.2.31 There are also landscape and visual receptors in the Fradley to Colton area, which are assessed and reported in SES2 and AP2 ES Volume 2, Community area 1, Fradley to Colton.

Local placement of surplus excavated material to the south of Moreton cutting (SES2-002-002)

- 2.2.32 The Bill provides for the temporary storage of excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. A temporary material stockpile would be provided to the south of Moreton cutting, immediately south-west of Colwich Bridleway 23 accommodation green overbridge, during construction. Following construction, the land would be returned to agricultural use. See Map CT-05-210, E7 to C6, in the main ES Volume 2: CA2 Map Book.
- 2.2.33 As part of a route-wide review of earthworks and the movement of materials, the scope for local placement of surplus excavated material on land already required for the construction of the scheme has been considered. Use of local placement areas would reduce the need for off-site road transportation and disposal of that surplus material and reduce the environmental impacts arising from HGV movements on the highway network. Volume 1 of the SES2 and AP2 ES provides further detail on the local placement of surplus excavated material.
- 2.2.34 Surplus excavated material will be placed permanently to the south of Moreton cutting, immediately south-west of Colwich Bridleway 23 accommodation green overbridge, in an area occupied by a temporary material stockpile in the original scheme. The location for the placement of surplus excavated material will cover an area of 1.9ha and will be up to 3m in height. The surplus excavated material will be graded to allow the area to be returned to agricultural use following construction. See Map CT-06-210, E7 to C6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 2.2.35 The agricultural soil profile (i.e. the topsoil and subsoil) will be available for agricultural restoration so that agricultural soils can be returned to the same condition as their pre-excavated state, using good practice techniques to handle, store and reinstate soils. Given the currently unknown nature of the surplus excavated material beneath the restored agricultural soil profile, it is likely that agricultural land drainage works will be required when restoring this area to achieve this condition and to ensure ongoing agricultural management of the restored land.
- 2.2.36 Surplus excavated material will be placed in the local placement area throughout the construction period as suitable material arises. This process will be managed from Trent South embankment main compound.

Local alternatives

- 2.2.37 A process identifying potentially suitable local placement areas in the Moreton area was undertaken.
- 2.2.38 This process identified five locations in the Moreton area for the placement of surplus excavated material, three of which are in the Colwich to Yarlet area. These were considered against criteria, as identified in Volume 1, which set out the key considerations for the suitability of local placement sites. The three locations in the Colwich to Yarlet area are reported below.
- 2.2.39 When considered against the criteria, Option 2 was not taken forward for further consideration as it was not considered to be a reasonable option. This option would be located to the east of Moreton Grange Farm, on the southern side of Moreton North

embankment. This option was not taken forward as it would be surrounded by Lount Farm Local Wildlife Site (LWS), which is designated for its marshy grassland. As a sensitive ecological receptor, the location for this option would potentially affect the structure and function of Lount Farm LWS.

2.2.40 The remaining two options were taken forward into the SES2 scheme:

- Option 4 would be located to the south-west of the Colwich Bridleway 23 accommodation overbridge, on the south side of Moreton cutting. The location for this option meets with the majority of the criteria, however it would potentially increase the temporary loss and severance of agricultural land during construction. This option has been taken forward into the SES2 scheme (reported as Local placement of surplus excavated material to the south of Moreton cutting (SES2-002-002)) as, on balance, the effects on agricultural land would be minor and limited to the construction period; and
- Option 5 would be located to the north-west of the Colwich Bridleway 35 accommodation overbridge, on the north side of Moreton cutting. The location for this option meets with the criteria and has been taken forward into the SES2 scheme. This is reported as Local placement of surplus excavated material to the north of Moreton cutting (SES2-002-003).

Topics included in the SES2 assessment

2.2.41 This SES2 design change is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for landscape and visual. This is reported in Section 3.

2.2.42 The assessment of the changes to construction traffic flows and traffic related effects as a result of this SES2 design change in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Local placement of surplus excavated material to the north of Moreton cutting (SES2-002-003)

2.2.43 The Bill provides for the temporary storage of excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. A temporary material stockpile would be provided to the north of Moreton cutting, immediately north of Colwich Bridleway 35 accommodation overbridge. Following construction, the land would be returned to agricultural use. See Map CT-05-211, I5 to G5, in the main ES Volume 2: CA2 Map Book.

2.2.44 As part of a route-wide review of earthworks and movement of materials, the scope for local placement of surplus excavated material on land already required for the construction of the scheme has been examined. Use of local placement areas would reduce the need for off-site road transportation and disposal of that surplus excavated material and reduce the environmental impacts arising from HGV movements on the highway network. Volume 1 of the SES2 and AP2 ES provides further detail on the local placement of surplus excavated material.

2.2.45 Surplus excavated material will be placed permanently to the north of Moreton cutting, immediately north of Colwich Bridleway 35 accommodation overbridge, in an area occupied by a temporary material stockpile in the original scheme.

The location for the placement of surplus excavated material will cover an area of 1.9ha and be up to 2.3m in height. The surplus excavated material will be graded to allow the area to be returned to agricultural use following construction. See Map CT-06-211, I5 to G5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

- 2.2.46 The agricultural soil profile (i.e. the topsoil and subsoil) will be available for agricultural restoration so that agricultural soils can be returned to the same condition as their pre-excavated state, using good practice techniques to handle, store and reinstate soils. Given the currently unknown nature of the surplus excavated material beneath the restored agricultural soil profile, it is likely that agricultural land drainage works will be required when restoring this area to achieve this condition and to ensure ongoing agricultural management of the restored land.
- 2.2.47 Surplus excavated material will be placed in the local placement area throughout the construction period as suitable material arises. This process will be managed from Trent South embankment main compound.

Local alternatives

- 2.2.48 Options considered as potentially suitable locations for local placement in the Moreton area are described under SES2-002-002: Local placement of surplus excavated material to the south of Moreton cutting.

Topics included in the SES2 assessment

- 2.2.49 This SES2 design change is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.
- 2.2.50 The assessment of the changes to construction traffic flows and traffic related effects as a result of this SES2 design change in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Three new working areas and a new utility compound for the British Pipeline Agency diversion works at the Trent North embankment and Brancote South cutting (SES2-002-005)

- 2.2.51 The Bill provides for the permanent diversion of an underground British Pipeline Agency (BPA) 10-inch diameter fuel pipeline for 1.8km. The diversion would cross beneath the HS2 route at Trent North embankment, 120m east of Ingestre underbridge. Grassland habitat creation would be provided along the entire length of the diverted pipeline easement. Two areas of woodland habitat creation would be provided north of the HS2 route; one area north of the Ingestre underbridge, which would cover 0.4ha, and a second area north-west of Ingestre green overbridge, which would cover 2ha. See Map CT-06-213, F8 to A5, and CT-06-214, J4 to F5, in the main ES Volume 2: CA2 Map Book. Works to divert the BPA fuel pipeline would take nine months to complete, commencing in 2021, and would be managed from Trent North embankment satellite compound.
- 2.2.52 Since submission of the SES1 and AP1 ES, further engagement with the utility provider has identified a requirement to provide three new temporary working areas during construction and a new temporary utility compound for the management of

the BPA fuel pipeline diversion works. The temporary working areas are all located adjacent to the realigned BPA pipeline and within areas identified for ecological mitigation planting in the original scheme. These are located in the following areas:

- at the eastern end of the pipeline diversion, to the south of the HS2 route, where it will re-connect into the existing alignment. See Map CT-05-213, G7 to F8, in the SES2 and AP2 ES Volume 2: CA2 Map Book;
- at the eastern end of the pipeline diversion, to the north of the HS2 route. See Map CT-05-213, F6 to F5, in the SES2 and AP2 ES Volume 2: CA2 Map Book; and
- at the western end of the pipeline diversion, to the north of the HS2 route, where it will re-connect into the existing alignment. See Map CT-05-214, F5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

2.2.53 The ecological mitigation planting, provided for in the original scheme, will still be provided following construction.

2.2.54 A new utility compound (Hanyards Lane utility compound) will be provided for the management of the BPA fuel pipeline diversion works and will be located 140m south-east of Ingestre underbridge, within land required for the Trent North embankment in the original scheme. See Map CT-05-213, F7 to F6 in the SES2 and AP2 ES, Volume 2: CA2 Map Book.

2.2.55 Hanyards Lane utility compound will be operational for nine months, commencing during 2021, and will support an average of 15 workers per day (20 workers at peak times). Access to the new compound will be from Great Haywood Road via Ingestre Park Road and along shared access with Ingestre Park Golf Club and the A518 Weston Road and site haul route.

2.2.56 The diversion works will be undertaken prior to the main construction works over a six month period, commencing in 2021.

2.2.57 This SES2 design change will only proceed if the AP1 revised scheme is enacted, as it is dependent on the additional area of land required for the site laydown area.

Topics included in the SES2 assessment

2.2.58 This SES2 design change is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for ecology and biodiversity. This is reported in Section 3.

2.2.59 The assessment of the changes to construction traffic flows and traffic related effects as a result of this SES2 design change in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Local placement of surplus excavated material to the south of Brancote North cutting (SES2-002-007)

2.2.60 The Bill provides for the temporary storage of excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. Two temporary material stockpiles would be provided to the south of the Brancote North cutting and would be separated by existing hedgerow field boundaries. The first material stockpile would be located 500m west of Tixall Bridleway 0.1628 accommodation overbridge and the

second would be located 200m east of Trent Walk underbridge. Following construction, the land would be returned to agricultural use. See Map CT-05-214, C6 to A6, and CT-05-215, J6 to H6, in the main ES Volume 2: CA2 Map Book.

- 2.2.61 As part of a route-wide review of earthworks and movement of materials, the scope of local placement of surplus excavated material on land already required for the construction of the scheme has been examined. Use of local placement areas would reduce the need for off-site road transportation and disposal of that surplus material and reduce the environmental impacts arising from HGV movements on the highway network. Volume 1 of the SES2 and AP2 ES provides further detail on the local placement of surplus excavated material.
- 2.2.62 Surplus excavated material will be placed permanently to the south of Brancote North cutting, extending across hedgerow field boundaries, west of Tixall Bridleway 0.1628 accommodation overbridge to the east of Trent Walk underbridge, in an area occupied by the two temporary material stockpiles in the original scheme. The location for the placement of surplus excavated material will cover an area of 3.6ha and be up to 3m in height. The surplus excavated material will be graded to allow the area to be returned to agricultural use following construction. See Map CT-06-214, C6 to A6, and CT-06-215, J6 to H6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 2.2.63 Extending the placement of surplus excavated material across the field boundaries, will result in the removal of a length of existing hedgerow; an equivalent length of new hedgerow habitat creation will be provided along the same alignment to provide replacement habitat. The reinstatement of hedgerows will replicate the existing field boundaries, however this will be at the new ground level created by the local placement site. See Map CT-06-214, B7 to CT-06-215, H6 in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 2.2.64 The agricultural soil profile (i.e. the topsoil and subsoil) will be available for agricultural restoration so that agricultural soils can be returned to the same condition as their pre-excavated state, using good practice techniques to handle, store and reinstate soils. Given the currently unknown nature of the surplus excavated material beneath the restored agricultural soil profile, it is likely that agricultural land drainage works will be required when restoring this area to achieve this condition and to ensure ongoing agricultural management of the restored land.
- 2.2.65 Surplus excavated material will be placed in the local placement area throughout the construction period as suitable material arises. This process will be managed from Trent South embankment main compound.

Local alternatives

- 2.2.66 A process of identifying potentially suitable local placement areas near Staffordshire County Showground was undertaken.
- 2.2.67 This process identified three locations near Staffordshire County Showground for the placement of surplus excavated material. These were considered against criteria, as identified in Volume 1, which set out the key considerations for the suitability of local placement sites. The three locations are reported below.

- 2.2.68 When considered against the criteria, Option 1 was not taken forward for further consideration as it was not considered to be a reasonable option. This option would be located to the west of A518 Weston Road overbridge, on the southern side of Hopton South cutting. This option was not taken forward as it would conflict with the Hopton South cutting transfer node (North), which would be in use throughout the duration of construction.
- 2.2.69 The remaining two options were taken forward into the SES2 scheme, collectively as SES2 change SES2-002-007:
- Option 2 would be located to the west of Tixall Bridleway 0.1628 accommodation overbridge, on the southern side of Brancote North cutting. The location for this option meets with the criteria and has been identified as a suitable option; and
 - Option 3 would be located to the west of Trent Walk, on the southern side of Hopton embankment. The location for this option meets with the criteria and has been identified as a suitable option.

Topics included in the SES2 assessment

- 2.2.70 This SES2 design change is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.
- 2.2.71 The assessment of the changes to construction traffic flows and traffic related effects as a result of this SES2 design change in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Local placement of surplus excavated material to the north of Marston North embankment (SES2-002-008)

- 2.2.72 The Bill provides for the temporary storage of excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. Four temporary material stockpiles would be provided to the north of Marston North embankment, north-east of Park Farm, Marston, and would be separated by existing hedgerow field boundaries and a field access track. Following construction, the land would be returned to agricultural use. See Map CT-05-218, E4 to B5, in the main ES Volume 2: CA2 Map Book.
- 2.2.73 As part of a route-wide review of earthworks and movement of materials, the scope of local placement of surplus excavated material on land already required for the construction of the scheme has been examined. Use of local placement areas would reduce the need for off-site road transport and disposal of that surplus material and reduce the environmental impacts arising from HGV movements on the highway network. Volume 1 of the SES2 and AP2 ES provides further detail on the local placement of surplus excavated material.
- 2.2.74 Surplus excavated material will be placed permanently to the north of Marston North embankment, extending across hedgerow field boundaries and a redundant field access, north-east of Park Farm, Marston, in the area occupied by the four temporary material stockpiles in the original scheme. The location for the placement of surplus excavated material will cover an area of 2.3ha and will be up to 2.4m in height. The surplus excavated material will be graded to allow the area to be returned to

agricultural use following construction. See Map CT-06-218, E4 to B5 in the SES2 and AP2 ES Volume 2: CA2 Map Book.

- 2.2.75 Extending the placement of surplus excavated material across the field boundaries, will result in the removal of a length of existing hedgerow; an equivalent length of new hedgerow habitat creation will be provided along the same alignment as replacement habitat. The reinstatement of hedgerows will replicate the existing field boundaries, however this will be at the new ground level created by the local placement site. See Map CT-06-218, D5 and C5 in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 2.2.76 The agricultural soil profile (i.e. the topsoil and subsoil), will be available for agricultural restoration so that agricultural soils can be returned to the same condition as their pre-excavated state, using good practice techniques to handle, store and reinstate soils. Given the currently unknown nature of the surplus excavated material beneath the restored agricultural soil profile, it is likely that agricultural land drainage works will be required when restoring this area to achieve this condition and to ensure ongoing agricultural management of the restored land.
- 2.2.77 Surplus excavated material will be placed in the local placement area throughout the construction period as suitable material arises. This process will be managed from Trent South embankment main compound.

Local alternatives

- 2.2.78 A process of identifying potentially suitable local placement areas in the Marston and Yarlet area was undertaken.
- 2.2.79 This process identified four locations in the Marston and Yarlet area for the placement of surplus excavated material. These were considered against criteria, as identified in Volume 1, which set out the key considerations for the suitability of local placement sites. The four locations are reported below.
- 2.2.80 When considered against the criteria, the following two options were not taken forward for further consideration as they were not considered to be reasonable options:
- Option 1A would be located to the north-west of Hopton and Coton Bridleway 11 accommodation overbridge, on the northern side of Hopton North cutting. This option was not taken forward as it would require additional land outside of the Bill powers and would conflict with the diversion of a high pressure gas pipeline and a high pressure fuel pipeline; and
 - Option 1 would be located to the south-east of the A34 Stone Road overbridge, on the northern side of Yarlet South cutting. This option was not taken forward as it would conflict with the Yarlet South cutting transfer node (South), which would be in use throughout the duration of construction.
- 2.2.81 The remaining two options were taken forward into the SES2 scheme, collectively as SES2 change SES2-002-008:
- Option 2 would be located to the north-east of Park Farm, on the northern side of Marston North embankment. The location for this option meets with the majority of the criteria, however it would be in proximity to Park Farm, Marston, which

would potentially be subject to visual impacts. This option has been taken forward into the SES2 scheme as, on balance, the effects on Park Farm, Marston would be minor and limited to the construction period; and

- Option 3 would be located to the north-east of Park Farm, on the northern side of Marston North embankment. The location for this option meets with the majority of the criteria, however it would be in proximity to Park Farm, Marston, which would potentially be subject to visual impacts. This option has been taken forward into the SES2 scheme as, on balance, the effects on Park Farm, Marston would be minor and limited to the construction period.

Topics included in the SES2 assessment

2.2.82 This SES2 design change is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

2.2.83 The assessment of the changes to construction traffic flows and traffic related effects as a result of this SES2 design change in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

New construction traffic route along the A51 from Stone to Weston via Sandon (SES2-002-010)

2.2.84 The Bill provides for a construction traffic route between Yarlet and Weston via Stafford. Vehicles would move excavated material from a transfer node at Yarlet South cutting satellite compound to borrow pits in the Fradley to Colton area (CA1). Construction traffic would travel south along the A34 Stone Road, then along the A513 Beaconside, and head north along the A518 Weston Road/Weston Bank/Stafford Road, before joining the A51 London Road at Weston. The main ES reported that the addition of construction traffic along this route would result in increased congestion, queuing and delays through the junctions along the A513 Beaconside, to the north.

2.2.85 Since submission of the Bill, following consultation with Staffordshire County Council, further design development has been undertaken to reduce the expected construction traffic flow through junctions along the A513 Beaconside. A new construction traffic route is provided to take construction traffic from Stone to Weston via Sandon. The new route, additional to that proposed in the original scheme, will allow construction traffic for the movement of excavated material to travel north along the A34 Stone Road/Stafford Road, then along the A51 Stone Bypass/Butterhill Bank/Lichfield Road/London Road, before re-joining the A51 London Road at Weston. See Maps TR-03-207-R1, TR-03-208-R1, and TR-03-209a-R1 in the SES2 and AP2 ES Volume 5: Traffic and transport Map Book. The construction traffic route proposed in the original scheme will still be used for HGVs travelling to compounds within the area. However, the use of the route will be substantially reduced resulting in reduced queues and delays on the A513 Beaconside.

2.2.86 The new construction traffic route will be used throughout the construction period from 2021 to 2027.

Topics included in the SES2 assessment

- 2.2.87 This SES2 design change is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.
- 2.2.88 The assessment of the changes to construction traffic flows and traffic related effects as a result of this SES2 design change in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

SES2 minor utility design changes

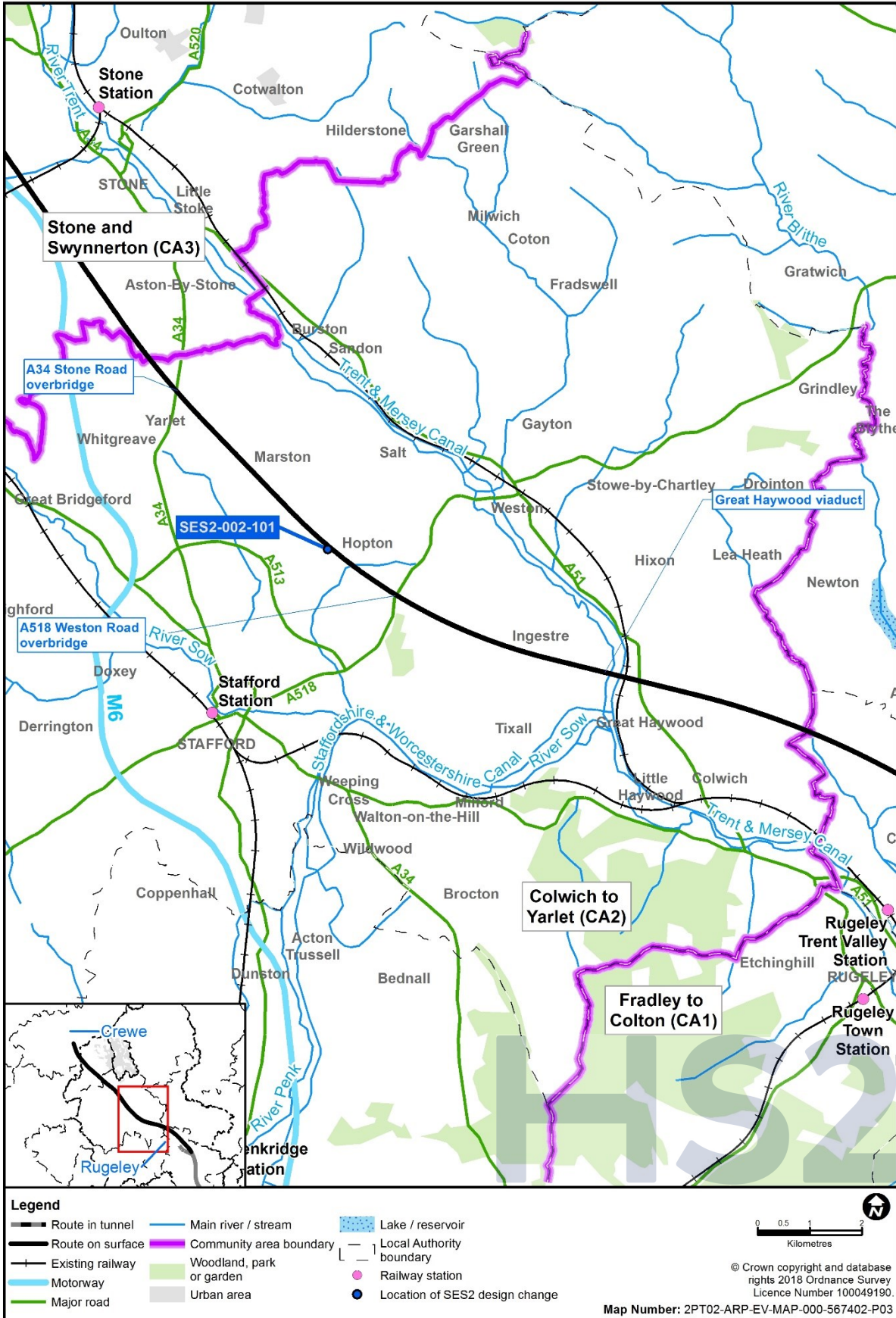
- 2.2.89 Table 4 provides a summary of the SES2 minor utility design change not requiring a change to the Bill which result in new or different significant effects in the Colwich to Yarlet area. Figure 4 shows the location of this change.
- 2.2.90 All dimensions in the following sections are approximate.

Table 4: Summary of changes to the minor utility design not requiring a change to the Bill in the Colwich to Yarlet area

Name of SES2 minor utility design change	Description of the SES1 scheme	Description of the SES2 scheme
Provision of a new underground Openreach telecommunications cable to the Sandon Road auto-transformer satellite compound SES2-002-101 Map CT-05-216, C8 to B5, in the SES2 and AP2 ES Volume 2: CA2 Map Book	No provision was made for a temporary telecommunications cable to the Sandon Road auto-transformer satellite compound.	Provision of a new temporary underground Openreach telecommunication cable, 145m in length, to Sandon Road auto-transformer satellite compound.

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Figure 4: Location of SES2 minor utility design change not requiring a change to the Bill in the Colwich to Yarlet area



Provision of a new underground Openreach telecommunications cable to the Sandon Road auto-transformer satellite compound (SES2-002-101)

- 2.2.91 Since submission of the Bill, further engagement with the utility provider has identified a need for a new temporary underground Openreach telecommunication cable to Sandon Road auto-transformer satellite compound. The new temporary telecommunications cable will be 150m in length, running beneath the proposed HS2 access to Sandon Road auto-transformer satellite compound. See Map CT-05-216, C8 to B5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 2.2.92 The activities will require the removal of any surface material from the area of the new utility (this may include vegetation, soil, and road surfacing) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to provide the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 2.2.93 This SES2 design change will result in new or different significant effects for community and sound, noise and vibration and these are reported in Section 3.

2.3 Corrections to the main ES and SES1

- 2.3.1 Since submission of the main ES and SES1, the need for a number of corrections to the contents of the main ES and SES1 has been identified. Table 5 provides a list of the instances where there has been a need to correct the Volume 2 Community area report for the Colwich to Yarlet area because of the potential to alter the significant environmental effects reported in the main ES or SES1, or a factual inaccuracy relating to a significant effect that has been identified. Table 5 also clarifies elements of the scheme description reported in the main ES. The table gives the location of the text that is subject to the correction in the main ES or SES1, the reason for the correction, replicates the text from the main ES or SES1, where applicable provides revised text, and identifies whether the correction changes a significant effect reported in the main ES or SES1. Where relevant, these corrections have been taken into account in the technical assessments contained within Section 3 of this SES2.

Table 5: Summary of corrections to the main ES and SES1 in the Colwich to Yarlet area

Reference in the main ES or SES1	Reason for correction	Text in the main ES or SES1	Revised text	Change to significant effects and mitigation
<p>Overview of the area and description of the Proposed Scheme</p> <p>Paragraph 2.2.37, Volume 2, CA2 of the main ES</p> <p>Map CT-05-218 and Map CT-06-218, Volume 2 Map Book, CA2 of the main ES</p>	<p>The main ES reports the length of a landscape bund along the Marston North embankment as 170m, the correct length is 270m.</p>	<p>Paragraph 2.2.37 - fifth bullet:</p> <p>Marston North embankment, 1km in length and up to 4m in height. There will be two landscape bunds, up to 5m in height, with landscape mitigation planting and woodland habitat creation on the southern side of the route of the Proposed Scheme. The first bund, approximately 170m in length, continuing on from along Marston South embankment, and the second bund, approximately 590m in length...;</p>	<p>Paragraph 2.2.37 - fifth bullet:</p> <p>Marston North embankment, 1km in length and up to 4m in height. There will be two landscape bunds, up to 5m in height, with landscape mitigation planting and woodland habitat creation on the southern side of the route of the Proposed Scheme. The first bund, approximately 270m in length, continuing on from along Marston South embankment, and the second bund, approximately 590m in length...;</p>	<p>No change.</p> <p>There is no change to the significant effects reported in the main ES.</p>
<p>Agriculture, Forestry and Soils</p> <p>Tables 10, 12 and 14, Volume 2, CA2 of the main ES and Volume 5: Map AG-01-108 of the main ES</p>	<p>Wadden Farm (CA2/30) was included as a separate holding in the Volume 2, CA2 report of the main ES, whereas it is part of New Buildings Farm⁸ (CA2/32). As a result, the size of New Buildings Farm holding was reported incorrectly.</p> <p>This was also reflected incorrectly on Map AG-01-108 (Volume 5 of the main ES).</p>	<p>Table 10, 30th entry:</p> <p>Holding reference/name - CA2/30* Wadden Farm</p> <p>Holding type - Grassland</p> <p>Holding size (ha) - 24</p> <p>Diversification - Not known</p> <p>Agri-environment scheme - None</p> <p>Sensitivity to change - Medium</p> <p>Table 10, 32nd entry:</p> <p>Holding size (ha) - 228</p>	<p>Table 10, 30th entry:</p> <p>Entry row removed with no replacement text</p> <p>Table 10, 32nd entry:</p> <p>Holding size (ha) - 252</p>	<p>No change.</p> <p>There is no change to the significant effects reported in the main ES.</p> <p>Corrections for this entry relating to Volume 5 can be found in SES2 and AP2 ES, Volume 5: Appendix CT-006-000. Volume 5: Map AG-01-108 has been corrected.</p>

⁸ This is also shown on OS mapping as Newbuildings Farm.

Reference in the main ES or SES1	Reason for correction	Text in the main ES or SES1	Revised text	Change to significant effects and mitigation
		<p>Table 12, 30th entry: Holding reference/name/sensitivity - CA2/30, Wadden Farm, Medium Sensitivity Total area required from holding - 2.1ha (9%), Low Construction severance - Negligible Disruptive effects - Negligible Scale of construction effect - Minor adverse Area to be restored - 1.1ha</p> <p>Table 12, 32nd entry: Total area required from holding - 42.2ha (19%), Medium Area to be restored - 21.3ha</p> <p>Table 14, 30th entry: Holding reference/name/sensitivity - CA2/30, Wadden Farm, Medium sensitivity Land required from holding - 1.0ha (<1%), Negligible Severance - Negligible Infrastructure - Negligible Scale of effect - Negligible</p> <p>Table 14, 32nd entry: Land required from holding - 20.8ha (9%), Low</p>	<p>Table 12, 30th entry: Entry row removed with no replacement text</p> <p>Table 12, 32nd entry: Total area required from holding - 44.3ha (18%), Medium Area to be restored - 22.4ha</p> <p>Table 14, 30th entry: Entry row removed with no replacement text</p> <p>Table 14, 32nd entry: Land required from holding – 21.8ha (9%), Low</p>	

Reference in the main ES or SES1	Reason for correction	Text in the main ES or SES1	Revised text	Change to significant effects and mitigation
<p>Agriculture, forestry and soils</p> <p>Tables 10, 12 and 14, Volume 2, CA2 of the main ES and Volume 5: Map AG-01-106 of the main ES</p>	<p>Land at Hoo Mill Lock (CA2/47) was not identified as a holding affected by the original scheme.</p>	<p>None included</p>	<p>Table 10, 45th entry:</p> <p>Holding reference/name - CA2/47* Land at Hoo Mill Lock</p> <p>Holding type - Smallholding (livestock)</p> <p>Holding size (ha) - 3</p> <p>Diversification - Marina and moorings for canal boats, craft workshops, café/shop, catering outlet, engineering workshops, boat building and repair</p> <p>Agri-environment scheme - None</p> <p>Sensitivity to change - Low</p> <p>Table 12, 45th entry:</p> <p>Holding reference/name/sensitivity - CA2/47, Land at Hoo Mill Lock, Low sensitivity</p> <p>Total area required from holding - 0.1ha (3%), Negligible</p> <p>Construction severance - Negligible</p> <p>Disruptive effects - Negligible</p> <p>Scale of construction effect - Negligible</p> <p>Area to be restored - 0.1ha (3%)</p> <p>Table 14, 45th entry:</p> <p>Holding reference/name/sensitivity - CA2/47, Land at Hoo Mill Lock, Low sensitivity</p> <p>Land required from holding - 0ha (0%), Negligible</p>	<p>No change - negligible effects which are not significant</p>

Reference in the main ES or SES1	Reason for correction	Text in the main ES or SES1	Revised text	Change to significant effects and mitigation
			Severance - Negligible Infrastructure - Negligible Scale of effect - Negligible	
Ecology and biodiversity Table 2, Volume 2, CA2 of SES1 and AP1 ES	<p>Approximately 1.6 ha of woodland habitat creation was proposed on an area (in a field to the north-west of Lount Farm) subsequently understood to comprise lowland meadow habitat of principal importance. Woodland habitat creation on top of meadow habitat was deemed to be inappropriate and, as such, woodland habitat creation will no longer be implemented at this location.</p> <p>It is proposed to further increase floristic diversity of the pre-existing meadow habitat, so that the plant species composition is more representative of MG4 <i>Alopecurus pratensis-Sanguisorba officinalis</i> grassland (the target community of the adjacent Lount Farm LWS).</p>	<p>Table 2, 4th entry: Paragraph 8.4.54</p> <p>Within the Colwich to Yarlet area, approximately 52.5ha of further woodland habitat creation will be undertaken to compensate primarily for adverse effects upon non-ancient woodland, at locations including the following: ...</p> <p>Table 2, 5th entry: Paragraph 8.4.60, first bullet</p> <p>approximately 8.7ha of lowland meadow habitat of principal importance will be created or enhanced alongside Moreton Brook, in order to connect the two currently disparate sections of Lount Farm LWS, within the Fradley to Colton area. The majority of this mitigation (7.4ha) occurs to the immediate west of Moreton Brook, with 1.3ha to the east (beneath the Moreton Brook viaduct) ...</p>	<p>Table 2, 4th entry: Paragraph 8.4.54</p> <p>Within the Colwich to Yarlet area, approximately 50.9ha of further woodland habitat creation will be undertaken to compensate primarily for adverse effects upon non-ancient woodland, at locations including the following: ...</p> <p>Table 2, 5th entry: Paragraph 8.4.60, first bullet point</p> <p>approximately 10.3ha of lowland meadow habitat of principal importance will be created or enhanced near Moreton Brook, in order to connect the two currently disparate sections of Lount Farm LWS, within the Fradley to Colton area. The majority of this mitigation (9ha) occurs to the immediate west of Moreton Brook, with 1.3ha to the east (beneath the Moreton Brook viaduct) ...</p>	<p>No change.</p> <p>This area of woodland habitat creation was provided to mitigate for route-wide losses of non-ancient woodland. The slight reduction in proposed woodland habitat creation within the Colwich to Yarlet area is not substantially different to that reported in the main ES and SES1 and will not change the level of significance of the effect, reported in the main ES and SES1.</p>
Traffic and transport Paragraph 14.4.15, Volume 2, CA2 of the main ES	The need to temporarily restrict access into and out of Yarlet Lane to left-in and left-out only during the temporary diversion of the A34 Stone Road was not included in the main ES.	<p>Paragraph 14.4.15:</p> <p>...This temporary diversion is expected to be required for 12 months and will maintain dual-carriageway capacity on the A34 Stone Road. On completion, the A34 Stone Road will be reinstated</p>	<p>Paragraph 14.4.15:</p> <p>...This temporary diversion is expected to be required for 12 months and will maintain dual-carriageway capacity on the A34 Stone Road. <i>Access to Yarlet Lane will be maintained and restricted to</i></p>	<p>Yes</p> <p>Moderate adverse significant traffic effect with regard to traffic flows and delays for vehicle occupants.</p>

Reference in the main ES or SES1	Reason for correction	Text in the main ES or SES1	Revised text	Change to significant effects and mitigation
		<p>on its existing alignment, crossing over the route of the Proposed Scheme on the A34 Stone Road overbridge. The temporary diversion will not have a significant effect on traffic flows and delays for vehicle occupants.</p>	<p><i>left-in and left-out only during the temporary diversion. On completion, the A34 Stone Road will be reinstated on its existing alignment, crossing over the route of the Proposed Scheme on the A34 Stone Road overbridge. The existing turning movement provision to Yarlet Lane will be reinstated. The temporary diversion will not have a significant effect on users of the A34 Stone Road with regard to traffic flows and delays for vehicle occupants. The restricted left-in and left-out access to Yarlet Lane will affect a low number of users but will result in an increased travel distance of up to 3.6km and will result in a temporary moderate adverse traffic effect with regard to traffic flows and delays for vehicle occupants, which is significant.</i></p>	

3 Assessment of SES2 changes in the Colwich to Yarlet area

3.1 Introduction

3.1.1 Section 3 reports the assessment for community; ecology and biodiversity; health; landscape and visual; and sound, noise and vibration as a result of the SES2 changes.

3.2 Community

Introduction

3.2.1 The environmental baseline relevant to the community assessment is described below. Any new or different likely significant environmental effects as a result of the changes introduced in Section 2 are then identified, compared to those reported in the main ES, as amended by SES1.

Scope, assumptions and limitations

3.2.2 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the Scope and Methodology Report⁹ (SMR) and SMR Addendum¹⁰ of the main ES.

3.2.3 The SES2 changes of relevance to this assessment have the potential to result in new or different significant temporary construction and operational effects. Therefore, both construction and operational phases are considered in the assessment.

SES2 changes of relevance to this assessment

3.2.4 The following SES2 changes are considered in this assessment:

- changes to the construction programme;
- changes to construction traffic flows on site haul routes;
- extension of a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001); and
- provision of a new temporary Openreach telecommunications cable to the Sandon Road auto-transformer satellite compound (SES2-002-101).

Environmental baseline

Existing baseline

3.2.5 The baseline community information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 6 of the main ES.

⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁰ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- 3.2.6 Upper Moreton Farm is a Community Interest Company (CIC) that provides care services alongside being a working farm and is part of the Care Farming UK initiative. It is located approximately 2km north-east of Little Haywood. It provides educational visits for local schools, and rural therapy and care farming for people with mental health problems, multiple learning difficulties, emotional difficulties, and people who have experienced abuse or neglect. The vast majority of activities take place outside. Activities are also often undertaken at the nearby Lount Farm Local Wildlife Site (LWS).
- 3.2.7 Hopton is a village made up of approximately 160 residential properties, including residential properties located within the secure Ministry of Defence (MoD) Stafford Barracks, located to the south of the village. Community facilities within the village include St. Peter's Church, playing fields and a village hall.
- 3.2.8 Yarlet School is located to the east of the A34 Stone Road and provides independent education for children aged between two and 13 years old. The school grounds include a chapel, and overnight accommodation for part time boarding.

Future baseline

Construction (2020) and operation (2027)

- 3.2.9 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 3.2.10 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹¹ (CoCP) are required.

Assessment of impacts and effects

- 3.2.11 The main ES, as amended by SES₁, reported that approximately 16 properties in Hopton would experience significant visual and noise effects during construction, with five of these additionally experiencing significant heavy goods vehicle (HGV) effects. The in-combination effect on the amenity of residents would result in a temporary major adverse significant effect at 16 properties for up to one year in total.
- 3.2.12 The changes to the construction programme, the provision of a new temporary Openreach telecommunications cable to the Sandon Road auto-transformer satellite compound (SES₂-002-101) and the changes to the construction traffic flow on the site haul route will result in seven additional properties in Hopton being subject to a significant temporary noise effect. In combination with the significant temporary visual effects reported in the main ES, as amended by SES₁, this will increase the in-combination effect reported in the main ES, as amended by SES₁, from 16 to 23 properties. This will give rise to a different in-combination effect, however this will not change the level of significance of the effect reported in the main ES, as amended by SES₁. In addition, the duration of the construction noise effect on all 23 properties will

¹¹ HS₂ Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

increase from up to one year, as reported in the main ES as amended by SES1, to one year and nine months. However, this will not change the level of significance of the effect reported in the main ES, as amended by SES1. These properties will also experience a different noise effect, resulting in a different in-combination effect, due to an AP2 amendment (AP2-002-019: Additional land and a change to Bill powers required for the realignment of the B5066 Sandon Road, diversion of Hopton Lane, extension of Hopton Lane and increased non-motorised user provision across the HS2 route between Hopton and Mount Edge), which is reported in Section 5.

- 3.2.13 The main ES did not report any significant in-combination effects on Yarlet School as a result of the original scheme. The changes to the construction programme will result in a new significant noise effect on the school for six months, primarily associated with demolition works close to Yarlet School. In combination with a new significant HGV effect, as a result of changes to traffic flows, and a visual effect reported in the main ES, this will give rise to a new major adverse temporary significant in-combination effect on the school for up to six months.
- 3.2.14 For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.

Other mitigation measures

- 3.2.15 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 3.2.16 The changes to the construction programme, the provision of a new temporary Openreach telecommunications cable to the Sandon Road auto-transformer satellite compound (SES2-002-101) and the changes to the construction traffic flow on the site haul route will give rise to a different likely residual temporary significant effect, due to an increase in the number of properties in Hopton subject to an in-combination effect from significant noise, visual and HGV effects. In addition, the changes to the construction programme, the provision of the new temporary Openreach telecommunications cable and changes to construction traffic flows will also increase the duration of the in-combination effect on those properties. However, this will not change the level of significance of the effect reported in the main ES, as amended by SES1.
- 3.2.17 The changes to the construction programme will give rise to a new likely residual significant temporary major adverse effect on Yarlet School, due to an in-combination effect from significant noise, visual and HGV effects, for up to six months.

Cumulative effects

- 3.2.18 There are no new or different likely significant cumulative effects for community receptors as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments.

Effects arising from operation

Avoidance and mitigation measures

- 3.2.19 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 3.2.20 The main ES reported that visitors to Upper Moreton Farm would experience significant visual and noise effects during operation. The in-combination effect on visitors to Upper Moreton Farm would result in a permanent major adverse significant effect.
- 3.2.21 The SES2 design change to extend a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001) will remove the significant noise effect at Upper Moreton Farm and consequently remove the significant in-combination community effect reported in the main ES.
- 3.2.22 For further information see SES2 and AP2 ES Volume 5: Community Map Book.

Other mitigation measures

- 3.2.23 No mitigation measures, additional to those reported in the main ES, are required.

Summary of likely residual significant effects

- 3.2.24 The SES2 design change to extend a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001) will remove a likely residual significant permanent major adverse in-combination effect at Upper Moreton Farm reported in the main ES.

Cumulative effects

- 3.2.25 There are no new or different likely significant cumulative effects for community receptors as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments.

Monitoring

- 3.2.26 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 3.2.27 There are no changes to the monitoring requirements identified in the main ES for community as a result of the SES2 changes.

3.3 Ecology and biodiversity

Introduction

- 3.3.1 The environmental baseline relevant to the ecology and biodiversity assessment is described below. Any new or different likely significant environmental effects as a result of the changes introduced in Section 2 are then identified, compared to those reported in the main ES, as amended by SES1.

Scope, assumptions and limitations

- 3.3.2 The assessment scope, key assumptions and limitations for ecology are as set out in Volume 1, the Scope and Methodology Report (SMR)¹² and SMR Addendum¹³ of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 3.3.3 The SES2 change of relevance to this assessment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 3.3.4 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 3.3.5 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the SES2 scheme.

SES2 changes of relevance to this assessment

- 3.3.6 Three new temporary working areas and a new temporary utility compound for the British Pipeline Agency diversion works at the Trent North embankment and Brancote South cutting (SES2-002-005) are considered in this assessment.

Environmental baseline

Existing baseline

- 3.3.7 The ecological baseline for the assessment takes into account baseline information collected in support of the main ES and SES1, which included field survey data, aerial photography and relevant existing information gathered from national organisations and from regional and local sources. A full list of data sources that informed the assessment in this area is provided in Volume 2, CA2, Section 8 of the main ES. The assessment also takes into account additional desk study and survey information that is reported in Background Information and Data (BID) document EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12¹⁴, which accompanies SES1 and AP1 ES.
- 3.3.8 Details of the Phase 1 habitat surveys completed since the production of SES1 are provided in BID-EC-019-000 and Map Series EC-02 which accompanies the SES2 and AP2 ES.

¹² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁴ HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe)*, HS2 Phase 2a background information and data: Ecology Map Book, Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692669/G35_Ecological_baseline_data_map_book.pdf

Species

- 3.3.9 The main ES reported a great crested newt metapopulation¹⁵ centred on Ingestre Park Golf Club (AMP2.2¹⁶). Field surveys determined the presence of great crested newt in all 16 ponds assumed to be used by this metapopulation. There is one pond within, and two ponds adjacent to, the land required for the original scheme that support small and medium populations of great crested newts respectively, which are associated with this metapopulation. Terrestrial habitats likely to be used by this metapopulation occur within the land required for the original scheme, in the form of grassland and woodland. Great crested newt is an Annex 2 species¹⁷, a species of principal importance and a conservation priority of the Staffordshire Biodiversity Action Plan (BAP)¹⁸. The great crested newt metapopulation associated with habitats at Ingestre Park Golf Club and adjoining land is of county value.

Future baseline

Construction (2020)

- 3.3.10 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 3.3.11 The assessment assumes implementation of the measures set out within the draft Code of Construction Practice¹⁹ (CoCP).
- 3.3.12 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 3.3.13 All of the effects within this section are reported in the absence of other mitigation.

Species

- 3.3.14 The main ES reported the loss of three ponds and associated terrestrial habitats that are known or assumed to be used by the great crested newt metapopulation centred on Ingestre Park Golf Club (AMP2.2), which would result in a permanent adverse effect that is significant at up to county level. The main ES also reported the creation of ecological habitat areas on both sides of the Brancote South cutting to compensate for loss of terrestrial habitats used by the great crested newt metapopulation (AMP2.2) at Ingestre Park Golf Club. These areas comprise grassland and woodland habitat creation.

¹⁵ A metapopulation is a group of spatially separated populations which interact.

¹⁶ The first and second number associated with the AMP reference relate to the specific CA and location e.g. AMP2.2 is within the Colwich to Yarlet area and is the second metapopulation encountered when following the route from London.

¹⁷ Annex 2 of the EU's Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation.

¹⁸ Staffordshire Biodiversity Partnership. Staffordshire Biodiversity Action Plan. Available online at: <http://www.sbap.org.uk/>

¹⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

- 3.3.15 The area of ecological habitat creation on the northern side of Brancote South cutting will be altered by the pipeline realignment associated with the provision of three new temporary working areas and a new temporary utility compound (SES2-002-005). In the original scheme, this area consisted of 9.8ha of compensatory terrestrial habitat for great crested newt, of which approximately 1.9ha would be provided as advanced planting before pipeline works commence. As a consequence of the pipeline realignment only 0.7ha will be provided as advanced planting, with the remaining 9.1ha provided after pipeline installation. The reduced area of advanced planting will still be capable of supporting translocated great crested newts from the small populations affected in advance of construction.
- 3.3.16 In addition, the main ES reported that approximately 1.9ha of existing grassland and two adjacent ponds provide suitable habitats to receive translocated great crested newts. This receptor site is located approximately 3km north-west of the great crested newt metapopulation (AMP2.2) at Ingestre Park Golf Club. Great crested newt surveys at the receptor site have concluded likely absence. Because the receptor site is more than 2km from the donor site, great crested newts at the donor site will be subject to disease screening at an early stage in accordance with guidance from ARG UK²⁰. Woodland habitat creation is proposed directly adjacent to the great crested newt receptor site. Once the woodland habitat is established it will offer additional terrestrial habitat opportunities for the translocated population of great crested newts from metapopulation.
- 3.3.17 The pipeline realignment works will not give rise to a new or different significant effect on the great crested newt metapopulation centred on Ingestre Park Golf Club and will not change the level of significance of the effects reported in the main ES.
- 3.3.18 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the SES design change are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Other mitigation measures

- 3.3.19 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 3.3.20 There are no changes to the likely residual significant construction ecology and biodiversity effects identified in the main ES, as amended by SES1.

Cumulative effects

- 3.3.21 There are no new or different likely significant cumulative effects for ecological receptors as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments. The combined effect

²⁰ Amphibian and Reptile Groups of the United Kingdom (UK) (2017). ARG UK Advice Note 4: Amphibian Disease Precautions: A Guide for UK Fieldworkers. Amphibian and Reptile Groups of the United Kingdom.

on hedgerows as a result of the SES scheme is reported at a route-wide level in SES2 and AP2 ES, Volume 3, Route-wide effects.

3.4 Health

Introduction

- 3.4.1 The environmental baseline relevant to the health assessment is described below. Any new or different likely health effects as a result of the changes introduced in Section 2 are then identified, compared to those reported in the main ES.

Scope, assumptions and limitations

- 3.4.2 The assessment scope, key assumptions and limitations for health are as set out in Volume 1 and the Scope and Methodology Report (SMR)²¹ of the main ES.
- 3.4.3 The SES2 change of relevance to this assessment has the potential to result in new or different operational health effects only. Therefore, there is no construction assessment for health.

SES2 changes of relevance to this assessment

- 3.4.4 The SES2 design change to extend a noise fence barrier from Moreton North embankment to Moreton South embankment is considered in this assessment (SES2-002-001).

Environmental baseline

Existing baseline

- 3.4.5 The baseline health information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 9 of the main ES.
- 3.4.6 Upper Moreton Farm is run by Upper Moreton Farm Rural Activities Community Interest Company (CIC), which provides care services alongside being a working farm. It is part of the Care Farming UK initiative, and provides educational visits for local schools, and rural therapy and care farming for people with mental health problems, multiple learning difficulties, autism spectrum disorders, emotional difficulties, and people who have experienced abuse or neglect. Regular users of the site include local special needs schools and adult learning disability groups, and the site also has links with Derby College. A seven-week Health and Wellbeing Project for people with enduring mental health needs is delivered on behalf of Staffordshire County Council. The farm has a strong focus on supporting people to secure jobs and offers volunteering opportunities and work placements.

²¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Future baseline

Operation (2027)

- 3.4.7 The future baseline for operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising from operation

Avoidance and mitigation measures

- 3.4.8 In addition to the SES2 design change to extend a noise fence barrier, no avoidance or mitigation measures, additional to those reported in the main ES, are identified.

Assessment of impacts and effects

- 3.4.9 The main ES reported that any reduction in the range and quality of services available at Upper Moreton Farm may adversely affect the health and wellbeing of vulnerable users, such as those with mental health problems, multiple learning difficulties, autistic spectrum disorders and emotional difficulties, by limiting opportunities for therapeutic activities.
- 3.4.10 The SES2 design change to extend a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001) will reduce levels of operational train noise across the site, including outdoor spaces used for therapeutic activities, and will bring noise levels within the classrooms to within an acceptable standard for teaching, as reported in Section 3.6, Sound, noise and vibration. Although there will be a beneficial impact on noise levels, the SES2 design change will not give rise to any new or different likely health effects from those reported in the main ES.

Other mitigation measures

- 3.4.11 HS2 Ltd will continue to engage with the owners of Upper Moreton Farm in relation to the mitigation measures.

Summary of likely residual effects

- 3.4.12 The amendment will reduce noise impacts across the site but will not result in any new or different health effects compared with the main ES.

Cumulative effects

- 3.4.13 There are no new or different likely significant cumulative effects for health receptors as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments.

Monitoring

- 3.4.14 Volume 1, Section 9 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 3.4.15 There are no changes to the monitoring requirements identified in the main ES for health as a result of the SES2 change.

3.5 Landscape and visual

Introduction

- 3.5.1 The environmental baseline relevant to the landscape and visual assessment is described below. Any new or different significant environmental effects as a result of the changes introduced in Section 2 are then identified, compared to those reported in the main ES.

Scope, assumptions and limitations

- 3.5.2 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the Scope and Methodology Report²² (SMR) and SMR Addendum²³ of the main ES.
- 3.5.3 The SES2 changes of relevance to this assessment have the potential to give rise to new or different significant operational visual effects only. Therefore, there is no operational assessment for landscape and no construction assessment for landscape or visual.

SES2 changes of relevance to this assessment

- 3.5.4 The following SES2 design changes are considered in this assessment:
- extension of a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001); and
 - the local placement of surplus excavated material to the south of Moreton cutting (SES2-002-002).

Environmental baseline

Existing baseline

- 3.5.5 The baseline landscape and visual information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 11 of the main ES. Two viewpoints are located within the Fradley to Colton area, and are as described in Volume 2, CA1, Section 11 of the main ES.

Visual baseline

- 3.5.6 The SES2 design change to extend a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001) has the potential to affect one viewpoint (007.03.015) in the Colwich to Yarlet area which is described in Volume 5: Appendix LV-001-002 of the main ES and summarised below.

²² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

²³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

View north from Upper Moreton Farm (viewpoint 007.03.015)

- 3.5.7 Residents of Upper Moreton Farm have views across an open undulating and sloping pasture crossed by a line of telegraph poles. The land falls away from the viewpoint towards the valley of Moreton Brook, where the farmland comprises a mix of rolling arable fields and pastures bounded by hedgerows with hedgerow trees. A pond is just visible above a stock fence that runs alongside Colton Bridleway 58. The presence of Moreton Brook in the valley floor is marked by a belt of waterside trees and a line of pylons. The land rises again to provide a background of rolling well-treed farmland and tree lined horizon. Scattered properties are visible on the valley side as far as Blithfield.
- 3.5.8 The SES2 design change to introduce the local placement of surplus excavated material to the south of Moreton cutting (SES2-002-002) will affect one viewpoint (008.03.001), which is described in Volume 5: Appendix LV-001-002 of the main ES and summarised below.

View south from Moreton Lane, Colwich Bridleway 23 (viewpoint 008.03.001)

- 3.5.9 Residents of Moreton Farm and users of Colwich Bridleway 23 and Colwich Footpath 36 currently have views across a gently rolling pasture bounded by post and wire fences. The view is foreshortened in the middle distance by the rising landform. An avenue of mature trees is a noticeable feature and represents the line of a former ha-ha wall²⁴ to Moreton House. To the north-west there are longer channelled views to a distant wooded horizon.

Future baseline

Operation (2027)

- 3.5.10 The future baseline for operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Permanent effects arising from operation

Avoidance and mitigation measures

- 3.5.11 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

View north from Upper Moreton Farm (viewpoint 007.03.015)

- 3.5.12 The main ES reported a major adverse significant effect at year 1 reducing to moderate adverse significant effect at year 15 and non-significant at year 60. This was due to the proximity of Moreton Brook viaduct (within the Fradley to Colton area (CA1)) and Moreton North embankment. These would be seen below the skyline, which would slightly reduce their prominence. The existing pylon line, which is visible in the distance would be removed which would be a beneficial effect. Advance woodland planting on the lower lying ground would be partially screened by

²⁴ A recessed landscape design element that creates a vertical barrier while preserving an uninterrupted view of the landscape beyond.

intervening mature trees and hedgerows and would have no additional screening effect at year 1. The overhead line equipment and movement of trains would be noticeable across much of the view. By year 15, maturing mitigation planting would provide some integration of the engineered landforms into the rural landscape, but overhead line equipment and movement of trains would still be noticeable. By year 60, the mature mitigation planting would provide further screening and integration of the HS2 route.

- 3.5.13 At year 1, the SES2 design change to extend a noise fence barrier (up to 3m in height) from Moreton North embankment to Moreton South embankment along the southern side of the HS2 route will be an additional feature on the Moreton South embankment, Moreton Brook viaduct and Moreton North embankment. It will screen the lower parts of the overhead line equipment and moving trains. The SES2 design change will therefore give rise to a different significant visual effect at viewpoint 007.03.015 at year 1. However, the level of significance of the effect will remain major adverse significant as reported in the main ES.
- 3.5.14 By year 15, the maturing mitigation planting will provide some screening and integration of the viaduct and embankments into the surrounding landscape. However, the operational railway will remain a noticeable linear feature within the rural farmland. The SES2 design change will therefore give rise to a different significant visual effect at viewpoint 007.03.015. However, the level of significance of effect will remain moderate adverse significant as reported in the main ES. At year 60 the level of significance of effect will remain non-significant as reported in the main ES.
- 3.5.15 The view of the SES2 design change from viewpoint 007.03.015 during operation year 1 is illustrated on the photomontage shown in Figures LV-01-680 (Volume 5: Appendix LV-001-002 in the SES2 and AP2 ES).
- 3.5.16 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

View south from Moreton Lane, Colwich Bridleway 23 (Viewpoint 008.03.001)

- 3.5.17 The main ES reported a major adverse significant effect at year 1, year 15 and year 60. This was due to the proximity of Moreton cutting, which would be shallower to the west, affording open views towards the operational railway with the overhead line equipment and moving trains clearly visible. The new infrastructure and resulting foreshortening of views would substantially change the view with consequent loss of scenic quality as reported in the main ES.
- 3.5.18 At year 1, year 15 and year 60, the SES2 design change to locally place surplus excavated material on the southern side of Moreton cutting will be a noticeable new landform feature up to 3m high within the flat to gently undulating farmland. It will be present in foreground views on the southern side of Moreton cutting, where it will form part of the overall change experienced in this location. The SES2 design change will therefore give rise to a different significant visual effect at viewpoint 008.03.001. However, the level of significance of effect will remain major adverse significant as reported in the main ES.

For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Other mitigation measures

- 3.5.19 No mitigation measures, additional to those reported in the main ES, are identified.

Summary of likely residual significant effects

- 3.5.20 The SES2 design change to extend a noise fence barrier (up to 3m in height) from Moreton North embankment to Moreton South embankment along the southern side of the HS2 route (SES2-002-001) will give rise to a different likely residual significant operational visual effect at the view north from Upper Moreton Farm (viewpoint 007.03.015). The effect will increase but will remain moderate adverse significant at year 15 for the view north from Upper Moreton Farm (viewpoint 007.03.015).
- 3.5.21 The SES2 design change to locally place surplus excavated material on the southern side of Moreton cutting (SES2-002-002) will give rise to a different likely residual significant operational visual effect at viewpoint 008.03.001, where the effect on the view south from Moreton Lane, Colwich Bridleway 23, will increase but will remain major adverse significant at year 15 and year 60. This will not change the level of significance of effect reported in the main ES.

Cumulative effects

- 3.5.22 There are no new or different likely significant cumulative effects for landscape or visual receptors as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments.

Monitoring

- 3.5.23 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 3.5.24 There are no changes to the monitoring requirements identified in the main ES for landscape and visual as a result of the SES2 design changes.

3.6 Sound, noise and vibration

Introduction

- 3.6.1 The environmental baseline relevant to the sound, noise and vibration assessment is described below. Any new or different likely significant temporary environmental effects as a result of the changes introduced in Section 2 are then identified, compared to those reported in the main ES, as amended by SES1.

Scope, assumptions and limitations

- 3.6.2 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the Scope and Methodology Report²⁵ (SMR) of the main ES.
- 3.6.3 The SES2 changes of relevance to this assessment have the potential to result in new or different significant construction and operational effects. Therefore, both construction and operational phases are considered in the assessment.

SES2 changes of relevance to this assessment

- 3.6.4 The following SES2 changes are considered in this assessment:
- changes to the construction programme;
 - changes to construction traffic flows on site haul routes;
 - extension of a noise fence barrier from Moreton South embankment to Moreton North embankment (SES2-002-001); and
 - provision of a new temporary Openreach telecommunications cable to the Sandon Road auto-transformer satellite compound (SES2-002-101).

Environmental baseline

Existing baseline

- 3.6.5 The baseline sound, noise and vibration information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by the SES2 changes have been used in the construction assessment.
- 3.6.6 In the vicinity of the SES2 design change to extend a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001), the existing environmental baseline is dominated by noise from distant road traffic noise on the A51, with trains on the West Coast Main Line (WCML), overflying aircraft and natural and agricultural sounds also contributing.
- 3.6.7 The area close to the SES2 design change to provide a new temporary Openreach telecommunications cable to the Sandon Road auto-transformer satellite compound (SES2-002-101) includes the residences on Mount Edge and Sandon Road in Hopton. The existing baseline at this area is dominated by road traffic noise from local and distance road traffic, specifically from vehicles using the B5066 Sandon Road.

²⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Future baseline

Construction (2020) and operation (2027)

- 3.6.8 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 3.6.9 Temporary screening²⁶ has been assumed at worksites in the vicinity of Yarlet School, Yarlet to avoid or reduce likely significant effects. This is additional to the avoidance and mitigation measures reported in the main ES and the draft Code of Construction Practice²⁷ (CoCP).

Assessment of impacts and effects

- 3.6.10 The main ES reported the likely significant sound, noise or vibration effects in the Colwich to Yarlet area. An assessment has been undertaken to determine whether construction noise and vibration associated with the SES2 changes will result in a new or different likely significant effect at any properties, using the significance criteria detailed in the main ES Volume 5: Appendix SV-001-000.
- 3.6.11 Where the assessment identifies receptors subject to a change in effect and therefore a potential new or different likely significant effect, the relevant construction noise results are presented in SES2 and AP2 ES Volume 5: Appendix SV-002-000. The nature of construction noise is that for a given receptor there may be contributions from a number of SES2 changes, and/or those works assessed in the main ES, as amended by SES1, where relevant. Where practicable, the contribution of the specific SES2 changes have been identified.

Residential receptors: direct effects – communities

- 3.6.12 The main ES, as amended by SES1, identified a likely significant construction noise effect on a community basis at approximately 20 residential properties at Hopton to the east and west of the original scheme for a period up to one year. This was denoted as CSVo2-Co4 in Volume 2, Section 13 and Volume 5: Appendix SV-002-002 of the main ES.
- 3.6.13 As a result of the changes to the construction programme resulting in an alteration to the earthworks activities at Hopton, the provision of a new temporary Openreach telecommunications cable to the Sandon Road auto-transformer satellite compound (SES2-002-101) and the changes to the construction traffic flow on the site haul route, the number of properties subject to a different temporary significant construction noise effect at Hopton will increase from approximately 20 to approximately 25²⁸, and

²⁶ Temporary acoustics blanket or screening or hoarding (approximate height would be 3.6m).

²⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

²⁸ The sound, noise and vibration and community assessment methodologies represent the number of residential properties in a different way. The sound, noise and vibration assessment rounds numbers of properties to the nearest 5, e.g. 27 is rounded to 25, whereas the community assessment counts absolute numbers of properties.

the duration will also increase to up to one year and nine months. For further information see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Non-residential receptors: direct effects

- 3.6.14 In addition to those non-residential receptors identified in the main ES, as amended by SES₁, this assessment identifies that the predicted airborne sound levels exceed both the relevant impact screening criteria and the noise change criterion (a change of greater than 3dB compared with the existing baseline sound level) at Yarlet School (assessment location ref.: 12209(N)). The change in construction noise levels is due to the changes in construction programme, primarily associated with demolition works close to Yarlet School. The assessment location is shown on Map SV-03-109a in Volume 5: Sound, noise and vibration Map Book of the main ES.
- 3.6.15 Yarlet School is located close to the A34 Stone Road at Yarlet, to the north of the HS2 route. The school consists of a number of brick built buildings with openable windows providing ventilation. The highest predicted daytime monthly construction noise level is 9dB(A) above the impact screening criteria defined in the SMR for this use for a period of six months. The typical monthly daytime construction noise level is 5dB above the relevant impact screening criteria defined in the SMR. Considering the duration of the construction effect, Yarlet School has been identified, on a precautionary basis, as being subject to a new likely significant adverse effect for up to six months denoted by CSV02-No4 in Table 8, SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Other mitigation measures

- 3.6.16 No mitigation measures, additional to those reported in the main ES, draft CoCP and the temporary screening assumed at worksites in the vicinity of Yarlet School, are identified.

Summary of likely residual significant effects

- 3.6.17 The proposed avoidance and mitigation measures set out within the main ES (Volume 5: Appendix SV-002-000) will reduce noise inside all dwellings from the construction activities such that residents will not be significantly affected.
- 3.6.18 As a result of the changes to the construction programme resulting in an alteration to the earthworks activities at Hopton, the provision of a new temporary Openreach telecommunications cable (SES2-002-101) and the changes to the construction traffic flow on the site haul route, the number of properties at Hopton subject to a different temporary residual significant construction noise effect at will increase from approximately 20 to approximately 25, and the duration will also increase to up to one year and nine months.
- 3.6.19 As a result of changes to the construction programme, primarily associated with demolition works close to Yarlet School, a significant residual temporary construction noise effect has been identified at Yarlet School for up to six months.
- 3.6.20 HS2 Ltd will continue to seek reasonably practicable measures to further reduce or avoid this significant effect at Yarlet School. In doing so HS2 Ltd will continue to engage with stakeholders to fully understand the receptor, its use and the benefit of the measures.

Cumulative effects

- 3.6.21 A new likely significant residual effect was identified at Yarlet School as a result of an AP1 amendment (AP1-002-106: Cadent 90mm low pressure gas main). The highest monthly construction noise levels are predicted to increase by 3dB at Yarlet School due to the combination of the SES2 changes and the AP1 amendment. However, this will not result in new or different likely significant cumulative effects for sound, noise and vibration as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments.

Effects arising during operation

Avoidance and mitigation measures

- 3.6.22 In addition to the SES2 design change to extend a noise fence barrier, no avoidance or mitigation measures, additional to those reported in the main ES, are identified.

Assessment of impacts and effects

- 3.6.23 In the main ES, Upper Moreton Farm was identified, on a precautionary basis, as being subject to a likely significant adverse effect (denoted by CSV02-No1 in Table 7, Volume 5: Appendix SV-002-002 of the main ES).
- 3.6.24 The SES2 design change to extend a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001) reduces the operational airborne noise levels at Upper Moreton Farm to below the impact screening criteria defined in the SMR for this building use. Therefore, the SES2 design change will remove the likely significant effect reported in the main ES.
- 3.6.25 For further information, see SES2 and AP2 ES Volume 5: Appendix SV-002-000 and SES2 and AP2 ES Volume 2: CA2 Map Book (Map Series SV-05).

Other mitigation measures

- 3.6.26 No mitigation measures, additional to those reported in the main ES, are required.

Summary of likely residual significant effects

- 3.6.27 The SES2 design change to extend a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001) will remove a likely residual significant operational airborne noise effect reported in the main ES at Upper Moreton Farm.

Cumulative effects

- 3.6.28 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments.

Monitoring

- 3.6.29 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.

- 3.6.30 There are no changes to the monitoring requirements identified in the main ES for sound, noise and vibration as a result of the amendment.

3.7 Summary of new or different likely residual significant effects as a result of the SES2 changes

- 3.7.1 A correction to the content of the main ES has identified a temporary moderate adverse significant effect on traffic flows and delays as a result of increased travel distance arising from restricted left-in and left-out access to Yarlet Lane.
- 3.7.2 During construction, there will be a different likely residual temporary significant in-combination effect on properties in Hopton, due to an increase in the number of properties in Hopton subject to an in-combination effect, as a result of the changes to the construction programme, the provision of a new temporary Openreach telecommunications cable to the Sandon Road auto-transformer satellite compound (SES2-002-101) and the changes to the construction traffic flow on the site haul route. These SES2 changes will also increase the duration of the in-combination effect on those properties. However, this will not change the level of significance of the effect reported in the main ES, as amended by SES1. In addition, changes to the construction programme will give rise to a new likely residual significant temporary major adverse in-combination effect on Yarlet School. The SES2 design change to extend a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001) will remove a likely residual significant permanent major adverse in-combination effect at Upper Moreton Farm.
- 3.7.3 The extension of a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001) will give rise to a different likely residual significant operational visual effect at viewpoint 007.03.015. However, this will not change the level of significance of the effect reported in the main ES. The placement of surplus excavated material on the southern side of Moreton cutting (SES2-002-002) will give rise to a different likely residual significant operational visual effect at viewpoint 008.03.001, however this will not change the level of significance of effect reported in the main ES.
- 3.7.4 As a result of the changes to the construction programme, the provision of a new temporary Openreach telecommunications cable (SES2-002-101) and the changes to the construction traffic flow on the site haul route, the number of properties at Hopton subject to a different temporary residual significant construction noise effect will increase to approximately 25, and the duration will also increase to up to one year and nine months. The changes to the construction programme, primarily associated with demolition works, will also give rise to new significant residual temporary construction noise effect at Yarlet School for up to six months. The extension of a noise fence barrier from Moreton North embankment to Moreton South embankment (SES2-002-001) will remove a likely residual significant operational airborne noise effect at Upper Moreton Farm.

Part 2: Additional Provision 2 Environmental Statement

4 Summary of AP2 amendments in the Colwich to Yarlet area

4.1 Introduction

4.1.1 In the Colwich to Yarlet area, the following types of amendments are proposed in the AP2 revised scheme:

- engineering amendments;
- minor utility amendments; and
- other amendments requiring changes to Bill powers.

4.1.2 All dimensions in the following sections are approximate.

4.2 Engineering amendments

4.2.1 Engineering amendments will be required in the Colwich to Yarlet area that will result in changes to the land or Bill powers required for the SES2 scheme, and separately the AP1 revised scheme where relevant. Table 6 provides a summary of the engineering amendments.

4.2.2 Figure 5 shows the locations of the engineering amendments.

Table 6: Summary of AP2 engineering amendments in the Colwich to Yarlet area

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
<p>Additional land required for the provision of a replacement facility for Mayfield Children's Home</p> <p>AP2-002-001</p> <p>Map CT-06-206-R1, I10 to H8, in the SES2 and AP2 ES, Volume 2: CA1 Map Book and Map CT-06-210, D5 to D4, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.</p>	<p>The HS2 route would pass approximately 40m from Mayfield Children's Home, which occupies the Grade II listed Moreton House. Mayfield Children's Home is a specialist residential children's home linked to an independent specialist school, Rugeley School, which is located on the outskirts of Blithbury, Lichfield in the Fradley to Colton area (CA1).</p>	<p>Additional land will be required for a permanent replacement facility for Mayfield Children's Home on the site of the former Westwood School, adjacent to Rugeley School, on the outskirts of Blithbury, Lichfield in the Fradley to Colton area (CA1).</p> <p>This amendment is relevant to both the Colwich and Yarlet area and the Fradley to Colton area. A description of the amendment within the Fradley to Colton area is reported in SES2 and AP2 ES Volume 2, Community area 1, Fradley to Colton.</p>
<p>Additional land and a change to Bill powers required for the removal of Moreton retaining wall and to realign the access track to Moreton House and Moreton House Farm</p> <p>AP2-002-002</p> <p>Map CT-06-210, E5 to D5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.</p>	<p>The HS2 route would pass Moreton House and Moreton House Farm via a section of Moreton cutting, north-east of Colwich Bridleway 23 accommodation green overbridge, with Moreton retaining wall located to the north of the HS2 route to reduce the area of land required in proximity to Moreton House.</p>	<p>Additional land and a change to Bill powers will be required for the removal of Moreton retaining wall and the realignment of the access track to Moreton House and Moreton House Farm.</p> <p>The removal of the retaining wall will increase the width of Moreton cutting to the north of the HS2 route,</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
	<p>The access track to Moreton House and Moreton House Farm would be located along the top of the retained cutting, to the north of the HS2 route.</p> <p>The AP1 revised scheme (amendment AP1-002-101) includes the permanent diversion of an Openreach overhead telecommunications cable along Moreton Lane.</p>	<p>and require additional land for the realignment of the access track.</p> <p>This amendment will require the demolition of a dwelling at Moreton House Farm.</p> <p>There will be a change to Bill powers for the realigned access track to the north-east of the access to Moreton House.</p>
<p>Additional land required during construction for the movement of surplus excavated material at Moreton, Ingestre, Hopton and Marston</p> <p>AP2-002-003</p> <p>Map CT-05-211, I7 to G6, Map CT-05-214, F5, to Map CT-05-215, H5, Map CT-05-215, E8 to D7, and Map CT-05-217, B6 to Map CT-05-218, I6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.</p>	<p>Land would be required temporarily for construction on the northern and southern side of the HS2 route, for the construction works associated with Moreton cutting, Brancote South cutting, Brancote North cutting, Hopton South cutting and Marston South embankment, including temporary material stockpiles and site haul routes.</p> <p>Land would be permanently required for the Moreton cutting, Brancote South cutting, Brancote North cutting, Hopton South cutting and Marston South embankment.</p>	<p>Four areas of additional land will be required at locations, adjacent to the HS2 route, at Moreton cutting, Brancote South cutting, Brancote North cutting, Hopton South cutting and Marston South embankment. This additional land will be used temporarily to separate public road going vehicles (e.g. heavy goods vehicles (HGVs) and light goods vehicles (LGVs)) from larger earth moving equipment (with an average capacity of 40 tonnes).</p> <p>One area is required to the south-west of the Colwich Footpath 26 diversion, on the southern side of Moreton cutting.</p> <p>A second area is required to the west of the Tixall Bridleway 0.1628 accommodation overbridge, on the northern side of the Brancote South and Brancote North cuttings, which will require the realignment of the temporary diversion of the Tixall Bridleway 0.1628 and Footpath 0.1630(b) adjacent to the HS2 route.</p> <p>A third area is required to the west of the realigned A518 Weston Road, on the southern side of Hopton South cutting.</p> <p>A fourth area is required to the west of the Marston Bridleway 8 accommodation underbridge, on the southern side of Marston South embankment.</p>
<p>Additional land required for the diversion of a National Grid gas pipeline and a new utility compound, west of Colwich Bridleway 35 accommodation overbridge</p> <p>AP2-002-004</p> <p>Map CT-06-211, F7 to Map CT-06-212, G4 in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required permanently for the diversion of an underground National Grid 1,050mm diameter gas pipeline, which would cross beneath the HS2 route at Moreton North cutting, west of Colwich Bridleway 35 accommodation overbridge.</p> <p>Grassland habitat creation would be provided along the length of the diverted pipeline easement, together with three ecological mitigation ponds to the south of the HS2 route.</p> <p>A temporary material stockpile would be located at Trent South embankment (south) transfer node,</p>	<p>Additional land will be required for the permanent diversion of a section of a National Grid 1,050mm diameter gas pipeline, to the west of Colwich Bridleway 35 accommodation overbridge. The connection points to the existing utility will be repositioned.</p> <p>Additional land will be required at each end of the pipeline diversion for temporary works to connect the new pipeline to the existing pipeline, whilst maintaining a gas supply during construction.</p> <p>A new temporary utility compound will be provided for the management of the National Grid 1,050mm</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
	<p>immediately south of Tolldish Lane temporary diversion.</p>	<p>diameter gas pipeline diversion works. It will be provided within land permanently required for the scheme, west of Colwich Bridleway 58 accommodation underbridge.</p> <p>An area of grassland habitat creation and ecological mitigation ponds will be reconfigured to accommodate the realignment of the pipeline.</p> <p>The temporary material stockpile at Trent South embankment (south) transfer node will be repositioned to accommodate the new utility compound.</p>
<p>Additional land required for the diversion of a Cadent²⁹ gas pipeline, east of Colwich Bridleway 58 accommodation overbridge</p> <p>AP2-002-005</p> <p>Map CT-06-211, D7, to Map CT-05-212, G4, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of a National Grid 12-inch diameter gas pipeline, to the east of Colwich Bridleway 58 accommodation overbridge.</p> <p>Two temporary material stockpiles would be located adjacent to the HS2 route, to the north-east and south-east of the Colwich Bridleway 58 accommodation overbridge.</p>	<p>Additional land will be required for the permanent diversion of a section of a Cadent 300mm diameter gas pipeline, to the east of the Colwich Bridleway 58 accommodation overbridge. The connection points to the existing utility will be repositioned.</p> <p>Two temporary material stockpiles, to the north-east and south-east of the Colwich Bridleway 58 accommodation overbridge, will be repositioned to accommodate the realigned pipeline.</p>
<p>Additional land and a change to Bill powers required for HS2 maintenance access to Colwich Bridleway 58 accommodation underbridge</p> <p>AP2-002-006</p> <p>Map CT-06-211, C4 to B3, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of Colwich Bridleway 58, west of its existing alignment, passing beneath the HS2 route via Colwich Bridleway 58 accommodation underbridge.</p> <p>Land would be required for temporary access to the north of the HS2 route from Tolldish Lane, during construction.</p>	<p>Additional land and a change to Bill powers will be required to upgrade the Colwich Bridleway 58 diversion for permanent HS2 maintenance access to Colwich Bridleway 58 accommodation underbridge from Tolldish Lane.</p>
<p>Change to Bill powers required for the diversion of a British Pipeline Agency fuel pipeline and a new utility compound, A51 Lichfield Road</p> <p>AP2-002-007</p> <p>Map CT-06-212, J7 to F7, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of an underground British Pipeline Agency (BPA) 10-inch diameter fuel pipeline, which would cross beneath the A51 Lichfield Road to the south of the HS2 route.</p> <p>The AP1 revised scheme (amendment AP1-002-001) would provide 0.3ha of additional land, west of Main Road, for the realignment of a 500m section of the BPA pipeline realignment to the south of the HS2 route.</p>	<p>Change to Bill powers, from temporary to permanent, will be required for the diversion of a section of a BPA 10-inch diameter fuel pipeline, A51 Lichfield Road.</p> <p>A new temporary utility compound will be provided for the management of the BPA fuel pipeline diversion works. It will be provided within land permanently required for the utility diversion in the original scheme, south-west of the A51 Lichfield underbridge.</p> <p>This amendment will only proceed if the AP1 revised scheme is enacted, as it is dependent on the additional area of land required for the BPA pipeline realignment to the south of the HS2 route.</p>

²⁹ In 2017, National Grid Gas Distribution was rebranded as Cadent, which is an independent organisation. The two utility providers describe the same asset differently.

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
<p>Additional land and a change to Bill powers required for construction activities at Great Haywood</p> <p>AP2-002-008</p> <p>Map CT-05-212, F5 to E4, and Map CT-05-212, D6 to B7, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the temporary establishment of the Trent South embankment main compound and Trent North embankment satellite compound, including site haul routes and temporary roundabout at the junction of Tixall Road and Great Haywood Road.</p> <p>Land would be required permanently for the construction of the Great Haywood viaduct and Trent North embankment, together with the diversion of Hoo Mill Lane (private accommodation track).</p>	<p>Three areas of additional land will be required around Great Haywood to ensure separation of activities during construction.</p> <p>One area will be required between the Trent and Mersey Canal and Colwich to Macclesfield railway, on the northern side of the HS2 route, to enable access across, and reduce disruption to, the canal and the existing railway.</p> <p>A second area will be required between Great Haywood viaduct and Hoo Mill Lane, on the northern side of the HS2 route, to separate public road going vehicles (e.g. heavy goods vehicles (HGVs) and light goods vehicles (LGVs)) from larger earth moving equipment (with an average capacity of 40 tonnes) adjacent to Great Haywood viaduct.</p> <p>A third area will be required at the junction of Tixall Road and Great Haywood Road, on the southern side of the HS2 route, to relocate a temporary roundabout away from the piers supporting the Great Haywood viaduct.</p>
<p>Additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline and a new utility compound, north-west of Great Haywood Marina</p> <p>AP2-002-009</p> <p>Map CT-06-212, D7 to B1, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of an underground National Grid 1,050mm diameter gas pipeline, which would cross beneath Hoo Mill Lane, north of Great Haywood viaduct.</p>	<p>Additional land and a change to Bill powers will be required for the permanent diversion of a section of a National Grid 1,050mm diameter gas pipeline, north of Great Haywood viaduct. The connection points to the existing utility will be repositioned.</p> <p>Additional land will be required at each end of the pipeline diversion for temporary works to connect the new pipeline to the existing pipeline, whilst maintaining a gas supply during construction.</p> <p>Additional land will be temporarily required for a new temporary utility compound for the management of the National Grid 1,050mm diameter gas pipeline diversion works.</p>
<p>Additional land required for the reconfiguration of Ingestre Park Golf Club</p> <p>AP2-002-010</p> <p>Map CT-06-213, F5, to Map CT-06-213-R1, D5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.</p>	<p>Land would be required temporarily and permanently for the HS2 route to pass through Ingestre Park Golf Club via Trent North embankment and Brancote South cutting, and would be lost or severed from Ingestre Park Golf Club resulting in the facility being unable to function in its current arrangement.</p> <p>Areas of woodland and grassland habitat creation would provide replacement habitat and ecological connectivity between fragmented habitats on both sides of the HS2 route. Landscape earthworks on both sides of the Trent north embankment</p>	<p>Additional land will be required for the permanent reconfiguration of Ingestre Park Golf Club, adjacent to the north and east of the existing golf course, to the north of the HS2 route, to replace land lost and severed by the original scheme.</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
	<p>and a landscape bund on the northern side of Brancote south cutting would provide visual screening for the residents of Ingestre. The original scheme would also provide for the permanent diversion of an underground BPA 10-inch diameter fuel pipeline for approximately 1.8km.</p> <p>The AP1 revised scheme (amendment AP1-002-002), includes a temporary laydown area, required during construction of the BPA pipeline diversion. The temporary laydown area would be located immediately north of a temporary material stockpile, approximately 200m north-east of Ingestre underbridge.</p>	
<p>Change to Bill powers required for HS2 maintenance access to Ingestre underbridge</p> <p>AP2-002-011</p> <p>Map CT-06-213, E3 and E6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required permanently for Ingestre underbridge, which provides access to land on the southern side of Trent North embankment.</p> <p>Land would be required for temporary access to the north of the HS2 route from Ingestre Park Road, during construction.</p>	<p>A change to Bill powers, from temporary to permanent, will be required to provide HS2 maintenance access to the Ingestre underbridge from Ingestre Park Road.</p>
<p>Additional land and a change to Bill powers required for the diversion of a Cadent³⁰ gas pipeline and a new utility compound, east of Ingestre green overbridge</p> <p>AP2-002-012</p> <p>Map CT-06-213, E3, to Map CT-06-214, F7, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of an underground National Grid 12-inch diameter gas pipeline, which would cross beneath the HS2 route at Brancote South cutting, east of Ingestre green overbridge.</p> <p>Grassland habitat creation would be provided along the length of the diverted pipeline easement. Two areas of woodland habitat creation and hedgerow habitat creation would be provided adjacent to the Ingestre green overbridge, to the south of the HS2 route.</p> <p>A temporary stockpile would be located to the south of Brancote South cutting, south of Tixall Bridleway 0.1628 accommodation overbridge.</p>	<p>Additional land and a change to Bill powers will be required for the permanent diversion of a section of a Cadent 300mm diameter gas pipeline, east of Ingestre green overbridge. The connection points to the existing utility will be repositioned.</p> <p>A new temporary utility compound will be provided for the management of the Cadent 300mm diameter gas pipeline diversion works. It will be provided within land permanently required for the Brancote South cutting, west of Ingestre underbridge.</p> <p>An area of grassland habitat, woodland habitat and hedgerow habitat creation will be adjusted to accommodate the realignment of the pipeline.</p> <p>The temporary material stockpile, to the south of Brancote South cutting, will be re-shaped to accommodate the realigned pipeline.</p>
<p>Additional land required for replacement car parking, east of Staffordshire County Showground</p> <p>AP2-002-013</p>	<p>Construction of the Hopton South cutting and the realignment of the A518 Weston Road would result in the loss of 800 parking spaces at Staffordshire County Showground.</p>	<p>Additional land will be required to the east of Staffordshire County Showground for permanent replacement car parking.</p>

³⁰ In 2017, National Grid Gas Distribution was rebranded as Cadent, which is an independent organisation. The two utility providers describe the same asset differently.

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
<p>Map CT-06-215, E4 and E6 to D6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>		
<p>Additional land and a change to Bill powers required for the lowering of Trent Walk beneath the HS2 route via Trent Walk underbridge</p> <p>AP2-002-014</p> <p>Map CT-06-215, F5 to F6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Trent Walk underbridge provides agricultural access for Park Farm, Stafford, as well as access for residential properties along Trent Walk. The underbridge would be located 350m south-east of the A518 Weston Road, south of Staffordshire County Showground. The Trent Walk underbridge would have a restricted height clearance of 3.1m.</p>	<p>Additional land and a change to Bill powers will be required to permanently lower Trent Walk to increase headroom at Trent Walk underbridge to 4.6m.</p>
<p>Additional land and a change to Bill powers required for HS2 maintenance access to Trent Walk underbridge</p> <p>AP2-002-015</p> <p>Map CT-06-215, F8 and F3, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required permanently for Trent Walk underbridge, providing access to agricultural land and residential properties to the north-east of the HS2 route.</p> <p>Land would be required for temporary access to the south of the HS2 route partially along Trent Walk, during construction.</p>	<p>Additional land and a change to Bill powers will be required for permanent HS2 maintenance right of access to Trent Walk underbridge from the A518 Weston Road.</p>
<p>Additional land required for modifications to the A513 Beaconside/A518 Weston Road/Hydrant Way junction</p> <p>AP2-002-016</p> <p>Map CT-06-201, E4 and E6 to D6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>In the original scheme, construction traffic would enter onto the A518 Weston Road, close to Staffordshire County Showground, and travel south-west to join the A513 Beaconside.</p> <p>The SES2 scheme provides for a new construction traffic route (SES2-002-010) to take HS2 construction traffic from Stone to Weston via Sandon.</p>	<p>Additional land will be required to permanently widen the Hydrant Way approach to the A513 Beaconside/A518 Weston Road roundabout.</p> <p>A footpath will be realigned to accommodate the widening works.</p>
<p>Additional land required for the relocation of stockpiles and realignment of Hopton and Coton Footpath 6</p> <p>AP2-002-017</p> <p>Map CT-06-215, D7 to A4, and Map CT-05-216, J7 to H6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.</p>	<p>Temporary stockpiles for the temporary storage of excavated materials, to the south of the HS2 route and west of Hopton and Coton Footpath 24, would be required.</p> <p>A temporary stockpile, a transfer node and the Hopton South cutting satellite compound would be located between Hopton and Coton Footpath 24 and the A518 Weston Road.</p> <p>Hopton and Coton Footpath 6 would be permanently diverted for 710m, 440m south of its existing alignment, to cross over the HS2 route on the Hopton and Coton Footpath 24 accommodation overbridge and join Hopton and Coton Footpath 7 to the north of the HS2 route. During construction, Hopton and Coton Footpath 6 would be temporarily diverted between the proposed temporary stockpiles.</p>	<p>Additional land will be required temporarily for the relocation of two temporary stockpiles from the south of the HS2 route to the north of the HS2 route.</p> <p>The permanent diversion of Hopton and Coton Footpath 6 will be realigned to follow the southern side of Hopton South cutting. The temporary diversion of Hopton and Coton Footpath 6 to the south of the route will be along field boundaries and connect into the existing Hopton and Coton Footpaths 5 and 24. The temporary diversion to the north of the HS2 route will be diverted around the relocated temporary stockpiles.</p>
<p>Additional land required for HS2 maintenance access to Hopton and Coton Footpath 24 accommodation overbridge</p>	<p>Land would be permanently required for the Hopton and Coton Footpath 24 accommodation overbridge, providing agricultural access across the HS2 route and HS2 maintenance access to</p>	<p>Additional land will be required for permanent HS2 maintenance access to the Hopton and Coton Footpath 24 accommodation overbridge from the A518 Weston Road.</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
<p>AP2-002-018</p> <p>Map CT-06-215, C6 and B5, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>the north of A518 Weston Road overbridge.</p> <p>Land would be temporarily required for access to the north of the HS2 route via a shared access, during construction.</p>	
<p>Additional land and a change to Bill powers required for the realignment of the B5066 Sandon Road, diversion of Hopton Lane, extension of Hopton Lane and increased non-motorised user provision across the HS2 route between Hopton and Mount Edge</p> <p>AP2-002-019</p> <p>Map CT-06-216, D9 to A1, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of Mount Edge, south-west of its existing alignment, the realignment of B5066 Sandon Road, west of its existing alignment, and the diversion of Hopton Lane, north of its existing alignment, to the north of the HS2 route. A retained section of Hopton Lane, to the south of the HS2 route, would be closed permanently to through-traffic and would provide access to a balancing pond.</p> <p>Pedestrian access across the HS2 route, between Mount Edge and Hopton village, would be provided via the Hopton and Coton new footpath overbridge.</p> <p>Two balancing ponds would be provided to the south of the HS2 route, one for railway drainage and one for highway drainage. To the north of the HS2 route a balancing pond would be provided for highway drainage.</p> <p>Two temporary material stockpiles and the Hopton North cutting satellite compound would be provided on land immediately west of the B5066 Sandon Road realignment.</p>	<p>Additional land and a change to Bill powers will be required for the permanent realignment of the B5066 Sandon Road.</p> <p>The Mount Edge diversion will no longer be required, and the associated hedgerow habitat creation will therefore not be implemented. A change to Bill powers will be required for the extension of Hopton Lane, south of the HS2 route, and the diversion of Hopton Lane, north of the HS2 route. This extension to the retained section of Hopton Lane will connect into the realigned B5066 Sandon Road. The diversion of Hopton Lane will join the B5066 Sandon Road 20m further north than in the original scheme, on the northern side of the HS2 route.</p> <p>There will a change to Bill powers for the increased provision of the non-motorised user route through the widening of the Hopton and Coton new footpath overbridge for equestrian and cyclist use (to become the Hopton and Coton new bridleway overbridge). Provision of a non-motorised user route along the B5066 Sandon Road will also be required as part of this amendment.</p> <p>The relocation and reconfiguration of balancing ponds, provided for in the original scheme, will accommodate the changes to the B5066 Sandon Lane realignment and the Hopton Lane extension.</p> <p>Two new balancing ponds, east of B5066 Sandon Road, to the south of the HS2 route, will provide drainage for an allocated development site, east of the realigned B5066 Sandon Road and to the south of the HS2 route.</p>
<p>Additional land required for construction activities around B5066 Sandon Road, Hopton</p> <p>AP2-002-020</p> <p>Map CT-05-216, C9 to A5, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the temporary establishment of Hopton North cutting satellite compound, including site haul routes.</p> <p>Land would be required permanently for the construction of the Hopton North cutting, the realignment of B5066 Sandon Road and the diversion of Mount Edge.</p>	<p>Two areas of additional land will be required around the B5066 Sandon Road, Hopton, during construction.</p> <p>One area will be required to the west of the Hopton South cutting satellite compound, on the southern side of the HS2 route, to separate public road going vehicles (e.g. heavy goods vehicles (HGVs) and light goods vehicles (LGVs)) from larger earth moving equipment (with an average</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
		<p>capacity of 40 tonnes), adjacent to Hopton North cutting.</p> <p>A second area will be required at the southern tie-in location for the realigned B5066 Sandon Road, on the southern side of the HS2 route, to accommodate the tie-in works with the existing alignment.</p>
<p>Additional land required for modifications to A513 Beaconside and B5066 Sandon Road junction</p> <p>AP2-002-021</p> <p>Map CT-05-201, E7 to E8, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>In the original scheme, construction traffic would enter onto the B5066 Sandon Road at Hopton and travel south to join the A513 Beaconside.</p> <p>The SES2 scheme provides for a new construction traffic route (SES2-002-010) to take HS2 construction traffic from Stone to Weston via Sandon.</p>	<p>Additional land will be required for a temporary traffic island and signalisation to the A513 Beaconside and B5066 Sandon Road junction.</p>
<p>Additional land required for a British Pipeline Agency construction working area and a new utility compound, west of B5066 Sandon Road</p> <p>AP2-002-022</p> <p>Map CT-05-217, G5 to D7, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of an underground British Pipeline Agency 10-inch diameter fuel pipeline, which would cross beneath the HS2 route at the Hopton North cutting, west of the B5066 Sandon Road.</p> <p>An area of grassland habitat creation would be provided along sections of the diverted pipeline.</p>	<p>Additional land will be required at the western end of the pipeline diversion for temporary works to connect the new pipeline to the existing pipeline, whilst maintaining a gas supply during construction.</p> <p>A new temporary utility compound will be provided for the management of the British Pipeline Agency 10-inch diameter fuel pipeline diversion works. It will be provided within land permanently required for Hopton North cutting in the original scheme, north-west of B5066 Sandon Road.</p>
<p>Additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline and a new utility compound, south-east of Marston Bridleway 8 accommodation underbridge</p> <p>AP2-002-023</p> <p>Map CT-06-217, D5 to C6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of an underground National Grid 1,050mm diameter high pressure gas pipeline, which would cross beneath the HS2 route at Marston South embankment, south-east of Marston Bridleway 8 accommodation underbridge.</p> <p>An area of grassland habitat creation would be provided as advanced mitigation planting along a section of the diverted pipeline, to the south of the HS2 route.</p> <p>A temporary material stockpile would be located to the north of Marston South embankment.</p>	<p>Additional land and a change to Bill powers will be required for the permanent diversion of a section of a National Grid 1,050mm diameter gas pipeline, south-east of Marston Bridleway 8 accommodation underbridge. The connection points to the existing utility will be repositioned.</p> <p>Additional land will be required at each end of the pipeline diversion for temporary works to connect the new pipeline to the existing pipeline, whilst maintaining a gas supply during construction.</p> <p>A new utility compound will be provided for the management of the National Grid 1,050mm diameter high pressure gas pipeline diversion works. It will be provided within land permanently required for Marston South embankment, east of Marston Bridleway 8.</p> <p>An area of grassland habitat creation will be provided following construction and site restoration to accommodate the realignment of the pipeline.</p> <p>A temporary material stockpile, to the north of Marston South embankment,</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

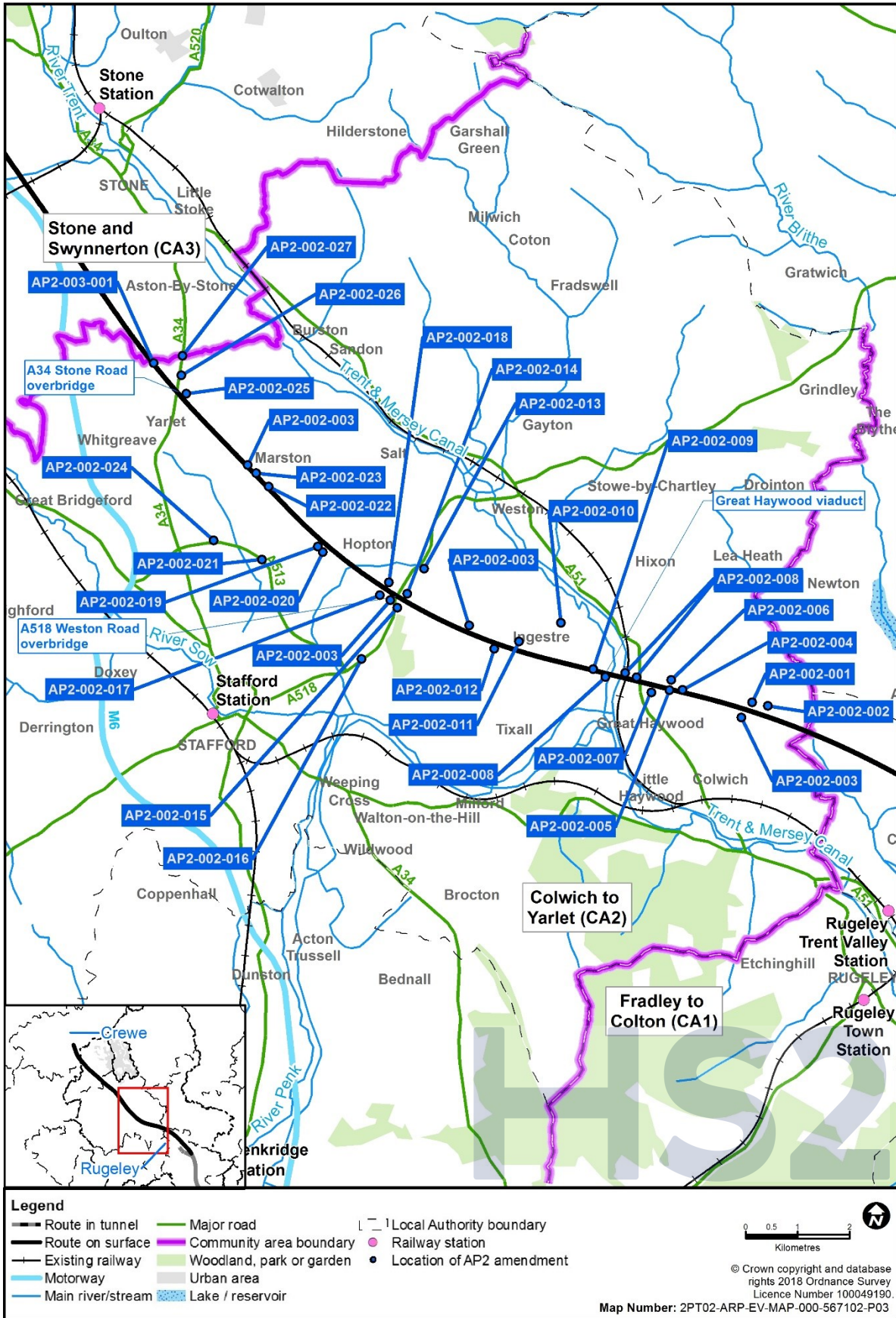
Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
		will be re-shaped to accommodate the realigned pipeline.
<p>Additional land required for modifications to A513 Beaconside/Marston Lane junction</p> <p>AP2-002-024</p> <p>Map CT-06-201, E4 and E6 to D6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>In the original scheme, construction traffic would enter onto Marston Lane at Marston and travel south to join the A513 Beaconside.</p> <p>The SES2 scheme provides for a new construction traffic route (SES2-002-010) to take HS2 construction traffic from Stone to Weston via Sandon.</p>	<p>Additional land will be required for a permanent traffic island and signalisation to the junction of A513 Beaconside and Marston Lane, located to the south of Marston.</p> <p>The eastern side of the Marston Lane junction will be realigned, which will result in the removal and reinstatement of hedgerow 30m in length.</p>
<p>Additional land required to relocate a temporary material stockpile and for a new transfer node, east of Yarlet South cutting</p> <p>AP2-002-025</p> <p>Map CT-05-219a, I5 to G5 and F8 to E7, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required during construction for the temporary storage of excavated materials, including designated transfer nodes for the storage, loading and unloading of bulk earthworks materials adjacent to the Yarlet South cutting.</p>	<p>Additional land will be required for the relocation of a temporary material stockpile and a new transfer node, located to the east of Yarlet South cutting.</p>
<p>Additional land required within the grounds of Yarlet School during construction of utility works</p> <p>AP2-002-026</p> <p>Map CT-06-219a, F4 to E4, in the SES and AP ES Volume 2: CA2 Map Book</p>	<p>Temporary rights of access would be required over the internal road within the grounds of Yarlet School during construction.</p> <p>The AP1 revised scheme (amendment AP1-002-106) provides a change in the Bill powers, from temporary to permanent rights, to permanently divert an existing Cadent gomm low pressure gas main along the access road to Yarlet School.</p>	<p>Additional land will be required to facilitate the construction of a gomm low pressure gas main diversion along the access road to Yarlet School off the A34 Stone Road, introduced as part of the AP1 revised scheme.</p>
<p>Additional land and a change to Bill powers required along the A34 Stone Road for the provision of a new access to Yarlet School</p> <p>AP2-002-027</p> <p>Map CT-06-219, F5 to C1, and Map CT-06-219-R1, D10 to C8, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.</p>	<p>The original scheme would include land for the temporary diversion of the A34 Stone Road for 750m, up to 100m from its existing alignment, during construction. The existing access to Yarlet School would be required for construction access to manage the temporary diversion of the A34 Stone Road.</p> <p>Following construction, the A34 Stone Road would be reinstated on its existing alignment to cross the HS2 route via the A34 Stone Road overbridge.</p> <p>The AP1 revised scheme (amendment AP1-002-106) included a change to Bill powers for the permanent diversion of Cadent gomm low pressure gas main at Yarlet along the existing school access.</p>	<p>Additional land and a change to Bill powers will be required for the permanent provision of a new junction and access road to serve Yarlet School.</p> <p>Modifications will be required to the central reservation and width of the A34 Stone Road to provide an access across the carriageway to Yarlet School.</p> <p>New areas of hedgerow habitat creation and woodland habitat creation will be provided as replacement habitat along the southbound side of the A34 Stone Road and school access.</p> <p>The majority of this amendment lies within the Colwich to Yarlet area. Part of this amendment lies within the Stone and Swynnerton area (CA3) and the works associated with this amendment within the Stone and Swynnerton area are reported in SES2 and AP2 ES Volume 2, Community area 3, Stone and Swynnerton.</p>
<p>Additional land required for a revised high pressure National Grid Gas</p>	<p>A 900mm diameter National Grid high pressure gas pipeline would be</p>	<p>Additional land will be permanently required and a change in Bill powers</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
<p>Transmission Line diversion under Yarlet central cutting and a new temporary utility compound</p> <p>AP2-003-001</p> <p>Map CT-06-220b, H4 to H7, in the SES2 and AP2 ES Volume 2: CA3 Map Book</p>	<p>diverted for 330m to cross under the HS2 route 30m south-east of its existing alignment under Yarlet central cutting. An ecological mitigation pond would be provided within an area of grassland habitat creation, in proximity to the diversion adjacent to the north-east of the HS2 route.</p> <p>The works would be managed from the Yarlet embankment satellite compound.</p>	<p>to modify the alignment of the diverted National Grid high pressure gas pipeline. The new diversion will be 350m in length and will cross the HS2 route 20m further south than in the original scheme and 55m south-east of its existing alignment. An ecological mitigation pond and associated grassland mitigation planting will be relocated further west to accommodate the diversion works.</p> <p>A new utility compound will be provided for the management of the high pressure gas diversion works 500m south-east of the revised location of Stone Rural Footpath 28 accommodation overbridge (provided for in amendment AP2-003-002: Additional land permanently required and a change in Bill powers for the relocation of Stone Rural Footpath 28 accommodation overbridge).</p> <p>The majority of this amendment and all relevant potential receptors lie within the Stone and Swynnerton area (CA3), therefore a detailed description of the amendment and assessment of effects is reported in SES2 and AP2 ES Volume 2, Community area 3, Stone and Swynnerton.</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Figure 5: Locations of AP2 engineering amendments in the Colwich to Yarlet area



- 4.2.3 Amendments in the Colwich to Yarlet area result in changes to waste arisings, which are reported in Volume 5: Appendix WM-001-000 of the SES2 and AP2 ES.
- 4.2.4 An assessment of the likely significant environmental effects associated with the disposal of construction, demolition, excavation and operational waste has been undertaken route-wide for the AP2 revised scheme. See Volume 3, Section 11 of the SES2 and AP2 ES for details of this assessment.

4.3 Minor utility amendments

- 4.3.1 Amendments to minor utilities will be required in the Colwich to Yarlet area to provide connections to construction compounds and to maintain continuity of supply in the area. This will result in changes to the land or Bill powers required for the SES2 scheme and separately the AP1 revised scheme where relevant. Typically, works associated with minor utility amendments will be small in scale and similar to the types of works undertaken routinely by utility providers in the normal course of their activities. The duration of minor utility works will generally be short term. Provision of access to adjacent properties will usually be maintained during the works with alternative access arrangements being made where necessary. Where relevant, the implementation of the works will be subject to appropriate traffic management measures to ensure that disruption to non-motorised users and vehicular traffic is reduced insofar as reasonably practicable. Table 7 provides a summary of the minor utility amendments and the changes to land or Bill powers required. Consideration has been given to the potential for new or different likely significant cumulative effects as a result of the minor utility amendments acting in combination with other SES2 changes and AP1 amendments and reported where relevant.
- 4.3.2 Figure 6 shows the general location of the minor utility amendments.

Table 7: Summary of AP2 minor utility amendments in the Colwich to Yarlet area

Name of the AP2 minor utility amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line near Moreton Brook AP2-002-101 Map CT-06-210, J7 to C7, in the SES2 and AP2 ES Volume 2: CA2 Map Book	Land would be required for the permanent diversion of an 11kV overhead line, 1.4km in length, across agricultural land, near Colwich Footpath 36 diversion (east), and Bishton Lane.	Additional land and a change to Bill powers will be required for the permanent diversion of an 11kV overhead line, 1.4km in length, along Colwich Footpath 36 diversion (east), Colwich Bridleway 19, and running along a HS2 access track to a balancing pond near Moreton Brook, along the southern side of the HS2 route.
Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line, west of Tithebarn Farm ³¹ AP2-002-102 Map CT-06-211, H7 to E1, in the SES2 and AP2 ES Volume 2: CA2 Map Book	Land would be required for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 200m in length, parallel to the existing overhead line, 20m east of Tithebarn Farm.	Additional land and a change to Bill powers will be required for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 800m in length, west of Tithebarn Farm.
Additional land and a change to Bill powers for the underground diversion of	Land would be required for the permanent underground diversion of a	Additional land and a change to Bill powers will be required for the

³¹ This is also shown on OS mapping as Tithe Barn Farm.

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 minor utility amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
<p>a Western Power Distribution 11kV overhead line, west of Great Haywood Marina</p> <p>AP2-002-103</p> <p>Map CT-06-212, from C9 to E4 in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Western Power Distribution 11kV overhead line, 220m in length, parallel to the existing overhead line, 150m west of Great Haywood Marina.</p>	<p>permanent underground diversion of a Western Power Distribution 11kV overhead line, 240m in length, west of Great Haywood Marina.</p>
<p>Additional land for the removal of a Western Power Distribution 11kV overhead line and associated infrastructure, west of Upper Hanyards Farm</p> <p>AP2-002-104</p> <p>Map CT-06-214, E5 to D9, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent removal of a Western Power Distribution 11kV overhead line, 350m in length, 100m west of Upper Hanyards Farm.</p> <p>Land would be required for permanent underground diversion of an 11kV overhead line, 200m in length, parallel to the existing overhead line, 50m north of Upper Hanyards Farm.</p>	<p>Additional land will be required for the permanent removal of a Western Power Distribution 11kV overhead line, 600m in length, and associated infrastructure west of Upper Hanyards Farm.</p>
<p>Additional land and a change to Bill powers for a new Severn Trent Water mains supply to the Brancote South cutting satellite compound</p> <p>AP2-00-105</p> <p>Map CT-05-214, E7 to C10, Map CT-05-214-L1, D1 to A9, Map CT-05-215-L1, J3 to H10, and Map CT-05-215-L2, I1 to H2, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for a new temporary 63mm diameter Severn Trent Water mains supply, 720m in length, from Lower Hanyards Farm to the Brancote South cutting satellite compound.</p>	<p>Additional land and a change to Bill powers will be required for a new temporary 63mm diameter Severn Trent Water mains supply, 1.9km in length, along Hanyards Lane to the Brancote South cutting satellite compound.</p>
<p>Additional land for the underground diversion of a Western Power Distribution low voltage underground cable, west of Trent Walk underbridge</p> <p>AP2-002-106</p> <p>Map CT-06-215, G5 to E10, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent underground diversion of a Western Power Distribution low voltage underground cable, 280m in length, along Trent Walk.</p>	<p>Additional land will be required for the permanent underground diversion of a Western Power Distribution low voltage underground cable, 245m in length, west of Trent Walk underbridge.</p>
<p>Additional land for the diversion of two Severn Trent Water sewers, south of Hopton</p> <p>AP2-002-107</p> <p>Map CT-06-216, G7 to G5, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>No provision was made for the permanent diversion of two Severn Trent Water sewers south of Hopton.</p>	<p>Additional land will be required for the permanent diversion of two 150mm diameter Severn Trent Water sewers, for a total of 435m in length, south of Hopton.</p>
<p>Additional land for the underground diversion of a Western Power Distribution 11kV overhead line, east of Mount Edge</p> <p>AP2-002-108</p> <p>Map CT-06-216, G8 to D4, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of a Western Power Distribution 11kV overhead line, running 400m from the east of properties at Mount Edge to a farm access track 200m south of Lower House Farm.</p>	<p>Additional land will be required for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 185m in length, east of Mount Edge.</p>
<p>Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line, south-west of Hopton</p> <p>AP2-002-109</p>	<p>Land would be required for the permanent underground diversion of a Western Power Distribution 11kV overhead line, running for 500m in length, 200m east of Ministry of Defence (MOD) Stafford to the west of properties along Wilmore Hill Lane and</p>	<p>Additional land and a change to Bill powers will be required for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 360m in length, south-west of Hopton.</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 minor utility amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
Map CT-06-216, G8 to D4, in the SES2 and AP2 ES Volume 2: CA2 Map Book	crossing the HS2 route, 400m south of Hopton Lane.	
<p>Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution low voltage overhead line crossing Hopton Lane</p> <p>AP2-002-110</p> <p>Map CT-06-216, G8 to D4, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	Land would be required for the permanent overhead line diversion of a Western Power Distribution low voltage overhead line, 125m in length, crossing Hopton Lane.	Additional land and a change to Bill powers will be required for the permanent underground diversion of a Western Power Distribution low voltage overhead line, 115m in length, crossing Hopton Lane.
<p>Additional land for the underground diversion of a Western Power Distribution 11kV overhead line to the north and west of Sandon Road auto-transformer station</p> <p>AP2-002-111</p> <p>Map CT-06-216, D8 to B5, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	Land would be required for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 300m in length, crossing the HS2 route at Sandon Road auto-transformer station.	Additional land will be required for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 1km in length, following the B5066 Sandon Road diversion to the south of the HS2 route.
<p>Additional land and a change to Bill powers for the underground diversion of Western Power Distribution 11kV overhead line, west of the B5066 Sandon Road</p> <p>AP2-002-112</p> <p>Map CT-06-217, J10 to H4, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	Land would be required for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 400m in length crossing the HS2 route, 140m north-west of the B5066 Sandon Road diversion.	Additional land and a change to Bill powers will be required for the permanent diversion of a Western Power Distribution 11kV overhead line, 1.2km in length, along Hopton and Coton Bridleway 12 and the B5066 Sandon Road diversion.
<p>Change to Bill powers for the diversion of a Cadent³² medium pressure gas main west of Kents Barn Farm</p> <p>AP2-002-113</p> <p>Map CT-06-217, I4 to H5 and H8 to H7, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	Land would be required for the permanent diversion of a National Grid Gas Distribution medium pressure gas main, 140m in length, crossing the HS2 route at the Hopton and Coton bridleway 11 accommodation overbridge.	A change to Bill powers will be required for the permanent diversion of a Cadent medium pressure gas main, 400m in length, from 400m west of Kents Farm Barn, crossing the HS2 route 190m north-west of Hopton and Coton bridleway 11 accommodation overbridge, and running to 200m east of Newbuildings Cottage.
<p>Additional land and a change to Bill powers for the underground diversion of Western Power Distribution 11kV overhead line at Marston Bridleway 8 accommodation underbridge</p> <p>AP2-002-114</p> <p>Map CT-06-218, B3 to A6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	Land would be required for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 320m in length, crossing the HS2 route, 80m north-west of Marston Bridleway 8 accommodation underbridge.	Additional land and a change to Bill powers will be required for the permanent diversion of a Western Power Distribution 11kV overhead line, 320m in length, crossing the HS2 route at Marston Bridleway 8 accommodation underbridge and connecting into an existing overhead line.
<p>Additional land for the revised Openreach telecommunications cable to Yarlet South cutting satellite compound</p> <p>AP2-002-115</p>	Land would be required for a new temporary underground Openreach telecommunications cable to Yarlet South cutting satellite compound, 80m in length, crossing farmland west of Hilltop Farm to the Yarlet South Cutting satellite compound.	Additional land will be required for a revised temporary Openreach telecommunications cable, 360m in length, from A34 Stone Road to Yarlet South cutting satellite compound.

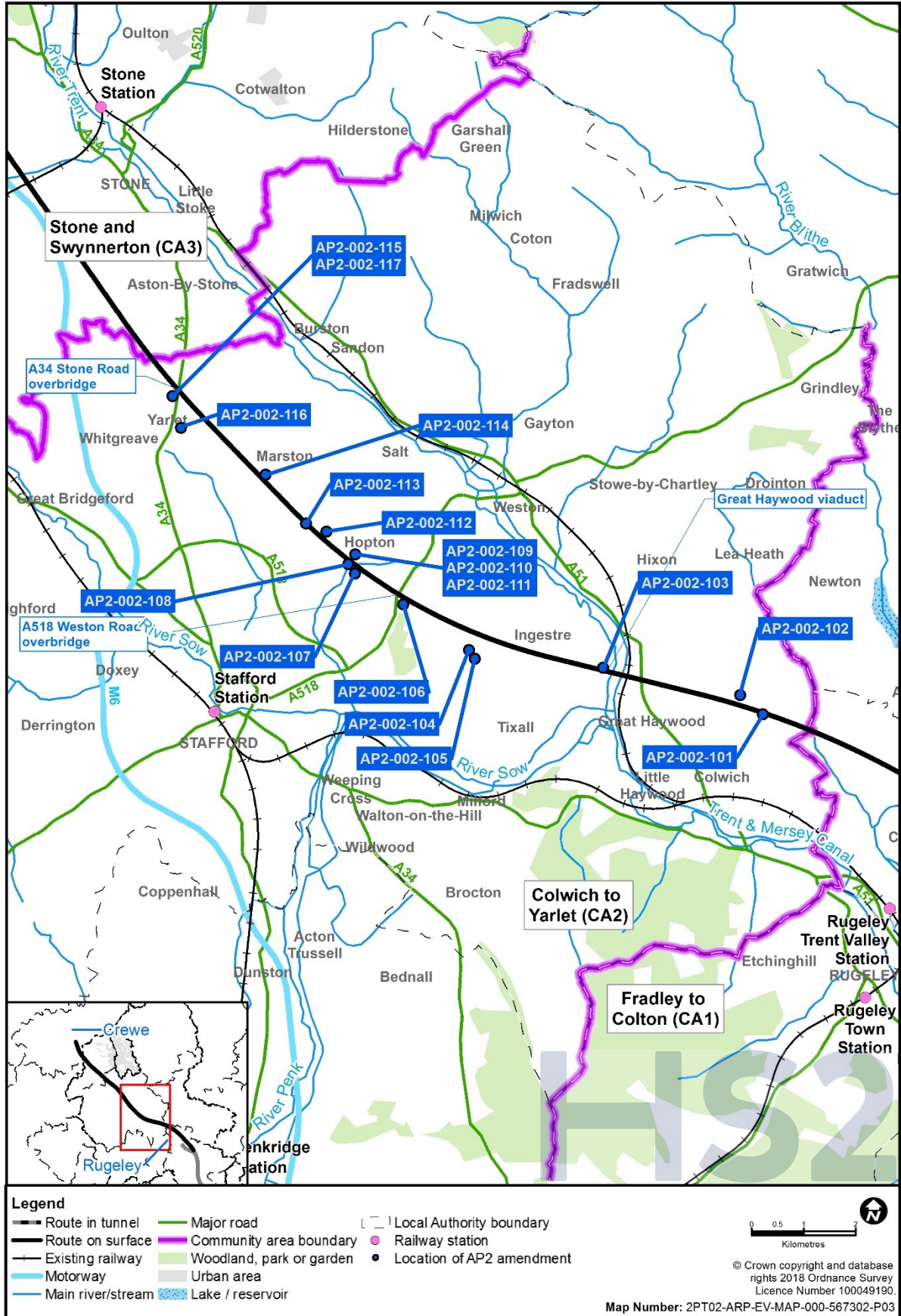
³² In 2017, National Grid Gas Distribution was rebranded as Cadent, which is an independent organisation. The two utility providers describe the same asset differently.

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Name of the AP2 minor utility amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
<p>Map CT-05-219a, from G7 to D6, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>		
<p>Additional land for the underground and overhead diversion of Western Power Distribution low voltage overhead line from Grove Farm to Hilltop Farm</p> <p>AP2-002-116</p> <p>Map CT-06-219a, E5 to E4, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent underground diversion of a Western Power Distribution low voltage overhead line, 260m in length, crossing the HS2 route, within the Yarlet south cutting, 50m south-east of the A34 Stone Road overbridge.</p>	<p>Additional land will be required for the permanent underground and overhead diversion of a Western Power Distribution low voltage overhead line, 165m in length. The diversion will run from near Grove Farm, west across the A34 Stone Road, to an existing Western Power Distribution pole near Hilltop Farm. The western section of the diversion, 75m in length, will be an overhead line.</p>
<p>Additional land and a change to Bill powers for the underground and overhead diversion of Western Power Distribution 11kV overhead lines from Yarlet House to south-west of Yarlet auto-transformer station</p> <p>AP2-002-117</p> <p>Map CT-06-219a, E5 to E4, in the SES2 and AP2 ES Volume 2: CA2 Map Book</p>	<p>Land would be required for the permanent diversion of a Western Power Distribution 11kV overhead line, 380m in length. The northern section of the diversion, 200m in length, would cross the HS2 route 190m west of the A34 Stone Road. The southern section of the diversion, 180m in length, south of the HS2 route would be an overhead line.</p>	<p>Additional land and a change to Bill powers will be required for the permanent underground and overhead diversion of a Western Power Distribution 11kv overhead lines, 840m in length, from Yarlet House, crossing the A34 Stone Road and the HS2 route north-west of Yarlet auto-transformer station. Three sections of the diversion will be an overhead line, totalling 520m in length, and three sections of the diversion will be an underground cable, totalling 320m in length.</p>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Figure 6: Locations of AP2 minor utility amendments in the Colwich to Yarlet area



4.4 Other amendments requiring changes to Bill powers

4.4.1 Since submission of the Bill, the need for an amendment to the Bill plans and Schedule 8 of the Bill ('Lands where powers of acquisition are limited to acquisition of rights or impositions of restrictive covenants') has been identified.

4.4.2 The amendment relates to the rights for use of a plot of land, which have been identified on the Bill plans and in Schedule 8 of the Bill as only being required for access during the construction phase. However, it has been ascertained that the land plot will also be required by the nominated undertaker, Network Rail and third party utility providers during the operational phase for access for inspection and maintenance purposes.

4.4.3 Regular inspection and maintenance access will be required to assets such as the following:

- habitat creation areas;
- line-side equipment;
- railway drainage system; and
- utilities.

4.4.4 During operation, vehicular access will be required and the frequency will vary depending on the asset and maintenance activities. Typically, access will be required two to four times per year by two light goods vehicles (LGV) (e.g. long wheel-base pick-up vehicles).

4.4.5 The use of the land plot for maintenance and operation access was considered in the preparation of the main ES. Given the limited frequency of this access, it was concluded that this would not result in any new or different significant effects. As this access was considered in the main ES, these amendments are not considered to require further assessment of the environmental effects or mitigation additional to that set out in the main ES with respect to any environmental topics.

4.4.6 Table 8 provides details of where there has been a need to amend the Bill plans and Schedule 8 of the Bill for the Colwich to Yarlet area.

Table 8: Summary of other amendments requiring changes to Bill powers in the Colwich to Yarlet area

Name of amendment	Description of the original scheme (Schedule 8 of the Bill)	Description of the AP2 revised scheme
Additional access rights to land plot AP2-58 in the parish of Hopton and Coton AP2-002-201 Bill plan replacement sheet 1-31	Provision of access for construction	Provision of access for construction and maintenance

5 Assessment of engineering amendments in the Colwich to Yarlet area

5.1 Additional land required for the provision of a replacement facility for Mayfield Children's Home (AP2-002-001)

- 5.1.1 This amendment relates to the Mayfield Children's Home which is located in the Colwich to Yarlet area. The description of this amendment and assessment of effects arising as a result of this amendment is relevant to both the Colwich and Yarlet area and the Fradley to Colton area (CA1). A description of the amendment and assessment of effects within the Fradley to Colton area is reported in SES2 and AP2 ES Volume 2, Community area 1, Fradley to Colton. A description of the amendment and assessment of effects within the Colwich to Yarlet area are described below.
- 5.1.2 The Bill provides for the HS2 route to pass to the south of Moreton House in a section of Moreton cutting, 1km in length and up to 19m in depth and 115m in width within this section, with an area of landscape mitigation planting and grassland habitat creation to the north of the route. Moreton retaining wall, 208m in length and up to 10m in height, would be located to the north of the HS2 route to reduce the amount of land required in proximity to Moreton House. See Map CT-06-210, D5 to D4, in the main ES, Volume 2: CA2 Map Book. Mayfield Children's Home is located in Moreton and occupies the Grade II listed Moreton House. It is a specialist residential home for students at Rugeley School located in the Fradley to Colton area. The home has facilities for up to 23 children aged between five and 19 years old, with approximately 100 staff. All of the children are severely autistic, with many also having special behavioural, learning or communication needs.
- 5.1.3 Mayfield Children's Home would be in proximity to the construction and operation of the original scheme. Works would include the Moreton cutting and Moreton retaining wall, which would be within 40m of the children's home at its closest point. Colwich Bridleway 23 accommodation green overbridge also would be located near to the children's home. See Map CT-06-210, F6 to E5, in the main ES, Volume 2: CA2 Map Book.
- 5.1.4 Residents of the children's home would experience significant adverse noise effects during construction of the original scheme, and activity disturbance and sleep disturbance due to the running of the trains during operation. Residents would also experience significant adverse visual effects due to close range views of construction, including stockpiles and construction vehicles moving along the site haul routes during construction, as well as close views of trains running along the route and from railway overhead line equipment, at Moreton cutting, during operation. The noise and visual effects would result in an in-combination community effect, which would be significant, on residents of Mayfield Children's Home for up to three years during construction, and permanent in-combination effects, which also would be significant, on the amenity of the residents of Mayfield Children's Home.
- 5.1.5 Since the submission of the Bill, a requirement has been identified to provide a replacement facility for the Mayfield Children's Home at the site of the former Westwood School, adjacent to Rugeley School, on the outskirts of Blithbury in

Lichfield in the Fradley to Colton area. See Map CT-06-206-R1, I10 to H8, in the SES2 and AP2 ES, Volume 2: CA1 Map Book. The requirement for the replacement facility of Mayfield Children's Home has been agreed with the operator (the Priory Group) of both Mayfield Children's Home and Rugeley School, in order to reduce the significant adverse environmental effects that would arise during construction and operation of the scheme on the existing Mayfield Children's Home, identified in the main ES. The assessment assumes that the existing Grade II Moreton House will remain as a residential property or be subject to a suitable management regime during HS2 Ltd ownership, but will no longer provide facilities for Mayfield Children's Home.

- 5.1.6 The new residential facility on the former Westwood School site is intended to be a replacement for Mayfield Children's Home, in a modern building and grounds with appropriate facilities, to be operated in conjunction with the educational and other facilities of the adjacent Rugeley School.
- 5.1.7 The new residential facility at the former Westwood School site is assumed to comprise up to four two-storey residential buildings and a communal building, with a total floorspace of approximately 1,600m², with pitched roofs and an assumed height of 12m. The details of the size and layout of the facility will be confirmed through discussion with the operator and the local planning authority.
- 5.1.8 HS2 Ltd is working with the Priory Group in providing the replacement facility. The Priory Group is seeking separate planning permission that would allow construction of the replacement facility to be completed in advance of construction works in the vicinity of Mayfield Children's Home. This process has the potential to allow the facility to be built sooner than assessed, therefore removing the significant effects reported in the main ES.
- 5.1.9 For the purpose of assessment, it has been assumed that if the Priory Group are unable to achieve their own consent for a replacement facility and the nominated undertaker is required to provide the new residential facility, construction of the new residential facility will commence in 2021, over a period of one year and six months, enabling the phased transfer of residents and staff from Moreton House to the new residential facility by June 2022. Construction of the new residential facility will be managed from a compound within the land acquired for the replacement Mayfield Children's Home and will be accessed via an existing access off Blithbury Road. See Map CT-06-206-R1, I10 to H8, in the SES2 and AP2 ES, Volume 2: CA1 Map Book.
- 5.1.10 The land required for the provision of a replacement facility for Mayfield Children's Home is outside of the limits of the Bill. This amendment will result in a requirement for an additional 2.3ha of land within the Fradley to Colton area (CA1). See Map CT-06-206-R1, I10 to H8, in the SES2 and AP2 ES, Volume 2: CA1 Map Book.

Topics included in the AP2 assessment

- 5.1.11 Within the Colwich to Yarlet area, this amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: community; cultural heritage; health; socio-economics; and sound, noise and vibration. This is reported within this section.

- 5.1.12 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.
- 5.1.13 There are also cultural heritage; ecology and biodiversity; health; landscape and visual; sound, noise and vibration; and traffic and transport receptors in the Fradley to Colton area, which are assessed and reported in SES2 and AP2 ES Volume 2, Community area 1, Fradley to Colton.

Community

Scope, assumptions and limitations

- 5.1.14 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the Scope and Methodology Report³³ (SMR) and SMR Addendum³⁴ of the main ES.
- 5.1.15 This amendment has the potential to result in new or different temporary significant construction and operational effects only for community. Therefore, there is no permanent construction assessment for community.
- 5.1.16 HS2 Ltd is working with the Priory Group in providing a replacement facility for Mayfield Children's Home. For the purposes of the assessment if the Priory Group are unable to achieve their own consent for a replacement facility, it is assumed that the relocation of Mayfield Children's Home from Moreton House to its new location will be complete approximately nine months after HS2 construction works begin. It is also assumed that once the children's home has relocated, Moreton House will become a residential property.

Existing environmental baseline

- 5.1.17 The baseline community information for the Colwich to Yarlet area is described in Volume 2, CA2, Section 6 of the main ES.
- 5.1.18 Moreton is a small hamlet made up of approximately 13 residential properties, located approximately 1.9km north-east of Little Haywood. Access to the properties is restricted and can only easily be accessed via Bishton Lane.
- 5.1.19 Moreton House is a Grade II listed building and is occupied by Mayfield Children's Home, a specialist residential home for residents at Rugeley School located in the Fradley to Colton area (CA1). The home has facilities for up to 23 children aged between five and 19 years old, with approximately 100 staff. All of the children are severely autistic with many also having special behavioural, learning or communication needs.

³³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

³⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Future environmental baseline

Construction (2020) and operation (2027)

- 5.1.20 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.21 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice³⁵ (CoCP) are identified.

Assessment of impacts and effects

- 5.1.22 The main ES reported that residents of Mayfield Children’s Home would experience significant adverse visual and noise effects due to construction works. The temporary in-combination effect would result in a major adverse significant effect on residents of Mayfield Children’s Home for up to three years in total.
- 5.1.23 This amendment will provide a replacement facility for Mayfield Children’s Home. It is assumed that the relocation of Mayfield Children’s Home from Moreton House to its new location will be complete approximately nine months after HS2 construction works begin in this area. This will reduce the duration of the temporary in-combination effect on residents of this facility from up to three years, as reported in the main ES, to nine months. This will give rise to a different significant effect, however, this will not change the level of significance of the effect reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.
- 5.1.24 The main ES reported that seven residential properties in Moreton would experience significant adverse visual and noise effects due to construction works. The temporary in-combination effect would result in a major adverse significant effect on amenity of residents at the seven properties for up to nine months in total.
- 5.1.25 It is assumed that once the residents of the children’s home have relocated, Moreton House will become a residential property. As a result, this will increase the number of residential properties in Moreton that will be subject to a temporary in-combination effect, from seven to eight. This will give rise to a different significant effect, however this will not change the level of significance of the effect reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.1.26 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

³⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Summary of likely residual significant effects

- 5.1.27 The amendment will give rise to a different likely residual significant temporary major adverse effect, due to the reduction in duration of significant in-combination effects on residents of Mayfield Children’s Home. However, this will not change the level of significance of the effects reported in the main ES.
- 5.1.28 The amendment will give rise to a different likely residual significant temporary major adverse effect, due to the increase in the number of residential properties in Moreton which will be subject to a significant in-combination effect, from visual and noise effects, from seven to eight properties. However, this will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.1.29 This amendment in combination with the AP2 amendment to remove Moreton retaining wall (AP2-002-002) will result in a different significant effect by changing the number of properties in Moreton which would be subject to a significant temporary in-combination effect from significant noise and visual effects. The amendment to remove Moreton retaining wall will result in the demolition of one residential property in Moreton, whilst the amendment to relocate Mayfield Children’s Home will result in one additional residential property in Moreton. The total number of properties subject to a significant temporary in-combination effect will therefore remain as seven. This will not change the level of significance of the effect reported in the main ES.

Effects arising during operation

Avoidance and mitigation measures

- 5.1.30 No avoidance or mitigation measures additional to those reported in the main ES are identified.

Assessment of impacts and effects

- 5.1.31 The main ES reported that Mayfield Children’s Home would experience significant adverse visual and noise effects due to the operation of the scheme. The permanent in-combination effect would result in a major adverse significant effect on the amenity of residents of Mayfield Children’s Home.
- 5.1.32 This amendment will relocate the residents of Mayfield Children’s Home and will remove the likely residual significant permanent major adverse in-combination effect on the amenity of residents of Mayfield Children’s Home, as reported in the main ES.
- 5.1.33 The main ES, as amended by SES1, reported that approximately 12 properties in Moreton would experience significant permanent adverse visual and noise effects due to the operation of the scheme. The permanent in-combination effect would result in a major adverse significant effect on the amenity of residents at the 12 properties.
- 5.1.34 This amendment will relocate the residents of Mayfield Children’s Home, which will give rise to a different significant effect by increasing the number of residential properties in Moreton which would be subject to a significant permanent in-combination effect. It is assumed that once the residents of the children’s home have relocated, Moreton House will become a residential property. This will increase the

number of properties in Moreton that will be subject to a permanent in-combination effect, from 12 to 13. However, this will not change the level of significance of the effect reported in the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.1.35 No mitigation measures, additional to those reported in the main ES, are required.

Summary of likely residual significant effects

- 5.1.36 The amendment will remove the likely residual significant permanent in-combination major adverse effect on the amenity of residents of Mayfield Children’s Home during operation, as reported in the main ES.
- 5.1.37 The amendment will give rise to a different likely residual significant permanent major adverse effect, due to the increase in the number of residential properties in Moreton which will be subject to a significant permanent in-combination effect on the amenity of residents at 13 properties during operation. However, this will not change the level of significance of the effect reported in the main ES.

Cumulative effects

- 5.1.38 This amendment in combination with the AP2 amendment to remove Moreton retaining wall (AP2-002-002) will result in a different significant effect by changing the number of properties in Moreton which would be subject to a significant permanent in-combination effect from significant noise and visual effects. The amendment to remove Moreton retaining wall will result in the demolition of one residential property in Moreton whilst the amendment to relocate Mayfield Children’s Home will result in one additional residential property in Moreton. The total number of properties subject to a significant permanent in-combination effect will therefore remain as 12. This will not change the level of significance of the effect reported in the main ES, as amended by SES1.

Monitoring

- 5.1.39 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.1.40 There are no changes to the monitoring requirements identified in the main ES for community as a result of the amendment.

Cultural heritage

Scope, assumptions and limitations

- 5.1.41 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.1.42 As the cultural heritage impacts of the amendment are not reversible, they therefore have the potential to result in new or different significant permanent construction

effects only. Therefore, there is no temporary construction or operational assessment for cultural heritage.

- 5.1.43 It is assumed that the Grade II listed Moreton House (COY006) will be in residential use or be subject to a suitable management regime during HS2 Ltd ownership, following the relocation of the residents of Mayfield Children’s Home.

Existing environmental baseline

- 5.1.44 The baseline cultural heritage information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 7 of the main ES and in SES2 and AP2 ES Volume 5: Appendix CH-002-000.
- 5.1.45 Mayfield Children’s Home occupies the Grade II listed Moreton House (COY006), a designated asset of moderate value. It is a substantial hilltop late 18th century house, originally set within a historic formal garden, with its main façade looking south.
- 5.1.46 Further information about these assets is provided in the main ES Volume 5: Appendix CH-002-002, Map Series CH-01, CH-02 and CH-03 in the main ES Volume 5: Cultural heritage Map Book, and the SES2 and AP2 ES Volume 5: Appendix CH-002-000.

Future environmental baseline

Construction (2020)

- 5.1.47 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.48 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

- 5.1.49 As the Grade II listed Moreton House (COY006) will be in residential use or be subject to a suitable management regime during HS2 Ltd ownership, the amendment will not give rise to a new or different significant permanent construction effect and will not change the level of significance of the effects, as reported in the main ES.
- 5.1.50 For further information see Map Series CH-01 in the SES2 and AP2 ES Volume 5: Cultural heritage Map Book, and the SES2 and AP2 ES Volume 5: Appendix CH-003-000.

Cumulative effects

- 5.1.51 There are no new or different likely significant cumulative effects for cultural heritage as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Health

Scope, assumptions and limitations

- 5.1.52 The assessment scope, key assumptions and limitations for health are as set out in Volume 1 and the SMR of the main ES.
- 5.1.53 This amendment has the potential to result in new or different temporary and permanent construction and operational effects for health. Therefore, both construction and operational phases are considered in this assessment.
- 5.1.54 HS2 Ltd is working with the Priory Group in providing a replacement facility for Mayfield Children's Home. For the purposes of the assessment if the Priory Group are unable to achieve their own consent for a replacement facility, it is assumed that the relocation of Mayfield Children's Home from Moreton House to its new location will be complete approximately nine months after HS2 construction works begin.

Existing environmental baseline

- 5.1.55 The baseline health information for the Colwich to Yarlet areas are as described in Volume 2, CA2, Section 9 of the main ES.
- 5.1.56 Mayfield Children's Home occupies Moreton House, within the hamlet of Moreton, immediately north of the HS2 route. The children's home, operated by the Priory Group, provides residential accommodation for up to 23 children who attend Rugeley School. The children travel by minibus daily from Moreton House to Rugeley School.
- 5.1.57 Rugeley School is an independent specialist residential school owned and operated by the Priory Group, serving up to 52 residential and day pupils between the ages of five and 19. The school is located on the outskirts of Blithbury in Staffordshire.
- 5.1.58 All of the pupils at Rugeley School have severe autism with complex needs. Many have communication, learning and behavioural needs and all require one to one care. Rugeley School accepts residential pupils from across the UK, as well as day pupils who commute daily to and from the school. The school provides a 40-week education programme, which is supplemented for some students with a care programme that can be up to 52 weeks a year.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.1.59 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.60 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

- 5.1.61 The main ES identified an adverse health effect on residents of Mayfield Children’s Home at Moreton House, due to noise, traffic and visual impacts. The amendment will reduce the duration of the adverse health effects, but will not remove them entirely as Mayfield Children’s Home will remain at Moreton House during the first nine months of construction. The amendment may, therefore, result in some children being exposed to construction impacts at both Mayfield Children’s Home and from construction of the replacement facility at Rugeley School during this period. This could exacerbate the adverse health effects reported in the main ES, by reducing opportunities for periods of respite. The health effects arising from construction of the replacement facility at Rugeley School are reported in the Fradley to Colton area (CA1).
- 5.1.62 Following completion of the replacement residential facility, the children will be relocated in a phased transfer. The transfer process also has the potential to cause temporary adverse effects on wellbeing, due to changes in the children’s familiar routines.

Mitigation and residual effects

Other mitigation measures

- 5.1.63 As reported in the main ES, HS2 Ltd will continue to engage with the Priory Group to develop mitigation measures that will reduce or avoid impacts on vulnerable residents of Mayfield Children’s Home during HS2 construction works. HS2 Ltd is working with the Priory Group in providing a replacement facility. The Priory Group is seeking separate planning permission that would allow construction of the replacement facility to be completed in advance of construction works in the vicinity of Mayfield Children’s Home, thereby avoiding the adverse health effects of exposure to construction activities.

Summary of likely residual effects

- 5.1.64 The amendment is likely to give rise to the following new or different likely residual health effects, which are additional to those reported in the main ES, comprising:
- a potential increase in the temporary adverse health effect on residents of Mayfield Children’s Home, as assessed in the main ES, due to a reduction in respite from construction impacts for a period of nine months; and
 - a new temporary adverse effect on the wellbeing of residents of Mayfield Children’s Home caused by disruption of routines associated with the phased transfer to the new facility.
- 5.1.65 The likely residual effects described above represent a worst case scenario, if the mitigation measures outlined are not adopted.

Cumulative effects

- 5.1.66 There are no new or different likely cumulative effects for health as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments. The AP2 amendment which will remove Moreton retaining wall

(AP2-002-002) brings these construction works closer to Moreton House. However, the effect of this will be negligible in comparison to the effect from works adjacent to Moreton House.

Effects arising from operation

Avoidance and mitigation measures

- 5.1.67 No avoidance or mitigation measures additional to those reported in the main ES are identified.

Assessment of impacts and effects

- 5.1.68 The main ES reported that the quality of the environment around Mayfield Children's Home at Moreton House would be severely affected by train noise, leading to adverse effects on the health and wellbeing of residents of the children's home.
- 5.1.69 The amendment will provide replacement residential accommodation adjacent to Rugeley School, which will remove the permanent adverse health effect on residents of Mayfield Children's Home.

Mitigation and residual effects

Other mitigation measures

- 5.1.70 No mitigation measures additional to those reported in the main ES are required.

Summary of likely residual effects

- 5.1.71 The amendment will provide replacement residential accommodation adjacent to Rugeley School, which will remove the permanent adverse health effect on residents of Mayfield Children's Home at Moreton House.

Cumulative effects

- 5.1.72 There are no new or different likely cumulative effects for health as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Monitoring

- 5.1.73 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.1.74 There are no changes to the monitoring requirements identified in the main ES for health as a result of the amendment.

Socio-economics

Scope, assumptions and limitations

- 5.1.75 The assessment scope, key assumptions and limitations for socio-economics are as set out in Volume 1 and the SMR of the main ES.

- 5.1.76 This amendment has the potential to result in new or different significant temporary and permanent construction and operational effects for socio-economics. Therefore, both construction and operational phases are considered in this assessment.

Existing environmental baseline

- 5.1.77 The baseline socio-economic information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 12 of the main ES.
- 5.1.78 Moreton House is a Grade II listed building and is occupied by Mayfield Children's Home, a specialist residential home for children who attend Rugeley School located in Fradley to Colton area (CA1) operated by the Priory Group. The home has facilities for up to 23 children who have severe autism with many also having special behavioural, learning or communication needs. Moreton House is located adjacent to the north-east of the HS2 route. Due to a high staff to student ratio, the establishment is a relatively large source of employment in the area, with approximately 100 staff.
- 5.1.79 The land required for the replacement facility is on the former Westwood School site adjacent to Rugeley School. The additional land will be permanently required for the provision of a replacement facility for Mayfield Children's Home and will help to secure the continued presence of this business in the area and its associated employment.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.1.80 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.81 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 5.1.82 The main ES reported that Mayfield Children's Home would experience significant adverse residual noise and visual effects from the construction of the original scheme. The sensitivity of this establishment was considered to be high, specifically as the establishment has locational ties with Rugeley School and residents are considered to be very sensitive to changes in environmental conditions. The main ES reported that these in-combination effects may impair the operation of Mayfield Children's Home as a business.
- 5.1.83 The amendment provides for a replacement facility on a site adjacent to Rugeley School in the Fradley to Colton area. This location will not experience adverse environmental effects associated with the scheme and will enable the children's home to continue to operate with regard to the needs of its users over the long term. For the purposes of the assessment it is assumed that there will be a limited period of time during which the business will be operating from the Moreton House location during the construction phase. The amendment will therefore remove a likely major adverse

significant effect at Mayfield Children’s Home at Moreton House, as reported in the main ES. See SES2 and AP2 ES Volume 5: Socio-economics Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.1.84 HS2 Ltd will continue to engage with the Priory Group to develop mitigation measures that will reduce or avoid impacts on the Mayfield Children’s Home at Moreton House during construction.

Summary of likely residual significant effects

- 5.1.85 The amendment will remove a likely residual significant major adverse in-combination construction effect (noise and visual) at Mayfield Children’s Home, as reported in the main ES.

Cumulative effects

- 5.1.86 There are no new or different likely significant cumulative effects for socio-economics as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Effects arising from operation

Avoidance and mitigation measures

- 5.1.87 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 5.1.88 The main ES reported that Mayfield Children’s Home would experience significant adverse residual noise and visual effects from the operation of the original scheme. The sensitivity of this establishment is considered to be high, specifically as the establishment has locational ties with Rugeley School and residents are considered to be very sensitive to changes in environmental conditions. The main ES reported that these in-combination effects may impair the operation of Mayfield Children’s Home as a business.
- 5.1.89 The amendment provides for a replacement facility on a site adjacent to Rugeley School in the Fradley to Colton area. This location will not experience adverse environmental effects associated with the operation of the scheme, and will enable the children's home to continue to operate with regard to the needs of its users over the long term. The amendment will therefore remove a likely major adverse residual significant effect at Mayfield Children’s Home at Moreton House, as reported in the main ES. See SES2 and AP2 ES Volume 5: Socio-economics Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.1.90 No mitigation measures additional to those reported in the main ES are required.

Summary of likely residual significant effects

- 5.1.91 The amendment will remove a likely residual significant major adverse in-combination operational effect (noise and visual) at Mayfield Children’s Home, as reported in the main ES.

Cumulative effects

- 5.1.92 There are no new or different likely significant cumulative effects for socio-economics as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Monitoring

- 5.1.93 Volume 1, Section 9 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.1.94 There are no changes to the monitoring requirements identified in the main ES for socio-economics as a result of the amendment.

Sound, noise and vibration

Scope, assumptions and limitations

- 5.1.95 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the SMR of the main ES.
- 5.1.96 This amendment has the potential to result in new or different significant temporary construction and operational effects for sound, noise and vibration. Therefore, both temporary construction and operational phases are considered in this assessment.

Existing environmental baseline

- 5.1.97 The baseline sound, noise and vibration information for the areas affected are described in Volume 2, CA2, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by the amendment have been used in the construction and operational assessment.
- 5.1.98 In the vicinity of the amendment at Moreton, the existing environmental baseline is dominated by noise from distant road traffic noise on the A51, with trains (on the West Coast Main Line (WCML)), overflying aircraft and natural and agricultural sounds also contributing.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.1.99 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.100 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

- 5.1.101 The main ES identified a likely significant construction noise effect at Mayfield Children’s Home during construction of the original scheme for a period of three years. The relocation of Mayfield Children’s Home from Moreton House to the new facility, will be completed approximately nine months after the HS2 construction works begin in this area. The amendment will not alter the construction activities considered in the main ES close to Mayfield Children’s Home. However, on the basis of the programme for relocation, construction noise levels at Mayfield Children’s Home associated with construction activities are only considered for this nine month period. This does not alter the highest and typical predicted construction noise levels presented in the main ES, and a likely significant construction noise effect remains at Mayfield Children’s Home, however the duration is reduced to nine months. For further information see SES2 and AP2 ES Volume 5: Appendix SV-002-000.
- 5.1.102 HS2 Ltd is working with the Priory Group in providing a replacement facility. Priory Group is seeking separate planning permission that would allow construction of the replacement facility to be completed in advance of construction works in the vicinity of Mayfield Children’s Home. This process has the potential to allow the facility to be built sooner than assessed, enabling the Mayfield Children’s Home occupants to be relocated.

Mitigation and residual effects

Other mitigation measures

- 5.1.103 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.1.104 The amendment will not give rise to a new or different likely residual significant construction noise effect and will not change the level of significance of the effects reported in the main ES, at Mayfield Children’s Home.

Cumulative effects

- 5.1.105 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Effects arising from operation

Avoidance and mitigation measures

- 5.1.106 No avoidance or mitigation measures additional to those reported in the main ES are identified.

Assessment of impacts and effects

- 5.1.107 The main ES identified on a precautionary basis, a likely operational airborne noise significant effect at Mayfield Children’s Home (assessment location ref.: 12008(N)) during the operation of the original scheme, denoted by OSV02-No2 on Map Series SV-05 Volume 2: CA2 Map Book of the main ES.

5.1.108 An assessment has been undertaken to determine whether the operational airborne noise levels, as a result of the amendment, will result in a new or different likely significant effect using the significance criteria detailed in the main ES (Volume 5: Appendix SV-001-001).

5.1.109 The amendment removes the likely significant operational airborne noise effect identified in the main ES at Mayfield Children’s Home. For further information see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Mitigation and residual effects

Other mitigation measures

5.1.110 No mitigation measures, additional to those reported in the main ES are identified.

Summary of likely residual significant effects

5.1.111 The amendment will remove the likely residual significant operational airborne noise effect at Mayfield Children’s Home reported in the main ES.

Cumulative effects

5.1.112 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Monitoring

5.1.113 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.

5.1.114 There are no changes to the monitoring requirements identified in the main ES for sound, noise and vibration as a result of the amendment.

Summary of new or different likely residual significant effects as a result of the amendment

5.1.115 The amendment will give rise to a different likely residual significant temporary adverse effect, due to the reduction in duration of significant in-combination community effects on residents of Mayfield Children’s Home during construction. However, this will not change the level of significance of the effects reported in the main ES. The amendment will also give rise to a different likely residual significant temporary and permanent adverse effect, due to the increase in the number of residential properties in Moreton which will be subject to in-combination community effects during construction and operation. However, this will not change the level of significance of the effect reported in the main ES. The amendment will remove the likely residual significant permanent in-combination community major adverse effect on the amenity of residents of Mayfield Children’s Home during operation.

5.1.116 The amendment will result in a potential increase in the temporary adverse health effect on residents of Mayfield Children’s Home due to a reduction in respite from construction impacts for a period of nine months. There will also be a new temporary adverse effect on the wellbeing of the residents caused by disruption of routines associated with the phased transfer to the new facility. The amendment will remove

the permanent adverse health effect on residents at Mayfield Children’s Home at Moreton House during operation.

- 5.1.117 The amendment will remove the likely residual significant major adverse in-combination socio-economic effect at Mayfield Children’s Home associated with both the construction and operation of the original scheme.
- 5.1.118 The amendment will remove the likely residual significant operational airborne noise effect at Mayfield Children’s Home.

5.2 Additional land and a change to Bill powers required for the removal of Moreton retaining wall and to realign the access track to Moreton House and Moreton House Farm (AP2-002-002)

- 5.2.1 The Bill provides for the HS2 route to continue from the Colwich Bridleway 23 accommodation overbridge in the Moreton cutting, which passes to the south of Moreton House and Moreton House Farm. Moreton retaining wall, 208m in length and up to 10m in height, would be located along the northern side of the cutting to reduce the amount of land required in proximity to Moreton House. Moreton House is a Grade II listed building and is occupied by Mayfield Children’s Home, a specialist residential home for residents attending Rugeley School located in the Fradley to Colton area (CA1). The home has facilities for up to 23 children aged between five and 19 years old, with approximately 100 staff. All of the children are severely autistic, with many also having special behavioural, learning or communication needs.
- 5.2.2 An access track would be provided on the northern side of Moreton cutting to enable access to Moreton House and Moreton House Farm. An area of landscape mitigation planting would be provided between access track and the top of the cutting. A section of hedgerow habitat creation, 165m in length, would be provided along the northern side of the access track. See Map CT-06-210, E5 to D5, in the main ES, Volume 2: CA2 Map Book.
- 5.2.3 The AP1 revised scheme (amendment AP1-002-101: Additional land for the permanent diversion of BT Openreach overhead telecommunications cable along Moreton Lane) includes the diversion of BT Openreach telecommunications cable, 1.3km in length, between Moreton House and the Moreton retaining wall, to follow the alignment of Moreton Lane to the north of the HS2 route. See Map CT-06-210, E3 to A8, and Map CT-06-211, J2 to F9, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.2.4 Since submission of the SES1 and AP1 ES, further design refinement and engagement with the residents of the dwelling at Moreton House Farm has identified the opportunity to remove Moreton retaining wall and extend the width of Moreton cutting. Moreton cutting will increase in width on the northern side of the HS2 route by 20m. The increased width of Moreton cutting will require a reduction in landscape mitigation planting by 780m² and will require the realignment of the access track over a length of 190m, 20m further north to follow the extent of the widened Moreton cutting. Hedgerow planting will be modified to follow the realignment of the access track and will increase in length by 35m. See Map CT-06-210, E5 to D5, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.

- 5.2.5 The demolition of the residential dwelling at Moreton House Farm will be required due to the construction of the realigned access track resulting from the removal of Moreton retaining wall and the widening of Moreton cutting at this location. Other farm buildings at Moreton House Farm will not be demolished.
- 5.2.6 The widening of Moreton cutting and associated access track realignment will be constructed over a period of three years and three months, commencing in 2022. This is six months longer than the period set out in the main ES and will be managed from the Trent South embankment main compound. See Map CT-05-212, F3 to F4, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.
- 5.2.7 The realignment of the access track and the demolition of the dwelling at Moreton House Farm are outside the limits of the Bill. The amendment will require a change to Bill powers and will result in a requirement for an additional 0.2ha of land. See Map CT-06-210, E5 to D5, in the SES2 and AP2 ES, Volume 2: CA2 Map Book. It is assumed that 0.1ha of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.2.8 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: agriculture, forestry and soils; community; ecology and biodiversity; and sound, noise and vibration. This is reported within this section.

Agriculture, forestry and soils

Scope, assumptions and limitations

- 5.2.9 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the Scope and Methodology Report (SMR)³⁶ and SMR Addendum³⁷ of the main ES.
- 5.2.10 This amendment has the potential to result in new or different significant temporary and permanent construction effects only. Therefore, there is no operational assessment for agriculture, forestry and soils.

Existing environmental baseline

- 5.2.11 The baseline agriculture, forestry and soils information for the Colwich to Yarlet area is as described in Volume 2: CA2, Section 4 of the main ES.
- 5.2.12 The area of land required for the amendment has soil in the Whimple 3 association, as described in Volume 2, CA2, Section 4 of the main ES. Whimple 3 association

³⁶ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

³⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

comprises of clay loam, silty clay loam or sandy clay loam topsoils over clay loam or clay subsoils. This land is classified as good quality land in Subgrade 3a³⁸.

- 5.2.13 One farm holding, already affected by the original scheme, will be further affected by this amendment. Moreton House Farm (CA2/6) is a 136ha arable and beef cattle holding of medium sensitivity to change.

Future environmental baseline

Construction (2020)

- 5.2.14 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.2.15 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice³⁹ (CoCP) are required.

Assessment of impacts and effects

- 5.2.16 The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES on best and most versatile (BMV) agricultural land or forestry land within the Colwich to Yarlet area as it is not of a scale to change the magnitude of impact. The route-wide effects on BMV land and forestry land are reported in Volume 3 of the SES2 and AP2 ES.
- 5.2.17 The main ES reported a temporary moderate adverse effect on Moreton House Farm (CA2/6), which is significant. Approximately 11.4ha (8% of the total area of the land holding) would be required temporarily, resulting in a low impact. The amendment will require an additional 0.2ha of land temporarily from the land holding, resulting in a total of area land required temporarily of 11.6ha (9% of the total area of the land holding). The amendment will not give rise to a different significant temporary effect and will not change the level of significance of the effects reported in the main ES.
- 5.2.18 The main ES reported a permanent moderate adverse effect on Moreton House Farm, which is significant. Approximately 6ha (4% of the total area of the land holding) would be required permanently, resulting in a negligible impact. The amendment will require an additional 0.1ha of land permanently from the land holding, resulting in a total of area land required permanently of 6.1ha (4% of the total area of the land holding). The amendment will also require the demolition of a residential property at Moreton House Farm which will be a high impact. The amendment will give rise to a different significant effect and will change the significance of the effect reported in the main ES from moderate adverse to major/moderate adverse.

³⁸ The quality of agricultural land in England and Wales is assessed according to the Agricultural Land Classification (ALC) system, which classifies agricultural land into five grades from excellent quality Grade 1 land to very poor quality Grade 5 land. Grade 3 is subdivided into Subgrades 3a and 3b. Grades 1, 2 and 3a are defined as the best and most versatile (BMV) land. The ALC methodology is contained in: Ministry of Agriculture, Fisheries and Food (1988), Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land.

³⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

- 5.2.19 For further information see SES2 and AP2 ES Volume 5: Appendix AG-001-000 and SES2 and AP2 ES Volume 5: Agriculture, forestry and soils Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.2.20 The land required temporarily for construction will be restored to its former agricultural condition once the works are completed, following good practice techniques in handling, storing and reinstating soils on that land, as set out in the draft CoCP. The demolition of the dwelling at Moreton House Farm could be mitigated by the construction of a replacement farm dwelling. However, this is not proposed as part of the AP2 revised scheme.

Summary of likely residual significant effects

- 5.2.21 The amendment will give rise to a different likely residual adverse permanent significant effect for agriculture, forestry and soils on Moreton House Farm (CA2/6) due to the demolition of a residential property. In the absence of a replacement farm residential property, which is not provided as part of the amendment, this will change the significance of the permanent effect reported in the main ES from moderate adverse to major/moderate adverse. If the farm residential property were to be replaced that would reduce the level of significance to that reported in the main ES.

Cumulative effects

- 5.2.22 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Community

Scope, assumptions and limitations

- 5.2.23 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR, and SMR Addendum of the main ES.
- 5.2.24 This amendment has the potential to result in new or different significant temporary and permanent construction and operational effects for community. Therefore, both construction and operational phases are considered in this assessment.

Existing environmental baseline

- 5.2.25 The baseline community information for the Colwich to Yarlet area is described in Volume 2, CA2, Section 6 of the main ES.
- 5.2.26 Moreton is a small hamlet made up of approximately 13 residential properties, located approximately 1.9km north-east of Little Haywood. Access to the properties is restricted and can only easily be accessed via Bishton Lane.
- 5.2.27 Moreton House is a Grade II listed building and is occupied by Mayfield Children's Home, a specialist residential home for residents at Rugeley School located in the Fradley to Colton area (CA1). The home has facilities for up to 23 children aged between five and 19 years old, with approximately 100 staff. All of the children are

severely autistic, with many also having special behavioural, learning or communication needs.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.2.28 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.2.29 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

- 5.2.30 The main ES and AP1 ES reported a temporary loss of land from the residential property at Moreton House Farm due to minor road works and minor utility works. The temporary loss of these small areas of land for up to three months would not impact on the ability of the residents to use their property and access would be maintained to the property throughout the construction works. The main ES and AP1 ES reported that this loss of land would result in a temporary minor adverse non-significant effect on Moreton House Farm.
- 5.2.31 The amendment will permanently require an additional area of land and the demolition of the residential property at Moreton House Farm. The demolition is a due to the construction of the realigned access track resulting from the removal of Moreton retaining wall and the widening of Moreton cutting at this location. The amendment will give rise to a different effect, however this will not change the level of significance of the effects reported in the main ES and AP1 ES. Although the loss of the individual property will be significant to the residents of that property, the loss of less than five residential properties is not considered to be significant to the community as a whole. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.
- 5.2.32 The main ES reported that seven residential properties in Moreton would experience significant adverse visual and noise effects due to construction works. The temporary in-combination effect would result in a major adverse significant effect on amenity of residents at the seven properties for up to nine months in total.
- 5.2.33 The amendment will result in the demolition of the residential property at Moreton House Farm and will therefore give rise to a different temporary significant in-combination effect by reducing the number of properties that will be subject to a temporary in-combination effect, from seven to six. This will give rise to a different significant effect, however, this will not change the level of significance of the effect reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.2.34 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.2.35 The amendment will give rise to a different likely residual significant temporary major adverse effect, due to a decrease in the number of residential properties in Moreton which will be subject to a significant in-combination effect, from visual and noise effects, from seven to six properties. However, this will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.2.36 This amendment in combination with the AP2 amendment to relocate Mayfield Children's Home (AP2-002-001) will result in a different significant effect by changing the number of properties in Moreton which would be subject to a significant temporary in-combination effect from significant noise and visual effects. The amendment to remove Moreton retaining wall will result in the demolition of one residential property in Moreton, whilst the amendment to relocate Mayfield Children's Home will result in one additional residential property in Moreton. The total number of properties subject to a significant temporary in-combination effect will therefore remain as seven. This will not change the level of significance of the effect reported in the main ES.

Effects arising during operation

Avoidance and mitigation measures

- 5.2.37 No avoidance or mitigation measures additional to those reported in the main ES are identified.

Assessment of impacts and effects

- 5.2.38 The main ES, as amended by SES1, reported that approximately 12 properties in Moreton would experience significant permanent adverse visual effects due to the operation of the scheme. The main ES, as amended by SES1, further reported that all of these properties would experience a significant permanent noise effect. The in-combination effect would result in a permanent major adverse significant effect at the 12 properties.
- 5.2.39 The amendment will give rise to a different likely residual significant permanent major adverse effect, due to a decrease in the number of residential properties in Moreton which will be subject to a significant in-combination effect, from visual and noise effects, from 12 to 11 properties. However, this will not change the level of significance of the effects reported in the main ES as amended by SES1.

Mitigation and residual effects

Other mitigation measures

- 5.2.40 No mitigation measures additional to those reported in the main ES are identified.

Summary of likely residual significant effects

- 5.2.41 The amendment will give rise to a different likely residual significant permanent major adverse effect, due to a decrease in the number of residential properties in Moreton which will be subject to a significant in-combination effect, from visual and noise effects, from 12 to 11 properties. However, this will not change the level of significance of the effects reported in the main ES as amended by SES1.

Cumulative effects

- 5.2.42 This amendment in combination with AP2 amendment to relocate Mayfield Children's Home (AP2-002-001) will result in a different significant effect by changing the number of properties in Moreton which would be subject to a significant permanent in-combination effect from significant noise and visual effects. The amendment to remove Moreton retaining wall will result in the demolition of one residential property in Moreton whilst the amendment to relocate Mayfield Children's Home will result in one additional residential property in Moreton. The total number of properties subject to a significant permanent in-combination effect will therefore remain as 12. This will not change the level of significance of the effect reported in the main ES as amended by SES1.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.2.43 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.2.44 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.2.45 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.2.46 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.2.47 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources.
- 5.2.48 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information

is provided in Background Information and Data (BID) document EC-019-000, including Map Series EC-02 which accompanies the SES2 and AP2 ES.

- 5.2.49 For those receptors described in the main ES, further details are provided in Volume 2, CA2, Section 8, and Volume 5: Appendix EC-001-000, including Map Series EC-01. Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12⁴⁰.
- 5.2.50 For those receptors described in SES1, further details are provided in Volume 2, CA2, Section 3 of the SES1 and AP1 ES. The baseline ecology report that accompanied SES1 and AP1 ES is provided in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12⁴¹.

Designated sites

- 5.2.51 The area subject to the amendment is located within a Natural England Impact Risk Zone⁴² for Blithfield Reservoir Site of Special Scientific interest (SSSI), which is of national value. Blithfield Reservoir SSSI, covering an area of approximately 436.9ha, is designated because it regularly supports >1% of the national wintering population of goosander. Blithfield Reservoir SSSI is located north-east of Moreton Farm, approximately 2.6km north-east of the area subject to the amendment.

Habitats

- 5.2.52 Habitats located within the area subject to the amendment include species-rich hedgerows, improved grassland, amenity grassland and a residential dwelling. The habitats of relevance to the assessment of the amendment are described in further detail below.
- 5.2.53 Hedgerows within the area subject to the amendment are predominantly species-rich. Hedgerow with at least 80% cover of native woody species is a habitat of principal importance in Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)⁴³ and a conservation priority of the Staffordshire Biodiversity Action Plan⁴⁴ (BAP). These contribute towards a wider hedgerow network within the Colwich to Yarlet area that is of district/borough value.

Species

- 5.2.54 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include bats and European hedgehog.
- 5.2.55 The main ES reported a bat assemblage associated with habitats near Moreton House. Field surveys in this area recorded small numbers of non-breeding roosts of a *Myotis* species, an unknown bat species and noctule. The area subject to the

⁴⁰ HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

⁴¹ HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

⁴² The Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals and indicate the types of development proposal which could potentially have adverse impacts.

⁴³ Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

⁴⁴ Staffordshire Biodiversity Partnership. *Staffordshire Biodiversity Action Plan*. Available online at: <http://www.sbap.org.uk/>

amendment contains potential bat roosting and foraging habitats that are likely to be used by this bat assemblage. The bat assemblage includes several species of principal importance and other species that are conservation priorities of the Staffordshire BAP. The bat assemblage associated with habitats at Moreton House is of up to county value.

- 5.2.56 The main ES reported populations of European hedgehog, identified through desk study records, as being potentially present throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable habitats for European hedgehog. If present, the populations of European hedgehog throughout Colwich to Yarlet are of local/parish value.

Future environmental baseline

Construction (2020)

- 5.2.57 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.2.58 The assessment assumes implementation of the measures set out within the draft CoCP.
- 5.2.59 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.2.60 All of the effects within this section are reported in the absence of other mitigation.

Designated sites

- 5.2.61 No effects on Blithfield Reservoir SSSI were reported within the main ES. Blithfield Reservoir SSSI will not be directly impacted by construction of the amendment. The closest point of construction will be a permanent access track on the north side Morten cutting, approximately 2.6km south-west of the SSSI. The amendment will therefore not give rise to new or different significant effects upon the designated features of this SSSI.

Habitats

- 5.2.62 On a precautionary basis, the main ES reported a loss of 33.9km of hedgerow habitat within the Colwich to Yarlet area, which would result in a permanent adverse effect that is significant at district/borough level. The amendment will result in the additional loss of approximately 120m of species-poor hedgerow. In the context of the hedgerow network within the Colwich to Yarlet area, this additional loss does not represent a new or different significant effect.
- 5.2.63 It is not likely that any other effects on habitats of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level

effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Species

- 5.2.64 The main ES reported a direct loss of roosts and a loss and fragmentation of foraging and commuting habitat used by the assemblage of bats near Moreton House, which would result in a permanent adverse effect that is significant at up to county level. The amendment will result in the demolition of a residential dwelling and loss of a small number of mature trees, which on a precautionary basis are assumed to support a bat roost. The assumed loss of an additional roost will give rise to a different significant effect on the bat assemblage near Moreton House. However, this will not change the level of significance of the effect as reported in the main ES.
- 5.2.65 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.2.66 The main ES reported habitat creation to the west of Moreton House, which includes the creation of ponds, species-rich grassland, hedgerows and broadleaved woodland, to compensate for the loss of bat foraging habitats. Once established, these habitat creation measures will provide suitable bat foraging and commuting habitat. Artificial roosting provision will be provided within and adjacent to woodland habitat creation areas to replace bat roosts that will be lost to construction, in accordance with the Ecological Principles of Mitigation within the SMR Addendum. These measures will reduce the different adverse effect resulting from this amendment on the bat assemblage associated with habitats near Moreton House to a level that is not significant.

Summary of likely residual significant effects

- 5.2.67 With the implementation of the mitigation proposed, the ecological effects arising from the amendment are reduced to a level where they are not considered to be significant. The significant effects of the amendment in this area are therefore unchanged from those reported in the main ES as amended by SES1.

Cumulative effects

- 5.2.68 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments. The combined effect on hedgerows as a result of the AP2 revised scheme is reported at a route-wide level in SES2 and AP2 ES, Volume 3, Route-wide effects.

Sound, noise and vibration

Scope, assumptions and limitations

- 5.2.69 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the SMR of the main ES.
- 5.2.70 This amendment has the potential to result in new or different significant temporary construction and operational effects for sound, noise and vibration. Therefore, both temporary construction and operational phases are considered in this assessment.

Existing environmental baseline

- 5.2.71 The baseline sound and vibration information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by the amendment have been used in the construction assessment.
- 5.2.72 In the vicinity of the amendment, the existing environmental baseline is dominated by noise from distant road traffic noise on the A51, with trains (on the West Coast Main Line (WCML)), overflying aircraft and natural and agricultural sounds also contributing.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.2.73 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: SV-001-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.2.74 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.2.75 The main ES reported a likely significant construction noise effect at Mayfield Children's Home and on a community basis at the residential properties in Moreton, which includes Moreton House Farm.
- 5.2.76 The amendment involves the demolition of the residential property at Moreton House Farm, thus reducing the number of properties by one within the community likely significant effect, which in itself does not constitute a new or different likely significant effect compared to the main ES. Furthermore, the demolition works themselves are minimal in both duration and noise and vibration level, given the scale and extent of the construction works identified in the main ES. Therefore, the amendment will not give rise to any new or different likely residual significant effects compared to those reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Cumulative effects

- 5.2.77 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Effects arising from operation

Avoidance and mitigation measures

- 5.2.78 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 5.2.79 The main ES reported a likely operational airborne noise significant effect at Mayfield Children's Home (assessment location ref.: 12008(N)) during the operation of the original scheme, denoted by OSVo2-No2 on Map Series SV-05 Volume 2: CA2 Map Book of the main ES.
- 5.2.80 The amendment slightly increases the operational airborne noise levels at Mayfield Children's Home⁴⁵ as the noise attenuation provided by the retaining wall included in the original scheme, is removed. However, considering the magnitude of the change and given that a likely significant residual effect is identified in the main ES, the slight increase in operational airborne noise levels does not result in a new or different likely significant effect at this receptor. For further information see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Cumulative effects

- 5.2.81 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of this amendment acting in combination with any other AP2 amendments or AP1 amendments.

Summary of new or different likely residual significant effects as a result of the amendment

- 5.2.82 The amendment will give rise to a different likely residual adverse permanent significant effect on Moreton House Farm (CA2/6) due to the demolition of the residential property at Moreton House Farm. This will change the significance of the permanent effect reported in the main ES from moderate adverse to major/moderate adverse.
- 5.2.83 In addition, the amendment will give rise to a different likely residual community effect on the residential property at Moreton House Farm, due to the demolition of the property, an increase in the area of land required and the change in requirement from temporary to permanent. However, this will not change the level of significance of the effects reported in the main ES.
- 5.2.84 The amendment will also give rise to a different likely residual significant temporary and permanent adverse effect, due to the decrease in the number of residential

⁴⁵ The effect on Mayfield Children's Home would not occur if AP2-002-001 is enacted.

properties in Moreton which will be subject to in-combination community effects during construction and operation. However, this will not change the level of significance of the effect reported in the main ES, as amended by SES1.

5.3 Additional land required during construction for the movement of surplus excavated material at Moreton, Ingestre, Hopton and Marston (AP2-002-003)

- 5.3.1 The Bill provides for the temporary use of land during construction of the scheme to the north and south of the HS2 route, which includes temporary material stockpiles and site haul routes. Land is required permanently for the construction of Moreton cutting, Brancote South cutting, Brancote North cutting, Hopton South cutting and Marston South embankment, together with the diversion of the A518 Weston Road and several public rights of way (PRoW). See Map CT-05-210, F5 to Map CT-05-211, A6; Map CT-05-213, D6 to Map CT-05-214, D6; Map CT-05-214, D6 to C6; Map CT-05-215, F6 to Map CT-05-216, F6; Map CT-05-217, C5 to Map CT-05-218, F5; and Map CT-05-215, E9 to E4 in the main ES Volume 2: CA2 Map Book.
- 5.3.2 Since submission of the Bill, a review of construction working areas and construction vehicle movements in this area has identified the temporary requirement for additional land in four locations. The additional land will be required temporarily on the northern and southern sides of the HS2 route at Moreton cutting, Brancote South cutting, Brancote North cutting, Hopton South cutting and Marston South embankment. These areas are required to separate public road-going vehicles (e.g. heavy goods vehicles (HGVs) and light goods vehicles (LGVs)) from larger earth moving equipment (with an average capacity of 40 tonnes), and comprise of:
- an additional 0.3ha of land, to the south-west of the Colwich Footpath 26 diversion, south of the HS2 route, adjacent to Moreton cutting. See Map CT-05-211, I7 to G6, in the SES2 and AP2 ES Volume 2: CA2 Map Book);
 - an additional 0.4ha of land, to the west of the Tixall Bridleway 0.1628 accommodation overbridge, north of the HS2 route, adjacent to Brancote South and Brancote North cuttings. To accommodate the separation of HGVs and LGVs from the larger earth moving vehicles, the temporary diversion of the Tixall Bridleway 0.1628 and Footpath 0.1630(b) will be further realigned by up to 10m. See Map CT-05-214, F5 to Map CT-05-215, H5, in the SES2 and AP2 ES Volume 2: CA2 Map Book)
 - an additional 0.4ha of land, to the west of the realigned A518 Weston Road, south of the HS2 route, adjacent to Hopton South cutting. See Map CT-05-215, E8 to D7, in the SES2 and AP2 ES Volume 2: CA2 Map Book; and
 - an additional 0.3ha of land, to the west of Marston Bridleway 8 accommodation underbridge, and to the south of the HS2 route, adjacent to Marston South embankment. See Map CT-05-217, B6 to Map CT-05-218, I6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.3.3 The areas of additional land would be used throughout the construction period.
- 5.3.4 The four areas of additional land are outside the limits of the Bill. The amendment will result in a requirement for an additional 1.4ha of land, some of which will be from the

following agricultural holdings: Coley Farm (CA2/8); Tithebarn Farm⁴⁶ (CA2/7); Upper Hanyards Farm (CA2/25); and Brickhouse Farm (CA2/27). See Map CT-05-211, I7 to G6; Map CT-05-214, F5 to Map CT-05-215, H5; Map CT-05-215, E8 to D7; and Map CT-05-217, B6 to Map CT-05-218, I6, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.3.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.4 Additional land required for the diversion of a National Grid gas pipeline and a new utility compound, west of Colwich Bridleway 35 accommodation overbridge (AP2-002-004)

- 5.4.1 The Bill provides for the permanent diversion of an underground National Grid 1,050mm diameter high pressure gas pipeline for 400m, 120m east of its existing alignment. The diversion would cross beneath the HS2 route at Moreton cutting, 720m north-west of Colwich Bridleway 35 accommodation overbridge. See Map CT-06-211, E6 to D5, in the main ES Volume 2: CA2 Map Book. Works to divert the National Grid gas pipeline would take nine months to complete, commencing in 2021, and would be managed from Trent South embankment main compound.
- 5.4.2 Grassland habitat creation would be provided along the length of the diverted pipeline easement to the south of the HS2 route for ecological connectivity. Three ecological mitigation ponds to provide replacement habitat for reptiles and amphibians, to the south of the HS2 route, would be located within an area of grassland habitat creation, 525m west of Colwich Bridleway 35 accommodation overbridge. See Map CT-06-211, F7 to E6 in the main ES Volume 2: CA2 Map Book.
- 5.4.3 The Bill further provides for the temporary storage of excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. A temporary material stockpile would be provided at Trent South embankment (south) transfer node, which would be located immediately south of Tolldish Lane temporary diversion. See Map CT-05-212, I5 to G4, in the main ES Volume 2: CA2 Map Book.
- 5.4.4 Since submission of the Bill, further engagement with the utility provider has identified a requirement to:
- reposition the locations where the diverted and existing pipelines connect;
 - realign a 1.5km section of the 1,050mm diameter high pressure gas pipeline;
 - provide additional working area to enable the connection of the new and existing pipelines; and

⁴⁶ This is also shown on OS mapping as Tithe Barn Farm.

- provide a new utility compound for the management of the National Grid 1,050mm diameter high pressure gas pipeline diversion works.

- 5.4.5 The western connection point will be repositioned 90m south of the location identified in the original scheme. As part of the amendment, a 1.5km section of pipeline will be diverted, changing the alignment in the original scheme, which is 90m further east than in the original scheme, crossing beneath the HS2 route, 630m north-west of Colwich Bridleway 35 accommodation overbridge. The new pipeline will reconnect with the existing pipeline alignment to the north of Tolldish Lane, 150m north-east of the A51 Lichfield Road underbridge. In total, the pipeline will be diverted by up to 390m north of its existing alignment. At each end of the pipeline diversion, works to connect the new section of pipeline to the existing pipeline, whilst maintaining gas supply during construction, will result in the temporary requirement for an additional 21ha of land. See Map CT-06-211, F7 to Map CT-06-212, G4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.4.6 The realigned pipeline diversion will require adjustment to ecological mitigation; the area of grassland habitat will move in line with the crossing of the HS2 route and the three ecological mitigation ponds will be relocated 350m to the north-west within another area of grassland habitat creation, provided in the original scheme, to the south of the HS2 route. See Map CT-06-211, F7 to C6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.4.7 A new utility compound (Trent South utility compound) will be provided for the management of the National Grid 1,050mm diameter gas pipeline diversion works. Trent South utility compound will be located 230m west of Colwich Bridleway 58 accommodation underbridge, within land required for Trent South embankment and the Trent South embankment (south) transfer node in the original scheme. See Map CT-05-212, I6 to H5, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.
- 5.4.8 Trent South utility compound will be operational for one year and nine months, commencing during 2021, and will support an average of 15 workers per day (20 workers at peak times). Access to the new compound will be from A51 Lichfield Road via site haul routes and Tolldish Lane.
- 5.4.9 The new utility compound will interact with the Trent South embankment (south) transfer node and, as a result, the transfer node will be reshaped. See Map CT-05-212, I5 to G4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.4.10 The diversion works will be undertaken prior to the main construction works over a nine month period, commencing in 2021.
- 5.4.11 The realignment of the National Grid 1,050mm diameter high pressure gas pipeline diversion is outside the limits of the Bill. This amendment will result in a requirement for an additional 21ha of land. See Map CT-06-211, F7 to Map CT-06-212, G4, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.4.12 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following

topics: agriculture, forestry and soils; cultural heritage; ecology and biodiversity; landscape and visual; traffic and transport; and water resources and flood risk. This is reported within this section.

- 5.4.13 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Agriculture, forestry and soils

Scope, assumptions and limitations

- 5.4.14 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the Scope and Methodology Report⁴⁷ (SMR) and SMR Addendum⁴⁸ of the main ES.
- 5.4.15 This amendment has the potential to result in new or different significant temporary construction effects only. Therefore, there is no permanent construction or operational assessment for agriculture, forestry and soils.

Existing environmental baseline

- 5.4.16 The baseline agriculture, forestry and soils information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 4 of the main ES.
- 5.4.17 The area of land required for the amendment has soil in the Whimple 3 association, as described in Volume 2, CA2, Section 4 of the main ES. Whimple 3 association comprises of clay loam, silty clay loam or sandy clay loam topsoils over clay loam or clay subsoils. This land is classified as good quality land in Subgrade 3a⁴⁹.
- 5.4.18 Two farm holdings, already affected by the original scheme, will be further affected by this amendment. These are:
- Tithebarn Farm (CA2/7), a 162ha arable and store cattle holding of medium sensitivity to change; and
 - Farley Farm (CA2/9), a 57ha beef cattle, sheep and equestrian holding of medium sensitivity to change.
- 5.4.19 Two farm holdings will be newly affected by this amendment. Baseline information on these holdings has been established through desk based study. These are:
- Land at Tolldish Barn (CA2/45), a 1ha non-commercial equestrian holding of low sensitivity to change; and

⁴⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁴⁸ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁴⁹ The quality of agricultural land in England and Wales is assessed according to the Agricultural Land Classification (ALC) system, which classifies agricultural land into five grades from excellent quality Grade 1 land to very poor quality Grade 5 land. Grade 3 is subdivided into Subgrades 3a and 3b. Grades 1, 2 and 3a are defined as the best and most versatile (BMV) land. The ALC methodology is contained in: Ministry of Agriculture, Fisheries and Food (1988), *Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land*.

- Land at Farley Lane (CA2/46), a 4ha grassland enterprise of low sensitivity to change.

Future environmental baseline

Construction (2020)

- 5.4.20 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.4.21 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice⁵⁰ (CoCP) are required.

Assessment of impacts and effects

- 5.4.22 This amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES on best and most versatile (BMV) agricultural land or forestry land within the Colwich to Yarlet area as it is not of a scale to change the magnitude of impact. The route-wide effects on BMV land and forestry land are reported in Volume 3 of the SES2 and AP2 ES.
- 5.4.23 The main ES reported a temporary major/moderate adverse effect on Tithebarn Farm (CA2/7), which is significant. Approximately 4.8ha (30% of the total area of the land holding) would be required temporarily, resulting in a high impact. The amendment will require an additional 13.7ha of land temporarily from the land holding, resulting in a total area required temporarily of 61.7ha (38% of the total area of the land holding). The amendment will give rise to a different significant effect, however this will not change the level of significance of the effects reported in the main ES. There is no change to the permanent land required from this land holding.
- 5.4.24 The main ES reported a temporary moderate adverse effect on Farley Farm (CA2/9), which is significant. Approximately 10.6ha (19% of the total area of the land holding) would be required temporarily, resulting in a medium impact. The amendment will require an additional 4.5ha of land temporarily from the land holding, resulting in a total area required temporarily of 15.1ha (26% of the total area of the land holding). The additional land required will change the impact from medium to high. The amendment will give rise to a different significant effect and will change the level of significance of the effect reported in the main ES from moderate adverse to major/moderate adverse. There is no change to the permanent land required from this land holding.
- 5.4.25 Land at Tolldish Barn (CA2/45) was not reported in the main ES as it was outside the land required for the original scheme. The amendment will require 0.5ha of land temporarily from the land holding (50% of the total area of the land holding), which is a high impact. The amendment will give rise to a new moderate adverse effect, which

⁵⁰ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

is significant, on this land holding. No permanent land is required from this land holding.

- 5.4.26 Land at Farley Farm (CA2/46) was not reported in the main ES as it was outside the land required for the original scheme. The amendment will require 0.5ha of land temporarily from the land holding (13% of the total area of the land holding), which is a medium impact. The amendment will give rise to a new minor adverse effect, which is not significant, on this land holding. No permanent land is required from this land holding.
- 5.4.27 For further information see SES2 and AP2 ES Volume 5: Appendix AG-001-000 and SES2 and AP2 ES Volume 5: Agriculture, forestry and soils Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.4.28 The land required temporarily for construction will be restored to its former agricultural condition once the works are completed, following good practice techniques in handling, storing and reinstating soils on that land, as reported in the main ES and draft CoCP. No other mitigation has been identified.

Summary of likely residual significant effects

- 5.4.29 This amendment will give rise to a new likely residual significant temporary moderate adverse effect on Land at Tolldish Barn (CA2/45) due to land required temporarily from the land holding.
- 5.4.30 At Farley Farm (CA2/9) and Tithebarn Farm (CA2/7) the amendment will give rise to different temporary residual significant effects. At Farley Farm the likely residual significance of the effect, as reported in the main ES, will change from moderate adverse to major/moderate adverse, due to the increase in land required temporarily from the land holding. The level of the significant effect at Tithebarn Farm will remain as major/moderate adverse.

Cumulative effects

- 5.4.31 The amendment, in combination with additional land required for the diversion of a Cadent gas pipeline, east of Colwich Bridleway 58 accommodation overbridge (AP2-002-005), will require 63.3ha of land temporarily from Tithebarn Farm (CA2/7) (39% of the total area of the land holding), which is a high impact.
- 5.4.32 No mitigation measures additional to those reported in the main ES and draft CoCP have been identified.
- 5.4.33 This will give rise to a different cumulative effect, however, this will not change the level of significance of the effects which will remain moderate/major adverse.

Cultural heritage

Scope, assumptions and limitations

- 5.4.34 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).

- 5.4.35 As the cultural heritage impacts of the amendment are not reversible, they therefore have the potential to result in new or different significant permanent construction effects only. There is no temporary construction or operational assessment for cultural heritage.

Existing environmental baseline

- 5.4.36 The baseline cultural heritage information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 7 of the main ES.
- 5.4.37 A cropmark enclosure at Tolldish Lane, Colwich (COY019), a non-designated asset of low value, lies wholly within the land required for the amendment.
- 5.4.38 Further information about this asset is provided in the main ES Volume 5: Appendix CH-002-002 and Map Series CH-01 in the main ES Volume 5: Cultural heritage Map Book.

Future environmental baseline

Construction (2020)

- 5.4.39 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.4.40 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

- 5.4.41 The main ES reported a permanent minor adverse effect, which is not significant, on a cropmark enclosure at Tolldish Lane, Colwich (COY019), a non-designated asset of low value. The full extent of the asset will be removed by the construction of the amendment. This will give rise to a new permanent high adverse impact and a new permanent moderate adverse effect, which is significant.
- 5.4.42 For further information see Map Series CH-01 in the SES2 and AP2 ES Volume 5: Cultural heritage Map Book and SES2 and AP2 ES Volume 5: Appendix CH-003-000.

Mitigation and residual effects

Other mitigation measures

- 5.4.43 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.4.44 This amendment will give rise to a new likely residual significant permanent moderate adverse effect on a cropmark enclosure at Tolldish Lane, Colwich (COY019), by removing the full extent of the asset during construction.

Cumulative effects

- 5.4.45 There are no new or different likely significant cumulative effects for cultural heritage as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.4.46 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.4.47 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.4.48 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.4.49 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.4.50 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources. In addition, the baseline has been informed by additional Phase 1 habitat survey.
- 5.4.51 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in Background Information and Data (BID) document EC-019-000, including Map Series EC-02 which accompanies the SES2 and AP2 ES.
- 5.4.52 For those receptors described in the main ES, further details are provided in Volume 2, CA2, Section 8, and Volume 5: Appendix EC-001-000, including Map Series EC-01. Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12⁵¹.
- 5.4.53 For those receptors described in SES1, further details are provided in Volume 2, CA2, Section 3. The baseline ecology report that accompanied SES1 and AP1 ES is provided in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12⁵².

⁵¹ HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

⁵² HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

Designated sites

5.4.54 There are two Special Areas of Conservation (SACs) of relevance to the assessment of the amendment, which are of international value. These are:

- Cannock Chase SAC, covering an area of approximately 1,240ha, is designated for its European dry heath (which is an Annex 1 habitat⁵³). Cannock Chase SAC is the most extensive area of lowland heathland in the Midlands and is characterised by heather, western gorse and wavy hair-grass. Cowberry, crowberry and intermediate bilberry, which are typical of northern heathlands, are also present. Cannock Chase SAC is located south of Great Haywood, approximately 2.6km south of the area subject to the amendment; and
- Pasturefields Salt Marsh SAC, covering an area of approximately 7.7ha, is designated for its inland salt meadow (which is an Annex 1⁵⁴ priority habitat). Pasturefields Salt Marsh SAC is cited as the best example of an inland salt meadow in the United Kingdom, and is characterised by red fescue, with saltmarsh rush, sea plantain, common saltmarsh-grass, lesser sea-spurrey and sea arrowgrass. Pasturefields Salt Marsh SAC is located north-west of Great Haywood, approximately 1km north-west of the area subject to the amendment.

5.4.55 The area subject to the amendment is located within Natural England Impact Risk Zones⁵⁵ for the following three Sites of Special Scientific Interest (SSSIs), which are of national value:

- Cannock Chase SSSI, covering an area of approximately 1,264ha (largely the same area as Cannock Chase SAC), is designated for its diverse semi-natural vegetation, which comprises nationally important ancient woodland, lowland heathland and wet heathland. Cannock Chase SSSI is located south of Great Haywood, approximately 2.6km south of the area subject to the amendment;
- Pasturefields Salt Marsh SSSI, covering the same area as Pasturefields Salt Marsh SAC (7.7ha), is designated for its inland salt meadow and notable breeding populations of snipe, redshank and lapwing. Pasturefields Salt Marsh SSSI is located north-west of Great Haywood, approximately 1km north-west of the area subject to the amendment; and
- Rawbones Meadow SSSI, covering an area of approximately 20ha, is designated for its wetland habitats, which support a notable breeding population of snipe. Rawbones Meadow SSSI is located west of Great Haywood, approximately 1.4km south-west of the area subject to the amendment.

⁵³Annex 1 of the EU's Habitats Directive (1992) lists key habitat types whose conservation requires the designation of Special Areas of Conservation.

⁵⁴ Annex 1 of the EU's Habitats Directive (1992) lists key habitat types whose conservation requires the designation of Special Areas of Conservation.

⁵⁵The Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals and indicate the types of development proposal which could potentially have adverse impacts.

- 5.4.56 There is one Ancient Woodland Inventory (AWI) site of relevance to the assessment of the amendment, which is of county value. Tithebarn Covert AWI site, covering an area of approximately 5.1ha, is located north-east of Great Haywood, immediately adjacent to the area subject to the amendment.

Habitats

- 5.4.57 Habitats within the area subject to the amendment include semi-natural broadleaved woodland, improved grassland, arable, species-rich hedgerows, species-poor hedgerows, watercourses and waterbodies. The habitats of relevance to the assessment of the amendment are described in further detail below.
- 5.4.58 There are two woodlands that qualify as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)⁵⁶ and a conservation priority of the Staffordshire Biodiversity Action Plan⁵⁷ (BAP). These are:
- Tithebarn Covert, listed on the AWI, covering an area of 5.1ha and located directly adjacent to the area subject to the amendment, approximately 300m west of Tithebarn Farm. The woodland is of county value; and
 - Little Covert, covering an area of 1.1ha and located partially within the area subject to the amendment, approximately 600m north-east of Great Haywood. The woodland is small in extent and of local/parish value.
- 5.4.59 Hedgerows within the area subject to the amendment are predominantly species-rich. Hedgerow with at least 80% cover of native woody species is a habitat of principal importance and a conservation priority of the Staffordshire BAP. These contribute towards a wider hedgerow network within the Colwich to Yarlet area that is of district/borough value.
- 5.4.60 A minor unnamed watercourse, south-east of Tolldish Lane, is located within the area subject to the amendment. This watercourse supports a diverse assemblage of wetland plants and consequently qualifies as a habitat of principal importance and a conservation priority of the Staffordshire BAP. This watercourse is of district/borough value.
- 5.4.61 There are five ponds within the area subject to the amendment. On a precautionary basis it is assumed that all ponds are habitats of principal importance or a conservation priority of the Staffordshire BAP. These ponds are of up to district/borough value.

Species

- 5.4.62 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include bats, great crested newt, other amphibians, reptiles, badger, polecat, harvest mouse, European hedgehog and brown hare.
- 5.4.63 The main ES reported a bat assemblage associated with habitats near Moreton House. Field surveys in this area recorded small numbers of non-breeding roosts of a

⁵⁶Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

⁵⁷ Staffordshire Biodiversity Partnership. *Staffordshire Biodiversity Action Plan*. Available online at: <http://www.sbap.org.uk/>

Myotis species, an unknown bat species and noctule. The area subject to the amendment contains potential bat roosting, foraging and commuting habitats that are likely to be used by this bat assemblage. The bat assemblage includes several species of principal importance and other species that are conservation priorities of the Staffordshire BAP. The bat assemblage associated with habitats near Moreton House is of up to county value.

- 5.4.64 The main ES, as amended by SES₁, reported a great crested newt metapopulation⁵⁸ centred on Moreton Farm (AMP⁵⁹2.1). Field surveys determined the presence of great crested newt in 13 of 18 ponds surveyed, within a network of 30 ponds assumed to be used by this metapopulation. There are five ponds within the metapopulation, which are within the area subject to the amendment. Terrestrial habitats likely to be used by this metapopulation also occur within the area subject to the amendment, in the form of woodland, grassland and hedgerows. Great crested newt is an Annex 2⁶⁰ species, a species of principal importance and a conservation priority of the Staffordshire BAP. The great crested newt population centred on Moreton Farm is of county value.
- 5.4.65 The main ES reported populations of amphibian species which include palmate newt, smooth newt, common toad and common frog, identified through field surveys, within ponds throughout the Colwich to Yarlet area. Amphibian species are assumed to be present in ponds that have not yet been surveyed. The area subject to the amendment includes woodland, grassland, hedgerows and ponds that are likely to be used by these species. Common toad is a species of principal importance. The populations of common amphibians throughout Colwich to Yarlet are of local/parish value.
- 5.4.66 The main ES reported populations of common reptile species which include common lizard, slow-worm and grass snake, identified through desk study records, as being potentially present at low numbers throughout the Colwich to Yarlet area. Common lizard, slow-worm and grass snake are species of principal importance. Grass snake is also a conservation priority of the Staffordshire BAP. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.
- 5.4.67 The main ES, as amended by SES₁, reported at least five social groups of badgers, identified through field surveys, throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable sett building and foraging habitats for badgers. The badger populations throughout the Colwich to Yarlet area are of local/parish value.
- 5.4.68 The main ES reported populations of other mammals including polecat, harvest mouse, European hedgehog and brown hare, identified through desk study records, as being potentially present throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.

⁵⁸ A metapopulation is a group of spatially separated populations which interact.

⁵⁹ The first and second number associated with the AMP reference relate to the specific CA and location e.g. AMP2.1 is within the Colwich to Yarlet area and is the first metapopulation encountered when following the route from London.

⁶⁰ Annex 2 of the EU's Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation.

Future environmental baseline

Construction (2020)

- 5.4.69 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.4.70 The assessment assumes implementation of the measures set out within the draft CoCP.
- 5.4.71 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.4.72 All of the effects within this section are reported in the absence of other mitigation.

Designated sites

- 5.4.73 No effects on Cannock Chase SAC were reported within the main ES. The Cannock Chase SAC will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be the pipeline installation works on the north side of Trent South embankment, approximately 2.6km north of the SAC. The SAC is designated for the most extensive area of lowland heathland in the Midlands. The amendment will not give rise to new or different significant effects upon the designated features of this SAC.
- 5.4.74 No effects on Pasturefields Salt Marsh SAC were reported within the main ES. Pasturefields Salt Marsh SAC will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be the pipeline installation works on the northern side of Trent South embankment, approximately 1km south-east of the SAC. The SAC is designated for its inland salt meadow, which is the best example of an inland salt meadow habitat in the United Kingdom. The amendment will not give rise to new or different significant effects upon the designated features of this SAC.
- 5.4.75 No effects on Cannock Chase SSSI were reported within the main ES. Cannock Chase SSSI will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be the pipeline installation works on the northern side of Trent South embankment, approximately 2.6km north of the SSSI. The SSSI is designated for its diverse semi-natural vegetation, which comprises nationally important ancient woodland, lowland heathland and wet heathland. The amendment will not give rise to new or different significant effects upon the designated features of this SSSI.
- 5.4.76 No effects on Pasturefields Salt Marsh SSSI were reported within the main ES. Pasturefields Salt Marsh SSSI will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be the pipeline installation works on the northern side of Trent South embankment, approximately 1km south-west of the SSSI. The SSSI is designated for its inland salt meadow and

notable breeding populations of snipe, redshank and lapwing. The amendment will not give rise to new or different significant effects upon the designated features of this SSSI.

- 5.4.77 No effects on Rawbones Meadow SSSI were reported within the main ES. Rawbones Meadow SSSI will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be the works to close Tolldish Lane on the southern side of Trent South embankment, approximately 1.4km north-east of the SSSI. The SSSI is designated for its wetland habitats, which support a notable breeding population of snipe. The amendment will not give rise to new or different significant effects upon the designated features of this SSSI.
- 5.4.78 Tithebarn Covert AWI site will not be directly impacted by construction of the amendment. The AWI site is located directly adjacent to the area subject to the amendment alongside Moreton cutting. The amendment will not give rise to new or different significant effects upon the designated feature of this AWI site.

Habitats

- 5.4.79 On a precautionary basis, the main ES reported the loss of 33.9km of hedgerow habitats within the Colwich to Yarlet area, which would result in a permanent adverse effect that is significant at district/borough level. The amendment will result in the loss of an additional 440m of species-rich hedgerow. In the context of the hedgerow network within the Colwich to Yarlet area, this will result in a different significant effect. However, this will not change the level of significance of the effect reported in the main ES.
- 5.4.80 The main ES reported the permanent diversion, realignment and culverting of minor watercourses within the Colwich to Yarlet area, which would result in a permanent adverse effect that is significant at up to district/borough level. The amendment will result in the loss of up to 600m of a minor unnamed watercourse to the south-east of Tolldish Lane. The permanent habitat loss will give rise to a different significant effect on the minor watercourse south-east of Tolldish Lane. However, this will not change the level of significance of the effect reported in the main ES.
- 5.4.81 On a precautionary basis the main ES reported the loss of 40 ponds within the Colwich to Yarlet area, which would result in a permanent adverse effect on each pond that is significant at up to district/borough level. The amendment will not alter the extent of pond loss. The amendment will not give rise to any new or different significant effect on ponds and will not change the level of significance of the effect reported in the main ES.
- 5.4.82 It is not likely that any other effects on habitats of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Species

- 5.4.83 The main ES reported a direct loss of roosts and a loss and fragmentation of foraging and commuting habitat used by the assemblage of bats near Moreton House, which would result in a permanent adverse effect that is significant at up to county level.

The amendment will result in the additional loss of trees, including one which is confirmed to have moderate roost potential and others that have not been surveyed. The assumed loss of additional roosts would give rise to a different significant effect on the bat assemblage near Moreton House. However, this will not change the level of significance of the effect as reported in the main ES.

- 5.4.84 The main ES, as amended by SES1, reported the loss of six ponds and associated terrestrial habitats that are known or assumed to be used by the great crested newt metapopulation centred on Moreton Farm (AMP 2.1), which would result in a permanent adverse effect that is significant at up to county level. The amendment will not impact additional ponds or terrestrial habitat. The amendment will not give rise to a new or different significant effect on the great crested newt metapopulation centred on Moreton Farm and will not change the level of significance of the effects reported in the main ES.
- 5.4.85 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.4.86 The amendment will result in a change in the extent and distribution of hedgerow habitat creation. The amendment includes provision of approximately 440m of hedgerow planting on the northern side of Trent South embankment. This hedgerow planting will compensate for the loss of 440m of existing hedgerow between Tithebarn Farm and the A51 Lichfield Road. There will be no net change in the length of hedgerow within the area subject to the amendment after the implementation of mitigation. In the context of the hedgerow network within the Colwich to Yarlet area, the new hedgerow planting will reduce the different significant effect resulting from this amendment upon hedgerow to a level that is not significant.
- 5.4.87 The main ES reported that minor watercourses which are permanently impacted, will where possible be restored to promote the establishment of marginal vegetation and pools. Once the vegetation has established, the new section of minor unnamed watercourse to the south-east of Tolldish Lane will reduce the different significant effect resulting from this amendment on this minor watercourse to a level that is not significant.
- 5.4.88 The main ES reported habitat creation areas between Moreton House and Tolldish Lane, which includes the creation of ponds, species-rich grassland, hedgerows and broadleaved woodland, to compensate for the loss of bat foraging habitats. Once established, these habitat creation measures will provide suitable bat foraging and commuting habitat. Artificial roosting provision will be provided within and adjacent to these habitat creation areas to replace bat roosts that will be lost to construction, in accordance with the Ecological Principles of Mitigation within the SMR Addendum. These measures will reduce the different adverse effect resulting from this amendment on the bat assemblage associated near Moreton House to a level that is not significant.

- 5.4.89 The main ES reported the provision of habitat creation areas to the north-east side of Tithebarn Covert for the metapopulation of great crested newts (AMP2.1). The amendment will result in a change in location of this habitat creation for great crested newt. The new location comprising woodland, grassland and pond habitat creation occurs approximately 300m to the west, located to the north-west of Tithebarn Covert. Once established, the new ponds, species-rich grassland, hedgerows and broadleaved woodland to the north-west of Tithebarn Covert will provide foraging and breeding habitat for the metapopulation of great crested newts (AMP2.1). This change in mitigation will not result in a new or different adverse effect resulting from this amendment on the metapopulation of great crested newt (AMP2.1) and will not change the level of significance of the effect reported in the main ES.

Summary of likely residual significant effects

- 5.4.90 With the implementation of the mitigation proposed, the ecological effects arising from the amendment are reduced to a level where they are not considered to be significant. The significant effects of the amendment in this area are therefore unchanged from those reported in the main ES as amended by SES1.

Cumulative effects

- 5.4.91 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments. The combined effect on hedgerows as a result of the AP2 revised scheme is reported at a route-wide level in SES2 and AP2 ES, Volume 3, Route-wide effects.

Landscape and visual

Scope, assumptions and limitations

- 5.4.92 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.4.93 The amendment has the potential to give rise to new or different temporary significant construction visual effects only. Therefore, there is no permanent construction assessment for landscape and no operational assessment for landscape and visual.

Existing environmental baseline

- 5.4.94 The baseline landscape and visual information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 11 of the main ES.

Visual baseline

- 5.4.95 The amendment has the potential to affect two viewpoints, which are described in Volume 5: Appendix LV-001-002 of the main ES and summarised below.

View north-east along A51 Lichfield Road (viewpoint 008.04.016)

- 5.4.96 This viewpoint represents the views experienced by users of the A51 Lichfield Road at Great Haywood. Foreground views comprise the road corridor which is bounded by

narrow grass verges, hedgerows and a footpath on the southern side. There are views towards the adjacent housing along Tolldish Lane to the north. Views towards medium to large scale fields to the north and north-east are restricted by the roadside hedgerow, but the tops of mature hedgerow trees are visible. To the north-east there are longer views as the land rises up to woodlands of Jewstrump Covert, Titheburn Covert and Little Covert. To the north there are glimpsed long distance views beyond the modern housing at the end of Tolldish Lane towards a wooded skyline. An overhead line crosses over the A51 Lichfield Road and the pylons and associated conductors are prominent features in views from the road.

View north from Colwich Bridleway 58 (viewpoint 008.03.020)

- 5.4.97 This viewpoint represents the views experienced by users of the bridleway east of the A51 Lichfield Road and Great Haywood. The foreground comprises a large and open arable field which slopes gently down away from the viewpoint. A pylon line crosses the field and is a prominent detractor from the otherwise rural views. In the middle distance are gently undulating fields with hedged boundaries and hedgerow trees. Views of residential properties along Tolldish Lane, Oldfields Crescent and Avondale (a residential property), are also visible in the middle distance to the north-west, but these are filtered by intervening vegetation. To the north-east, Little Covert and Titheburn Covert are visible on the skyline and foreshorten longer views. In other directions there are long distance views towards a low horizon.

Future environmental baseline

Construction (2020)

- 5.4.98 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.4.99 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

View north-east along A51 Lichfield Road (viewpoint 008.04.016)

- 5.4.100 The main ES reported a moderate adverse significant effect due to construction activity associated with the removal of Little Covert, an area of Titheburn Covert, and mature trees around Tolldish Lane. Construction of the Trent South embankment and Colwich Bridleway 58 accommodation underbridge would also be visible between the trees. Construction of the A51 Lichfield Road underbridge would be prominent in northerly views along the A51 Lichfield Road. This would require the removal of roadside vegetation, which would be visible in foreground views. The A51 Lichfield Road would be used as a construction traffic route.
- 5.4.101 Construction activity associated with the amendment will slightly increase the visual effects at this viewpoint but the amendment will still be seen as part of the wider construction activity in this area, which will be extensive. Cranes associated with the

utility compound will be introduced north of the view where there will be prominent skyline features. The amendment will therefore give rise to a different significant effect at viewpoint 008.04.016. However, the level of significance of effect will remain moderate adverse significant as reported in the main ES.

- 5.4.102 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

View north from Colwich Bridleway 58 (viewpoint 008.03.020)

- 5.4.103 The main ES reported a major adverse significant effect due to construction activity associated with the removal of Little Covert, Trent South embankment and Colwich Bridleway 58 accommodation underbridge. Construction activity will be present across the full width of the view. Construction of the A51 Lichfield Road underbridge, Tolldish Lane diversion, works on the A51 Lichfield Road, the balancing pond west of the A51 Lichfield Road and Great Haywood viaduct will be visible, whilst works west of the A51 Lichfield Road will be partially screened by roadside trees. The demolition of Avondale (a residential property), and the presence of large scale construction equipment, vehicle movements, movement of material and stockpiles and works within the Trent South embankment main compound area will be visible in the middle distance. This construction activity will substantially change the view.
- 5.4.104 Construction activity associated with the amendment will introduce new construction activity into the view. However, this will be minimal when seen alongside the wider construction activity in this area, which will be extensive. Cranes associated with the utility compound will be introduced to the north of the view where they will be prominent skyline features. The amendment will therefore give rise to a different significant effect at viewpoint 008.03.020. However, the level of significance of effect will remain major adverse significant as reported in the main ES.
- 5.4.105 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.4.106 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.4.107 The temporary residual significant effect during construction remain as described above. This effect will be temporary and reversible in nature lasting only for the duration of the construction works. This residual effect will generally arise from the widespread presence of construction activity and construction plant within the landscape and viewed by surrounding residents, and users of public rights of way (PRoW) and main roads within the study area.
- 5.4.108 The significant effects that will remain after implementation of construction phase mitigation is summarised below.

5.4.109 The amendment to divert a National Grid pipeline and provide a new temporary utility compound west of Colwich Bridleway accommodation overbridge will give rise to a different likely residual significant construction visual effect at the following viewpoints. However, this will not change the level of significance of the effects reported in the main ES:

- view north-east along A51 Lichfield Road (viewpoint 008.04.016) – the effect will increase but will remain moderate adverse significant as reported in the main ES; and
- view north from Colwich Bridleway 58 (viewpoint 008.03.020) – the effect will increase but will remain major adverse significant as reported in the main ES.

Cumulative effects

5.4.110 There are no new or different likely significant cumulative effects for landscape and visual as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

5.4.111 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.

5.4.112 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.

5.4.113 The assessment in this section considers the potential effects on PRoW or footway users. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

5.4.114 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.

5.4.115 Tolldish Lane is an unclassified local road in the Colwich to Yarlet area. There are a number of PRoW which cross the area including Colwich Footpath 54 which connects Moreton Lane close to Tolldish Lane, to Colwich Bridleway 58. The surveys undertaken to inform the assessment showed that there were fewer than 10 people a day recorded on most of the PRoW in the area.

Future environmental baseline

Construction (2023)

5.4.116 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.4.117 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.4.118 The main ES reported that utility works would cross Colwich Footpath 54, which would result in disruption to the users of Colwich Footpath 54. However, as any disruption would be of short duration and limited to where the utility crosses Colwich Footpath 54, the effect on non-motorised users would not be significant.
- 5.4.119 This amendment extends the length of the utility works such that the works will cross Tolldish Lane in addition to Colwich Footpath 54. The works across Tolldish Lane will be undertaken under local traffic management and are expected to be of short duration and limited to where the utility crosses Tolldish Lane.
- 5.4.120 This amendment will therefore not give rise to any new or different likely residual significant effects on the users of Colwich Footpath 54 or Tolldish Lane and will not change the level of significance of the effects reported in the main ES.
- 5.4.121 For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and BID-TR-001-000 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.4.122 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Water resources and flood risk

Scope, assumptions and limitations

- 5.4.123 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.4.124 This amendment has the potential to result in new or different significant temporary construction effects only. Therefore, there is no permanent construction or operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.4.125 The baseline water resources information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-002 and Appendix WR-003-002 and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.4.126 This amendment is located near a surface watercourse which discharges to the River Trent, which is a very high value receptor. There are several nearby surface water

abstractions from this river. This amendment will involve construction activities of a nature and scale that have potential water quality implications.

Future environmental baseline

Construction (2020)

- 5.4.127 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.4.128 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. This amendment has the potential to give rise to temporary adverse impacts on surface water quality which could affect abstractions and the water environment more generally. However, the amendment will be constructed in accordance with measures specifically designed to safeguard water resources outlined in the draft CoCP.
- 5.4.129 Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.4.130 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Summary of new or different likely residual significant effects as a result of the amendment

- 5.4.131 This amendment will give rise to a new likely residual significant temporary moderate adverse effect on Land at Tolldish Barn (CA2/45) due to land required temporarily from the land holding. In addition, At Farley Farm (CA2/9) and Tithebarn Farm (CA2/7) the amendment will give rise to different temporary residual significant effects. At Farley Farm the likely residual significance of the effect will change from moderate adverse to major/moderate adverse, due to the increase in land required temporarily from the land holding. The level of the significant effect at Tithebarn Farm will remain as reported in the main ES.
- 5.4.132 The amendment will give rise to a new likely residual significant moderate adverse effect on a cropmark enclosure at Tolldish Lane, Colwich (COY019) by removing the full extent of the asset during construction.
- 5.4.133 The amendment will give rise to a different likely residual significant construction visual effect at viewpoint 008.04.016 and viewpoint 008.03.020. However, this will not change the level of significance of the effects reported in the main ES.

5.5 Additional land required for the diversion of a Cadent⁶¹ gas pipeline, east of Colwich Bridleway 58 accommodation overbridge (AP2-002-005)

- 5.5.1 The Bill provides for the permanent diversion of an underground National Grid 12-inch diameter high pressure gas pipeline for 550m, 100m east of its existing alignment. The diversion would cross beneath the HS2 route at Trent South embankment, 50m east of the Colwich Bridleway 58 accommodation underbridge. See Map CT-06-211, C6 to A4, in the main ES Volume 2: CA2 Map Book. Works to divert the National Grid gas pipeline would take nine months to complete, commencing in 2021, and would be managed from Trent South embankment main compound.
- 5.5.2 The Bill also provides for the temporary storage of excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. Two temporary material stockpiles would be provided on the northern and southern sides of Trent South embankment, which would be located 100m north-east and 120m south-east of the Colwich Bridleway 58 accommodation underbridge respectively. See Map CT-05-211, D7 to C6 and C5 to C4, in the main ES Volume 2: CA2 Map Book.
- 5.5.3 Since submission of the Bill, further engagement with the utility provider has identified a requirement to reposition the locations where the diverted and existing pipelines connect, and to realign a 970m section of the 300mm gas pipeline.
- 5.5.4 The eastern connection point will be repositioned 100m south of the location identified in the original scheme. As part of the amendment, a 970m section of pipeline will be diverted, changing the alignment in the original scheme and locating it 190m further east, crossing beneath the HS2 route, 100m east of the Colwich Bridleway 58 accommodation underbridge. The new pipeline will reconnect with the existing pipeline alignment to the north of the Tolldish Lane temporary diversion, 370m north-east of the A51 Lichfield Road underbridge. In total, the pipeline will be diverted by up to 290m east of its existing alignment. At each end of the pipeline diversion, works to connect the new section of pipeline to the existing pipeline, whilst maintaining gas supply during construction, will result in the requirement for an additional 21ha of land. See Map CT-06-211, D7 to Map CT-06-212, G4 in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.5.5 The realigned pipeline diversion will interact with the temporary material stockpiles on the northern and southern sides of the HS2 route and, as a result, these stockpiles will be re-shaped to accommodate the pipeline easement. See Map CT-05-211, D7 to C6 and C5 to C4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.5.6 The works to the Cadent 300mm diameter gas pipeline diversion will be managed from the Trent South utility compound, provided for as part of AP2-002-004. See Map CT-05-212, I6 to H5, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.
- 5.5.7 The diversion works will be undertaken over a nine month period, commencing in 2022. Works will be managed from the Trent South utility compound.

⁶¹ In 2017, National Grid Gas Distribution was rebranded as Cadent, which is an independent organisation. The two utility providers describe the same asset differently.

- 5.5.8 The realignment of the Cadent 300mm diameter high pressure gas pipeline diversion is outside the limits of the Bill. This amendment will result in a requirement for an additional 21ha of land. See Maps CT-06-211, D7 to CT-06-212, G4 in the SES2 and AP2 ES Volume 2: CA2 Map Book.

Topics included in the AP2 assessment

- 5.5.9 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: agriculture, forestry and soils; traffic and transport; and water resources and flood risk. This is reported within this section.
- 5.5.10 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Agriculture, forestry and soils

Scope, assumptions and limitations

- 5.5.11 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the Scope and Methodology Report⁶² (SMR) and SMR Addendum⁶³ of the main ES.
- 5.5.12 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for agriculture, forestry and soils.

Existing environmental baseline

- 5.5.13 The baseline agriculture, forestry and soils information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 4 of the main ES.
- 5.5.14 The area of land required for the amendment has soil in the Whimple 3 association, as described in Volume 2, CA2, Section 4 of the main ES. Whimple 3 association comprises of clay loam, silty clay loam or sandy clay loam topsoils over clay loam or clay subsoils. This land is classified as good quality land in Subgrade 3a⁶⁴.
- 5.5.15 One farm holding, already affected by the original scheme, will be further affected by this amendment. Tithebarn Farm (CA2/7) is a 162ha arable and store cattle holding of medium sensitivity to change.

⁶² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁶³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁶⁴ The quality of agricultural land in England and Wales is assessed according to the Agricultural Land Classification (ALC) system, which classifies agricultural land into five grades from excellent quality Grade 1 land to very poor quality Grade 5 land. Grade 3 is subdivided into Subgrades 3a and 3b. Grades 1, 2 and 3a are defined as the best and most versatile (BMV) land. The ALC methodology is contained in: Ministry of Agriculture, Fisheries and Food (1988), *Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land*.

Future environmental baseline

Construction (2020)

- 5.5.16 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.5.17 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice⁶⁵ (CoCP) are required.

Assessment of impacts and effects

- 5.5.18 This amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES on best and most versatile (BMV) agricultural land or forestry land within the Colwich to Yarlet area as it is not of a scale to change the magnitude of impact. The route-wide effects on BMV land and forestry land are reported in Volume 3 of the SES2 and AP2 ES.
- 5.5.19 The main ES reported a temporary major/moderate adverse effect on Tithebarn Farm (CA2/7), which is significant. Approximately 48ha (30% of the total area of the land holding) would be required temporarily, resulting in a high impact. The amendment will require an additional 1.6ha of land temporarily from the land holding, resulting in a total area required temporarily of 49.6ha (31% of the total area of the land holding). The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES. There is no change to the permanent land required from this land holding.
- 5.5.20 For further information see SES2 and AP2 ES Volume 5: Appendix AG-001-000 and SES2 and AP2 ES Volume 5: Agriculture, forestry and soils Map Book.

Cumulative effects

- 5.5.21 The amendment in combination with additional land permanently required for the diversion of a National Grid gas pipeline, west of Colwich Bridleway 35 accommodation overbridge (AP2-002-004) will require 63.3ha of land temporarily from Tithebarn Farm (CA2/7) (39% of the total area of the land holding), which is a high impact.
- 5.5.22 No mitigation measures, additional to those reported in the main ES and draft CoCP, have been identified.
- 5.5.23 This will give rise to a different cumulative effect, however, this will not change the level of significance of the effects which will remain moderate/major adverse.

⁶⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Traffic and transport

Scope, assumptions and limitations

- 5.5.24 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.5.25 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.
- 5.5.26 The assessment in this section considers the potential effects on public rights of way (PRoW) or footway users. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.5.27 The baseline traffic and transport information for the Fradley to Colton area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.5.28 Tolldish Lane is an unclassified local road in the Colwich to Yarlet area. There are a number of PRoW which cross the area including Colwich Footpath 54 and Colwich Bridleway 58. Colwich Footpath 54 connects Moreton Lane close to Tolldish Lane, to Colwich Bridleway 58 and onward to the A51 Lichfield Road. The surveys undertaken to inform the assessment showed that there were fewer than 10 people a day recorded on any of these PRoW.

Future environmental baseline

Construction (2023)

- 5.5.29 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.5.30 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.5.31 The main ES identified that the utility works would cross Tolldish Lane and Colwich Bridleway 58 diversion. This would result in disruption to the users of Tolldish Lane and Colwich Bridleway 58 diversion. However, as any disruption would be of short duration and limited to where the utility crosses Tolldish Lane and Colwich Bridleway 58 diversion, the effect on non-motorised users would not be significant.
- 5.5.32 This amendment extends the length of the utility works such that the works will also cross Colwich Footpath 54 diversion. The works across Colwich Footpath 54 diversion will be undertaken under local traffic management and are expected to be of short duration and limited to where the utility crosses Colwich Footpath 54 diversion.

- 5.5.33 This amendment will therefore not give rise to any new or different likely residual significant effects on the users of Tolldish Lane, Colwich Bridleway 58 diversion or Colwich Footpath 54 diversion and will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and BID document BID-TR-001-000 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.5.34 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Water resources and flood risk

Scope, assumptions and limitations

- 5.5.35 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum of the main ESS and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.5.36 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.5.37 The baseline water resources information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-002 and Appendix WR-003-002 and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.5.38 This amendment is located to the east of the Trent and Mersey Canal and the River Trent, which are very high value receptors. There are several nearby abstractions from the River Trent, which are high value receptors.
- 5.5.39 This amendment will involve construction activities of a nature and scale that have potential water quality implications.

Future environmental baseline

Construction (2020)

- 5.5.40 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.5.41 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. This amendment has the potential to give rise to temporary adverse impacts on surface water quality which could affect abstractions and the water environment more generally. However, the

amendment will be constructed in accordance with the measures specifically designed to safeguard water resources outlined in the draft CoCP.

- 5.5.42 Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.5.43 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

5.6 Additional land and a change to Bill powers required for HS2 maintenance access to Colwich Bridleway 58 accommodation underbridge (AP2-002-006)

- 5.6.1 The Bill provides for the permanent diversion of Colwich Bridleway 58, 375m west of its existing alignment, to pass beneath Trent South embankment via Colwich Bridleway 58 accommodation underbridge, to join Tolldish Lane to the north of the HS2 route. The diverted bridleway follows an existing watercourse and field boundary to the north of the HS2 route. See Map CT-06-211, C6 to B3, in the main ES Volume 2: CA2 Map Book.
- 5.6.2 Since submission of the Bill, it has been identified that there is a need to provide a HS2 maintenance access to Colwich Bridleway 58 accommodation underbridge. The HS2 maintenance access will follow the alignment of Colwich Bridleway 58 diversion from Tolldish Lane, to the north of the HS2 route. The bridleway will be upgraded to 3m in width to accommodate HS2 maintenance vehicles. Two short sections of existing hedgerow, 30m in total length, will be removed permanently where the HS2 maintenance access crosses a field boundary and to provide access from Tolldish Lane. See Map CT-06-211, C4 to B3, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.6.3 This amendment will be constructed after the main works are complete, commencing in 2024. Works will be managed from the Trent South embankment main compound.
- 5.6.4 The upgrade of Colwich Bridleway 58 diversion for its use as a permanent HS2 maintenance access is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.1ha of land, some of which will be from Tithebarn Farm⁶⁶ (CA2/7). See Map CT-06-211, C4 to B3, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.6.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

⁶⁶ This is also shown on OS mapping as Tithe Barn Farm.

5.7 Change to Bill powers required for the diversion of a British Pipeline Agency fuel pipeline and a new utility compound, A51 Lichfield Road (AP2-002-007)

- 5.7.1 The Bill provides for the permanent diversion of an underground British Pipeline Agency (BPA) 10-inch diameter fuel pipeline for 830m, 200m south of its existing alignment. The diversion would be located south of the HS2 route and would cross beneath the A51 Lichfield Road and Main Road, before reconnecting with the existing pipeline, 50m south-east of the Great Haywood Marina. See Map CT-06-211, B7 to A7, and Map CT-06-212, J8 to F8, in the main ES Volume 2: CA2 Map Book. Works to divert the BPA fuel pipeline would take nine months to complete, commencing in 2021, and would be managed from Trent South embankment main compound.
- 5.7.2 The AP1 revised scheme (amendment AP1-002-001: Additional land permanently required for amendment to a fuel pipeline diversion, A51 Lichfield Road) would provide 0.3ha of additional land, west of Main Road, for the realignment of a 500m section of the BPA pipeline diversion to the south of the HS2 route. See Map CT-06-212, J7 to H8, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.7.3 Since submission of the SES1 and AP1 ES, further engagement with the utility provider has identified a requirement to reposition the point that the diverted and existing pipelines connect, to realign a 710m section of the BPA fuel pipeline, and to provide a new temporary utility compound for the management of the BPA 10-inch diameter fuel pipeline diversion works.
- 5.7.4 The eastern connection point will be repositioned 150m north-west of the location identified in the original scheme. The western connection point will be repositioned 50m south of the location identified in the original scheme. As part of the amendment a 710m section of pipeline will be realigned, changing the alignment length in the original scheme, which will start 250m south-east of the turning head for the closure of Tolldish Lane. The pipeline will cross beneath the A51 Lichfield Road and Main Road at the same location as the original scheme. The pipeline diversion will connect into the existing pipeline alignment, east of the Macclesfield to Colwich Line, 150m east of the Great Haywood Marina. In total, the pipeline will be diverted up to 120m south of its existing alignment. See Map CT-06-212, J7 to F7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.7.5 A new temporary utility compound (Main Road utility compound) will be provided for the management of the BPA fuel pipeline diversion works. The Main Road utility compound will be located 220m south-west of Pyford Brook, within land required for the original scheme. See Map CT-05-212, G8 to F8, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.
- 5.7.6 The Main Road utility compound will be operational for nine months, commencing during 2021, and will support an average of 15 workers per day (20 workers at peak times). Access to the new compound will be from the A51 Lichfield Road via site haul routes and Main Road.
- 5.7.7 The diversion works will be undertaken over a six month period, commencing in 2021.

- 5.7.8 The realignment of the BPA fuel pipeline diversion is outside the limits of the Bill and will require a change to Bill powers.
- 5.7.9 This amendment will only proceed if the AP1 revised scheme (amendment AP1-002-001) is enacted, as it is dependent on the additional area of land required for the BPA pipeline realignment to the south of the HS2 route.

Topics included in the AP2 assessment

- 5.7.10 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: sound, noise and vibration; and water resources and flood risk. This is reported within this section.
- 5.7.11 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Sound, noise and vibration

Scope, assumptions and limitations

- 5.7.12 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the Scope and Methodology Report⁶⁷ (SMR) of the main ES.
- 5.7.13 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for sound, noise and vibration.

Existing environmental baseline

- 5.7.14 The baseline sound and vibration information for Colwich to Yarlet is as described in Volume 2, CA2, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by the amendment have been used in the construction assessment.
- 5.7.15 The area close to the amendment includes the residences on Green Lane and Nursery Lane, Great Haywood. The existing baseline at this area is dominated by road traffic noise from local and distant road traffic, including the A51 Lichfield Road.

Future environmental baseline

Construction (2020)

- 5.7.16 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

⁶⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Effects arising during construction

Avoidance and mitigation measures

- 5.7.17 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice⁶⁸ (CoCP) are required.

Assessment of impacts and effects

- 5.7.18 The main ES did not identify any likely significant effects on a community basis close to this amendment. The amendment has the potential to result in a new or different likely significant construction noise effects at residential properties in Great Haywood.
- 5.7.19 The assessment has considered the construction noise and vibration levels associated with the amendment and those identified in the main ES, the construction programme for the amendment and local mitigation identified in the main ES. The amendment will give rise to a new significant effect on a community basis at approximately 30 properties on Green Lane and Nursery Lane, Great Haywood for a period of two months, denoted as CSV02-Co7. For further information, see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Mitigation and residual effects

Other mitigation measures

- 5.7.20 No mitigation measures, additional to those reported in the main ES and draft CoCP, are identified.

Summary of likely residual significant effects

- 5.7.21 The amendment will give rise to a new likely residual significant construction noise effect on a community basis at approximately 30 properties on Green Lane and Nursery Lane, Great Haywood for a period of two months.

Cumulative effects

- 5.7.22 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Water resources and flood risk

Scope, assumptions and limitations

- 5.7.23 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum⁶⁹ of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).

⁶⁸ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

⁶⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- 5.7.24 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.7.25 The baseline water resources information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-002 and Appendix WR-003-002, and the Volume 5: Water resources and flood risk Map Book of the main ES. An updated flood risk assessment is provided in Volume 5: Appendix WR-003-002 of the SES2 and AP2 ES.
- 5.7.26 This amendment is located adjacent to Tolldish stream, to the north-west of Great Haywood, just upstream of its confluence with the River Trent, which is a very high value receptor.
- 5.7.27 This amendment will involve construction activities of a nature and scale that have potential water quality implications. There is an area at heightened surface water flood risk in the vicinity of the land required for this amendment, which is also considered.

Future environmental baseline

Construction (2020)

- 5.7.28 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.7.29 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.7.30 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. This amendment has the potential to give rise to temporary adverse impacts on surface water quality which have the potential to affect the River Trent (via Tolldish stream) and its associated abstractions. However, the amendment will be constructed in accordance with the measures specifically designed to safeguard water resources outlined in the draft CoCP.
- 5.7.31 Therefore, the amendment will not give rise to a new or different significant surface water quality effect and will not change the level of significance of the effects reported in the main ES.
- 5.7.32 The main ES reported no significant effects related to flood risk in the vicinity of this amendment. The proposed temporary utility compound associated with this amendment is within the 0.1% (1 in 1,000) annual probability surface water flood zone. A flood risk assessment has therefore been undertaken and is reported in SES2 and

AP2 ES Volume 5: Appendix WR-003-002. This amendment has the potential to cause a new temporary moderate adverse impact on flood risk associated with agricultural land, which is a moderate value receptor. It therefore gives rise to a new moderate adverse significant flood risk effect.

Mitigation and residual effects

Other mitigation measures

5.7.33 The following mitigation measures are additional to those reported in the main ES and draft CoCP. The compound will be designed and configured in a manner that takes the risk of flooding into consideration. Specific measures will include:

- ensuring staff welfare facilities, site offices space and any storage areas for flood sensitive apparatus are located on the highest ground; and
- reducing the extent to which ground levels are raised above their existing level, retaining routes for floodwater through the site that are compatible with shallow flooding and which would not result in scour or pollution-generation.

5.7.34 Other flood risk issues would be managed through application of the measures and procedures outlined in the draft CoCP.

Summary of likely residual significant effects

5.7.35 The amendment has potential to give rise to a new temporary moderate adverse residual significant effect related to flood risk associated with the construction compound adjacent to Tolldish stream, to the north-west of Great Haywood.

5.7.36 It is currently anticipated that a means of mitigating this impact will be developed, to ensure that there are no residual significant effects arising from construction.

Cumulative effects

5.7.37 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Summary of new or different likely residual significant effects as a result of the amendment

5.7.38 The amendment will give rise to a new likely residual significant construction noise effect on a community basis at approximately 30 properties on Green Lane and Nursery Lane, Great Haywood for a period of two months.

5.7.39 The amendment has potential to give rise to a new temporary moderate adverse residual significant effect related to flood risk associated with the construction compound adjacent to Tolldish stream, to the north-west of Great Haywood.

5.8 Additional land and a change to Bill powers required for construction activities at Great Haywood (AP2-002-008)

5.8.1 The Bill provides for the temporary use of land for the construction of the scheme on the northern and southern sides of the HS2 route, which includes the establishment of

the Trent South embankment main compound, Trent North embankment satellite compound and site haul routes. Land would be required permanently for the construction of the Great Haywood viaduct and Trent North embankment, together with the diversion of Hoo Mill Lane (private accommodation track). See Map CT-05-212, F6 to B6; Map CT-05-212, B6 to Map CT-05-213, D6; and Map CT-05-212, C6 to B6, in the main ES Volume 2: CA2 Map Book.

- 5.8.2 Since submission of the Bill, a review of construction working areas and construction vehicle movements in this area has identified the temporary requirement for additional land at three locations at Great Haywood. These are:
- an additional 0.5ha of land, between the Trent and Mersey Canal and Colwich to Macclesfield railway, north of the Great Haywood viaduct, to improve access across the River Trent, canal and the railway. See Map CT-05-212, F5 to E4, in the SES2 and AP2 ES Volume 2: CA2 Map Book;
 - an additional 1.3ha of land, between the Great Haywood viaduct and Hoo Mill Lane, north of the HS2 route, to separate public road-going vehicles heavy goods vehicles (HGVs) and light goods vehicles (LGVs) from larger earth moving equipment (with a typical capacity of 40 tonnes) adjacent to Great Haywood viaduct. See Map CT-05-212, D6 to C6, in the SES2 and AP2 ES Volume 2: CA2 Map Book; and
 - an additional 0.4ha of land, at the junction of Tixall Road and Great Haywood Road, south of the Great Haywood viaduct, to enable the relocation of the temporary roundabout 40m further south-east of its location within the original scheme, away from the piers supporting the Great Haywood viaduct. See Map CT-05-212, C7 to B7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.8.3 The areas of additional land will be required throughout the period of construction from 2021 to 2027.
- 5.8.4 The areas of additional land are outside the limits of the Bill. The amendment will result in a requirement for an additional 2.2ha of land. See Map CT-05-212, F5 to E4 and D6 to B7, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.8.5 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: agriculture, forestry and soils; and water resources and flood risk. This is reported within this section.
- 5.8.6 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Agriculture, forestry and soils

Scope, assumptions and limitations

- 5.8.7 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the Scope and Methodology Report⁷⁰ (SMR) and SMR Addendum⁷¹ of the main ES.
- 5.8.8 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for agriculture, forestry and soils.

Existing environmental baseline

- 5.8.9 The baseline agriculture, forestry and soils information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 4 of the main ES.
- 5.8.10 The area of land required for the amendment has soils in the Middelney and Wick 1 associations, as described in Volume 2, CA2, Section 4 of the main ES. Middelney 3 association comprises of black medium clay loam topsoil overlying malodorous, greenish grey clay subsoil, affected by groundwater. This land is classified as poor quality land in Grade 4⁷². Wick 1 association comprises of clay loam or sandy loam topsoil and predominantly overlies sandy loam subsoils. This land is classified as moderate quality land in Subgrade 3b.
- 5.8.11 Three farm holdings, already affected by the original scheme, will be further affected by this amendment. These are:
- Hoo Mill Lane Farm (CA2/19), a 113ha beef cattle holding of medium sensitivity to change;
 - Land at Tixall Lane (CA2/21), a 3ha non-commercial equestrian holding of low sensitivity to change; and
 - Land at Hoo Mill Lock (CA2/47), a 3ha holding based around a marina and moorings, with various workshops, café, shop and an agricultural smallholding with mixed livestock of low sensitivity to change.

⁷⁰ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁷¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁷² The quality of agricultural land in England and Wales is assessed according to the Agricultural Land Classification (ALC) system, which classifies agricultural land into five grades from excellent quality Grade 1 land to very poor quality Grade 5 land. Grade 3 is subdivided into Subgrades 3a and 3b. Grades 1, 2 and 3a are defined as the best and most versatile (BMV) land. The ALC methodology is contained in: Ministry of Agriculture, Fisheries and Food (1988), *Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land*.

Future environmental baseline

Construction (2020)

- 5.8.12 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.8.13 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice⁷³ (CoCP) are required.

Assessment of impacts and effects

- 5.8.14 This amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES on best and most versatile (BMV) agricultural land or forestry land within the Colwich to Yarlet area as it is not of a scale to change the magnitude of impact. The route-wide effects on BMV land and forestry land are reported in Volume 3 of the SES2 and AP2 ES.
- 5.8.15 The main ES reported a temporary moderate adverse effect on Hoo Mill Lane Farm (CA2/19), which is significant. Approximately 6.1ha (5% of the total area of the land holding) would be required temporarily, resulting in a low impact. The amendment will require an additional 0.4ha of land temporarily from the land holding, resulting in a total area required temporarily of 6.5ha (6% of the total area of the land holding). The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES. There is no change to the permanent land required from this land holding.
- 5.8.16 The main ES reported a negligible temporary effect on Land at Tixall Lane (CA2/21), which is not significant. Approximately 0.3ha (10% of the total area of the land holding) would be required temporarily, resulting in a low impact. The amendment will require an additional 0.4ha of land temporarily from the land holding, resulting in a total area required temporarily of 0.7ha (23% of the total area of the land holding). The additional land required will change the impact from low to high. The amendment will give rise to a new moderate adverse effect, which is significant, on this land holding. There is no change to the permanent land required from this land holding.
- 5.8.17 SES2 reported a negligible temporary effect on Land at Hoo Mill Lock (CA2/47), which is not significant. Approximately 0.1ha (3% of the total area of the land holding) would be required temporarily, resulting in a negligible impact. The amendment will require an additional 0.4ha of land temporarily from the land holding, resulting in a total area required temporarily of 0.5ha (17% of the total area of the land holding). The additional land required will change the impact from negligible to medium. The amendment will give rise to a new minor adverse effect, which is not significant, on this land holding. There is no change to the permanent land required from this land holding.

⁷³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

- 5.8.18 For further information see SES2 and AP2 ES Volume 5: Appendix AG-001-000 and SES2 and AP2 ES Volume 5: Agriculture, forestry and soils Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.8.19 The land required temporarily for construction will be restored to its former agricultural condition once the works are completed, following good practice techniques in handling, storing and reinstating soils on that land, as reported in the main ES and draft CoCP. No other mitigation has been identified.

Summary of likely residual significant effects

- 5.8.20 The amendment will give rise to a new likely residual moderate adverse significant effect on agriculture, forestry and soils on Land at Tixall Lane (CA2/21) due to the increase in land required temporarily from the land holding.

Cumulative effects

- 5.8.21 The amendment in combination with additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline, north-west of Great Haywood Marina (AP2-002-009) will require 11ha of land temporarily from Hoo Mill Lane Farm (CA2/19) (10% of the total area of the land holding), which is a low impact.
- 5.8.22 No mitigation measures additional to those reported in the main ES and draft CoCP have been identified.
- 5.8.23 This will give rise to a different cumulative temporary significant effect, however, this will not change the level of significance of the effects which will remain moderate.

Water resources and flood risk

Scope, assumptions and limitations

- 5.8.24 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.8.25 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.8.26 The baseline water resources information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 15 of the main ES as amended by the SES1. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-002 and Appendix WR-003-002, and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.8.27 This amendment is located to the west of the River Trent and is directly adjacent to a surface water drain which discharges to the River Trent, which is a very high value receptor. It is also near Lionlodge Covert Local Wildlife Site (LWS) and its associated saline springs.

- 5.8.28 This amendment will involve construction activities of a nature and scale that have potential water quality implications.

Future environmental baseline

Construction (2020)

- 5.8.29 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.8.30 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. This amendment has the potential to give rise to temporary adverse impacts on surface water quality which could affect the local water environment, including the River Trent and the saline springs located in Lionlodge Covert LWS. However, the amendment will be constructed in accordance with the measures specifically designed to safeguard water resources outlined in the draft CoCP.
- 5.8.31 Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.8.32 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Summary of new or different likely residual significant effects as a result of the amendment

- 5.8.33 The amendment will give rise to a new likely residual significant temporary moderate adverse effect on Land at Tixall Lane (CA2/21) due to the increase in land required temporarily from the land holding.

5.9 Additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline and a new utility compound, north-west of Great Haywood Marina (AP2-002-009)

- 5.9.1 The Bill provides for the permanent diversion of an underground National Grid 1,050mm diameter high pressure gas pipeline for 580m, 280m north-east of its existing alignment. The diversion would be located north of the HS2 route and would cross beneath Hoo Mill Lane, 230m north of Great Haywood viaduct. See Map CT-06-212, D5 to B2, in the main ES Volume 2: CA2 Map Book. Works to divert the National Grid gas pipeline would take nine months to complete, commencing in 2021, and would be managed from Trent North embankment satellite compound.
- 5.9.2 Since submission of the Bill, further engagement with the utility provider has identified a requirement to reposition the locations where the diverted and existing pipelines connect, and to provide a new temporary utility compound for the

management of the National Grid 1,050mm diameter high pressure gas pipeline diversion works.

- 5.9.3 The eastern connection point will be repositioned 30m east of the location identified in the original scheme, and the western connection point will be repositioned 50m south-west of the location identified in the original scheme. The pipeline diversion will cross beneath Hoo Mill Lane at the same location as the original scheme but will be diverted 20m further north than in the original scheme. In total, the pipeline will be diverted 280m north-east of its existing alignment. At each end of the pipeline diversion, works to connect the new section of pipeline to the existing pipeline, whilst maintaining gas supply during construction, will result in the temporary requirement for an additional 11.8ha of land. See Map CT-06-212, E5 to B2, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.9.4 A new utility compound (Trent North utility compound) will be provided for the management of the National Grid 1,050mm diameter gas pipeline diversion works. See Map CT-05-212, B5 to A3, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.
- 5.9.5 Trent North utility compound will be operational for one year, commencing during 2021, and will support an average of 15 workers per day (20 workers at peak times). Access to the new compound will be from Great Haywood Road via Ingestre Park Road and the A518 Weston Road via site haul routes.
- 5.9.6 The diversion works will be undertaken prior to the main construction works, over a nine month period commencing in 2021.
- 5.9.7 The realignment of the National Grid 1,050mm diameter high pressure gas pipeline diversion is outside the limits of the Bill. This amendment will result in a requirement for an additional 11.8ha of land. See Map CT-06-212, D6 to B1, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.9.8 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: agriculture, forestry and soils; cultural heritage; ecology and biodiversity; sound, noise and vibration; traffic and transport; and water resources and flood risk. This is reported within this section.
- 5.9.9 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Agriculture, forestry and soils

Scope, assumptions and limitations

- 5.9.10 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the Scope and Methodology Report⁷⁴ (SMR) and SMR Addendum⁷⁵ of the main ES.
- 5.9.11 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for agriculture, forestry and soils.

Existing environmental baseline

- 5.9.12 The baseline agriculture, forestry and soils information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 4 of the main ES.
- 5.9.13 The area of land required for this amendment has soils in the Midelney and Wick 1 associations, as described in Volume 2, CA2, Section 4 of the main ES. Midelney 3 association comprises of black medium clay loam topsoil overlying malodorous, greenish grey clay subsoil, affected by groundwater. This land is classified as poor quality land in Grade 4⁷⁶. Wick 1 association comprises of clay loam or sandy loam topsoil and predominantly overlies sandy loam subsoils. This land is classified as moderate quality land in Subgrade 3b.
- 5.9.14 Two farm holdings, already affected by the original scheme, will be further affected by this amendment. These are:
- Hoo Mill Lane Farm (CA2/19), a 113ha beef cattle holding of medium sensitivity to change; and
 - Ingestre Manor Farm (CA2/20), a 526ha arable, sheep and store cattle holding of medium sensitivity to change.

Future environmental baseline

Construction (2020)

- 5.9.15 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

⁷⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁷⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁷⁶ The quality of agricultural land in England and Wales is assessed according to the Agricultural Land Classification (ALC) system, which classifies agricultural land into five grades from excellent quality Grade 1 land to very poor quality Grade 5 land. Grade 3 is subdivided into Subgrades 3a and 3b. Grades 1, 2 and 3a are defined as the best and most versatile (BMV) land. The ALC methodology is contained in: Ministry of Agriculture, Fisheries and Food (1988), *Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land*.

Effects arising during construction

Avoidance and mitigation measures

- 5.9.16 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice⁷⁷ (CoCP) are required.

Assessment of impacts and effects

- 5.9.17 This amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES on best and most versatile (BMV) agricultural land or forestry land within the Colwich to Yarlet area as it is not of a scale to change the magnitude of impact. The route-wide effects on BMV land and forestry land are reported in Volume 3 of the SES2 and AP2 ES.
- 5.9.18 The main ES reported a temporary moderate adverse effect on Hoo Mill Lane Farm (CA2/19), which is significant. Approximately 6.1ha (5% of the total area of the land holding) would be required temporarily, resulting in a low impact. The amendment will require an additional 4.5ha of land temporarily from the land holding, resulting in a total area required temporarily of 10.6ha (9% of the total area of the land holding). The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES. There is no change to the permanent land required from this land holding.
- 5.9.19 The main ES reported a temporary minor adverse effect on Ingestre Manor Farm (CA2/20), which is not significant. Approximately 7.1ha (1% of the total area of the land holding) would be required temporarily, resulting in a negligible impact. The amendment will require an additional 7ha of land temporarily from the land holding, resulting in a total area required temporarily of 14.1ha (3% of the total area of the land holding). The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES. There is no change to the permanent land required from this land holding.
- 5.9.20 For further information see SES2 and AP2 ES Volume 5: Appendix AG-001-000 and the main ES Volume 5: Agriculture, forestry and soils Map Book.

Cumulative effects

- 5.9.21 The amendment (AP2-002-009) in combination with additional land required permanently for the reconfiguration of Ingestre Park Golf Club (AP2-002-010) will require 67.5ha of land temporarily from Ingestre Manor Farm (CA2/20) (13% of the total area of the land holding) and 57.2ha of land permanently (11% of the total area of the land holding). The additional land required will change the impact from negligible to medium.
- 5.9.22 No mitigation measures additional to those reported in the main ES and draft CoCP have been identified.
- 5.9.23 This will give rise to a new cumulative temporary and permanent significant effect and will change the significance of the temporary effect from minor adverse to moderate

⁷⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

adverse and the significance of the permanent effect from negligible to moderate adverse.

- 5.9.24 The amendment (AP2-002-009) in combination with additional land required for construction activities at Great Haywood (AP2-002-008) will require 11ha of land temporarily from Hoo Mill Lane Farm (CA2/19) (10% of the total area of the land holding), which is a low impact.
- 5.9.25 No mitigation measures additional to those reported in the main ES and draft CoCP have been identified.
- 5.9.26 This will give rise to a different cumulative temporary significant effect, however, this will not change the level of significance of the effects which will remain moderate.

Cultural heritage

Scope, assumptions and limitations

- 5.9.27 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.9.28 As the cultural heritage impacts of the amendment are not reversible, they therefore have the potential to result in new or different significant permanent construction effects only. There is no temporary construction or operational assessment for cultural heritage.

Existing environmental baseline

- 5.9.29 The baseline cultural heritage information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 7 of the main ES.
- 5.9.30 This amendment will be constructed in proximity to Ingestre Conservation Area (COY049), a designated asset of moderate value.
- 5.9.31 The following non-designated assets of high value lie wholly or partially within the land required for the amendment:
- a group of cropmarks on Pleistocene (Ice-Age) gravels to the west of the River Trent and to the east of Ingestre Park, including three possibly Bronze Age ring-ditches and extensive linear features indicative of a prehistoric field system, a possible trackway indicated by two parallel pit alignments and a possible square barrow (COY048); and
 - cropmarks indicating buried archaeological remains of two Bronze Age round barrows and a field boundary of probable Iron Age or Roman date at Hoo Mill, Ingestre (COY045).
- 5.9.32 The remains of post-medieval water meadows in the Trent Valley to the north of Great Haywood (COY046), a non-designated asset of low value, is located partially within the land required for the amendment.
- 5.9.33 Further information about these assets is provided in the main ES Volume 5: Appendix CH-002-002 and Map Series CH-01, CH-02 and CH-03 in the main ES Volume 5: Cultural heritage Map Book.

Future environmental baseline

Construction (2020)

- 5.9.34 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.9.35 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

- 5.9.36 The main ES reported a permanent major adverse significant effect on a group of cropmarks to the west of the River Trent and to the east of Ingestre Park (COYo48), a non-designated asset of high value. This amendment will increase the extent of the asset that will be removed during construction, including the buried remains of a square barrow. This will give rise to a different significant effect, however this will not change the level of the significance of the effect reported in the main ES.
- 5.9.37 The main ES reported a permanent major adverse significant effect on cropmarks at Hoo Mill, Ingestre (COYo45), a non-designated asset of high value. This amendment will increase the extent of the asset that will be removed during construction, including the buried remains of two possible Bronze Age barrows. This will give rise to a different significant effect, however this will not change the level of the significance of the effect reported in the main ES.
- 5.9.38 The main ES reported a permanent moderate adverse significant effect on the remains of post-medieval water meadows in the Trent Valley to the north of Great Haywood (COYo46), a non-designated asset of low value. This amendment will increase the extent of the asset that will be removed during construction. This will give rise to a different significant effect, however this will not change the level of the significance of the effect reported in the main ES.
- 5.9.39 For further information see Map Series CH-01 in the SES2 and AP2 ES Volume 5: Cultural heritage Map Book and the SES2 and AP2 ES Volume 5: Appendix CH-003-000.

Mitigation and residual effects

Other mitigation measures

- 5.9.40 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.9.41 This amendment will give rise to different likely residual permanent major significant effects on a group of cropmarks to the west of the River Trent and to the east of Ingestre Park (COYo48) and cropmarks at Hoo Mill, Ingestre (COYo45), and a different likely residual permanent moderate significant effect on the remains of post-medieval

water meadows in the Trent Valley to the north of Great Haywood (COYo46), by increasing the extent of the assets to be removed during construction. However, this will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.9.42 There are no new or different likely significant cumulative effects for cultural heritage as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.9.43 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the SMR and the SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.9.44 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.9.45 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.9.46 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.9.47 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources.
- 5.9.48 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in Background Information and Data (BID) document EC-019-000, including Map Series EC-02 which accompanies the SES2 and AP2 ES.
- 5.9.49 For those receptors described in the main ES, further details are provided in Volume 2, CA2, Section 8, and Volume 5: Appendix EC-001-000, including Map Series EC-01. Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12⁷⁸.
- 5.9.50 For those receptors described in SES1, further details are provided in Volume 2, CA2, Section 3. The baseline ecology report that accompanied SES1 and AP1 ES is provided

⁷⁸ HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12⁷⁹.

Designated sites

- 5.9.51 There is one Special Area of Conservation (SAC) of relevance to the assessment of the amendment, which is of international value. Pasturefields Salt Marsh SAC, covering an area of approximately 7.7ha, is designated for its inland salt meadow (which is an Annex 1⁸⁰ priority habitat). Pasturefields Salt Marsh SAC is cited as the best example of an inland salt meadow in the United Kingdom, and is characterised by red fescue, with saltmarsh rush, sea plantain, common saltmarsh-grass, lesser sea-spurrey and sea arrowgrass. Pasturefields Salt Marsh SAC is located north-west of Great Haywood, approximately 350m north of the area subject to the amendment.
- 5.9.52 The area subject to the amendment is located within a Natural England Impact Risk Zone⁸¹ for Pasturefields Salt Marsh Site of Special Scientific Interest (SSSI), which is of national value. Pasturefields Salt Marsh SSSI, covering the same area as Pasturefields Salt Marsh SAC (7.7ha), is designated for its inland salt meadow and notable breeding populations of snipe, redshank and lapwing. Pasturefields Salt Marsh SSSI is located north-west of Great Haywood, approximately 350m north of the area subject to the amendment.
- 5.9.53 There is one Local Wildlife Site (LWS) of relevance to the assessment of the amendment, which is of county value. Lionlodge Covert LWS, covering an area of approximately 16.9ha, is designated for its semi-natural broadleaved woodland and inland salt meadow (supported by springs from historic salt mining). Lionlodge Covert LWS is located north-west of Great Haywood, approximately 50m west of the area subject to the amendment.

Habitats

- 5.9.54 Habitats within the area subject to the amendment include improved grassland and species-rich hedgerows. The habitats of relevance to the assessment of the amendment are described in further detail below.
- 5.9.55 Lionlodge Covert is located north-west of Great Haywood, approximately 500m south-east of Ingestre. The semi-natural areas are likely to qualify as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)⁸² and a conservation priority of the Staffordshire Biodiversity Action Plan⁸³ (BAP). Lionlodge Covert is located approximately 50m west of the area subject to the amendment. The woodland is of county value.

⁷⁹ HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

⁸⁰ Annex 1 of the EU's Habitats Directive (1992) lists key habitat types whose conservation requires the designation of Special Areas of Conservation.

⁸¹ The Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals and indicate the types of development proposal which could potentially have adverse impacts.

⁸² Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

⁸³ Staffordshire Biodiversity Partnership. *Staffordshire Biodiversity Action Plan*. Available online at: <http://www.sbap.org.uk/>

- 5.9.56 An extensive area of improved and species-poor semi-improved grassland, covering an area of approximately 67.5ha, occurs on the River Trent floodplain near Great Haywood. This area of grassland is subject to periodic inundation from the River Trent and it qualifies as floodplain grazing marsh, a habitat of principal importance and a conservation priority of the Staffordshire BAP. However, botanical surveys of the area of floodplain grazing marsh which is subject to the amendment confirm that it does not include an abundance or diversity of rush or sedge species that are typically associated with grazed marshes. The floodplain grazing marsh is of district/borough value.
- 5.9.57 Hedgerows within the area subject to the amendment are predominantly species-rich. Hedgerow with at least 80% cover of native woody species is a habitat of principal importance and a conservation priority of the Staffordshire BAP. These contribute towards a wider hedgerow network within the Colwich to Yarlet area that is of district/borough value.

Species

- 5.9.58 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include bats, badger, polecat, harvest mouse, European hedgehog and brown hare.
- 5.9.59 The main ES reported a bat assemblage associated with habitats on the River Trent floodplain, south of Hoo Mill. Field surveys in this area recorded high levels of activity and a diverse assemblage of bat species including common pipistrelle, soprano pipistrelle, Nathusius's pipistrelle, Myotis species, noctule and Leisler's bat. The area subject to the amendment contains potential bat roosting, foraging and commuting habitats that are likely to be used by this bat assemblage. The bat assemblage includes several species of principal importance and other species that are conservation priorities of the Staffordshire BAP. The bat assemblage associated with habitats on the River Trent floodplain, south of Hoo Mill, is of up to regional value.
- 5.9.60 The main ES, as amended by SES1, reported at least five social groups of badgers, identified through field surveys, throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable sett building and foraging habitats for badgers. The badger populations throughout the Colwich to Yarlet area are of local/parish value.
- 5.9.61 The main ES reported populations of other mammals including polecat, harvest mouse, European hedgehog and brown hare, identified through desk study records, as being potentially present throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable habitats for these species. If present, these species are of local/parish value.

Future environmental baseline

Construction (2020)

- 5.9.62 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.9.63 The assessment assumes implementation of the measures set out within the draft CoCP.
- 5.9.64 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.9.65 All of the effects within this section are reported in the absence of other mitigation.

Designated sites

- 5.9.66 No effects on Pasturefields Salt Marsh SAC were reported within the main ES. Pasturefields Salt Marsh SAC will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be the pipeline installation works on the northern side of Great Haywood viaduct, approximately 350m south of the SAC. The SAC is designated for its inland salt meadow, which is the best example of an inland salt meadow habitat in the United Kingdom. The amendment will not give rise to new or different significant effects upon the designated features of this SAC.
- 5.9.67 No effects on Pasturefields Salt Marsh SSSI were reported within the main ES. Pasturefields Salt Marsh SSSI will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be the pipeline installation works on the northern side of Great Haywood viaduct, approximately 350m south of the SSSI. The SSSI is designated for its inland salt meadow and notable breeding populations of snipe, redshank and lapwing. The amendment will not give rise to new or different significant effects upon the designated features of this SSSI.
- 5.9.68 The main ES reported the permanent loss of approximately 4.4ha (27%) of Lionlodge Covert LWS. Lionlodge Covert LWS will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be the pipeline installation works on the northern side of Great Haywood viaduct, approximately 50m east of this LWS. The LWS is designated for its semi-natural broadleaved woodland and inland salt meadow (supported by springs from historic salt mining). The amendment will not give rise to new or different significant effects upon the designated features of this LWS and will not change the level of significance of the effect as reported in the main ES.

Habitats

- 5.9.69 The main ES reported the loss of 3ha (19%) of semi-natural broadleaved woodland habitat at Lionlodge Covert, which would result in a permanent adverse effect that is significant at county level. The amendment will not alter the extent of woodland loss at Lionlodge Covert. The amendment will not give rise to any new or different significant effects on woodland at Lionlodge Covert and will not change the level of significance of the effects reported in the main ES.

- 5.9.70 The main ES reported the loss of approximately 14ha (21%) of floodplain grazing marsh (improved grassland and species-poor semi-improved grassland) adjacent to the River Trent, which would result in a permanent adverse effect that is significant at up to district/borough level. The amendment will result in the additional loss of approximately 4.3ha of floodplain grazing marsh (improved grassland). The amendment will give rise to a different significant effect on floodplain grazing marsh adjacent to the River Trent. However, this will not change the level of significance of the effect reported in the main ES.
- 5.9.71 On a precautionary basis, the main ES reported the loss of 33.9km of hedgerow habitats within the Colwich to Yarlet area, which would result in a permanent adverse effect that is significant at district/borough level. The amendment will result in the loss of an additional 185m of species-rich hedgerows. In the context of the hedgerow network within the Colwich to Yarlet area, this additional loss does not represent a new or different significant effect.
- 5.9.72 It is not likely that any other effects on habitats of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Species

- 5.9.73 The main ES reported the potential temporary disturbance to foraging habitat and commuting corridors along the River Trent and the Trent and Mersey Canal used by the bat assemblage associated with habitats on the River Trent floodplain, south of Hoo Mill. However, it was reported that it would be unlikely there would be a significant adverse effect on the bat assemblage. The assumed loss of a roost would give rise to a new effect on the bat assemblage near Hoo Mill that is significant at up to regional level.
- 5.9.74 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.9.75 It is assumed that 4.3ha of floodplain grazing marsh to be lost during construction of the amendment will be reinstated as improved grassland for agricultural use after construction, allowing it to still function as floodplain grazing marsh. Following the reinstatement of improved grassland, the adverse effect resulting from this amendment on floodplain grazing marsh near Hoo Mill will be reduced to a level that is not significant.
- 5.9.76 Artificial roosting provision will be provided within and adjacent to woodland habitat creation areas along Hoo Mill Lane to replace bat roosts that will be lost to construction, in accordance with the Ecological Principles of Mitigation within the SMR Addendum. These measures will reduce the new adverse effect resulting from

this amendment on the bat assemblage associated with Hoo Mill to a level that is not significant.

Summary of likely residual significant effects

- 5.9.77 With the implementation of the mitigation proposed, the ecological effects arising from the amendment are reduced to a level where they are not considered to be significant. The significant effects of the amendment in this area are therefore unchanged from those reported in the main ES.

Cumulative effects

- 5.9.78 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments. The combined effect on hedgerows as a result of the AP2 revised scheme is reported at a route-wide level in SES2 and AP2 ES, Volume 3, Route-wide effects.

Sound, noise and vibration

Scope, assumptions and limitations

- 5.9.79 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the SMR of the main ES.
- 5.9.80 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for sound, noise and vibration.

Existing environmental baseline

- 5.9.81 The baseline sound and vibration information for Colwich to Yarlet is as described in Volume 2, CA2, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by the amendment have been used in the construction assessment.
- 5.9.82 The area close to the amendment includes the residences on Hoo Mill Lane and close to the Ingestre Care Home. The existing baseline in this area is dominated by road traffic noise from local and distant road traffic, including the A51 Lichfield Road.

Future environmental baseline

Construction (2020)

- 5.9.83 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.9.84 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.9.85 In the area close to the amendment, the main ES did not identify any residual likely significant sound, noise or vibration effects. However, the amendment has the potential to result in a new or different likely significant construction noise effects at residential properties on Hoo Mill Lane and close to Ingestre Care Home.
- 5.9.86 The assessment has considered the construction noise and vibration levels associated with the amendment and those identified in the main ES, the construction programme for the amendment and local mitigation identified in the main ES. The amendment will not give rise to any new or different likely residual significant effects compared to those reported in the main ES. For further information, see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Cumulative effects

- 5.9.87 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

- 5.9.88 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.9.89 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.
- 5.9.90 The assessment in this section considers the potential effects on public rights of way (PRoW) or footway users. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.9.91 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.9.92 Ingestre Park Road and Great Haywood Road are local roads in the Colwich to Yarlet area. Hoo Mill Lane is a private access which is crossed by the HS2 route.

Future environmental baseline

Construction (2023)

- 5.9.93 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.9.94 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.9.95 The main ES identified that the utility works would cross Hoo Mill Lane, which would result in disruption to the users of Hoo Mill Lane. However, as any disruption would be of short duration and limited to where the utility crosses Hoo Mill Lane, the effect on users would not be significant.
- 5.9.96 This amendment extends the length of the utility works but does not result in any change in disruption to Hoo Mill Lane.
- 5.9.97 This amendment will not give rise to any new or different likely residual significant effects on the users of Hoo Mil Lane and will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and BID document BID-TR-001-000 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.9.98 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Water resources and flood risk

Scope, assumptions and limitations

- 5.9.99 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.9.100 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.9.101 The baseline water resources information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-002 and Appendix WR-003-002, and the Volume 5: Water resources and flood risk Map Book in the main ES.
- 5.9.102 This amendment is located in the vicinity of the River Trent, which is a very high value receptor and will involve construction activities of a nature and scale that have potential water quality implications.

Future environmental baseline

Construction (2020)

- 5.9.103 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.9.104 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. This amendment has the potential to give rise to temporary adverse impacts on surface water quality which could affect have the potential to affect the River Trent and its associated abstractions. However, the amendment will be constructed in accordance with the measures specifically designed to safeguard water resources outlined in the draft CoCP.
- 5.9.105 Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.9.106 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 or AP1 amendments.

Summary of new or different likely residual significant effects as a result of the amendment

- 5.9.107 The amendment will give rise to different likely residual permanent significant effects on a group of cropmarks to the west of the River Trent and to the east of Ingestre Park (COY048), cropmarks at Hoo Mill, Ingestre (COY045), and the remains of post-medieval water meadows in the Trent Valley to the north of Great Haywood (COY046), by increasing the extent of the assets to be removed during construction. However, this will not change the level of significance of the effects reported in the main ES.

5.10 Additional land permanently required for the reconfiguration of Ingestre Park Golf Club (AP2-002-010)

- 5.10.1 The Bill provides for the HS2 route to pass through Ingestre Park Golf Club along a section of Trent North embankment, 1.1km in total length, and would continue in the Brancote South cutting, 1.6km in total length. Ingestre Park Golf Club is a private members' club with approximately 650 members; the club house is used for a variety of social and recreational events and can cater for up to 200 people. Construction of the scheme, in this location, would require a total of approximately 24.5ha (approximately 47%) of the course at Ingestre Park Golf Club to be either lost or severed from the club house. This would result in the facility being unable to function in its current arrangement. See Map CT-06-213, E8 to A4, and Map CT-06-214, J7 to H5, in the main ES Volume 2: CA2 Map Book.
- 5.10.2 Areas of woodland and grassland habitat creation would provide replacement habitat and ecological connectivity between fragmented habitats on both sides of the HS2 route. The HS2 route would pass through the southern extent of Lionlodge Covert, a Local Wildlife Site (LWS) covering an area of approximately 16.9ha. To compensate for this loss of woodland, a 3.4ha area of woodland habitat creation, on the northern side of the route, along the western side of Lionlodge Covert would be required. Landscape earthworks would be included on both sides of the Trent North embankment, and a landscape bund on the northern side of Brancote south cutting

would be required to provide visual screening for the residents of Ingestre and reduce the impact on the historic landscape character in the area of Ingestre and Tixall. See Map CT-06-213, J7 to Map CT-06-214, H5, in the main ES Volume 2: CA2 Map Book.

- 5.10.3 The Bill provides for the permanent diversion of an underground British Pipeline Agency (BPA) 10-inch diameter fuel pipeline for approximately 1.8km. The diversion would start approximately 230m south-east of Ingestre underbridge, continuing north before crossing the HS2 route beneath the Trent North embankment, approximately 120m east of Ingestre underbridge. The diversion would continue to the west, adjacent to the HS2 route, reconnecting with the existing pipeline alignment approximately 450m west of Ingestre Hall. See Map CT-06-213, F7 to Map CT-06-214, F5, in the main ES Volume 2: CA2 Map Book.
- 5.10.4 The AP1 revised scheme (amendment AP1-002-002: Additional land required for a temporary laydown area at Trent North embankment) provides a temporary laydown area located immediately north of a temporary material stockpile, approximately 200m north-east of Ingestre underbridge, for the realignment of a 1.2km section of the diverted 10-inch diameter BPA pipeline on the northern side of the HS2 route. See Map CT-06-213, F5 to F3, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.10.5 Since the submission of the Bill, additional land has been identified for the reconfiguration of Ingestre Park Golf Club to replace the land lost and severed by the HS2 route, which will allow the golf club to continue as a community asset in its present location. Ingestre Park Golf Club club house, located to the north of the HS2 route, and the land owned by Ingestre Park Golf Club on the northern side of the HS2 route, will be retained for the reconfigured golf course layout. Approximately 61ha of land will be required permanently for the reconfiguration of Ingestre Park Golf Club golf course. The additional land will be to the north-west of Lionlodge Covert LWS, crossing over and including powers over part of Ingestre Park Road and Ingestre Byway Open to All Traffic (BOAT) 1, extending further north-west onto land west of Ingestre Manor Farm. Access along Ingestre BOAT 1 will be retained during construction and operation. See Map CT-06-213, F5 to Map CT-06-213-R1, D5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.10.6 An indicative layout has been prepared for the reconfigured golf course, retaining the club house and six existing holes to the north of the HS2 route, as shown in Figure 7.

Figure 7: Indicative layout for the reconfigured Ingestre Park Golf Club



5.10.7 The extension will provide 12 new holes. This layout, together with information on environmental and conservation constraints, has been used as the basis for the assessment of this amendment. The environmental assumptions that have been applied, which will need to be reflected in any future detailed design, include:

- the extended part of the course will be designed with a 'woodland/parkland' feel that complements the historic landscape context of the existing course;
- any earthworks to create the playing areas and other elements, such as water features, will be no more than approximately 5m above or below existing ground levels, with any surplus excavated materials from the reconfiguration of the golf course reused in landscaping the course;
- existing mature trees and hedgerows and any other features of ecological or historic value will be incorporated into the design. The maintained playing area is likely to occupy no more than 30% of the additional land, allowing for substantial woodland planting and habitat creation;
- the course design and any woodland planting will take account of the key views into and out of Ingestre Conservation Area, to maintain its character and the settings of listed buildings;
- changes in ground levels within the Trent valley floodplain area will be avoided, or, if required will aim for a net increase in flood storage. Surface water drainage will be designed to ensure no increase in peak flood levels at any flood sensitive local receptors; and

- it is anticipated that any water required for irrigation of the reconfigured course can be provided from the Ingestre Park Golf Club's existing licensed abstraction from the Sherwood Sandstone Group. Any new abstraction would require an application to be submitted to the Environment Agency, together with an assessment of any impacts on the wider environment.

- 5.10.8 In order to provide a coherent layout for the reconfigured course, a triangular area of land within the limits of the Bill just to the south of the club house is likely to be required. See Map CT-05-213, F6 to F4, in the SES2 and AP2 ES Volume 2: CA2 Map Book. This was identified for use as a temporary material stockpile during construction, and to become permanent woodland habitat creation, in compensation for the loss of woodland in the adjacent Lionlodge Covert. If necessary, the stockpile will be relocated within Bill limits and in accordance with the Environmental Minimum Requirements⁸⁴. The woodland habitat creation can be repositioned as part of the reconfigured golf course, on land contiguous with the northern boundary of Lionlodge Covert.
- 5.10.9 The assessment assumes that if the Bill powers are used to provide the reconfigured golf course, construction will commence in 2021, over a period of one year and three months, to allow the reconfigured Ingestre Park golf course to be brought into use during 2023. The construction of the reconfigured golf course will be managed from within the extent of the required additional land, with access from the south along Ingestre Park Road.
- 5.10.10 The land required for the reconfiguration of Ingestre Park Golf Club is principally outside the limits of the Bill and will result in a requirement for an additional 61ha of land. See Map CT-06-213, G3 to C1, and CT-06-213-R1, H9 to B7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

Topics included in the AP2 assessment

- 5.10.11 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: agriculture, forestry and soils; community; cultural heritage; ecology and biodiversity; health; landscape and visual; sound, noise and vibration; and water resources and flood risk. This is reported within this section.

Agriculture, Forestry and Soils

Scope, assumptions and limitations

- 5.10.12 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the Scope and Methodology Report⁸⁵ (SMR) and SMR Addendum⁸⁶ of the main ES.

⁸⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Draft Environmental Minimum Requirements: Draft General Principals*. Available online at: <https://www.gov.uk/government/publications/environmental-minimum-requirements-for-hs2-phase-2a>

⁸⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁸⁶ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- 5.10.13 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for agriculture, forestry and soils.

Existing environmental baseline

- 5.10.14 The baseline agriculture, forestry and soils information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 4 of the main ES.
- 5.10.15 The area of land required for the amendment has soil in the Wick 1 association, as described in Volume 2, CA2, Section 4 of the main ES. Wick association soils are derived from glaciofluvial and terrace drift, and are deep, well drained, coarse loamy and sandy soils, locally over gravel. They are classified predominantly as best and most versatile (BMV) agricultural land in Grades 2 and 3a⁸⁷.
- 5.10.16 Two farm holdings, already affected by the original scheme, will be further affected by this amendment. These are:
- Ingestre Manor Farm (CA2/20), a 526ha arable, sheep and store cattle holding of medium sensitivity to change, and
 - Tixall Manor Farm (CA2/23), a 117ha arable and beef cattle holding of medium sensitivity to change.

Future environmental baseline

Construction (2020)

- 5.10.17 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.10.18 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice⁸⁸ (CoCP) are required.

Assessment of impacts and effects

- 5.10.19 This amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES on BMV agricultural land or forestry land within the Colwich to Yarlet area as it is not of a scale to change the magnitude of impact. The route-wide effects on BMV land and forestry land are reported in Volume 3 of the SES2 and AP2 ES.
- 5.10.20 The main ES reported a temporary minor adverse effect on Ingestre Manor Farm (CA2/20), which is not significant. Approximately 7.1ha (1% of the total area of the

⁸⁷ The quality of agricultural land in England and Wales is assessed according to the Agricultural Land Classification (ALC) system, which classifies agricultural land into five grades from excellent quality Grade 1 land to very poor quality Grade 5 land. Grade 3 is subdivided into Subgrades 3a and 3b. Grades 1, 2 and 3a are defined as the best and most versatile (BMV) land. The ALC methodology is contained in: Ministry of Agriculture, Fisheries and Food (1988), Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land.

⁸⁸ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

land holding) would be required temporarily, resulting in a negligible impact.

The amendment will require an additional 53.4ha of land temporarily from the land holding, resulting in a total of area land required temporarily of 60.5ha (12% of the total area of the land holding). The additional land required will change the impact from negligible to medium. The amendment will give rise to a new moderate adverse effect, which is significant, on this land holding.

- 5.10.21 The main ES reported a permanent negligible effect on Ingestre Manor Farm, which is not significant. Approximately 3.8ha (less than 1% of the total area of the land holding) would be required permanently, resulting in a negligible impact. The amendment will require an additional 53.4ha of land permanently from the land holding, resulting in a total of area land required permanently of 57.2ha (11% of the total area of the land holding). The additional land required will change the impact from negligible to medium. The amendment will give rise to a new moderate adverse effect, which is significant, on this land holding.
- 5.10.22 The main ES reported a temporary major/moderate adverse effect on Tixall Manor Farm (CA2/23), which is significant. Approximately 23.8ha (20% of the total area of the land holding) would be required temporarily, resulting in a high impact. The amendment will require an additional 7.6ha of land temporarily from the land holding, resulting in a total area of land required temporarily of 31.4ha (27% of the total area of the land holding). The amendment will give rise to a different significant effect, however this will not change the level of significance of the effects reported in the main ES.
- 5.10.23 The main ES reported a permanent moderate adverse effect on Tixall Manor Farm, which is significant. Approximately 16.2ha (14% of the total area of the land holding) would be required permanently, resulting in a medium impact. The amendment will require an additional 7.6ha of land permanently from the land holding, resulting in a total of area land required permanently of 23.8ha (20% of the total area of the land holding). The additional land required will change the impact from medium to high. The amendment will give rise to a different significant effect and will change the significance of the effect reported in the main ES from moderate adverse to major/moderate adverse.
- 5.10.24 For further information see SES2 and AP2 ES Volume 5: Appendix AG-001-000 and SES2 and AP2 ES Volume 5: Agriculture, forestry and soils Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.10.25 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 5.10.26 The amendment will result in a new likely residual significant moderate adverse temporary and permanent effect on Ingestre Manor Farm (CA2/20) due to an increase in the land required from the land holding. Tixall Manor Farm (CA2/23) will experience a different likely residual temporary and permanent significant effect due to an increase in the land required from the land holding. This will change the significance of

the permanent effect reported in the main ES from moderate adverse to major/moderate adverse.

Cumulative effects

- 5.10.27 The amendment in combination with additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline and a new utility compound, north-west of Great Haywood Marina (AP2-002-009) will require 67.5ha of land temporarily from Ingestre Manor Farm (CA2/20) (13% of the total area of the land holding) and 57.2ha of land permanently (11% of the total area of the land holding).
- 5.10.28 No mitigation measures additional to those reported in the main ES and draft CoCP have been identified.
- 5.10.29 This will give rise to a new moderate adverse cumulative temporary significant effect, compared to the main ES, but will not change the significance of the impact on the holding as a result of the AP2 amendment.

Community

Scope, assumptions and limitations

- 5.10.30 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR, and the SMR Addendum of the main ES.
- 5.10.31 This amendment has the potential to result in new or different construction and operational effects for community. Therefore, both construction and operational phases are considered in this assessment.

Existing environmental baseline

- 5.10.32 The baseline community information for the Colwich to Yarlet area is described in Volume 2, CA2, Section 6 of the main ES.
- 5.10.33 Ingestre Park Golf Club is located in the village of Ingestre. It is a private members' club with approximately 650 members. The course has 18 holes and is currently a 70/72-par course (men/women). In addition to the course, there is a club house that includes a bar, restaurant and a pro-shop. The club house facilities are used for a variety of social and recreational events and can cater for up to 200 people.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.10.34 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.10.35 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.10.36 The main ES reported a loss of land at Ingestre Park Golf Club due to construction of the Trent North embankment, Brancote South cutting and associated landscaping. These works would require a total of approximately 24.5ha (approximately 47%) of Ingestre Park Golf Club to be either lost or severed from the club during construction. This loss of land would mean that the club would be unable to function in its current arrangement. The main ES reported that should the club be required to close then this would result in a permanent major adverse significant effect. The original scheme made no provision for new land to reinstate the area of land lost or severed from the club house.
- 5.10.37 The golf course reconfiguration at Ingestre is being included within AP2 in response to the direction of the Select Committee, which was 'to come to a solution that allows the Golf Club to continue as a community asset'. The amendment will provide additional land for the reconfiguration of the golf course to replace the land lost and severed by the HS2 route. The works to reconfigure the golf course will take place over a period of one year and three months and will commence in 2021, with the reconfigured golf course to be brought into use during 2023. During the period of reconfiguration works, it is assumed for the assessment, that the outdoor parts of the golf course will close, but the club house will remain open. The amendment will give rise to a different likely residual temporary significant effect, due to a decrease in the duration of the effect on Ingestre Park Golf Club. However, this will not change the level of significance of the effects reported in the main ES.
- 5.10.38 This amendment will remove the permanent construction effect from loss of land reported in the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.10.39 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 5.10.40 The amendment will give rise to a different likely residual temporary significant effect on the Ingestre Park Golf Club, due to a change in the duration of loss of land. However, this will not change the level of significance reported in the main ES. The amendment will remove the permanent effect from loss of land reported in the main ES.

Cumulative effects

- 5.10.41 There are no new or different likely significant cumulative effects for community as a result of the amendment acting in-combination with any other AP2 amendments or AP1 amendments.

Effects arising during operation

Avoidance and mitigation measures

- 5.10.42 No mitigation measures, additional to those reported in the main ES, are required.

Assessment of impacts and effects

- 5.10.43 The main ES did not report any significant effect at Ingestre Park Golf Club during operation as it was assumed to be permanently closed. This amendment has been assessed for potential noise and visual effects to determine if these give rise to a new significant in-combination effect on community resources in this area. The assessment has concluded that this amendment will not give rise to any new likely residual significant effects.

Cumulative effects

- 5.10.44 There are no new or different likely significant cumulative effects for community as a result of the amendment acting in-combination with any other AP2 amendments or AP1 amendments.

Cultural heritage

Scope, assumptions and limitations

- 5.10.45 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).

- 5.10.46 The amendment has the potential to result in new or different temporary or permanent significant construction effects only. Therefore, there is no operational assessment for cultural heritage.

Existing environmental baseline

- 5.10.47 The baseline cultural heritage information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 7 of the main ES.

- 5.10.48 The following designated assets of moderate value lie partially within or adjacent to the land required for the amendment:

- Ingestre Conservation Area (COY049);
- Ingestre village, comprising of a group of Victorian buildings and a Grade II listed phonebox (COY052); and
- Ingestre Home Farm, comprising of a Grade II listed farmhouse and farm buildings dating from approximately 1820 (COY057).

- 5.10.49 A large group of cropmarks and earthworks on the golf course of Ingestre Park Golf Club, relating to the medieval/post-medieval landscape (COY053), a non-designated asset of low value, is located within the land required for the amendment.

- 5.10.50 Further information about these assets is provided in the main ES Volume 5: Appendix CH-002-002 and Map Series CH-01 and CH-02 in the main ES Volume 5: Cultural heritage Map Book.

Future environmental baseline

Construction (2020)

- 5.10.51 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.10.52 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

- 5.10.53 The main ES reported a temporary moderate adverse significant effect on Ingestre Conservation Area (COY049), a designated asset of moderate value. Construction works to reconfigure the golf course will introduce noise and traffic which will further affect the rural setting of the asset. This will give rise to a different significant effect, however this will not change the level of the significance of the effect reported in the main ES.
- 5.10.54 The main ES reported that there would be no effect on Ingestre Village (COY052), a designated asset of moderate value. The village derives some significance from its historic rural village setting. Construction works to reconfigure the golf course will introduce noise and traffic which will affect the rural setting of the asset. This will give rise to a new temporary medium adverse impact and a new temporary moderate adverse effect, which is significant.
- 5.10.55 The main ES reported that there would be no effect on Ingestre Home Farm (COY057), a designated asset of moderate value. The building derives some significance from its historic rural setting. Construction works to reconfigure the golf course will introduce noise and traffic which will affect the rural setting of the asset. This will give rise to a new temporary medium adverse impact and a new temporary moderate adverse effect, which is significant.
- 5.10.56 The main ES reported a permanent moderate adverse significant effect on cropmarks and earthwork features at Ingestre Park Golf Club (COY053), a non-designated asset of low value. This amendment will increase the extent of the asset to be removed during construction. This will give rise to a different significant effect, however this will not change the level of the significance of the effect reported in the main ES.
- 5.10.57 For further information see Map Series CH-01 in the SES2 and AP2 ES Volume 5: Cultural heritage Map Book and the SES2 and AP2 ES Volume 5: Appendix CH-003-000.

Mitigation and residual effects

Other mitigation measures

- 5.10.58 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.10.59 The temporary effects of construction activity on the setting of the heritage assets have been considered. However, they are largely reversible in nature and will be restricted to the duration of the construction works. The amendment will not change the level of significance of the effects reported in the main ES.
- 5.10.60 This amendment will give rise to different likely residual permanent moderate adverse significant effects on cropmarks and earthwork features at Ingestre Park Golf Club (COY053), by increasing the extent of the assets to be removed during construction. However, this will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.10.61 There are no new or different likely significant cumulative effects for cultural heritage as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.10.62 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the SMR and the SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.10.63 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.10.64 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.10.65 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.10.66 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources.
- 5.10.67 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in Background Information and Data (BID) document EC-019-000, including Map Series EC-02 which accompanies the SES2 and AP2 ES.
- 5.10.68 For those receptors described in the main ES, further details are provided in Volume 2, CA2, Section 8, and Volume 5: Appendix EC-001-000, including Map Series EC-01.

Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12⁸⁹.

- 5.10.69 For those receptors described in SES₁, further details are provided in Volume 2, CA₂, Section 3. The baseline ecology report that accompanied SES₁ and AP₁ ES is provided in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12⁹⁰.

Designated sites

- 5.10.70 There is one Special Area of Conservation (SAC) of relevance to the assessment of the amendment, which is of international value. Pasturefields Salt Marsh SAC, covering an area of approximately 7.7ha, is designated for its inland salt meadow (which is an Annex 1⁹¹ priority habitat). The Pasturefields Salt Marsh SAC is cited as the best example of an inland salt meadow in the United Kingdom, and is characterised by red fescue, with saltmarsh rush, sea plantain, common saltmarsh-grass, lesser sea-spurrey and sea arrowgrass. Pasturefields Salt Marsh SAC is located north-west of Great Haywood, approximately 125m north-east of the area subject to the amendment.
- 5.10.71 The area subject to the amendment is located within a Natural England Impact Risk Zone⁹² for Pasturefields Salt Marsh Site of Special Scientific Interest (SSSI), which is of national value. Pasturefields Salt Marsh SSSI, covering the same area as Pasturefields Salt Marsh SAC (7.7ha), is designated for its inland salt meadow and notable breeding populations of snipe, redshank and lapwing. Pasturefields Salt Marsh SSSI is located north-west of Great Haywood, approximately 125m north-east of the area subject to the amendment.
- 5.10.72 There is one LWS of relevance to the assessment of the amendment, which is of county value. Lionlodge Covert LWS, covering an area of approximately 16.9ha, is designated for its semi-natural broadleaved woodland and inland salt meadow. Lionlodge Covert LWS is located west of Great Haywood, directly adjacent to the area subject to the amendment.
- 5.10.73 There is one Ancient Woodland Inventory (AWI) site of relevance to the assessment of the amendment, which is of county value. Flushing Covert AWI site, covering an area of approximately 1.2ha, is located approximately 280m south-west of the area subject to the amendment.

⁸⁹ HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

⁹⁰ HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

⁹¹ Annex 1 of the EU's Habitats Directive (1992) lists key habitat types whose conservation requires the designation of Special Areas of Conservation.

⁹² The Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals and indicate the types of development proposal which could potentially have adverse impacts.

Habitats

- 5.10.74 Habitats within the area subject to the amendment include species-rich hedgerows, improved grassland, arable and a water body. The habitats of relevance to the assessment of the amendment are described in further detail below.
- 5.10.75 Hedgerows within the area subject to the amendment are predominantly species-rich. Hedgerow with at least 80% cover of native woody species is a habitat of principal importance in Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)⁹³ and a conservation priority of the Staffordshire Biodiversity Action Plan⁹⁴ (BAP). These contribute towards a wider hedgerow network within the Colwich to Yarlet area that is of district/borough value.
- 5.10.76 There is one pond within the area subject to the amendment. On a precautionary basis it is assumed that this pond is a habitat of principal importance and a conservation priority of the Staffordshire BAP. This pond is of up to district/borough value.

Species

- 5.10.77 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include bats, great crested newt, wintering flocks of golden plover and lapwing, other amphibians, reptiles, badger, polecat, harvest mouse, European hedgehog and brown hare.
- 5.10.78 The main ES reported a bat assemblage associated with habitats at Ingestre Park Golf Club. Field surveys in this area recorded a *Myotis* bat species maternity roost, three soprano pipistrelle day roosts and a common pipistrelle day roost in trees at Ingestre Park Golf Club. The area subject to the amendment contains potential bat roosting, foraging and commuting habitats that are likely to be used by this bat assemblage. The bat assemblage includes several species of principal importance and other species that are conservation priorities of the Staffordshire BAP. The bat assemblage associated with habitats at Ingestre Park Golf Club and adjoining land is of up to regional value.
- 5.10.79 The main ES, as amended by SES1, reported a great crested newt metapopulation⁹⁵ centred on Ingestre Park Golf Club (AMP⁹⁶2.2). Field surveys determined the presence of great crested newt in seven ponds of 11 ponds surveyed, within a network of 16 ponds assumed to be used by this metapopulation. A further pond is located within the area subject to the amendment, which is likely to be associated with this metapopulation. Great crested newt is an Annex 2⁹⁷ species, a species of principal importance and a conservation priority of the Staffordshire BAP. The great crested newt metapopulation associated with habitats at Ingestre Park Golf Club and adjoining land is of county value.

⁹³ Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

⁹⁴ Staffordshire Biodiversity Partnership. *Staffordshire Biodiversity Action Plan*. Available online at: <http://www.sbap.org.uk/>

⁹⁵ A metapopulation is a group of spatially separated populations which interact.

⁹⁶ The first and second number associated with the AMP reference relate to the specific CA and location e.g. AMP2.1 is within the Colwich to Yarlet area and is the first metapopulation encountered when following the route from London.

⁹⁷ Annex 2 of the EU's Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation.

- 5.10.80 The area subject to the amendment at Ingestre Manor Farm has not been surveyed but is reported by West Midland Bird Club to support wintering mixed flocks of up to 500 golden plover and up to 500 lapwing. Golden plover is an Annex 1⁹⁸ species. Lapwing is species of principal importance and a conservation priority of the Staffordshire BAP. The wintering golden plover and lapwing assemblage associated with habitats at Manor Farm, adjoining Ingestre Park Golf Club, is of district/borough value.
- 5.10.81 The main ES reported populations of amphibian species which include palmate newt, smooth newt, common toad and common frog, identified through field surveys, within ponds throughout the Colwich to Yarlet area. Amphibian species are assumed to be present in ponds that have not yet been surveyed. The area subject to the amendment includes hedgerows and ponds that are likely to be used by these species. Common toad is a species of principal importance. The populations of common amphibians throughout Colwich to Yarlet are of local/parish value.
- 5.10.82 The main ES reported populations of common reptile species which include common lizard, slow-worm and grass snake, identified through desk study records, as being potentially present at low numbers throughout the Colwich to Yarlet area. Common lizard, slow-worm and grass snake are species of principal importance. Grass snake is also a conservation priority of the Staffordshire BAP. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.
- 5.10.83 The main ES, as amended by SES1, reported at least five social groups of badgers, identified through field surveys, throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable sett building and foraging habitats for badgers. The badger populations throughout the Colwich to Yarlet area are of local/parish value.
- 5.10.84 The main ES reported populations of other mammals including polecat, harvest mouse, European hedgehog and brown hare, identified through desk study records, as being potentially present throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.

Future environmental baseline

Construction (2020)

- 5.10.85 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.10.86 The assessment assumes implementation of the measures set out within the draft CoCP.

⁹⁸ Annex 1 of the EU's Birds (2009) lists priority species whose conservation requires the designation of Special Protection Areas.

- 5.10.87 The following measures are proposed for the golf course reconfiguration, which contribute to avoiding or reducing adverse effects on habitat and species:
- avoidance of Lionlodge Covert LWS, which supports lowland mixed deciduous woodland, a habitat of principal importance;
 - avoidance of Flushing Covert AWI site, which supports lowland mixed deciduous woodland, a habitat of principal importance;
 - protection of peripheral scattered trees, hedgerows and tree lines; and
 - restriction of lighting to the club house and practice areas to prevent displacement of bats from existing commuting routes and foraging areas, including Lionlodge Covert LWS.

Assessment of impacts and effects

- 5.10.88 All of the effects within this section are reported in the absence of other mitigation.

Designated sites

- 5.10.89 No effects on Pasturefields Salt Marsh SAC were reported within the main ES. The amendment has the potential to result in a new adverse effect on the integrity of the Pasturefields Salt Marsh SAC as a consequence of changes to the hydrological regime which sustains the inland salt meadow. An updated Habitats Regulations Assessment (HRA) screening document considers potential impacts that will result from this amendment which are described in Volume 5: Appendix EC-017-004. The HRA screening document concludes that the amendment will not give rise to a new or different significant effect on the integrity of Pasturefields Salt Marsh SAC or the inland salt meadow.
- 5.10.90 No effects on Pasturefields Salt Marsh SSSI were reported within the main ES. The amendment has the potential to result in visual disturbance resulting from construction works on breeding populations of snipe, redshank and lapwing (which together with the inland salt meadow are qualifying features of Pasturefields Salt Marsh SSSI). However, existing woodland screens the view between the area subject to the amendment and suitable habitat at Pasturefields Salt Marsh SSSI known to support breeding populations of snipe, redshank and lapwing. The amendment will not give rise to a new or different significant effect on breeding wader populations at Pasturefields Salt Marsh SSSI.
- 5.10.91 The main ES reported the loss of 3ha (19%) of woodland habitat at Lionlodge Covert LWS, which would result in a permanent adverse effect that is significant at county level. The amendment will not alter the extent of woodland loss at Lionlodge Covert LWS. The amendment will not give rise to any new or different significant effects on Lionlodge Covert LWS and will not change the level of significance of the effects reported in the main ES.
- 5.10.92 The main ES reported the loss of 0.2ha (17%) of woodland habitat at Flushing Covert AWI site, which would result in a permanent adverse effect that is significant at county level. The amendment will not alter the extent of woodland loss at Flushing Covert AWI site. The amendment will not give rise to any new or different significant effects

on woodland at Flushing Covert AWI site and will not change the level of significance of the effects reported in the main ES.

- 5.10.93 The amendment will not give rise to new or different significant effects on local designated sites due to the scale of the works and the distance from those sites. It will not change the level of significance of the effects reported in the main ES.

Habitats

- 5.10.94 On a precautionary basis, the main ES reported a loss of 33.9km of hedgerow habitat within the Colwich to Yarlet area, which would result in a permanent adverse effect that is significant at district/borough level. The amendment will result in the additional loss of approximately 230m of species-rich hedgerow. In the context of the hedgerow network within the Colwich to Yarlet area, this additional loss does not represent a new or different significant effect.
- 5.10.95 On a precautionary basis the main ES reported the loss of 40 ponds within the Colwich to Yarlet area, which would result in a permanent adverse effect on each pond that is significant at up to district/borough level. The amendment will result in the loss of an additional pond which will give rise to a new effect upon this pond that is significant at the district/borough level.
- 5.10.96 It is not likely that any other effects on habitats of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Species

- 5.10.97 The main ES reported a direct loss of roosts and a loss and fragmentation of foraging and commuting habitat used by the assemblage of bats associated with habitats at Ingestre Park Golf Club, which would result in a permanent adverse effect that is significant at a regional level. Whilst the design of the reconfigured golf course will aim to retain mature trees where possible, the loss of some mature trees is likely. On a precautionary basis, mature trees within the area subject to the amendment are assumed to support bat roosts. The assumed loss of additional roosts would give rise to a different significant effect on the bat assemblage associated with habitats at Ingestre Park Golf Club. However, this will not change the level of significance of the effect as reported in the main ES.
- 5.10.98 The main ES, as amended by SES1, reported the loss of 11 ponds and associated terrestrial habitats that are known or assumed to be used by the great crested newt metapopulation centred on Ingestre Park Golf Club (AMP 2.2), which would result in a permanent adverse effect that is significant at up to county level. The amendment will result in the loss of an additional pond, which on a precautionary basis is assumed to be associated with the metapopulation. The assumed loss of a great crested newt breeding pond will give rise to a different significant effect on the great crested newt metapopulation centred on Ingestre Park Golf Club. However, this will not change the level of significance of the effect as reported in the main ES.
- 5.10.99 Construction works within the area subject to the amendment will result in the removal of approximately 51ha of large (>5ha) arable fields adjacent to Manor Farm,

Ingestre which are assumed to provide foraging habitat for regular wintering mixed flocks of up to 500 golden plover and 500 lapwing. Similar large arable fields to those at Manor Farm occupy an additional area of approximately 170ha (221ha in total) within the Trent valley in a 2km radius between Great Haywood and Weston, including approximately 74ha at the non-operational Hixon Airfield which is known to regularly support wintering flocks of golden plover and lapwing. At least 77% of suitable arable fields within this radius will not be impacted by the area subject to the amendment and there is additional similar habitat in the Trent valley further to the north and south. However, the assumed loss of wintering golden plover and lapwing foraging habitat resulting from the amendment will give rise to a new effect on this wintering bird assemblage that is significant at the district/borough level.

- 5.10.100 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.10.101 The main ES reported habitat creation measures near Ingestre Park Golf Club, which includes the creation of ponds. The provision of ponds will reduce the new adverse effect resulting from this amendment on the loss of a pond to a level that is not significant.
- 5.10.102 The main ES reported habitat creation measures near Ingestre Park Golf Club, which includes the creation of ponds, species-rich grassland, hedgerows and broadleaved woodland, to compensate for the loss of bat foraging habitats. Once established, these habitat creation measures will provide suitable bat foraging and commuting habitat. Artificial roosting provision will be provided across the woodland habitat creation areas to replace bat roosts that will be lost to construction, in accordance with the Ecological Principles of Mitigation within the SMR Addendum. These measures will reduce the different adverse effect resulting from this amendment on the bat assemblage associated with Ingestre Park Golf Club to a level that is not significant.
- 5.10.103 The main ES also reported the creation of ecological habitat areas on both sides of the Brancote South cutting to compensate for loss of terrestrial habitats used by the great crested newt metapopulation (AMP2.2) at Ingestre Park Golf Club. Provision of ponds, species-rich grassland and broadleaved woodland will be designed to compensate for the loss of breeding sites, foraging habitat and places of shelter used by great crested newts and other amphibian species, in accordance with the Ecological Principles of Mitigation within the SMR Addendum. These measures will reduce the different adverse effect resulting from this amendment on the metapopulation of great crested newts (AMP2.2) centred on Ingestre Park Golf Club to a level that is not significant.

Summary of likely residual significant effects

- 5.10.104 The amendment will result in the loss of assumed foraging habitat for wintering golden plover and lapwing within arable fields adjacent to Ingestre Manor Farm, which will give rise to a new residual permanent adverse effect upon this wintering

bird assemblage that is significant at the district/borough level. However, in consultation with relevant stakeholders, suitable offsite compensatory measures will be sought in order to reduce this permanent adverse effect to a level that is not significant.

Cumulative effects

- 5.10.105 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments. The combined effect on hedgerows as a result of the AP2 revised scheme is reported at a route-wide level in SES2 and AP2 ES, Volume 3, Route-wide effects.

Health

Scope, assumptions and limitations

- 5.10.106 The assessment scope, key assumptions and limitations for health are as set out in Volume 1 and the SMR of the main ES.
- 5.10.107 This amendment has the potential to result in new or different significant construction effects for health. Therefore, only the construction phase is considered in this assessment.

Existing environmental baseline

- 5.10.108 The baseline health information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 9 of the main ES.
- 5.10.109 Ingestre Park Golf Club is located in the village of Ingestre. It is a private members' club with approximately 650 members. The course has 18 holes and is currently a 70/72-par course (men/women). In addition to the course, there is a club house that includes a bar, restaurant and a pro-shop. The club house facilities are used for a variety of social and recreational events and can cater for up to 200 people.

Future environmental baseline

Construction (2020)

- 5.10.110 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.10.111 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.10.112 The main ES reported that the original scheme would be constructed through Ingestre Park Golf Club, permanently preventing the course from functioning in its current arrangement. This would result in a permanent adverse health effect associated with

reduced access to the beneficial effects of green space, physical activity and social interaction for existing and potential users.

- 5.10.113 The amendment will remove the permanent health effect associated with the loss of the 18-hole golf course reported in the main ES, and will give rise to a new temporary health effect. Members of the club will be unable to use the course during construction of the scheme until the reopening of the course on the additional acquired land in 2023. During this period, they will lose the benefits of access to green space, physical activity and social interaction provided by the facility. However, knowledge of plans for the course to be reinstated may change the way in which users respond to its closure, compared with the permanent loss of the course. Members are less likely to discontinue the sport or lose the social networks established through the club. The continued availability of the club house during this period will provide a means of maintaining social connections. The change from a permanent to temporary effect will reduce the level of health effect reported in the main ES, resulting in a different health effect compared to the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.10.114 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual effects

- 5.10.115 The amendment will give rise to a different likely residual health effect. The amendment is likely to change the way in which users respond to closure during construction. Members are less likely to discontinue the sport or lose the social networks established through the club, therefore reducing the adverse effect. This will change the level of health effect reported in the main ES.
- 5.10.116 Following construction, the amendment will remove the likely health effect reported in the main ES by enabling the course to be reinstated as an 18-hole golf course.

Cumulative effects

- 5.10.117 There are no new or different cumulative effects for health as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Landscape and visual

Scope, assumptions and limitations

- 5.10.118 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.10.119 This amendment has the potential to give rise to new or different significant operational effects for landscape only. This is because the construction activity will comprise earth moving and planting which will not give rise to a significant effect on the landscape character of Ingestre Park Sandstone Estatelands Landscape Character Area (LCA) or on views. Once operational, the extended golf course will appear as landscaped green space and will not give rise to any visual effects. Therefore, there is

no construction assessment for landscape or visual, and no operational assessment for visual.

Existing environmental baseline

- 5.10.120 The baseline landscape and visual information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 11 of the main ES.

Landscape baseline

- 5.10.121 The amendment is located within the Ingestre Park Sandstone Estatelands, which is described in the Volume 5: Appendix LV-001-002 of the main ES and summarised below.

Ingestre Park Sandstone Estatelands LCA

- 5.10.122 The Ingestre Park Sandstone Estatelands LCA is an area of historic designed parklands including Tixall Park and Ingestre Park. Ancient woodlands, a Local Wildlife Site, historic salt marsh associated with Pasturefields SAC and a salt spring pool are also features of the landscape. Settlement comprises the dispersed farmsteads and the historic villages of Little Ingestre and Tixall and a high concentration of listed buildings. Along the A518 Weston Road lies Staffordshire County Showground. These elements contribute to a high historic and scenic value with a distinct sense of place. Mature vegetation and parkland species together with limited public access create a sense of remoteness and tranquillity.

Future environmental baseline

Operation (2027)

- 5.10.123 The future baseline for operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Permanent effects arising during operation

Avoidance and mitigation measures

- 5.10.124 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

Ingestre Park Sandstone Estatelands LCA

- 5.10.125 The main ES reported a major adverse significant effect for year 1 and year 15 of operation, reducing to moderate adverse significant effect at year 60. This was due to the severance of the historic landscapes and the relationship of the landscapes to each other. The introduction of large scale embankment earthworks and cuttings and the loss of substantial areas of mature vegetation within the historic landscapes and the loss of the remaining rare salt marsh and salt spring pool at Lionlodge Covert would change the designed historic landscape pattern and landscape elements within it. By year 60 the effect would reduce to moderate as the mature mitigation planting would provide some screening, integration and restore the historic landscape pattern

although the presence of the original scheme would continue to substantially change the character of the LCA.

- 5.10.126 At year 1 and year 15, the amendment will replace mostly arable land with a managed golf course landscape. The reconfigured golf course will retain mature trees and hedgerows where reasonably practicable and provide appropriate planting to maintain key views and character in the wider landscape. The replacement of rural farmland with a managed golf course landscape will slightly add to the effects of the operational railway within the landscape. The amendment will therefore give rise to a different significant effect on the landscape character of the Ingestre Park Sandstone Estatelands LCA. However, the level of significance of the effect will remain major adverse significant as reported in the main ES.
- 5.10.127 At year 60, the mature woodland mitigation planting will provide further integration of the golf course into the wider landscape, but the effects of the operational railway will remain. The amendment will therefore not give rise to a new or different likely significant effect on this LCA and will not change the level of significance of effect reported in the main ES.
- 5.10.128 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.10.129 No mitigation measures, additional to those reported in the main ES, are identified.

Summary of likely residual significant effects

- 5.10.130 The amendment to reconfigure Ingestre Park Golf Club will give rise to a different likely residual significant operational effect on the landscape character of the Ingestre Park Sandstone Estatelands LCA. The effect will increase but will remain major adverse significant at year 15. This will not change the level of significance of the effect reported in the main ES.

Cumulative effects

- 5.10.131 There are no new or different likely significant cumulative effects for landscape and visual as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Monitoring

- 5.10.132 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.10.133 There are no changes to the monitoring requirements identified in the main ES for landscape and visual as a result of the amendment.

Sound, noise and vibration

Scope, assumptions and limitations

- 5.10.134 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the SMR of the main ES.
- 5.10.135 This amendment has the potential to result in new or different significant construction and operational effects for sound, noise and vibration. Therefore, both construction and operational phases are considered in this assessment.

Existing environmental baseline

- 5.10.136 The baseline sound and vibration information for Colwich to Yarlet is as described in Volume 2, CA2, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by the amendment have been used in the construction and operational assessment.
- 5.10.137 In the vicinity of the amendment, the existing environmental baseline is dominated by road traffic noise from local and distant road traffic, including the A51 Lichfield Road.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.10.138 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.10.139 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.10.140 For the purposes of the noise assessment it was assumed that Ingestre Park Golf Club and the club house would not be used following the commencement of the construction phase of the original scheme, therefore, no significant effect was reported in the main ES. The amendment will change this assumption and an assessment of noise during the construction phase was undertaken. The results were compared against the relevant assessment criteria for this use, which are presented in Volume 5: Appendix SV-001-000 of the main ES. The construction noise levels are below the relevant assessment criteria for this use, and therefore no or different new likely residual significant effects are identified compared to the main ES.

Cumulative effects

- 5.10.141 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of this amendment acting in combination with any other AP2 amendments or AP1 amendments.

Effects arising during operation

Avoidance and mitigation measures

- 5.10.142 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 5.10.143 For the purposes of the noise assessment it was assumed that Ingestre Park Golf Club and the club house would not be used following the commencement of the construction phase of the original scheme, therefore, no significant effect was reported in the main ES. The amendment will change this assumption and an assessment of noise during the operational phase was undertaken. The results were compared against the relevant assessment criteria for this use, which are presented in Volume 5: Appendix SV-001-000 of the main ES. The operational noise levels are below the relevant assessment criteria for this use and therefore no new or different likely residual significant effects are identified compared to the main ES.

Cumulative effects

- 5.10.144 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of this amendment acting in combination with any other AP2 amendments or AP1 amendments.

Water resources and flood risk

Scope, assumptions and limitations

- 5.10.145 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.10.146 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.10.147 The baseline water resources information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-002 and Appendix WR-003-002, and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.10.148 This amendment is located near Pasturefields Salt Marsh SAC and SSSI (a very high value receptor), the salt springs at Lionlodge Covert LWS (moderate value receptors), the groundwater abstraction at Ingestre Park Golf Club (a high value receptor), the River Trent (a very high value receptor) and the Trent and Mersey Canal (a high value receptor). This amendment will involve construction activities of a nature and scale that have potential water quality and flood risk implications. In addition, the new golf course will potentially require a new, permanent source of water for irrigation. This has potential implications for the water resources and hydrology of the area.

Future environmental baseline

Construction (2020)

- 5.10.149 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.10.150 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. The amendment has the potential to give rise to temporary adverse impacts on water quality.
- 5.10.151 To avoid potential impacts to Pasturefields Salt Marsh SAC and SSSI, irrigation of the golf course will be achieved using water from either the existing borehole at Ingestre Park Golf Club, under its current licence conditions, or an alternative source. Potential alternative sources include: use of mains water; use of a new licensed abstraction from the River Trent; or use of a new licensed abstraction from the river terrace gravels, which comprise a Secondary A aquifer. These sources could be used in conjunction with landscaped storage ponds on the golf course to increase the reliability of the supply. Any new abstraction will require an application to be submitted to the Environment Agency for a licence, together with an assessment of its impacts on the wider environment. The amendment will not give rise to a new or different significant effect on Pasturefields SAC. The likelihood of this proposal resulting in significant impacts on the other water receptors in the area is negligible.
- 5.10.152 The amendment has been assessed as predominantly water compatible, as defined by the National Planning Policy Framework⁹⁹ (NPPF), and would not require protection from flooding. For the purposes of this assessment it has been assumed that:
- any flood-sensitive assets would be located outside of the floodplain;
 - runoff from any new areas of hard-standing, for example car parks, would be balanced to ensure no net increases in runoff rates and volumes;
 - changes in ground levels within floodplain areas would be avoided, or, if proposed, would aim for a net increase in flood storage; and
 - changes in ground surface roughness, caused by for example tree planting, that have potential to affect flood conveyance, would be limited to ensure no increase in peak flood levels at Pasturefields Salt Marsh SAC and SSSI or any other flood-sensitive local receptors.
- 5.10.153 Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

⁹⁹ National Planning Policy Framework (2018). Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/740441/National_Planning_Policy_Framework_web_accessible_version.pdf

Cumulative effects

- 5.10.154 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Summary of new or different likely residual significant effects as a result of the amendment

- 5.10.155 The amendment will give rise to a new likely residual significant moderate adverse temporary and permanent agricultural effect on Ingestre Manor Farm (CA2/20) due to land required from the land holding. Tixall Manor Farm (CA2/23) will experience a different likely residual temporary and permanent significant effect due to an increase in the land required from the land holding. This will change the significance of the permanent effect reported in the main ES from moderate adverse to major/moderate adverse.
- 5.10.156 The amendment will give rise to a different likely residual temporary significant community effect on the Ingestre Park Golf Club, due to a change in the duration of loss of land. However, this will not change the level of significance reported in the main ES. The amendment will remove the permanent effect from loss of land.
- 5.10.157 The amendment will give rise to different likely residual permanent significant effects on cropmarks and earthwork features at Ingestre Park Golf Club (COY053) due to an increase in the extent of the asset to be removed. However, this will not change the level of significance of the effects reported in the main ES.
- 5.10.158 The amendment will result in the loss of assumed foraging habitat for wintering golden plover and lapwing within arable fields adjacent to Manor Farm, which will give rise to a new residual permanent adverse significant effect.
- 5.10.159 The amendment is likely to change the way in which users respond to closure during construction. Members are less likely to discontinue the sport or lose the social networks established through the club, therefore reducing the adverse effect. This will change the level of health effect reported in the main ES. The amendment will remove the likely permanent health effect associated with the loss of the golf course, by enabling the golf course to be reinstated.
- 5.10.160 The amendment will result in a different likely residual significant operational effect on the landscape character of the Ingestre Park Sandstone Estatelands LCA. However, this will not change the level of significance of the effects reported in the main ES.

5.11 Change to Bill powers required for HS2 maintenance access to Ingestre underbridge (AP2-002-011)

- 5.11.1 The Bill provides for Ingestre underbridge, immediately adjacent to Ingestre Park Golf Club, which would provide permanent access to agricultural land adjacent to Trent North embankment. The Bill also provides for temporary access to land to the north of the HS2 route from an existing farm track, between the Ingestre underbridge and Ingestre Park Road, which would be used during construction. See Map CT-06-213, E3 to E6, in the main ES Volume 2: CA2 Map Book.

- 5.11.2 Since submission of the Bill, it has been identified that there is a need to provide a permanent HS2 maintenance access to Ingestre underbridge. An HS2 right of access over an existing track, currently shared by agricultural vehicles and visitors to Ingestre Park Golf Club, will be required permanently to accommodate HS2 maintenance vehicles accessing Ingestre underbridge from Ingestre Park Road. See Map CT-06-213, E3 to E6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.11.3 The use of the existing track as a permanent HS2 maintenance access is within the limits of the Bill but will require a change to Bill powers.

Topics included in the AP2 assessment

- 5.11.4 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.12 Additional land and a change to Bill Powers required for the diversion of a Cadent¹⁰⁰ gas pipeline and a new utility compound, east of Ingestre green overbridge (AP2-002-012)

- 5.12.1 The Bill provides for the permanent diversion of an underground National Grid 12-inch diameter high pressure gas pipeline for 680m, 320m south of its existing alignment. The diversion would cross beneath the HS2 route at Brancote South cutting, 240m east of Ingestre green overbridge. See Map CT-06-213, C5 to Map CT-06-214, H7, in the main ES Volume 2: CA2 Map Book. Works to divert the National Grid gas pipeline would take nine months to complete, commencing in 2021, and would be managed from Brancote South cutting satellite compound.
- 5.12.2 Grassland habitat creation would be provided along the length of the diverted pipeline easement. Two areas of woodland habitat creation would be provided south of the HS2 route, adjacent to the pipeline diversion, together with hedgerow habitat creation. See Map CT-06-213, C5 to Map CT-06-214, H7, in the main ES Volume 2: CA2 Map Book.
- 5.12.3 The Bill further provides for the temporary storage of excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. A temporary material stockpile would be located to the south of the HS2 route, adjacent to the Ingestre green overbridge. See Map CT-05-213, B8 to B7, in the main ES Volume 2: CA2 Map Book.
- 5.12.4 Since submission of the Bill, further engagement with the utility provider has identified a requirement to reposition the locations where the diverted and existing pipelines connect, and to provide a new utility compound for the management of the Cadent 300mm diameter gas pipeline diversion works.
- 5.12.5 The eastern connection point will be repositioned 50m west of the location identified in the original scheme. The western connection point will be repositioned 30m west of the location identified in the original scheme. A minor adjustment in the alignment of

¹⁰⁰ In 2017, National Grid Gas Distribution was rebranded as Cadent, which is an independent organisation. The two utility providers describe the same asset differently.

the pipeline diversion, to the south of the HS2 route, will ensure that there is sufficient clearance between the easement and Brancote South cutting. The repositioning of the connection points and the minor adjustment in pipeline alignment, to the south of the HS2 route, will reduce the diversion length by 30m from that in the original scheme. In total, the pipeline will be diverted up to 260m south-east of its existing alignment. See Map CT-05-213, C6 to A7 and Map CT-05-214, J5 to H7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

- 5.12.6 The realigned pipeline diversion will extend into an area of woodland habitat creation, which will be replaced with grassland habitat creation. This change from woodland to grassland habitat will result in a change in location and a reduction in the provision of woodland habitat creation by 0.1ha, compared to the original scheme, however an additional 0.5ha of woodland habitat creation will be provided. In addition, there will be increase in the provision grassland habitat creation by 0.2ha. As a result of the change in location of the woodland habitat creation, west of the Ingestre green overbridge, a 55m section of the hedgerow habitat creation will no longer be provided to the south of the HS2 route, between the pipeline diversion and the top of Brancote South cutting. See Map CT-06-213, C7 to B7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.12.7 The realigned pipeline will interact with a material stockpile to the south of the HS2 route, 75m south of Tixall Bridleway 0.1628 accommodation overbridge and, as a result, this stockpile will be re-shaped to ensure sufficient clearance from the easement. See Map CT-05-214, H6 to F7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.12.8 A new utility compound (Ingestre Park Road utility compound) will be provided for the management of the Cadent 300mm diameter gas pipeline diversion works. The Ingestre Park Road utility compound will be located 270m west of Ingestre underbridge. See Map CT-05-213, D6 to C6, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.
- 5.12.9 The Ingestre Park Road utility compound will be operational for nine months, commencing during 2022, and will support an average of 15 workers per day (20 workers at peak times). Access to the new compound will be from Great Haywood Road, via Ingestre Park Road, and along the Ingestre Park Golf Club access road and the A518 Weston Road, via site haul routes.
- 5.12.10 The diversion works will be undertaken prior to the main construction works over a six month period, commencing in 2022.
- 5.12.11 The realignment of the Cadent 300mm diameter high pressure gas pipeline diversion is outside the limits of the Bill. This amendment will result in a requirement for an additional 0.4ha of land, some of which will be from the following holdings: Upper Hanyards Farm (CA2/25); and Tixall Manor Farm (CA2/23). See Map CT-05-213, C7 to B7, and Map CT-05-214, H7 to G8, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.12.12 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: ecology and biodiversity; traffic and transport; and water resources and flood risk. This is reported within this section.
- 5.12.13 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.12.14 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the Scope and Methodology Report¹⁰¹ (SMR) and SMR Addendum¹⁰² of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.12.15 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.12.16 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.12.17 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.12.18 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources.
- 5.12.19 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in Background Information and Data (BID) document EC-019-000, including Map Series EC-02 which accompanies the SES2 and AP2 ES.
- 5.12.20 For those receptors described in the main ES, further details are provided in Volume 2, CA2, Section 8, and Volume 5: Appendix EC-001-000, including Map Series EC-01.

¹⁰¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁰² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12¹⁰³.

- 5.12.21 For those receptors described in SES₁, further details are provided in Volume 2, CA₂, Section 3. The baseline ecology report that accompanied SES₁ and AP₁ ES is provided in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12¹⁰⁴.

Designated sites

- 5.12.22 There is one Special Area of Conservation (SAC) of relevance to the assessment of the amendment, which is of international value. Pasturefields Salt Marsh SAC, covering an area of approximately 7.7ha, is designated for its inland salt meadow (which is an Annex 1¹⁰⁵ priority habitat). The Pasturefields Salt Marsh SAC is cited as the best example of an inland salt meadow in the United Kingdom, and is characterised by red fescue, with saltmarsh rush, sea plantain, common saltmarsh-grass, lesser sea-spurrey and sea arrowgrass. Pasturefields Salt Marsh SAC is located north-west of Great Haywood, approximately 670m north-east of the area subject to the amendment.
- 5.12.23 The area subject to the amendment is located within a Natural England Impact Risk Zone¹⁰⁶ for Pasturefields Salt Marsh Site of Special Scientific Interest (SSSI), which is of national value. Pasturefields Salt Marsh SSSI, covering the same area as Pasturefields Salt Marsh SAC (7.7ha), is designated for its inland salt meadow and notable breeding populations of snipe, redshank and lapwing. Pasturefields Salt Marsh SSSI is located north-east of Great Haywood, approximately 670m north-east of the area subject to the amendment.
- 5.12.24 There is one Local Wildlife Site (LWS) of relevance to the assessment of the amendment, which is of county value. Lionlodge Covert LWS, covering an area of approximately 16.9ha, is designated for its semi-natural broadleaved woodland and inland salt meadow. Lionlodge Covert LWS is located north-west of Great Haywood, approximately 400m west of the area subject to the amendment.
- 5.12.25 There is one Ancient Woodland Inventory (AWI) site of relevance to the assessment of the amendment, which is of county value. Town Field Plantation AWI site, covering an area of approximately 0.4ha, is located within Ingestre Park Golf Club, directly adjacent to the area subject to the amendment.

Habitats

- 5.12.26 Habitats located within or near the area subject to the amendment include semi-natural broadleaved woodland, improved grassland, amenity grassland and arable.

¹⁰³ HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

¹⁰⁴ HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

¹⁰⁵ Annex 1 of the EU's Habitats Directive (1992) lists key habitat types whose conservation requires the designation of Special Areas of Conservation.

¹⁰⁶ The Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals and indicate the types of development proposal which could potentially have adverse impacts.

The habitats of relevance to the assessment of the amendment are described in further detail below.

5.12.27 There are two woodlands that qualify as lowland mixed deciduous woodland, a habitat of principal importance in Section 4.1 of the Natural Environment and Rural Communities (NERC) Act (2006)¹⁰⁷ and a conservation priority of the Staffordshire Biodiversity Action Plan¹⁰⁸ (BAP). These are:

- Town Field Plantation woodland, covering an area of 0.4ha, is located directly adjacent to the area subject to the amendment, on the western side of Ingestre Park Golf Club. The woodland is of county value; and
- a woodland belt, covering an area of approximately 3ha, is located partially within the area subject to the amendment, on the western side of Ingestre Park Golf Club. This woodland connects with Ingestre Wood. The woodland is of district/borough value.

Species

5.12.28 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include bats, great crested newt, other amphibians, reptiles, badger, polecat, harvest mouse, European hedgehog and brown hare.

5.12.29 The main ES reported a bat assemblage associated with habitats at Ingestre Park Golf Club. Field surveys in this area recorded a *Myotis* species maternity roost, three soprano pipistrelle day roosts and a common pipistrelle day roost in trees at Ingestre Park Golf Club. Two of the soprano pipistrelle day roosts are located within the area subject to the amendment. The area subject to the amendment contains potential bat roosting, foraging and commuting habitats that are likely to be used by this bat assemblage. The bat assemblage includes several species of principal importance and other species that are conservation priorities of the Staffordshire BAP. The bat assemblage associated with habitats at Ingestre Park Golf Club is of up to regional value.

5.12.30 The main ES, as amended by SES1, reported a great crested newt metapopulation¹⁰⁹ centred on Ingestre Park Golf Club (AMP¹¹⁰2.2). Field surveys determined the presence of great crested newt in seven ponds of 11 ponds surveyed, within a network of 16 ponds assumed to be used by this metapopulation. There is one pond directly adjacent to the area subject to the amendment, which supports a medium population of great crested newts and is associated with this metapopulation. Terrestrial habitats likely to be used by this metapopulation occur within the area subject to the amendment, in the form of grassland and woodland. Great crested newt is an Annex 2¹¹¹ species, a species of principal importance and a conservation priority of the

¹⁰⁷ Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

¹⁰⁸ Staffordshire Biodiversity Partnership. *Staffordshire Biodiversity Action Plan*. Available online at: <http://www.sbap.org.uk/>

¹⁰⁹ A metapopulation is a group of spatially separated populations that interact. Metapopulations are described in BID-EC-007-000 (which accompanied the main ES) and BID-EC-004-000 (which accompanied the SES1 and AP1 ES).

¹¹⁰ The first and second number associated with the AMP reference relate to the specific CA and location e.g. AMP2.1 is within the Colwich to Yarlet area and is the first metapopulation encountered when following the HS2 route from London.

¹¹¹ Annex 2 of the EU's Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation.

Staffordshire BAP. The great crested newt metapopulation associated with habitats at Ingestre Park Golf Club and adjoining land is of county value.

- 5.12.31 The main ES reported populations of amphibian species which include palmate newt, smooth newt, common toad and common frog, identified through field surveys, within ponds throughout the Colwich to Yarlet area. Amphibian species are assumed to be present in ponds that have not yet been surveyed. The area subject to the amendment includes woodland, grassland, hedgerows and ponds that are likely to be used by these species. Common toad is a species of principal importance. The populations of common amphibians throughout Colwich to Yarlet are of local/parish value.
- 5.12.32 The main ES reported populations of common reptile species which include common lizard, slow-worm and grass snake, identified through desk study records, as being potentially present at low numbers throughout the Colwich to Yarlet area. Common lizard, slow-worm and grass snake are species of principal importance. Grass snake is also a conservation priority of the Staffordshire BAP. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.
- 5.12.33 The main ES, as amended by SES1, reported at least five social groups of badgers, identified through field surveys, throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable sett building and foraging habitats for badgers. The badger populations throughout the Colwich to Yarlet area are of local/parish value.
- 5.12.34 The main ES reported populations of other mammals including polecat, harvest mouse, European hedgehog and brown hare, identified through desk study records, as being potentially present throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.

Future environmental baseline

Construction (2020)

- 5.12.35 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.12.36 The assessment assumes implementation of the measures set out within the draft Code of Construction Practice¹¹² (CoCP).
- 5.12.37 The proposed working area for the pipeline diversion has been locally reduced, so as to avoid impacts to Town Field Plantation AWI site. As a result, there will be no additional loss of ancient woodland habitat in this area.

¹¹² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Assessment of impacts and effects

- 5.12.38 All of the effects within this section are reported in the absence of other mitigation.

Designated sites

- 5.12.39 No effects on Pasturefields Salt Marsh SAC were reported within the main ES. Pasturefields Salt Marsh SAC will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be a permanent maintenance access track on the northern side of Brancote South cutting, approximately 670m south-west of the SAC. The SAC is designated for its inland salt meadow, which is the best example of an inland salt meadow habitat in the United Kingdom. The amendment will not give rise to new or different significant effects upon the designated features of this SAC.
- 5.12.40 No effects on Pasturefields Salt Marsh SSSI were reported within the main ES. Pasturefields Salt Marsh SSSI will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be a permanent maintenance access track on the northern side of Brancote South cutting, approximately 670m south-west of the SSSI. The SSSI is designated for its inland salt meadow and notable breeding populations of snipe, redshank and lapwing. The amendment will not give rise to new or different significant effects upon the designated features of this SSSI.
- 5.12.41 The main ES reported the loss of 3ha (19%) of woodland habitat at Lionlodge Covert LWS, which would result in a permanent adverse effect that is significant at county level. The amendment will not alter the extent of woodland loss at Lionlodge Covert LWS. The amendment will not give rise to any new or different significant effects on Lionlodge Covert LWS and will not change the level of significance of the effects reported in the main ES.
- 5.12.42 The main ES reported the loss of 0.1ha (34%) of woodland habitat at Town Field Plantation AWI site, which would result in a permanent adverse effect that is significant at county level. The amendment will not alter the extent of woodland loss at Town Field Plantation AWI site. The amendment will not give rise to any new or different significant effects on woodland at Town Field Plantation AWI site and will not change the level of significance of the effects reported in the main ES.

Habitats

- 5.12.43 The main ES reported the loss of 1ha (33%) of the woodland belt on the western side of Ingestre Park Golf Club, which would result in a permanent adverse effect that is significant at district/borough level. This amendment will result in the additional loss of 0.2ha of woodland. This amendment will give rise to a different significant effect on the woodland belt at Ingestre Park Golf Club. However, this will not change the level of significance of the effect reported in the main ES.
- 5.12.44 It is not likely that any other effects on habitats of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Species

- 5.12.45 The main ES reported a direct loss of roosts and a loss and fragmentation of foraging and commuting habitat used by the assemblage of bats at Ingestre Park Golf Club, which would result in a permanent adverse effect that is significant at up to regional level. The amendment will result in the additional loss of mature trees, which on a precautionary basis are assumed to support bat roosts. The assumed loss of additional roosts will result in a different significant effect on the bat assemblage associated with habitats at Ingestre Park Golf Club. However, this will not change the level of significance of the effect reported in the main ES.
- 5.12.46 The main ES, as amended by SES₁, reported the loss of 11 ponds and associated terrestrial habitats that are known or assumed to be used by the great crested newt metapopulation centred on Ingestre Park Golf Club (AMP 2.2), which would result in a permanent adverse effect that is significant at up to county level. The amendment will result in the loss of 0.2ha of semi-natural broadleaved woodland that is within 250m of a pond and known to support part of this great crested newt metapopulation. The amendment will not give rise to a new or different significant effect on the great crested newt metapopulation centred on Ingestre Park Golf Club and will not change the level of significance of the effects reported in the main ES.
- 5.12.47 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES₂ and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.12.48 The main ES reported the provision of approximately 40.3ha of woodland habitat creation in the Colwich to Yarlet area. This includes the provision of approximately 4.4ha of broadleaved woodland on the western side of Ingestre Park Golf Club. The amendment includes the provision of an additional 0.5ha of woodland habitat creation on the western side of Ingestre Park Golf Club. This additional measure, once established, will compensate for the loss of 0.2ha of lowland mixed deciduous woodland at Ingestre Park Golf Club and will reduce the different adverse effect resulting from this amendment to a level that is not significant.
- 5.12.49 The main ES reported habitat creation measures near Ingestre Park Golf Club which includes ponds, species-rich grassland, hedgerows and broadleaved woodland. Once established, these habitat creation measures will provide suitable bat foraging and commuting habitat. Artificial roosting provision will be provided within and adjacent to woodland habitat creation areas to replace bat roosts that will be lost to construction, in accordance with the Ecological Principles of Mitigation within the SMR Addendum. These measures will reduce the different adverse effect resulting from this amendment on the bat assemblage associated with habitats at Ingestre Park Golf Club to a level that is not significant.

Summary of likely residual significant effects

- 5.12.50 With the implementation of the mitigation proposed, the ecological effects arising from the amendment are reduced to a level where they are not considered to be significant. The significant effects of the amendment in this area are therefore unchanged from those reported in the main ES, as amended by SES1 and AP1 ES.

Cumulative effects

- 5.12.51 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

- 5.12.52 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.12.53 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.
- 5.12.54 The assessment in this section considers the potential effects on public rights of way (PRoW) or footway users. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.12.55 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.12.56 Ingestre Park Road and Great Haywood Road are local roads in the Colwich to Yarlet area. Ingestre Byway Open to All Traffic (BOAT) 1 traverses Ingestre Park Road from just south of Lion Lodge to the junction of Ingestre BOAT2 and Ingestre BOAT3 near the Ingestre Post Office.

Future environmental baseline

Construction (2023)

- 5.12.57 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.12.58 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.12.59 The main ES reported that the utility works would not interact with any roads or PRoW.

- 5.12.60 This amendment introduces a new utility compound located at the Ingestre Park Golf Club which is required to undertake the works. The establishment of the compound will introduce some construction traffic on to Ingestre BOAT₁ between Lion Lodge and the access to the Ingestre Park Golf Club. However, this will be for a short duration and any amenity or ambience effects for non-motorised road users will not be significant.
- 5.12.61 This amendment will therefore not give rise to any new or different likely residual significant effects and will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and BID document BID-TR-001-000 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.12.62 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Water resources and flood risk

Scope, assumptions and limitations

- 5.12.63 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.12.64 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.12.65 The baseline water resources information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 15 of the main ES, as amended by SES1. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-002 and Appendix WR-003-002, and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.12.66 This amendment is located in the vicinity of surface water flow paths and potential saline springs in Lionlodge Covert LWS and will involve construction activities of a nature and scale that have potential water quality implications.

Future environmental baseline

Construction (2020)

- 5.12.67 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.12.68 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. This amendment has

the potential to give rise to temporary adverse impacts on surface water quality which could affect the local water environment, including the River Trent and the saline springs located in Lionlodge Covert LWS. However, the amendment will be constructed in accordance with the measures specifically designed to safeguard water resources outlined in the draft CoCP. This includes directing surface water runoff away from sensitive receptors such as the saline springs (moderate value) within Lionlodge Covert LWS. Lionlodge Covert LWS is located approximately 400m east of the land required for the amendment. The risks of this amendment intercepting shallow groundwater pathways that support the saline springs are anticipated to be negligible.

- 5.12.69 Therefore, the amendment will not give risk to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.12.70 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

5.13 Additional land required for replacement car parking, east of Staffordshire County Showground (AP2-002-013)

- 5.13.1 The Bill provides land for construction of Hopton South cutting and the realignment of the A518 Weston Road. The main ES reported that this would require approximately 9.6ha of land from the Staffordshire County Showground, of which 5.4ha would be required permanently. This includes areas used for overflow car parking during large, regional events. The loss of parking equates to 800 spaces and would have the potential to impair the use of the site for larger events, such as the Staffordshire County Show. See Map CT-05-215 and Map CT-06-215 in the SES1 and AP1 ES Volume 2: CA2 Map Book.
- 5.13.2 Since submission of the Bill, engagement with representatives of the Staffordshire County Showground has led to a greater understanding of the impact associated with the loss of car parking on the potential viability of the showground as a business both during construction and operation. As such, two parcels of land, immediately north-east (3.2ha) and east (5ha) of the Staffordshire County Showground, at Park Farm (CA2/26), have been identified for permanent use as replacement parking areas during large events and functions held at the site, during construction and operation. See Map CT-05-216 and Map CT-06-215 in the SES2 and AP2 ES Volume 2: CA2 Map Book. HS2 Ltd is aware that the operator of Staffordshire Showground is seeking to obtain replacement parking by agreement. Nevertheless, the land within AP2 is necessary to mitigate the loss of existing parking in the event that agreement is not reached.
- 5.13.3 The two areas of additional land permanently required for replacement car parking are outside the limits of the Bill. This amendment will result in a requirement for an additional 8.2ha of land. For the purposes of the assessment it has been assumed that the area will no longer be in agricultural use. See Map CT-06-215, G4 to F1, and Map CT-05-215-R1, G10 to F9, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

Topics included in the AP2 assessment

- 5.13.4 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES₁ and SES₂, for the following topics: agriculture, forestry and soils; community; socio-economics; and traffic and transport. This is reported within this section.

Agriculture, forestry and soils

Scope, assumptions and limitations

- 5.13.5 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the Scope and Methodology Report¹¹³ (SMR) and SMR Addendum¹¹⁴ of the main ES.
- 5.13.6 This amendment has the potential to result in new or different construction effects only. Therefore, there is no operational assessment for agriculture, forestry and soils.

Existing environmental baseline

- 5.13.7 The baseline agriculture, forestry and soils information for the Colwich to Yarlet area is as described in Volume 2, CA₂, Section 4 of the main ES.
- 5.13.8 The area of land required for the amendment has soil in the Bromsgrove association, as described in Volume 2, CA₂, Section 4 of the main ES. Bromsgrove association comprises well drained reddish coarse loamy soils mainly over soft sandstone. These soils are limited slightly by droughtiness to very good quality land in Grade 2¹¹⁵.
- 5.13.9 One farm holding, already affected by the original scheme, will be further affected by this amendment. Park Farm (CA₂/26) is a 79ha mainly grassland holding used primarily for silage/haylage in the summer and grazed with sheep in the winter. The land is also used for numerous diversified activities including equestrian eventing, storage for a rail engineering firm, a caravan site, and car parking and show jumping for the Staffordshire County Showground. The buildings include residential barn conversions that are let and a bed and breakfast enterprise.

Future environmental baseline

Construction (2020)

- 5.13.10 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

¹¹³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹¹⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹¹⁵ The quality of agricultural land in England and Wales is assessed according to the Agricultural Land Classification (ALC) system, which classifies agricultural land into five grades from excellent quality Grade 1 land to very poor quality Grade 5 land. Grade 3 is subdivided into Subgrades 3a and 3b. Grades 1, 2 and 3a are defined as the best and most versatile (BMV) land. The ALC methodology is contained in: Ministry of Agriculture, Fisheries and Food (1988), *Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land*.

Effects arising during construction

Avoidance and mitigation measures

- 5.13.11 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹¹⁶ (CoCP) are required.

Assessment of impacts and effects

- 5.13.12 The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES on best and most versatile (BMV) agricultural land or forestry land within the Colwich to Yarlet area as it is not of a scale to change the magnitude of impact. The route-wide effects on BMV land and forestry land are reported in Volume 3 of the SES2 and AP2 ES.
- 5.13.13 The main ES reported a temporary major/moderate adverse effect on Park Farm (CA2/26), which is significant. Approximately 5.3ha (7% of the total area of the land holding) would be required temporarily, resulting in a low impact. The amendment will require an additional 8.2ha of land temporarily from the land holding, increasing the total area of land required temporarily to 13.5ha (17% of the total area of the land holding), which is a medium impact. This amendment will give rise to a different significant effect, however this will not change the level of significance of the effects reported in the main ES.
- 5.13.14 The main ES reported a permanent major/moderate adverse effect on Park Farm (CA2/26), which is significant. Approximately 4.4ha (6% of the total area of the land holding) would be required permanently, resulting in a low impact. The amendment will require an additional 8.2ha of land permanently, resulting in a total area of land required permanently of 12.6ha (16% of the total area of the land holding), which is a medium impact. The amendment will give rise to a different significant permanent effect, however this will not change the level of significance of the effects reported in the main ES.
- 5.13.15 For further information see SES2 and AP2 ES Volume 5: Appendix AG-001-000 and the main ES Volume 5: Agriculture, forestry and soils Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.13.16 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 5.13.17 This amendment will give rise to a different temporary and permanent likely residual significant effect on Park Farm (CA2/26). However, this will not change the level of significance of the temporary and permanent effects reported in the main ES.

¹¹⁶ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Cumulative effects

- 5.13.18 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Community

Scope, assumptions and limitations

- 5.13.19 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.13.20 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for community.

Existing environmental baseline

- 5.13.21 The baseline community information for the Colwich to Yarlet area is described in Volume 2, CA2, Section 6 of the main ES.
- 5.13.22 Staffordshire County Showground is a multi-purpose venue, comprising exhibition halls, conference suites, a 600 seat grandstand and caravan and camping facilities for use on show days. It is located approximately 1km north-east of Stafford, off the A518 Weston Road. It hosts a number of events each year, including the Staffordshire County Show. Staffordshire Bridge Club and the Young Farmers Club meet at the Showground on a weekly basis.

Future environmental baseline

Construction (2020)

- 5.13.23 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.13.24 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.13.25 The main ES reported that the construction of Hopton South cutting and the A518 Weston Road realignment would temporarily require approximately 9.6ha of land from the Staffordshire County Showground (approximately 22%), of which 5.4ha (approximately 12%) would be required permanently. The land required, both temporarily and permanently, would include an area of car parking used for large events (equivalent to 800 visitor car parking spaces), and a small section of Lower Berry Hill woodland. The temporary and permanent loss of car parking was identified as having the potential to partly impair the use of the site for the Staffordshire County Show and the ability of the site to attract and retain events or functions. The main ES reported that this loss of land would result in a temporary and permanent moderate adverse significant effect.

- 5.13.26 This amendment will remove the likely residual significant effects on Staffordshire County Showground by providing equivalent car parking to that lost in the original scheme. The replacement parking will mean that there will be no impairment to use of the site and its ability to attract and retain events or functions. This amendment will remove the temporary and permanent moderate adverse significant effect, as reported in the main ES. See SES2 and AP2 ES Volume 5: Community Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.13.27 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 5.13.28 This amendment will remove the likely residual moderate adverse significant community effect associated with the temporary and permanent loss of car parking at the Staffordshire County Showground, as reported in the main ES.

Cumulative effects

- 5.13.29 There are no new or different likely significant cumulative effects for community as a result of the amendment acting in-combination with any other AP2 amendments or AP1 amendments.

Socio-economics

Scope, assumptions and limitations

- 5.13.30 The assessment scope, key assumptions and limitations for socio-economics are as set out in Volume 1 and the SMR of the main ES.
- 5.13.31 This amendment has the potential to result in new or different significant permanent construction effects only. Therefore, there is no temporary construction or operational assessment for socio-economics.

Existing environmental baseline

- 5.13.32 The baseline socio-economic information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 12 of the main ES.
- 5.13.33 Staffordshire County Showground is a multi-purpose venue, comprising exhibition halls, conference suites, a 600 seat grandstand and caravan and camping facilities for use on show days. It is located approximately 1km north-east of Stafford, off the A518 Weston Road. It hosts a number of larger events each year, such as the Staffordshire County Show, which attract a large number of car dependent visitors requiring extensive parking facilities for their vehicles and camping purposes. The Staffordshire Bridge Club and the Young Farmers Club meet at the Staffordshire County Showground on a weekly basis.

Future environmental baseline

Construction (2020)

- 5.13.34 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.13.35 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.13.36 The main ES reported that the construction of Hopton South cutting and the A518 Weston Road overbridge would require the demolition of a steel frame outbuilding within the Staffordshire County Showground and the acquisition of land used for car parking for large events throughout the year. The loss of car parking was identified as having the potential to partly impair the use of the site for large events, including the Staffordshire County Show and the ability of the site to attract and retain events or functions. The main ES reported that the loss of parking would result in a permanent moderate adverse effect, which is significant.
- 5.13.37 The amendment will provide equivalent car parking to that lost in the original scheme such that there will be no impairment to the use of the site and its ability to attract and retain events or functions. The amendment will therefore remove a likely permanent moderate adverse residual significant effect, as reported in the main ES. See SES2 and AP2 ES Volume 5: Socio-economics Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.13.38 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 5.13.39 The amendment will remove a likely permanent moderate adverse residual significant effect associated with the loss of car parking at the Staffordshire County Showground, as reported in the main ES.

Cumulative effects

- 5.13.40 There are no new or different likely significant cumulative effects for socio-economics as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

- 5.13.41 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.13.42 This amendment has the potential to result in new or different significant operational effects only. Therefore, there is no temporary or permanent construction assessment for traffic and transport.

Existing environmental baseline

- 5.13.43 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.13.44 The Staffordshire County Showground is located in the Colwich to Yarlet area. The Showground has 160 marked parking spaces adjacent to the Member's Pavilion, including six disabled spaces. The overall site has parking provision for up to 4,000 cars in mainly unmarked spaces.

Future environmental baseline

Operation (2027 and 2041)

- 5.13.45 The future baseline for operation in 2027 and 2041 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising from operation

Avoidance and mitigation measures

- 5.13.46 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 5.13.47 The main ES reported that there would be an impact on car parking located to the west of the A518 Weston Road, where there is parking provision in unmarked spaces within these fields. It was estimated that approximately 800 car parking spaces would be removed during construction and these spaces would be lost permanently. This would result in a major adverse significant effect on parking.
- 5.13.48 This amendment will provide permanent additional land which will be used by Staffordshire County Showground for car parking. The proposed car parking area will provide an equivalent parking capacity to the area to be removed during construction. The provision of permanent additional land for parking will mitigate the loss of approximately 800 car parking spaces and will remove the major adverse significant effect at Staffordshire County Showground.
- 5.13.49 For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and the SES2 and AP2 ES Volume 5: Traffic and transport Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.13.50 No mitigation measures additional to those reported in the main ES are required.

Summary of likely residual significant effects

- 5.13.51 The provision of replacement car parking spaces will remove the likely residual major adverse significant effect on traffic and transport at Staffordshire County Showground, as reported in the main ES.

Cumulative effects

- 5.13.52 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Monitoring

- 5.13.53 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.13.54 There are no changes to the monitoring requirements identified in the main ES for traffic and transport as a result of the amendment.

Summary of new or different likely residual significant effects as a result of the amendment

- 5.13.55 The amendment will give rise to a different temporary and permanent likely residual significant effect on Park Farm, Stafford (CA2/26). However, this will not change the level of significance of the temporary and permanent effects reported in the main ES.
- 5.13.56 The amendment will remove the likely residual moderate adverse significant community and socio-economic effects associated with the loss of car parking at the Staffordshire County Showground.
- 5.13.57 The amendment will remove the likely residual major adverse significant effect on traffic and transport at Staffordshire County Showground.

5.14 Additional land and a change to Bill powers required for the lowering of Trent Walk beneath the HS2 route via Trent Walk underbridge (AP2-002-014)

- 5.14.1 The Bill provides for Trent Walk underbridge, with a restricted height clearance of 3.1m, to provide a restricted headroom access for agricultural and access to residential properties along Trent Walk beneath the HS2 route. Trent Walk underbridge would also provide a crossing point (culvert) for an unnamed watercourse. Planting adjacent to this underbridge would facilitate ecological connectivity across the HS2 route. Trent Walk underbridge would be located 350m south-east of the A518 Weston Road, south of Staffordshire County Showground. Tie-in works to the approach to Trent Walk underbridge, on the northern side of the HS2 route, would be 65m in length, and on the south side would be 20m in length. See Map CT-06-215, F5 to F6, in the main ES, Volume 2: CA2 Map Book.

- 5.14.2 Since submission of the Bill, further landowner engagement and design refinement has identified a requirement to increase the headroom of Trent Walk underbridge to a height clearance of 4.6m. Trent Walk will be lowered by up to 1.5m at Trent Walk underbridge; tie-in works to the approach on the northern side of the HS2 route will be increased in length by 25m, to a total of 90m, and increased by 40m, to a total of 105m on the southern side. These tie-in works will permanently require an additional 330m² of land. The lowering of Trent Walk will require the culvert, provided in the original scheme, to be relocated 50m further south-west. See Map CT-06-215, F5 to F6, in the SES and AP ES, Volume 2: CA2 Map Book.
- 5.14.3 The works to lower Trent Walk will be undertaken in conjunction with the construction of Trent Walk underbridge, which will be constructed over a period of one year and six months, commencing in 2021. Works will be managed from the Hopton South cutting satellite compound.
- 5.14.4 The lowering of Trent Walk is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 330m² of land, some of which will be from Park Farm, Stafford (CA2/26). See Map CT-06-215, F5 to F6, in the SES2 and AP2 ES, Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.14.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.15 Additional land and a change to Bill powers required for HS2 maintenance access to Trent Walk underbridge (AP2-002-015)

- 5.15.1 The Bill provides for Trent Walk underbridge, which would provide permanent access to agricultural land and access to residential properties on Trent Walk (a private road). The underbridge would also provide a crossing point for an unnamed watercourse and planting would be provided adjacent to the underbridge to facilitate ecological connectivity and the movement of species across the HS2 route. A 175m section of Trent Walk, to the south of the HS2 route, would be required temporarily during construction. See Map CT-05-215, F8 to F3, in the main ES Volume 2: CA2 Map Book.
- 5.15.2 Since submission of the Bill, it has been identified that there is a need to provide a permanent HS2 maintenance access to Trent Walk underbridge. An HS2 right of access over the existing private access along Trent Walk, from the A518 Weston Road, will be required permanently to accommodate HS2 maintenance vehicles. The section of private access, immediately south of Trent Walk underbridge, which was required temporarily in the original scheme, will be required permanently for a HS2 right of access. See Map CT-05-215, F6 to E10, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.15.3 The use of Trent Walk as a permanent HS2 maintenance access is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.4ha of land, some of which will be from Park Farm, Stafford (CA2/26). See Map CT-05-215, F8 to E10, in the SES2 and AP2 ES Volume 2:

CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.15.4 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.16 Additional land required for modifications to the A513 Beaconside/A518 Weston Road/Hydrant Way junction (AP2-002-016)

- 5.16.1 The original scheme provides for a temporary construction traffic route between the HS2 route at Staffordshire County Showground and the A513 Beaconside, to the south-west, via the A518 Weston Road. Construction traffic would enter onto the A518 Weston Road, close to Staffordshire County Showground, and travel south-west to join the A513 Beaconside. The main ES identifies that the addition of construction traffic along this route would result in increased congestion, queuing and delays through the junction of the A513 Beaconside, A518 Weston Road and Hydrant Way.
- 5.16.2 The SES2 scheme provides for a new construction traffic route (SES2-002-010: New construction traffic route from Stone to Weston via Sandon) to reduce the volume of HS2 construction traffic travelling through the junctions along the A513 Beaconside, which includes its junction with the A518 Weston Road and Hydrant Way. This additional route would reduce the volume of construction traffic using the A513 Beaconside/A518 Weston Road/Hydrant Way junction.
- 5.16.3 Since submission of the Bill, it has been identified that there is a need to reduce the queuing and delays through the A513 Beaconside/A518 Weston Road/Hydrant Way junction. To improve junction capacity, localised modifications will be provided in the form of carriageway widening works to the roundabout approach from Hydrant Way. To accommodate these modifications, an additional 0.3ha of land will be required. An existing shared use pedestrian and cycle footway, adjacent to a pedestrian crossing point, will be realigned to accommodate the junction widening works. See Map CT-05-215-L2, E3 to D2, and Map CT-06-215-L2, E3 to D2, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.16.4 The junction modifications will be constructed prior to the main works, over a period of up to three months, commencing in 2020. These works will be managed locally within the highway.
- 5.16.5 The land required for the permanent junction modifications is outside the limits of the Bill. This amendment will result in the requirement for an additional 0.4ha of land. See Map CT-05-215-L2, E3 to D2, and Map CT-06-215-L2, E3 to D2, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.16.6 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for traffic and transport. This is reported within this section.
- 5.16.7 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Traffic and transport

Scope, assumptions and limitations

- 5.16.8 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the Scope and Methodology Report¹¹⁷ (SMR) and SMR Addendum¹¹⁸ of the main ES.
- 5.16.9 This amendment has the potential to result in new or different significant construction and operational effects for traffic and transport. Therefore, both construction and operational phases are considered in this assessment.
- 5.16.10 The assessment in this section considers the potential effects resulting from the construction works associated with the amendment. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.16.11 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.16.12 The A513 Beaconside connects Stafford to Rugeley, passing through the village of Milford and the northern part of Cannock Chase. The A518 Weston Road connects Stafford to Uttoxeter, passing through the village of Weston as well as providing access to the Staffordshire County Showground. Hydrant Way is a local road and provides access to new residential areas to the south. The junction of the A513 Beaconside and A518 Weston Road is a four-arm roundabout, the southern approach of which is the recently completed Hydrant Way. The local road network in this area generally operates well although some localised delays can be experienced particularly at peak times.

Future environmental baseline

Construction (2023) and operation (2027 and 2041)

- 5.16.13 SES2 and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2023 for construction

¹¹⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹¹⁸ HS2 Ltd (2017), *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

and 2027 and 2041 for operation, additional to those identified in the main ES Volume 5: Appendix CT-004-000.

- 5.16.14 The development relevant to the assessment of traffic and transport relates to the provision of the eastern access improvement from Hydrant Way to Tixall Road with a new traffic controlled junction (Tixall Road northern side) as part of a residential development of up to 373 dwellings (planning reference 13/18698/OUT). This locally re-routes existing traffic movements around the A518 Weston Road, Blackheath Lane and Tixall Road areas.

Effects arising during construction

Avoidance and mitigation measures

- 5.16.15 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹⁴⁹ (CoCP) are required.

Assessment of impacts and effects

- 5.16.16 The main ES reported that construction of the original scheme would result in queues and delays for vehicle occupants at the A513 Beaconside/A518 Weston Road/Hydrant Way junction, which would give rise to a major adverse significant traffic congestion and delay effect.
- 5.16.17 Although the amendment will reduce the impacts of construction traffic at the junction (considered in combination with all SES2 changes and AP2 amendments in Section 7), the temporary construction works, which are expected to take three months to implement, associated with the modifications to the A513 Beaconside/A518 Weston Road/Hydrant Way junction and associated traffic management measures will be likely to result in a temporary reduction in capacity and some delays at the junction during its construction. Although once completed the changes will reduce congestion and delays, this amendment will give rise to a new temporary minor adverse effect on traffic flows and delays for road users during its construction, which is significant.
- 5.16.18 For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and the SES2 and AP2 ES Volume 5: Traffic and transport Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.16.19 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 5.16.20 During the junction works, this amendment will give rise to a new likely residual significant temporary minor adverse effect on traffic flows and delays for road users at the junction of the A513 Beaconside/A518 Weston Road/Hydrant Way.

¹⁴⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Cumulative effects

- 5.16.21 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Effects arising from operation

Avoidance and mitigation measures

- 5.16.22 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 5.16.23 Although the amendment is not required to support the AP2 revised scheme in the operational phase, as the scheme does not add any substantial permanent traffic to the area, the junction will be retained following construction.
- 5.16.24 The main ES reported that the existing junction operates within capacity with minimal queues and delays at the junction. In the future assessment years of 2027 and 2041 the junction is forecast to operate over-capacity as a consequence of traffic growth associated with development in the area. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000.
- 5.16.25 This amendment will substantially reduce the queues to the junction in the 2027 future assessment year, with the junction forecast to operate within capacity. In the 2041 future assessment year, the junction is shown to be over-capacity although queues are substantially reduced when compared to the 2041 baseline operation. This amendment will give rise to a new permanent moderate beneficial traffic effect for vehicle occupants in 2027, which is significant, and a new permanent minor beneficial traffic effect for vehicle occupants in 2041, which is significant. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and the SES2 and AP2 ES Volume 5: Traffic and transport Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.16.26 No mitigation measures additional to those reported in the main ES are identified.

Summary of likely residual significant effects

- 5.16.27 This amendment will give rise to a new likely residual significant permanent moderate beneficial effect for road users at the junction of the A513 Beaconside/A518 Weston Road/Hydrant Way in the future assessment year of 2027. This will reduce to a likely residual significant permanent minor beneficial traffic effect in the future assessment year of 2041.

Cumulative effects

- 5.16.28 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Monitoring

- 5.16.29 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.16.30 There are no changes to the monitoring requirements identified in the main ES for traffic and transport as a result of this amendment.

5.17 Additional land required for the relocation of stockpiles and realignment of Hopton and Coton Footpath 6 (AP2-002-017)

- 5.17.1 The Bill provides for the use of land for the temporary storage of excavated material in stockpiles adjacent to the HS2 route, to be used for construction of the scheme. Two temporary material stockpiles would be located to the west of the Hopton and Coton Footpath 24 accommodation overbridge, one to the south and one to the north of Hopton South cutting. See Map CT-05-215, B6 to A6 and B5 to A5, in the main ES, Volume 2: CA2 Map Book. A temporary material stockpile, Hopton South cutting transfer node and Hopton South cutting satellite compound would be located on the south side of Hopton South cutting, between Hopton and Coton Footpath 24 accommodation overbridge and the realigned A518 Weston Road. See Map CT-05-215, D8 to C6, in the main ES, Volume 2: CA2 Map Book.
- 5.17.2 During construction, a 150m section of Hopton and Coton Footpath 24 would be temporarily diverted, 20m north of its existing alignment on the northern side of the HS2 route, for a period of one year and six months. The diversion would divert users around the overbridge earthworks. See Map CT-05-215, B6 to C5, in the main ES, Volume 2: CA2 Map Book. The Hopton and Coton Footpath 6 would be permanently diverted over a distance of 710m, 440m east of its existing alignment on the northern side of the HS2 route, to cross over the HS2 route via the Hopton and Coton Footpath 24 accommodation overbridge and join the Hopton and Coton Footpath 7 to the north of the HS2 route. However, during construction a 200m section of Hopton and Coton Footpath 6 would be temporarily diverted, to join the permanent Hopton and Coton Footpath 6 diversion, 350m east of its existing alignment, to divert users to the east of a material stockpile for a period of one year and six months. See Map CT-05-215, A8 to C6 and B5 to A4, in the main ES, Volume 2: CA2 Map Book.
- 5.17.3 Since submission of the Bill, further engagement with the landowner has identified an opportunity to relocate and combine the two temporary material stockpiles, on the south side of Hopton South cutting in the original scheme, to the northern side of the cutting. This will result in the relocation of Hopton South cutting satellite compound, 100m north of its location in the original scheme, to the location previously occupied by a temporary material stockpile. This will also provide an opportunity to reconfigure the Hopton South cutting transfer node (north), which will be reduced in size. See Map CT-05-215, D7 to A4, and Map CT-06-216, D7 to A4, in the SES2 and AP2 ES Volume 2: CA2 Map Book. The temporary diversion of Hopton and Coton Footpath 6, on the northern side of the HS2 route, will be realigned over a distance of 455m to join the Hopton and Coton Footpath 24 temporary diversion, to divert users around the larger, combined temporary stockpile. See Map CT-05-215, C6 to A4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

- 5.17.4 The relocation of the temporary material stockpile, from the west of the Hopton and Coton Footpath 24 accommodation overbridge, on the south side of the Hopton and Coton cutting, to the northern side of the cutting will require further realignment of the diverted Hopton and Coton Footpath 6. The footpath diversion will be realigned over a distance of 425m, on the south side of Hopton South cutting, increasing the journey length by 285m from the original scheme. During construction, the Hopton and Coton Footpath 6, on the south side of the HS2 route, will be diverted over a distance of 355m in length. It will connect into the existing Hopton and Coton Footpath 24, to cross over the HS2 route via the Hopton and Coton Footpath 24 accommodation overbridge. See Map CT-05-215, D7 to A4, and Map CT-06-216, D7 to A4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.17.5 The amendment will be constructed over a period of one month and will remain in position for a period of at least one year and nine months, commencing in 2022. Works will be managed from the Hopton South cutting satellite compound.
- 5.17.6 The relocation of the temporary stockpiles and temporary diversion of the Hopton and Coton Footpath 6 are currently outside the limits of the Bill. This amendment will result in a requirement for an additional 2.4ha of land, some of which will be from Brick House Farm (CA2/27). See Map CT-05-215, D7 to A4, Map CT-05-216, D7 to A4, and Map CT-05-216, J7 to H6, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction. The land for the temporary material stockpiles, transfer node and satellite compound, on the south side of Hopton North cutting will no longer be needed, removing the requirement for 2.9ha of land.

Topics included in the AP2 assessment

- 5.17.7 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for water resources and flood risk. This is reported within this section.

Water resources and flood risk

Scope, assumptions and limitations

- 5.17.8 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the Scope and Methodology Report¹²⁰ (SMR) and SMR Addendum¹²¹ of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.17.9 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

¹²⁰ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹²¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Existing environmental baseline

- 5.17.10 The baseline water resources information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-002 and Appendix WR-003-002, and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.17.11 This amendment is located near a tributary of Kingston Brook, which is a high value receptor. This amendment will involve construction activities of a nature and scale that have potential water quality implications.

Future environmental baseline

Construction (2020)

- 5.17.12 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.17.13 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. This amendment has the potential to give rise to adverse impacts on surface water quality as a result of the scale of the earthworks proposed and the presence of a pathway from the area to Kingston Brook. However, the amendment will be constructed in accordance with the measures specifically designed to safeguard water resources outlined in the draft Code of Construction Practice¹²² (CoCP).
- 5.17.14 Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.17.15 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments

5.18 Additional land required for HS2 maintenance access to Hopton and Coton Footpath 24 accommodation overbridge (AP2-002-018)

- 5.18.1 The Bill provides for the Hopton and Coton Footpath 24 accommodation overbridge, which would provide permanent access to agricultural land adjacent to Hopton South cutting. The Bill also provides for two private means of access to Staffordshire County Showground and its adjacent overflow car park off the realigned A518 Weston Road, on the northern side of the HS2 route, to the east and west of the A518 Weston Road overbridge. Temporary access would be provided, via the private access road to the west of the realigned A518 Weston Road, to Hopton and Coton Footpath 24

¹²² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

accommodation overbridge during construction. See Map CT-05-215, C6 to B5, in the main ES Volume 2: CA2 Map Book.

- 5.18.2 Since submission of the Bill, it has been identified that there is a need to provide a permanent HS2 maintenance access to the Hopton and Coton Footpath 24 accommodation overbridge. The private access from the A518 Weston Road, provided in the original scheme, will be shared and extended to the Hopton and Coton Footpath 24 accommodation overbridge and a HS2 right of access will be required permanently to accommodate HS2 maintenance vehicles. See Map CT-05-215, C6 to B5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.18.3 The shared use of the private access road, as a permanent HS2 maintenance access to join Hopton and Coton Footpath 24 accommodation overbridge, to the west of the A518 Weston Road, is outside the limits of the Bill. This will result in a requirement for an additional 40m² of land, some of which will be from Tithebarn Farm (CA2/07). See Map CT-05-215, C5, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.18.4 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.19 Additional land and a change to Bill powers required for the realignment of the B5066 Sandon Road, diversion of Hopton Lane, extension of Hopton Lane and increased non-motorised user provision across the HS2 route between Hopton and Mount Edge (AP2-002-019)

- 5.19.1 The Bill provides for the realignment of the B5066 Sandon Road, 1km in length and 100m north-west of its existing alignment, to cross the HS2 route at Hopton North cutting, via the B5066 Sandon Road overbridge, 10m above existing ground level. This would reduce the journey length for users of the B5066 Sandon Road by 30m. Landscape earthworks, with landscape mitigation planting on both sides of the road, would help integrate the scheme into the surrounding landscape. There would also be an area of woodland habitat creation along the south-east of the realigned road to provide replacement habitat. See Map CT-06-216, B2 to B9, in the main ES Volume 2: CA2 Map Book.
- 5.19.2 Hopton Lane would be diverted over a distance of 550m, 400m west of its existing alignment, to join the B5066 Sandon Road, north of the HS2 route. This diversion would reduce the length of journey, when travelling north on the B5066 Sandon Road by 200m, and increase the length of journey, when travelling south on the B5066 Sandon Road by 300m. South of the HS2 route, Hopton Lane would be closed permanently to through traffic and would provide HS2 access to a balancing pond. See Map CT-06-216, D5 to B5, in the main ES Volume 2: CA2 Map Book.
- 5.19.3 Pedestrian access across the HS2 route, between Mount Edge and Hopton village, would be provided via the Hopton and Coton new footpath, 200m in length and

crossing over the Hopton and Coton new footpath overbridge, 1.7m above existing ground level and 9m above rail level. The overbridge, which would not be directly connected to the public rights of way (PRoW) network, would reinstate a connection for pedestrians only between Mount Edge and Hopton Lane. See Map CT-06-216, D5 to D6, in the main ES Volume 2: CA2 Map Book.

- 5.19.4 Two balancing ponds would be provided on the southern side of the HS2 route. One would be provided for railway drainage, within an area of woodland habitat creation, 20m north of Mount Edge. Access would be provided from Mount Edge and the B5066 Sandon Road. See Map CT-06-216, C7 to C6, in the main ES Volume 2: CA2 Map Book. The second would be provided for highway drainage, 125m south-west of Mount Edge. Access would be provided from the existing B5066 Sandon Road. See Map CT-06-216, C10, in the main ES Volume 2: CA2 Map Book.
- 5.19.5 The southern section of Mount Edge would be diverted over a distance of 225m, 125m west of its existing alignment. A new section of road, 240m in length, would reconnect the realigned B5066 Sandon Road with Mount Edge. The new section would join the realigned B5066 Sandon Road to the south of the HS2 route and would reduce the length of journey by 175m. Hedgerow habitat creation would be provided along the south of the Mount Edge diversion. See Volume 2: Map CT-06-216, D7 to B8, in the main ES Volume 2: CA2 Map Book.
- 5.19.6 A balancing pond would be provided to the north of the HS2 route for highway drainage, 150m north-east of the B5066 Sandon Road overbridge. Access would be provided from the realigned B5066 Sandon Road and the Hopton and Coton Bridleway 12. See Map CT-06-216, B4, in the main ES, Volume 2: CA2 Map Book.
- 5.19.7 Land to the west of the B5066 Sandon Road would be used during construction for the temporary storage of excavated material, either side of the HS2 route, and for the Hopton North cutting satellite compound. See Map CT-06-216, B7 to A4, in the main ES, Volume 2: CA2 Map Book.
- 5.19.8 Since the submission of the Bill, further engagement with stakeholders and landowners has resulted in a change of the realigned B5066 Sandon Road. This will reduce the amount of land required by the scheme from an allocated development site, immediately south-west of the B5066 Sandon Road overbridge, but will include land to accommodate the proposed balancing ponds associated with the development.
- 5.19.9 In addition, further design refinement has been undertaken to simplify the amendments to the highway network in the Hopton area and increased provision for non-motorised users to cross the HS2 route has been included. The changes include:
- the relocation of the B5066 Sandon Road overbridge, which will cross the HS2 route 35m to the south-east of its position in the original scheme, to improve integration with the allocated development site. As a result, the B5066 Sandon Road realignment will extend 125m further north-east than the original scheme, to tie into the existing B5066 Sandon Road to the north of the HS2 route. To the south of the HS2 route, the B5066 Sandon Road realignment will tie into the existing road alignment 75m further north than in the original scheme. In total, the B5066 Sandon Road will be realigned over a length of 1.1km. See Map CT-06-216, C9 to B1, in the SES2 and AP2 ES, Volume 2: CA2 Map Book;

- the tie in point at the junction between the B5066 Sandon Road realignment and Hopton Lane diversion, to the north of the HS2 route, will be relocated 20m north of its position in the original scheme, to accommodate an adjustment to the B5066 Sandon Road realignment. The area of woodland habitat creation at this junction will be adjusted to accommodate the Hopton Lane diversion and, as a result, an area of woodland habitat creation will not be implemented. See Map CT-06-216, D5 to B4, in the SES2 and AP2 ES, Volume 2: CA2 Map Book;
- to the south of the HS2 route, an extension of the retained section of Hopton Lane (referred to as the Hopton Lane extension), 200m in length, will tie in to the realigned B5066 Sandon Road at the southern extent of the landscape earthworks. See Map CT-06-216, C9 to C8, in the SES2 and AP2 ES Volume 2: CA2 Map Book;
- the Mount Edge diversion will no longer be required and will avoid the creation of two parallel roads to the south of the HS2 route (the Mount Edge diversion and the retained section of Hopton Lane). A 235m length of hedgerow habitat creation, along the southern side of the Mount Edge diversion in the original scheme, will no longer be required. See Map CT-06-216, C8, in the SES2 and AP2 ES Volume 2: CA2 Map Book;
- the provision of access for all non-motorised users between Hopton village and Mount Edge will be enabled by the upgrade of Hopton and Coton new footpath overbridge, to Hopton and Coton new bridleway overbridge. The Hopton and Coton new bridleway overbridge will be widened to 3.5m (from 2m in the original scheme) and the approaches modified to accommodate equestrian and cycle users, on the same alignment as the original scheme, enabling access to both sides of the HS2 route. To the south of the HS2 route, non-motorised users will share the carriageway along the Hopton Lane extension and the retained section of Hopton Lane (which will be closed to through-traffic) to Hopton via the Hopton and Coton new bridleway overbridge. To the north of the HS2 route, non-motorised users will share the carriageway along the Hopton Lane diversion and continue in either a northern direction, to the realigned B5066 Sandon Road, or a southern direction, towards Hopton village. See Map CT-06-216, D9 to B1, in the SES2 and AP2 ES Volume 2: CA2 Map Book;
- a highway balancing pond, to the south of the HS2 route, will be reconfigured and relocated by 250m north-east of its position in the original scheme. Shared maintenance access to the highway balancing pond and agricultural access to land west of Mount Edge will be provided from the B5066 Sandon Road via the Hopton Lane extension. See Map CT-06-216, C8 to C6, in the main ES, Volume 2: CA2 Map Book;
- two new balancing ponds for drainage of the allocated development site to the west will be provided within an area occupied by woodland habitat creation in the original scheme, adjacent to the Hopton Lane extension and to the south of the HS2 route. Maintenance access to these new ponds will be provided from the B5066 Sandon Road via the Hopton Lane extension. As a result, woodland habitat creation proposed in the original scheme will not be implemented in this location. See Map CT-06-216, C8 to C7, in the main ES, Volume 2: CA2 Map Book;

- a pedestrian footway will be provided along the western side of the realigned B5066 Sandon Road, crossing the HS2 route via the B5066 Sandon Road overbridge to tie-in with the existing B5066 Sandon Road. The footway will be 1.5m wide, with a 1m verge separation to replicate the existing footway along the west of the realigned B5066 Sandon Road. Hedgerow habitat creation, along the western side of the realigned B5066 Sandon Road, will be slightly realigned to accommodate the minor change to earthworks. See Map CT-06-216, C9 to B1, in the SES2 and AP2 ES Volume 2: CA2 Map Book; and
- reconfiguration of a highway balancing pond and access, located to the north of the HS2 route, to avoid the B5066 Sandon Road realignment earthworks encroaching into the highway balancing pond See Map CT-06-216, B4 to B3, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

- 5.19.10 To compensate for the loss of woodland habitat creation, land that would be temporarily required for material stockpiles during construction in the original scheme, immediately west of the B5066 Sandon Road realignment on both sides of the HS2 route, will be permanently used for 3.1ha of woodland habitat creation. See Map CT-06-216, B6 to A6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.19.11 The existing utilities located within the B5066 Sandon Road will be diverted to accommodate the realignment of the highway.
- 5.19.12 The amendment will be constructed over a period of two years whilst maintaining access across the HS2 route, commencing in 2021. Works will be managed from Hopton North cutting satellite compound.
- 5.19.13 The land required for the Hopton Lane extension is within the limits of the Bill but will require a change to Bill powers. See Map CT-06-216, C8 to C7, in the SES2 and AP2 ES Volume 2: CA2 Map Book. The relocation of a highway balancing pond and area of woodland habitat creation, and the realignment of the Hopton Lane diversion and extension of the tie-in work at the northern end with the existing B5066 Sandon Road, are outside of the limits of the Bill. The amendment will result in a requirement for an additional 1.2ha of land, some of which will be from the following agricultural holdings: New Buildings Farm (CA2/32); and Wadden Farm (CA2/30). See Map CT-06-216, B5 to B3, and Map CT-06-216, C9 to B1, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

Local alternatives

- 5.19.14 The main alternatives for the realignment of the B5066 Sandon Road are summarised in this section. Key considerations in the development of alternatives included: consultation with stakeholders and the interaction with a pending outline planning application (planning reference 16/25450/OUT) for a mixed-use development with up to 2,000 dwellings on land North of Beaconside Stafford (CA2/P/17, see SES2 and AP2 ES Volume 5: Appendix CT-004-002); the requirement for additional land outside of the limits of the Bill; and environmental, engineering and construction constraints.
- 5.19.15 A preliminary options appraisal was undertaken of six options, of which the following four options were not taken forward for further consideration as they were not considered to be reasonable alternatives:

- Option 3, 4 and 5 included the realignment of the B5066 Sandon Road which would cross over the HS2 route on the existing highway alignment and would require the construction of a temporary highway diversion. These options would require increased construction activity and an increase in the additional land required for the temporary highway diversion. These options were considerably more intrusive, technically challenging and costly than other identified options; and
- Option 6 would provide a realignment of the B5066 Sandon Road to cross the HS2 route to the east of the existing alignment, close to the residential areas of Hopton and Mount Edge. This option was very similar to Option 2 and would not provide any additional benefit, and therefore it was not progressed further.

5.19.16 The following two options were taken forward to a more detailed appraisal where engineering and construction feasibility, cost and environmental impacts were further considered:

- Option 1 (AP2 revised scheme): the B5066 Sandon Road would be realigned to cross the HS2 route to the west of the existing highway alignment. A balancing pond associated with a pending outline planning application for a mixed-use development (planning reference 16/25450/OUT) would be relocated to the eastern side of the realigned B5066 Sandon Road. The alignment of the Hopton Lane extension would be amended to tie into the southern extent of the realigned B5066 Sandon Road. This option would require slight amendments to the tie-in of the Hopton Lane diversion on the northern side of the route; and
- Option 2: the B5066 Sandon Road would be realigned to cross the HS2 route to the east of the existing highway alignment. The southern tie in point with the existing B5066 Sandon Road would be located further north to avoid interactions with the pending outline planning application for a mixed-use development (planning reference 16/25450/OUT). The alignment of the Mount Edge diversion would be amended and Hopton Lane would be stopped up on the south side of the HS2 route. A balancing pond for railway drainage would be relocated west of its location in the original scheme.

5.19.17 Option 1 was identified as the preferred option as on balance it presented the most favourable option from a cost and construction perspective, incurring only a minor increase in the length of the highway realignment and additional land required. In comparison to the original scheme Option 1 represents a minor increase in environmental impact. The environmental impact associated with Option 2 would be greater due to the realignment of the B5066 Sandon Road moving closer to the residential areas of Hopton and Mount Edge, and the additional land required would result in further environmental impacts. Option 2 would result in an increase in cost and construction activity due to the increased highway realignment length and the requirement for large areas of additional land. An increase in utility diversions would also likely be required as a result of Option 2 being implemented.

5.19.18 The analysis of engineering, cost and potential environmental impacts associated with the options is set out below, with the impacts of the preferred option presented first.

Option 1

- 5.19.19 In comparison to the original scheme, Option 1 would realign the B5066 Sandon Road whilst maintaining the viability of the pending outline planning application for a mixed-use development (planning reference 16/25450/OUT) adjacent to the existing highway alignment. Option 1 would reduce the conflict of proposed housing and designated green space impacted in comparison to the original scheme. Option 1 would also improve the interaction with the proposed development through the provision of balancing ponds, required by the development, to the east of the realigned B5066 Sandon Road. There would be a marginal reduction in the overall area of agricultural land required for this option in comparison to the original scheme.
- 5.19.20 Option 1 would result in an increased impact on the existing ponds located at the northern extent of the B5066 Sandon Road realignment due to the tie in location to the existing B5066 Sandon Road further north to that of the original scheme.
- 5.19.21 Option 1 does not introduce high levels of technical or construction complexity, risk of safety hazards or lengthening of the construction programme as set out in the main ES. This option would result in additional cost compared to the original scheme due to the increased highway realignment length and the permanent requirement for additional land.

Option 2

- 5.19.22 In comparison to Option 1, the B5066 Sandon Road would be realigned further east to cross over the HS2 route at a location closer to the residential areas of Hopton and Mount Edge, resulting in an increase in community effects including noise and visual impacts on residential properties, and would also increase journey time for motorised users due to an increased highway realignment length. Option 2 would avoid conflicting with the pending outline planning application for a mixed-use development (planning reference 16/25450/OUT) to the west of the existing B5066 Sandon Road but would require the relocation of a proposed HS2 balancing pond for railway drainage and the reconfiguration of the highway network at Mount Edge. The diversion of an existing British Pipeline Agency (BPA) fuel pipeline and a high voltage overhead powerline would be required.
- 5.19.23 In comparison to Option 1, Option 2 would require an increase in additional land resulting in the increase in the permanent loss of agricultural land, areas of woodland, semi-improved grassland and hedgerows. Option 2 would result in increased impacts in comparison to Option 1 on buried archaeology in an area of Prehistoric Romano-British date (COY107). The realignment of the B5066 Sandon Road would cross the historic line of the 1867 Stafford to Uttoxeter railway (COY110) and a historic landfill site off Within Lane.
- 5.19.24 Option 2 does not introduce high levels of technical or construction complexity, risk of safety hazards or lengthening of the construction programme as set out in the main ES. This option would, however, result in additional cost compared to Option 1 due to the increased highway realignment length and the permanent requirement for additional land.

Topics included in the AP2 assessment

- 5.19.25 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES₁ and SES₂, for the following topics: community; landscape and visual; sound, noise and vibration; and water resources and flood risk. This is reported within this section.
- 5.19.26 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES₂ changes and AP2 amendments, is reported in Section 7.

Community

Scope, assumptions and limitations

- 5.19.27 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the Scope and Methodology Report¹²³ (SMR) and SMR Addendum¹²⁴ of the main ES.
- 5.19.28 This amendment has the potential to result in new or different temporary construction effects only. Therefore, there is no permanent construction or operational assessment for community.

Existing environmental baseline

- 5.19.29 The baseline community information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 6 of the main ES.
- 5.19.30 Hopton is a village made up of approximately 160 residential properties, including residential properties located within the secure Ministry of Defence (MoD) Stafford Barracks, located to the south of the village. Community facilities within the village include St. Peter's Church, playing fields and a village hall.

Future environmental baseline

Construction (2020)

- 5.19.31 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.19.32 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹²⁵ (CoCP) are identified.

¹²³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹²⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹²⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Assessment of impacts and effects

- 5.19.33 The SES2 reported that changes to the construction programme would result in 23 properties in Hopton experiencing a significant temporary major adverse in-combination effect due to significant noise, visual and heavy goods vehicle (HGV) effects for up to one year and nine months (for further information see Section 3).
- 5.19.34 This amendment will result in an increase to the number of properties in Hopton which will be subject to a significant noise effect, from 23 properties to 40 properties. Combined with the significant visual effect reported in the main ES, as amended by SES1, this will change the number of properties subject to a significant in-combination effect in Hopton from 23 to 40. This will give rise to a different temporary significant in-combination effect, however this will not change the level of significance of the effect reported in the main ES, as amended by SES1 and SES2.

Mitigation and residual effects

Other mitigation measures

- 5.19.35 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.19.36 The amendment will give rise to a different likely residual temporary significant in-combination community effect at 40 residential properties in Hopton, due to an increase in the number of properties which will be subject to a significant in-combination effect. This is due to an increase in the number of properties subject to a significant noise effect. However, this will not change the level of significance of the effect reported in the main ES, as amended by SES1 and SES2.

Cumulative effects

- 5.19.37 There are no new or different likely significant cumulative effects for community as a result of the amendment acting in-combination with any other AP2 amendments or AP1 amendments.

Landscape and visual

Scope, assumptions and limitations

- 5.19.38 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.19.39 This amendment has the potential to give rise to new or different significant construction and operational visual effects only. Therefore, there is no construction or operational assessment for landscape.

Existing environmental baseline

- 5.19.40 The baseline landscape and visual information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 11 of the main ES.

Visual baseline

- 5.19.41 The amendment has the potential to affect three viewpoints, which are described in Volume 5: Appendix LV-001-002 of the main ES and summarised below.

View south from Hopton and Coton Bridleway 12 (viewpoint 012.03.008)

- 5.19.42 This viewpoint represents the views experienced by occupants of Kents Barn Farm¹²⁶ and users of Hopton and Coton Bridleway 12 and Stone Circles Challenge. Residents and users of the bridleway and Stone Circles Challenge have views across gently sloping fields bounded by mature hedgerows and crossed by a line of telegraph poles. To the west, the B5066 Sandon Road is screened by mature hedgerows. Above the hedgerow, the landform can be seen rising towards a woodland belt on the skyline in the middle distance. To the south-west the land rises gently away from the viewpoint foreshortening the view. Longer distance views are afforded to the south and a tower block breaks the otherwise predominantly wooded skyline.

View south-west along B5066 Sandon Road (viewpoint 012.04.005)

- 5.19.43 This viewpoint represents the views experienced by users of the B5066 Sandon Road. Users of the road currently have views of the road corridor and associated grass verges and roadside hedgerows. To the south-east, pastures are visible above the hedgerows in the middle distance. To the south-west the landform falls steeply away from the viewpoint. There are glimpsed longer distance views towards Stafford and Tollgate Industrial Estate just visible below the wooded skyline.

View north-east from Spode Avenue, Mount Edge (viewpoint 012.02.001)

- 5.19.44 This viewpoint represents the views experienced by residents along the edge of Mount Edge and Spode Avenue who currently look out over and through a timber post and rail fence in the foreground across open pastures with patchy hedgerows, mature trees and a line of telegraph poles, which extend into the distance. The B5066 Sandon Road is screened by mature roadside vegetation and is only discernible due to the presence of road signs and views of passing lorries. Kents Barn Farm and Thorn Rise are visible in the distance on the skyline.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.19.45 SES2 and AP2 ES Volume 5: Appendix CT-004-002 provides details of the developments which are assumed to have been implemented by 2020 for construction and 2027 for operation, additional to those identified in the main ES Volume 5: Appendix CT-004-000.

- 5.19.46 The development relevant to the assessment of landscape and visual relates to 16/25450/OUT, a pending outline planning application for a mixed-use development with up to 2,000 dwellings on land north of Beaconside, Stafford, which is a continuation from the housing allocation identified in Volume 2, CA2, Section 11 of the main ES (Policy Stafford 2 – North of Stafford – Housing).

¹²⁶ This is also shown on OS mapping as Kent's Barn Farm.

- 5.19.47 The presence of the allocated development site potentially changes the level of significance of the operational visual effects reported for the AP2 revised scheme. This is because the new housing development will extend the built edge of Stafford to the north and encroach into an area of rolling farmland. It will be visible in distant south-westerly views from Hopton (viewpoint 012.03.008) and will therefore change the baseline description.

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.19.48 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

View south from Hopton and Coton Bridleway 12 (viewpoint 012.03.008)

- 5.19.49 The main ES reported a major adverse significant effect due to the full width of the view being dominated by major construction activity associated with construction of Hopton cutting, which would dominate immediate foreground views. The removal of vegetation and construction activity associated with the B5066 Sandon Road realignment and the B5066 Sandon Road overbridge structure, together with a balancing pond and access track, would be present in the immediate foreground. The realignment of Hopton Lane would cross the rising land in front of the Mount Edge properties. Construction activity associated with Hopton cutting would be prominent within 200m of the viewpoint. Hopton North cutting satellite compound would be visible to the south-west. The presence of material stockpiles, construction equipment, and the movement of construction vehicles would also affect the rural outlook.
- 5.19.50 Construction of the amendment will introduce new construction activities into the view, associated with new balancing ponds at Mount Edge and a larger balancing pond than originally proposed close to the viewpoint. These construction activities will, however, only form a small part of the view and their effect on the wider view will be minimal when seen alongside the wider construction activity associated with Hopton North cutting and the B5066 Sandon Road overbridge. The amendment will therefore give rise to a different significant effect at viewpoint 012.03.008. However, the level of significance of effect will remain major adverse significant as reported in the main ES.
- 5.19.51 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

View south-west along B5066 Sandon Road (viewpoint 012.04.005)

- 5.19.52 The main ES reported a moderate adverse significant effect due to construction activity associated with the realignment of the B5066 Sandon Road, including a balancing pond and access track, the B5066 Sandon Road overbridge and the diverted Hopton Lane, which would cross the existing B5066 Sandon Road. Key landscape characteristics such as existing mature vegetation would be removed and open up wider long-distance views. Construction works to the east would be screened by the mature vegetation bordering the MoD Stafford depots. Views of Sandon Road

auto-transformer station and construction of Hopton North cutting would be heavily filtered by the retained tall hedgerow, however, the earthworks and presence of stockpiles would be perceptible.

- 5.19.53 Construction of the amendment will bring construction activity slightly closer to this viewpoint as it will extend further north along B5066 Sandon Road. This means that construction activity will slightly increase the effect on the view in this location. The amendment will therefore give rise to a different significant effect at viewpoint 012.04.005. However, the level of significance will remain moderate adverse significant as reported in the main ES.
- 5.19.54 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

View north-east from Spode Avenue, Mount Edge (viewpoint 012.02.001)

- 5.19.55 The main ES reported a major adverse significant effect due to construction activity associated with the balancing pond and an access track from the existing B5066 Sandon Road and overbridge. Earthworks would foreshorten rural views and require the removal of existing mature hedgerows and trees. The existing B5066 Sandon Road would be used as a construction route and, together with the presence of equipment and movement of material, would introduce large-scale activity into the rural view.
- 5.19.56 Construction of the amendment will give rise to new construction effects from the additional balancing ponds in the foreground of the view and the realignment of Hopton Lane and access track to Sandon auto-transformer station. This will add to the effects of the construction activity reported in the main ES. The amendment will therefore give rise to a different significant effect at viewpoint 012.02.001. However, the level of significance of effect will remain major adverse significant as reported in the main ES.
- 5.19.57 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.19.58 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.19.59 The temporary residual significant effects during construction remain as described above. These effects will be temporary and reversible in nature lasting only for the duration of the construction works. These residual effects will generally arise from the widespread presence of construction activity and construction plant within the landscape and viewed from surrounding residents, and users of PRow and main roads within the study area.

5.19.60 The amendment will give rise to a different likely residual significant construction effect at the following viewpoints. However, this will not change the level of significance of effects reported in the main ES:

- view south from Hopton and Coton Bridleway 12 (viewpoint 012.03.008) - the effect will increase but will remain major adverse significant;
- view south-west along B5066 Sandon Road (viewpoint 012.04.005) - the effect will increase but will remain moderate adverse significant; and
- view north-east from Spode Avenue, Mount Edge (viewpoint 012.02.001) - the effect will increase but will remain moderate adverse significant.

Cumulative effects

5.19.61 There are no new or different likely significant cumulative effects for landscape and visual as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Permanent effects arising during operation

Avoidance and mitigation measures

5.19.62 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

View south from Hopton and Coton Bridleway 12 (viewpoint 012.03.008)

5.19.63 The main ES reported a major adverse significant effect at year 1 and year 15, before reducing to moderate adverse significant at year 60. This was due to the large-scale changes to the view from the presence of the embankments associated with the realigned section of the B5066 Sandon Road and associated overbridge, together with views towards Hopton North cutting, the overhead line equipment and moving trains.

5.19.64 At year 1, the amendment will move the embankments associated with the B5066 Sandon Road overbridge further from the viewpoint. This will slightly improve the outlook from the viewpoint, but the B5066 Sandon Road overbridge and its associated embankments will continue to be prominent features. Hopton North cutting and moving trains will remain visible. The amendment will therefore give rise to a different significant visual effect at viewpoint 012.03.008. However, the level of significance of the effect will remain major adverse significant as reported in the main ES.

5.19.65 At year 15, the extensive areas of maturing woodland mitigation planting associated with the amendment will provide additional screening of the embankments associated with the B5066 Sandon Road overbridge and movement of trains in Hopton North cutting. The outlook will be one of developing woodland but it will still be rural in character. The amendment will therefore give rise to a different significant effect at viewpoint 012.03.008 as the level of significance of the effect reported in the main ES will reduce from major adverse significant to moderate adverse significant.

- 5.19.66 At year 60, the extensive areas of mature woodland will provide further screening of the embankments associated with the B5066 Sandon Road overbridge and movement of trains in Hopton North cutting. The outlook will be one of developing woodland but it will be rural in character. The amendment will therefore remove the significant effect at 012.03.008 as the level of significance of the effect reported in the main ES will reduce from moderate adverse significant to minor adverse non-significant.

View south-west along B5066 Sandon Road (viewpoint 012.04.005)

- 5.19.67 The main ES reported a moderate adverse significant effect at year 1 reducing to minor adverse non-significant at year 15 and negligible non-significant at year 60. This was due to the very noticeable changes to middle and long-distance views. The open fields in the middle distance would be replaced by the embankment of the realigned B5066 Sandon Road, B5066 Sandon Road overbridge and diverted section of Hopton Lane. The engineered landforms and road infrastructure would change the character of the rural view. Long-distance views to Stafford would be opened up by the loss of mature trees and hedgerows in the middle distance, further changing the character of view although the operational railway would be heavily filtered by the retained tall roadside hedgerow. In year 1 summer, views of construction activity would be substantially screened by the roadside hedgerows in full leaf and the main ES reported a minor adverse non-significant effect.
- 5.19.68 At year 1, the amendment will include the presence of additional balancing ponds and realignment of Hopton Lane in place of the Mount Edge diversion. The new balancing ponds will be located in the foreground of the view and will reduce the amount of mitigation planting, which will slightly increase the overall effect on the view. The amendment will therefore give rise to a different significant effect. However, the level of significance of the effect will remain moderate adverse significant as reported in the main ES. At year 15 and year 60 the level of significance of the effects will remain non-significant as reported in the main ES.

View north-east from Spode Avenue, Mount Edge (viewpoint 012.02.001)

- 5.19.69 The main ES reported a major adverse significant effect at year 1 and year 15 reducing to moderate adverse significant at year 60. This was due mostly to the presence of the Mount Edge diversion and open views to the realigned B5066 Sandon Road and associated overbridge and embankments. Moving trains would be visible between Hopton North cutting and Hopton South cutting, together with overhead line equipment and noise fence barriers. The rural view would substantially change.
- 5.19.70 At year 1, the amendment will include the presence of additional balancing ponds and a realignment of Hopton Lane in place of the Mount Edge diversion. The new balancing ponds will be located in the foreground of the view and will reduce the amount of mitigation planting, which will slightly worsen the overall effect on the view. The amendment will therefore give rise to a different significant effect at viewpoint 012.02.001. However, the level of significance of effect will remain major adverse significant as reported in the main ES.
- 5.19.71 At year 15, the maturing mitigation planting will screen much of the amendment which will slightly reduce the overall effect on the view, but it will also foreshorten and change the character of the existing view across open fields. The outlook will be one

of developing woodland, although it will remain rural in character. The amendment will therefore give rise to a different significant effect at viewpoint 012.02.001. However, the level of significance of effect reported in the main ES will remain major adverse significant as reported in the main ES.

- 5.19.72 By year 60, the mature woodland will continue to screen much of the amendment but will also foreshorten and change the character of the current view from open fields to woodland, although it will remain rural in character. The amendment will therefore give rise to a different significant effect at viewpoint 012.02.001. However, the level of significance of effect reported in the main ES will remain moderate adverse significant as reported in the main ES.
- 5.19.73 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.19.74 No mitigation measures additional to those reported in the main ES are identified.

Summary of likely residual significant effects

- 5.19.75 The amendment will give rise to a different likely residual significant operational visual effect at the view south from Hopton and Coton Bridleway 12 (viewpoint 012.03.008). The effect will reduce from the major adverse significant effect to moderate adverse significant at year 15. At year 60, the moderate adverse significant effect, reported in the main ES, will reduce to minor adverse non-significant. This will change the level of significance of the effect, removing the residual significant effect reported in the main ES.
- 5.19.76 The amendment will give rise to a different likely residual significant operational visual effect at the view north-east from Spode Avenue and Mount Edge (viewpoint 012.02.001). The effect will increase but will remain major adverse significant at year 15 and moderate adverse significant at year 60. This will not change the level of significance of the effect reported in the main ES.

Cumulative effects

- 5.19.77 There are no new or different likely significant cumulative effects for landscape and visual as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Monitoring

- 5.19.78 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.19.79 There are no changes to the monitoring requirements identified in the main ES for landscape and visual as a result of the amendment.

Sound, noise and vibration

Scope, assumptions and limitations

- 5.19.80 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the SMR of the main ES.
- 5.19.81 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for sound, noise and vibration.

Existing environmental baseline

- 5.19.82 The baseline sound, noise and vibration information for Colwich to Yarlet is as described in Volume 2, CA2, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by the amendment have been used in the construction assessment.
- 5.19.83 The area close to the amendment includes the residences on Mount Edge and the B5066 Sandon Road in Hopton. The existing baseline in this area is dominated by road traffic noise from local and distant road traffic, specifically from vehicles using the B5066 Sandon Road.

Future environmental baseline

Construction (2020)

- 5.19.84 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.19.85 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.19.86 SES2 identified a likely significant effect on a community basis due to construction noise at approximately 25 dwellings in Hopton¹²⁷, to the west and east of the HS2 route, for a period of up to one year and nine months.
- 5.19.87 The amendment will result in more road works being undertaken closer to Mount Edge, which will increase the construction noise levels at residential properties on Mount Edge, Hopton such that an effect is identified at an additional 17 properties compared to those reported in SES2. When considered in conjunction with the SES2 changes a different likely significant construction noise effect is identified at

¹²⁷ The sound, noise and vibration and community assessment methodologies represent the number of residential properties in a different way. The sound, noise and vibration assessment rounds numbers of properties to the nearest 5, e.g. 27 is rounded to 25, whereas the community assessment counts absolute numbers of properties.

approximately 40¹²⁸ properties at Hopton, to the east and west of the HS2 route, for a period of up to one year and nine months.

Mitigation and residual effects

Other mitigation measures

- 5.19.88 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.19.89 The amendment will give rise to a different likely residual significant construction noise effect on a community basis at 17 properties in the vicinity of Mount Edge, Hopton, which in conjunction with the SES2 changes, will result in a different likely significant effect on approximately 40 properties, to the east and west of the HS2 route, for a period of up to one year and nine months.

Cumulative effects

- 5.19.90 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Water resources and flood risk

Scope, assumptions and limitations

- 5.19.91 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.19.92 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.19.93 The baseline water resources information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 15 of the main ES. Further details relating to Water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-002 and Appendix WR-003-002, and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.19.94 This amendment is located near a tributary of Kingston Brook, which is a low value receptor. This amendment will involve construction activities of a nature and scale that have potential flood risk implications.

¹²⁸ The sound, noise and vibration assessment rounds number of properties to the nearest five, e.g. 42 is rounded to 40, whereas the community assessment counts absolute numbers of properties.

Future environmental baseline

Construction (2020)

- 5.19.95 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.19.96 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.19.97 The main ES reported no significant effects on flood risk in the vicinity of this amendment. The amendment involves realignment of the B5066 Sandon Road and construction of two new balancing ponds to attenuate storm runoff from a housing development. The realigned B5066 Sandon Road and the balancing ponds are located within an area of heightened risk of surface water flooding. These features, therefore have potential to displace flood water that would otherwise accumulate in this location, adversely affecting flood risk downstream.
- 5.19.98 An assessment of this issue is contained within the SES2 and AP2 ES Volume 5: Appendix WR-003-002. This concludes that the amendment has the potential to give rise to a permanent moderate adverse impact on agricultural land, which is a moderate value receptor. This will therefore lead to a new permanent moderate adverse significant effect that is not reported in the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.19.99 The detailed design of the surface water management infrastructure including the proposed balancing ponds will involve refinement of their configuration to create a system that accommodates, rather than displaces, the floodwater that would naturally accumulate in this location. The design refinement will be undertaken in consultation with the Environment Agency and Staffordshire County Council acting as the Lead Local Flood Authority.
- 5.19.100 The operation and maintenance procedures of the proposed surface water management infrastructure including the balancing ponds will be outlined, agreed with the Environment Agency and Staffordshire County Council and carried out by the appropriate organisation.

Summary of likely residual significant effects

- 5.19.101 This amendment will give rise to a new likely residual significant permanent moderate adverse effect, with regard to the impact of two balancing ponds on flood risk to downstream agricultural land, which is a moderate value receptor.
- 5.19.102 It is currently anticipated that a means of mitigating these impacts will be developed to ensure that there are no residual significant effects arising from construction.

Cumulative effects

- 5.19.103 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Summary of new or different likely residual significant effects as a result of the amendment

- 5.19.104 The amendment will give rise to a different likely residual temporary significant in-combination community effect at 40 residential properties in Hopton, due to an increase in the number of properties which will be subject to a significant in-combination effect. However, this will not change the level of significance of the effect reported in the main ES, as amended by SES1 and SES2.
- 5.19.105 During construction, the amendment will give rise to a different likely residual significant construction effect at viewpoints 012.03.008, 012.04.005 and 012.02.001. However, this will not change the level of significance of the effects reported in the main ES. During operation, there will be a different likely residual significant operational effect at viewpoint 012.03.008. At year 15 the effect will reduce from the major adverse to moderate adverse and at year 60 the effect will reduce from moderate adverse to minor adverse, which is not significant. This will remove the residual significant effect reported in the main ES. At viewpoint 012.02.001 the amendment will give rise to a different likely residual significant operational effect. However, this will not change the level of significance of the effects reported in the main ES.
- 5.19.106 The amendment will give rise to a different likely residual significant construction noise effect on a community basis at 17 properties in the vicinity of Mount Edge, Hopton, which in conjunction with the SES2 changes, will result in a different likely significant effect on approximately 40 properties.
- 5.19.107 The amendment will result in a new likely residual significant permanent moderate adverse effect on flood risk to downstream agricultural land.

5.20 Additional land required for construction activities around B5066 Sandon Road, Hopton (AP2-002-020)

- 5.20.1 The Bill provides for the temporary use of land for construction of the scheme on the northern and southern sides of the HS2 route, which includes the establishment of the Hopton North cutting satellite compound and site haul routes. Land would be required permanently for the construction of the Hopton North cutting, realignment of the B5066 Sandon Road and the diversion of Mount Edge. See Map CT-05-216, C9 to A5, in the main ES Volume 2: CA2 Map Book.
- 5.20.2 The B5066 Sandon Road would be realigned for 1km in length and 100m north-west of its existing alignment, to cross the HS2 route via the B5066 Sandon Road overbridge. The existing B5066 Sandon Road would remain open during construction of the B5066 Sandon Road overbridge. Following construction, there would be tie-in works and traffic management to connect the existing road with the new alignment. See Map CT-05-216, C9 and B2 in the main ES Volume 2: CA2 Map Book.

- 5.20.3 Since submission of the Bill, a review of construction working areas and construction vehicle movements in this area has identified the temporary requirement for additional land at two locations around the B5066 Sandon Road, Hopton. These are:
- an additional 0.8ha of land, on the southern side of Hopton North cutting satellite compound, to separate public road-going vehicles (e.g. heavy goods vehicles (HGVs) and light goods vehicles (LGVs)) from larger earth moving equipment (with an average capacity of 40 tonnes) adjacent to Hopton North cutting. See Map CT-05-217, J9 to I7, in the SES2 and AP2 ES Volume 2: CA2 Map Book; and
 - an additional 0.1ha of land, at the southern tie-in of the realigned B5066 Sandon Road, to accommodate a temporary diversion of the existing B5066 Sandon Road for 100m in length. The ground levels between the existing and realigned B5066 Sandon Road differ by up to 2m in this location. The temporary diversion will enable the B5066 Sandon Road to remain open whilst the levels associated with the tie-in works, at the southern end, are completed. See Map CT-05-216, C9, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.20.4 The areas of additional land will be required throughout construction.
- 5.20.5 The areas of additional land are outside the limits of the Bill. This amendment will result in a requirement for an additional 0.9ha of land, some of which will be from the following agricultural holdings: New Buildings Farm¹²⁹ (CA2/32); and Wadden Farm (CA2/30). See Map CT-05-216, J9 to I7 and C9, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.20.6 This amendment is considered to require a reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for sound, noise and vibration. This is reported within this section.
- 5.20.7 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Sound, noise and vibration

Scope, assumptions and limitations

- 5.20.8 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the Scope and Methodology Report¹³⁰ (SMR) of the main ES.
- 5.20.9 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for sound, noise and vibration.

¹²⁹ This is also shown on OS mapping as Newbuildings Farm.

¹³⁰ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Existing environmental baseline

- 5.20.10 The baseline sound, noise and vibration information for Colwich to Yarlet is as described in Volume 2: CA2, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by the amendment have been used in the construction assessment.
- 5.20.11 The area close to the amendment includes the residences on Mount Edge and Sandon Road in Hopton. The existing baseline at this area is dominated by road traffic noise from local and distant road traffic, specifically from vehicles using the B5066 Sandon Road.

Future environmental baseline

Construction (2020)

- 5.20.12 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.20.13 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹³¹ (CoCP) are identified.

Assessment of impacts and effects

- 5.20.14 In the area close to the amendment, the main ES did not identify any residual likely significant sound, noise or vibration effects. However, the amendment has the potential to result in a new or different likely significant construction noise effects at residential properties on Mount Edge, Hopton.
- 5.20.15 The assessment has considered the construction noise and vibration levels associated with the amendment and those identified in the main ES, the construction programme for the amendment and local mitigation identified in the main ES. The amendment will not give rise to any new or different likely residual significant effects compared to those reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Cumulative effects

- 5.20.16 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the amendment acting in combination with any other AP2 amendments (specifically amendment AP2-002-019) or AP1 amendments.

5.21 Additional land required for modifications to A513 Beaconside and B5066 Sandon Road junction (AP2-002-021)

- 5.21.1 The original scheme provides for a temporary construction traffic route between the HS2 route at Hopton and the A513 Beaconside, to the south-west, via the B5066

¹³¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Sandon Road. Construction traffic would enter onto the B5066 Sandon Road at Hopton and travel south to join the A513 Beaconside. The main ES identifies that the addition of construction traffic along this route would result in increased congestion, queuing and delays through the junction of the A513 Beaconside and B5066 Sandon Road.

- 5.21.2 The SES2 scheme provides for a new construction traffic route (SES2-002-010: New construction traffic route from Stone to Weston via Sandon) to reduce the volume of HS2 construction traffic travelling through the junctions along the A513 Beaconside, which includes its junction with the B5066 Sandon Road. This additional route would reduce the volume of construction traffic using this junction. See Maps TR-03-207-R1, TR-03-208-R1, and TR-03-209a-R1 in the SES2 and AP2 ES Volume 5: Traffic and transport Map Book.
- 5.21.3 Since the submission of the Bill, it has been identified that there is a need to reduce the queuing and delays through the A513 Beaconside/B5066 Sandon Road (east) junction during construction. To improve junction capacity, localised modifications will be provided in the form of a temporary traffic island at, and signalisation of, the junction of the A513 Beaconside and the B5066 Sandon Road. To accommodate these modifications, an additional 0.7ha of land will be required. The traffic signals will also improve safety for turning manoeuvres in to and out of the B5066 Sandon Road. New splitter islands¹³² will be constructed in the carriageway to accommodate the traffic signal equipment on the A513 Beaconside and B5066 Sandon Road. Following construction, the layout and operation of the junction will revert to the existing arrangement. See Map CT-05-217-L1, J6 to H5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.21.4 The junction modifications will be constructed prior to the main works, over a period of up to three months, commencing in 2020. These temporary works will remain in place until 2025. The works will be managed locally within the highway.
- 5.21.5 The land required for the temporary junction modifications is outside the limits of the Bill. This amendment will result in a requirement for an additional 0.7ha of land, some of which will be from New Buildings Farm¹³³ (CA2/32). See Map CT-05-217-L1, J6 to H5, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.21.6 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for traffic and transport. This is reported within this section.
- 5.21.7 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

¹³² A splitter island is an area of carriageway, shaped to separate and direct traffic entering or leaving a junction. These are usually kerbed, but where there is insufficient space, these may consist entirely of markings.

¹³³ This is also shown on OS mapping as Newbuildings Farm.

Traffic and transport

Scope, assumptions and limitations

- 5.21.8 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the Scope and Methodology Report¹³⁴ (SMR) and SMR Addendum¹³⁵ of the main ES.
- 5.21.9 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.
- 5.21.10 The assessment in this section considers the potential effects resulting from the construction works associated with the amendment. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.21.11 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.21.12 The A513 Beaconside is a main local road which connects the A34 Stone Road in the west to the A51 Lichfield Road in the east of the Colwich to Yarlet area. The A513 Beaconside can get busy at peak times and delays can be experienced.
- 5.21.13 The B5066 Sandon Road is a local road in the Colwich to Yarlet area. The local road network in this area generally operates well although some localised delays can be experienced particularly at peak times where local roads meet the main road network.

Future environmental baseline

Construction (2023)

- 5.21.14 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.21.15 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹³⁶ (CoCP) are required.

Assessment of impacts and effects

- 5.21.16 The main ES reported that construction of the original scheme would result in queues and delays for vehicle occupants at the A513 Beaconside and B5066 Sandon Road

¹³⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹³⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹³⁶ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

junction, which would give rise to a major adverse significant traffic congestion and delay effect.

- 5.21.17 Although the amendment will reduce the impacts of construction traffic at the junction (considered in combination with all SES2 changes and AP2 amendments in Section 7), the temporary construction works, which are expected to take three months to implement, associated with the modifications to the A513 Beaconside and B5066 Sandon Road junction and associated traffic management measures will be likely to result in a temporary reduction in capacity and some delays at the junction during its construction. Although once completed the changes will reduce congestion and delays, this amendment will give rise to a new temporary minor adverse effect on traffic flows and delays for road users during its construction, which is significant.
- 5.21.18 On completion of the construction of the AP2 revised scheme, the existing junction arrangements will be re-instated.
- 5.21.19 For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and the SES2 and AP2 ES Volume 5: Traffic and transport Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.21.20 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 5.21.21 During the junction works, this amendment will give rise to a new likely residual significant temporary minor adverse effect on traffic flows and delays for road users at the junction of the A513 Beaconside and B5066 Sandon Road.

Cumulative effects

- 5.21.22 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

5.22 Additional land required for a British Pipeline Agency construction working area and a new utility compound, west of B5066 Sandon Road (AP2-002-022)

- 5.22.1 The Bill provides for the permanent diversion of an underground British Pipeline Agency (BPA) 10-inch diameter fuel pipeline for 815m, 370m north of its existing alignment. The diversion would cross beneath the HS2 route at the Hopton North cutting, 250m north-west of Hopton and Coton Bridleway 11 accommodation overbridge. See Map CT-05-217, G5 to D7, in the main ES Volume 2: CA2 Map Book. Works to divert the BPA 10-inch diameter fuel pipeline would take nine months to complete, commencing in 2021, and would be managed from Hopton North cutting satellite compound. An area of grassland habitat creation would be provided along sections of the diverted pipeline easement, on both sides of the HS2 route. See Map CT-05-217, G5 to E5 and D7, in the main ES Volume 2: CA2 Map Book.

- 5.22.2 Since submission of the Bill, further engagement with the utility provider has identified a requirement to provide an additional working area, to enable the connection of the new and existing pipelines at the western end of the diversion, 50m north-west of Newbuildings Cottage, and provide a new utility compound for the management of the BPA 10-inch diameter fuel pipeline diversion works.
- 5.22.3 At the western end of the pipeline diversion, works to connect the new section of pipeline to the existing pipeline, whilst maintaining gas supply during construction, will result in the temporary requirement for an additional 960m² of land. See Map CT-05-217, D7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.22.4 A new utility compound (Sandon Road utility compound) will be provided for the management of the BPA 10-inch diameter fuel pipeline diversion works. Sandon Road utility compound will be located within land required for Hopton North cutting, 550m north-west of the existing B5066 Sandon Road. See Map CT-05-217, F6 to G5 in the SES2 and AP2 ES, Volume 2: CA2 Map Book.
- 5.22.5 Sandon Road utility compound will be operational for nine months, commencing during 2021, and will support an average of 15 workers per day (20 workers at peak times). Access to the new compound will be from the B5066 Sandon Road and site haul routes thereafter.
- 5.22.6 The diversion works would be undertaken prior to the main construction works over a period of six months, commencing in 2021.
- 5.22.7 The land required as additional working area is outside the limits of the Bill. This amendment will result in a requirement for an additional 960m² of land, some of which will be from New Buildings Farm¹³⁷ (CA2/32). See Map CT-05-217, D7, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.22.8 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: landscape and visual; and traffic and transport. This is reported within this section.
- 5.22.9 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

¹³⁷ This is also shown on OS mapping as Newbuildings Farm.

Landscape and visual

Scope, assumptions and limitations

- 5.22.10 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the Scope and Methodology Report¹³⁸ (SMR) and SMR Addendum¹³⁹ of the main ES.
- 5.22.11 This amendment has the potential to give rise to new or different significant construction visual effects only. Therefore, there is no construction assessment for landscape and no operational assessment for landscape and visual.

Existing environmental baseline

- 5.22.12 The baseline landscape and visual information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 11 of the main ES.
- 5.22.13 The amendment has the potential to affect the following two viewpoints which are described in Volume 5: Appendix LV-001-002 of the main ES and summarised below.

View south from Hopton and Coton Bridleway 12 (viewpoint 012.03.008)

- 5.22.14 This viewpoint represents the views experienced by occupants of Kents Barn Farm¹⁴⁰ and users of Hopton and Coton Bridleway 12 and Stone Circles Challenge. Residents of Kents Barn Farm and users of the bridleway and Stone Circles Challenge have views across gently sloping fields bounded by mature hedgerows and crossed by a line of telegraph poles. To the west, the B5066 Sandon Road is screened by mature hedgerows. Above the hedgerows, the landform can be seen rising towards a woodland belt on the skyline in the middle distance. To the south-west the land rises gently away from the viewpoint foreshortening the view. Longer distance views are afforded to the south and a tower block breaks the otherwise predominantly wooded skyline.

View north-east from Hopton and Coton Bridleway 11 (viewpoint 012.03.011)

- 5.22.15 This viewpoint represents the views experienced by users of the Hopton and Coton Bridleway 11 east of Newbuildings Farm who currently have filtered views through a mature hedgerow with hedgerow trees towards rising medium to large scale pastures and a distant rural skyline. Occasional hedgerows, field trees and a wood pole overhead line punctuate these views.

¹³⁸ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹³⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁴⁰ This is also shown on OS mapping as Kent's Barn Farm.

Future environmental baseline

Construction (2020)

- 5.22.16 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.22.17 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹⁴¹ (CoCP) are required.

Assessment of impacts and effects

View south from Hopton and Coton Bridleway 12 (viewpoint 012.03.008) and view north-east from Hopton Bridleway 11 (viewpoint 012.03.011)

- 5.22.18 The main ES reported a major adverse significant effect at viewpoints 012.03.008 and 012.03.011 due to the scale and proximity of the construction activity associated with the realignment of the B5066 Sandon Road and B5066 Sandon Road overbridge. This, and the realignment of Hopton Lane, construction of Hopton North cutting and presence of a satellite compound, material stockpiles, and hedgerow removal will dominate close distance views.
- 5.22.19 Construction of the amendment will introduce new construction activities into the view, but the effects will be minimal when seen alongside the wider construction activity related to the realignment of the B5066 Sandon Road and B5066 Sandon Road overbridge, which will be extensive.
- 5.22.20 The amendment will therefore not give rise to any new or different significant effects and will not change the level of significance of the effect reported in the main ES.
- 5.22.21 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Cumulative effects

- 5.22.22 There are no new or different likely significant cumulative effects for landscape and visual as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

- 5.22.23 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.

¹⁴¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

- 5.22.24 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.
- 5.22.25 The assessment in this section considers the potential effects on public rights of way (PRoW) or footway users. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.22.26 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.22.27 The B5066 Sandon Road is a local road in the Colwich to Yarlet area. There are a number of PRoW which cross the area including: Hopton and Coton Bridleway 11, which travels in a north-south direction and connects from the junction of Salt and Enson Bridleway 8 and Salt and Enson Bridleway 4 to the B5066 Sandon Road; Hopton and Coton Bridleway 12, which travels in an east-west direction and connects the B5066 Sandon Road to Hopton and Coton Bridleway 11; and Hopton and Coton Bridleway 16, which travels in an east-west direction and connects Hopton and Coton Bridleway 11 to the B5066 Sandon Road and Marston Bridleway 8 and on to Marston Lane. The surveys undertaken to inform the assessment showed that Marston Bridleway 8 had the highest usage, with 22 users a day recorded.

Future environmental baseline

Construction (2023)

- 5.22.28 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.22.29 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.22.30 The main ES showed that the utility diversion works would cross Hopton and Coton Bridleway 11, Hopton and Coton Bridleway 12 and Hopton and Coton Bridleway 16. This would result in disruption to the users of Hopton and Coton Bridleway 11, Hopton and Coton Bridleway 12 and Hopton and Coton Bridleway 16. However, as any disruption would be of short duration and limited to where the utility crosses Hopton and Coton Bridleway 11, Hopton and Coton Bridleway 12 and Hopton and Coton Bridleway 16, the effect on non-motorised users would not be significant.
- 5.22.31 The amendment does not result in any change in disruption to the users of Hopton and Coton Bridleway 11, Hopton and Coton Bridleway 12 and Hopton and Coton Bridleway 16 and will therefore not give rise to any new or different likely residual significant effects on the users. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and Background Information and Data (BID) document TR-001-000 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.22.32 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

5.23 Additional land and a change to Bill powers required for the diversion of a National Grid gas pipeline and a new utility compound, south-east of Marston Bridleway 8 accommodation underbridge (AP2-002-023)

- 5.23.1 The Bill provides for the permanent diversion of an underground National Grid 1,050mm diameter high pressure gas pipeline for 280m, 55m north of its existing alignment. The diversion would cross beneath the HS2 route at Hopton North cutting, 300m south-east of Marston Bridleway 8 accommodation underbridge. See Map CT-06-217, D5 to C6, in the main ES Volume 2: CA2 Map Book. Works to divert the National Grid 1,050mm diameter high pressure gas pipeline would take nine months to complete, commencing in 2021, and would be managed from Hopton North cutting satellite compound.
- 5.23.2 An area of grassland habitat creation would be provided along a section of the diverted pipeline easement to the south of the HS2 route. This area of grassland habitat creation would be implemented as advanced mitigation planting, which would establish ecological connectivity between fragmented habitats and provide replacement habitat. See Map CT-06-217, D5 to C6, in the main ES Volume 2: CA2 Map Book.
- 5.23.3 The Bill also provides for the temporary storage of excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. A temporary material stockpile would be located to the north of the HS2 route, adjacent to Marston South embankment. See Map CT-05-217, C5, in the main ES Volume 2: CA2 Map Book.
- 5.23.4 Since submission of the Bill, further engagement with the utility provider has identified a requirement to reposition the locations where the diverted and existing pipelines connect, to provide an additional working area to enable the connection of the new and existing pipelines, and to provide a new utility compound for the management of the National Grid 1,050mm diameter high pressure gas pipeline diversion works.
- 5.23.5 The western connection point will be repositioned 50m west of the location identified in the original scheme. The eastern connection point will be repositioned 10m west of the location identified in the original scheme. As part of the amendment, a 380m section of pipeline will be further diverted, changing the alignment in the original scheme. The diversion will start 420m east of Marston Bridleway 8 accommodation underbridge, heading south-west to cross the HS2 route at Marston South embankment, 240m south-east of Marston Bridleway 8 accommodation underbridge. The diversion will continue south-west, crossing beneath Hopton and Coton Bridleway 16, to reconnect with the existing pipeline alignment, 300m south of Marston Bridleway 8 accommodation underbridge. In total, the pipeline will be diverted up to 60m south-east of its existing alignment. See Map CT-06-217, D5 to C6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

- 5.23.6 At each end of the pipeline diversion, works to connect the new section of pipeline to the existing pipeline, whilst maintaining gas supply during construction, will result in the temporary requirement for an additional 1.8ha of land. See Map CT-05-217, C7 and D4 to C5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.23.7 A section of the realigned pipeline, to the south of the HS2 route, will be located within the area of grassland habitat creation, identified to provide advanced mitigation planting in the original scheme. The grassland habitat creation, 0.8ha, will still be provided, however this will be implemented later in the construction programme than in the original scheme following the completion of construction and site restoration. See Map CT-05-217, C6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.23.8 The realigned pipeline will interact with a material stockpile to the north of the HS2 route and, as a result, this stockpile will require re-shaping to ensure sufficient clearance from the easement. See Map CT-06-217, C5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 5.23.9 A new utility compound (Marston Lane utility compound) will be provided for the management of the National Grid 1,050mm diameter gas pipeline diversion. Marston Lane utility compound will be located within land required for Marston South embankment, 140m east of Marston Bridleway 8. See Map CT-05-217, C6 to C4 in the SES2 and AP2 ES, Volume 2: CA2 Map Book.
- 5.23.10 Marston Lane utility compound will be operational for nine months, commencing during 2023, and will support an average of 15 utility workers per day (20 workers at peak times). Access to the new compound will be from the A34 Stone Road via site haul routes.
- 5.23.11 The diversion works will be undertaken over a six month period, commencing in 2023.
- 5.23.12 The realignment of the National Grid 1,050mm diameter high pressure gas pipeline diversion is outside the limits of the Bill. This amendment will result in the permanent requirement for an additional 1.2ha of land, some of which will be from New Buildings Farm¹⁴² (CA2/32). See Map CT-05-217, C7 and D4 to C5, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.23.13 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: cultural heritage; landscape and visual; and traffic and transport. This is reported within this section.
- 5.23.14 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

¹⁴² This is also shown on OS mapping as Newbuildings Farm.

Cultural heritage

Scope, assumptions and limitations

- 5.23.15 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the Scope and Methodology Report¹⁴³ (SMR) and SMR Addendum¹⁴⁴ of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.23.16 As the cultural heritage impacts of the amendment are not reversible, they therefore have the potential to result in new or different significant permanent construction effects only. There is no temporary construction or operational assessment for cultural heritage.

Existing environmental baseline

- 5.23.17 The baseline cultural heritage information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 7 of the main ES.
- 5.23.18 An area of surviving ridge and furrow and associated earthworks, north of Newbuildings Farm near Hopton (COY121), a non-designated asset of low value, is located partially within the land required for the amendment.
- 5.23.19 Further information about this asset is provided in the main ES Volume 5: Appendix CH-002-002 and Map Series CH-01 in the main ES Volume 5: Cultural heritage Map Book.

Future environmental baseline

Construction (2020)

- 5.23.20 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.23.21 No avoidance or mitigation measures, additional to those reported in the main ES and draft Code of Construction Practice¹⁴⁵ (CoCP), are identified.

Assessment of impacts and effects

- 5.23.22 The main ES reported a permanent moderate adverse significant effect on an area of surviving ridge and furrow and associated earthworks, north of Newbuildings Farm near Hopton (COY121), a non-designated asset of low value. This amendment will increase the extent of the asset to be removed during construction, leaving only a

¹⁴³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁴⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁴⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

small amount in-situ. This will give rise to a different significant effect, however this will not change the level of the significance of the effect reported in the main ES.

- 5.23.23 For further information see the SES2 and AP2 ES Volume 5: Cultural heritage Map Book and the SES2 and AP2 ES Volume 5: Appendix CH-003-000.

Mitigation and residual effects

Other mitigation measures

- 5.23.24 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.23.25 The amendment will give rise to a different likely residual permanent moderate adverse significant effect on surviving ridge and furrow and associated earthworks, north of Newbuildings Farm near Hopton (COY121), by increasing the extent of the asset to be removed during construction. However, this will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.23.26 There are no new or different likely significant cumulative effects for cultural heritage as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Landscape and visual

Scope, assumptions and limitations

- 5.23.27 The assessment scope, key assumptions and limitations for landscape or visual are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.23.28 This amendment has the potential to give rise to new or different significant construction visual effects only. Therefore, there is no construction assessment for landscape and no operational assessment for landscape or visual.

Existing environmental baseline

- 5.23.29 The baseline landscape and visual information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 11 of the main ES.

Visual baseline

- 5.23.30 The amendment has the potential to affect the following viewpoint, which is described in Volume 5: Appendix LV-001-002 of the main ES and summarised below.

View west from Marston Lane Farm, Marston Lane (viewpoint 013.02.011)

- 5.23.31 This viewpoint represents the views experienced by residents of Marston Lane Farm along Marston Lane. The foreground comprises the roadside hedgerow, but the winding nature of the road and associated vegetation screens longer views along the road corridor. Views to the south-west consist of a pond and boundary vegetation and pastures bounded by hedgerows and wire fences. Longer views are screened by field boundary hedgerows and mature hedgerow trees.

Future environmental baseline

Construction (2020)

- 5.23.32 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.23.33 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

View west from Marston Lane Farm, Marston Lane (viewpoint 013.02.011)

- 5.23.34 The main ES reported a minor adverse non-significant effect due to construction activity associated with Marston South embankment, Marston North embankment, Marston Lane realignment and the presence of the Marston South satellite compound and excavated material stockpiles. The gently rising landform would limit the extent of ground level views, however the upper storeys of Marston Lane Farm would afford distant views of this construction activity.
- 5.23.35 The amendment will affect the views from a group of residential properties on Marston Lane that are also represented by this viewpoint. Residents of these properties will have close and middle distance views of the construction activity, which will substantially change the current rural outlook. The amendment will therefore give rise to a new significant effect at viewpoint 013.02.011 as the level of significance of the effect reported in the main ES will increase from minor adverse non-significant to major adverse significant.
- 5.23.36 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.23.37 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.23.38 The temporary residual significant effect during construction remain as described above. This effect will be temporary and reversible in nature lasting only for the duration of the construction works. This residual effect will generally arise from the widespread presence of construction activity and construction plant within the landscape and viewed by surrounding residents, and users of public rights of way (PRoW) and main roads within the study area.
- 5.23.39 The significant effect that will remain after implementation of construction phase mitigation is summarised below.

- 5.23.40 The amendment will give rise to a new likely residual significant construction visual effect at the view west from Marston Lane Farm (viewpoint 013.02.011) as the level of the significance of the effect will increase from minor adverse non-significant effect to major adverse significant. This will change the level of significance of the effect reported in the main ES.

Cumulative effects

- 5.23.41 There are no new or different likely significant cumulative effects for landscape and visual as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

- 5.23.42 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.23.43 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.
- 5.23.44 The assessment in this section considers the potential effects on PRow or footway users. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.23.45 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.23.46 Marston Lane is a lightly used local road to the north of the A513 Beaconside that provides access from the A513 Beaconside to the village of Marston. Marston Lane is also part of the National Cycle Network (NCN Route 5). There are a number of PRow which cross the area including Hopton and Coton Bridleway 16. Hopton and Coton Bridleway 16 travels in an east-west direction and connects Hopton and Coton Bridleway 11 to the B5066 Sandon Road and Marston Bridleway 8 and on to Marston Lane. The surveys undertaken to inform the assessment showed that Marston Lane had the highest usage with 34 users a day recorded.

Future environmental baseline

Construction (2023)

- 5.23.47 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.23.48 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.23.49 The main ES showed that the utility diversion works would cross Hopton and Coton Bridleway 16, which would result in disruption to the users of Hopton and Coton Bridleway 16. However, as any disruption would be of short duration and limited to where the utility crosses Hopton and Coton Bridleway 16, the effect on non-motorised users would not be significant.
- 5.23.50 The amendment realigns the utility but does not result in any change in disruption to the users of Hopton and Coton Bridleway 16. This amendment will therefore not give rise to any new or different likely residual significant effects on the users of Hopton and Coton Bridleway 16 and will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and Background Information and Data (BID) document TR-001-000 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.23.51 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Summary of new or different likely residual significant effects as a result of the amendment

- 5.23.52 The amendment will give rise to a different likely residual permanent adverse significant effect on surviving ridge and furrow and associated earthworks, north of Newbuildings Farm near Hopton (COY121), by increasing the extent of the asset to be removed during construction. However, this will not change the level of significance of the effects reported in the main ES.
- 5.23.53 The amendment will give rise to a new likely residual major adverse significant construction effect at viewpoint 013.02.011.

5.24 Additional land required for modifications to A513 Beaconside/Marston Lane junction (AP2-002-024)

- 5.24.1 The original scheme provides for a temporary construction traffic route between the HS2 route at Marston and the A513 Beaconside, to the south, via Marston Lane. Construction traffic would enter onto Marston Lane at Marston and travel south to join the A513 Beaconside. The main ES identifies that the addition of construction traffic along this route would result in increased congestion, queuing and delays through the junction of the A513 Beaconside and Marston Lane.
- 5.24.2 The SES2 scheme provides for a new construction traffic route (SES2-002-010: New construction traffic route from Stone to Weston via Sandon) to reduce the volume of HS2 construction traffic travelling through the junctions along the A513 Beaconside, which includes its junction with Marston Lane. This additional route would reduce the volume of construction traffic using this junction.
- 5.24.3 It has been identified that there is a need to reduce the queuing and delays through the A513 Beaconside/Marston Lane junction. The existing junctions currently operate

by means of a ghost island¹⁴⁶ right turn arrangement. To improve junction capacity, localised modifications will be provided in the form of permanent signalisation of the junction of A513 Beaconside and Marston Lane, and realignment of kerblines. To accommodate these modifications, an additional 0.5ha of land will be required. The traffic signals will also improve safety for turning manoeuvres into and out of Marston Lane and Common Road. New splitter traffic islands¹⁴⁷ will be constructed within the carriageway to accommodate the traffic signal equipment on the A513 Beaconside. See Map CT-05-217-L1, D8 to D7, and Map CT-06-217-L1, D8 to D7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

- 5.24.4 There will also be a requirement to permanently realign the kerbing on the eastern side of the Marston Lane junction, which will result in the removal of hedgerow 30m in length. The hedgerow will be replaced following works to the kerbing. There will be no overall loss of hedgerow habitat as a result of this amendment.
- 5.24.5 The junction modifications will be constructed prior to the main works, over a period of up to three months, commencing in 2020. These works will be managed locally within the highway.
- 5.24.6 The land required for the permanent junction modifications is outside the limits of the Bill. This amendment will result in a requirement for an additional 0.8ha of land. See Map CT-05-217-L1, D8 to D7, and Map CT-06-217-L1, D8 to D7, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.24.7 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for traffic and transport. This is reported within this section.
- 5.24.8 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Traffic and transport

Scope, assumptions and limitations

- 5.24.9 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the Scope and Methodology Report¹⁴⁸ (SMR) and SMR Addendum¹⁴⁹ of the main ES.

¹⁴⁶ A ghost island is a junction, which is marked within the carriageway and shaped and/or located to direct traffic movement.

¹⁴⁷ A splitter island is an area of carriageway, shaped to separate and direct traffic entering or leaving a junction. These are usually kerbed, but where there is insufficient space, these may consist entirely of markings.

¹⁴⁸ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁴⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- 5.24.10 This amendment has the potential to result in new or different significant construction and operational effects for traffic and transport. Therefore, both construction and operational phases are considered in the assessment.
- 5.24.11 The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.24.12 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.24.13 The A513 Beaconside connects Stafford to Rugeley, passing through the village of Milford and the northern part of Cannock Chase. Marston Lane is a lightly trafficked local road to the north of the A513 Beaconside that provides access from the A513 Beaconside to the village of Marston. Marston Lane is also part of the National Cycle Network (NCN Route 5). Common Road is a local road to the south of the A513 Beaconside that provides access from the A513 Beaconside to an industrial area and onwards into the centre of Stafford. The local road network in this area generally operates well although some localised delays can be experienced particularly at peak times.

Future environmental baseline

Construction (2023) and operation (2027 and 2041)

- 5.24.14 The future baseline for construction in 2023 and operation in 2027 and 2041 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.24.15 No avoidance or mitigation measures, additional to those reported in the main ES and draft Code of Construction Practice¹⁵⁰ (CoCP), are required.

Assessment of impacts and effects

- 5.24.16 The main ES reported that construction of the original scheme would result in queues and delays for vehicle occupants at the A513 Beaconside/Marston Lane/Common Road junction, which would give rise to a major adverse traffic congestion and delay effect, which is significant.
- 5.24.17 Although the amendment will reduce the impacts of construction traffic at the junction (considered in combination with all SES2 changes and AP2 amendments in Section 7), the temporary construction works, which are expected to take three months to implement, associated with the modifications to the A513 Beaconside/Marston Lane/Common Road junction and associated traffic management measures will be likely to result in a temporary reduction in capacity and

¹⁵⁰ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

some delays on the junction approaches during its construction. Although once completed the changes will reduce congestion and delays, this amendment will give rise to a new temporary minor adverse effect on traffic flows and delays for road users during its construction, which is significant.

- 5.24.18 For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and the SES2 and AP2 ES Volume 5: Traffic and transport Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.24.19 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.24.20 During the junction works this amendment will give rise to a new likely residual significant temporary minor adverse effect on traffic flows and delays for road users at the junction of the A513 Beaconside Marston Lane/Common Road.

Cumulative effects

- 5.24.21 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Effects arising from operation

Avoidance and mitigation measures

- 5.24.22 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 5.24.23 Whilst the amendment is not required to support the AP2 revised scheme in the operational phase as the scheme does not add any substantial permanent traffic to the area, the junction will be retained following construction.
- 5.24.24 The main ES reported that regardless of the HS2 scheme, in the future assessment years of 2027 and 2041 the junction is forecast to operate over-capacity, with queues developing on the minor arm approaches of Marston Lane and Common Road. This is a consequence of general traffic growth associated with development in the area, which would make it increasingly difficult for side road traffic to access the A513 Beaconside and the wider network. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000.
- 5.24.25 This amendment will facilitate turning manoeuvres for vehicles by managing the turning movements under signal control. This amendment will therefore give rise to a permanent minor beneficial traffic effect for vehicle occupants in 2027 and 2041, which is significant.
- 5.24.26 For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and the SES2 and AP2 ES Volume 5: Traffic and transport Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.24.27 No mitigation measures, additional to those reported in the main ES, are required.

Summary of likely residual significant effects

- 5.24.28 This amendment will give rise to a new likely residual permanent minor beneficial significant effect for road users at the junction of the A513 Beaconside/Marston Lane/Common Road in the future assessment years of 2027 and 2041.

Cumulative effects

- 5.24.29 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Monitoring

- 5.24.30 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.24.31 There are no changes to the monitoring requirements identified in the main ES for traffic and transport as a result of the amendment.

5.25 Additional land required to relocate a temporary material stockpile and for a new transfer node, east of the Yarlet South cutting (AP2-002-025)

- 5.25.1 The original scheme provides for the use of land for the temporary storage of excavated material in stockpiles adjacent to the HS2 route, to be used for construction of the scheme. A temporary material stockpile would be located to the east of the Yarlet South cutting, 300m south of Yarlet School. Some of the temporary material stockpiles along the HS2 route would be designated as transfer nodes, used specifically for the storage, loading and unloading of bulk earthworks materials. Five transfer nodes would be provided in the Colwich to Yarlet area, including the Yarlet South cutting transfer node. Located to the west of Yarlet, and to the south-west of the HS2 route, this transfer node would be accessed via the A34 Stone Road. See Map CT-05-219a, I5 to G5 and F8 to E7, in the SES1 and AP1 ES Volume 2: CA2 Map Book.
- 5.25.2 The SES2 scheme provides for a new construction traffic route (SES2-002-010: New construction traffic route from Stone to Weston via Sandon) to reduce the volume of HS2 construction traffic travelling through the junctions along the A513 Beaconside. Heavy goods vehicles (HGVs) entering onto the A34 Stone Road at Yarlet will be routed north towards Stone and along the A51 to Weston via Sandon. The use of the A34 Stone Road for the movement of surplus excavated material would reduce the construction traffic on the A518 Weston Road, and congestion at its junction with the A513 Beaconside.
- 5.25.3 Since submission of the Bill, a review of the construction traffic movements has identified that a new transfer node is required and will be provided to the north-west of Marston North embankment, in a location which was occupied by a temporary

material stockpile in the original scheme. This will enable more efficient use of the A34 Stone Road for the movement of surplus excavated material being stored at the transfer node. Access to the new Marston North embankment transfer node will be from the A34 Stone Road and site haul routes. To accommodate the new Marston North embankment transfer node, the temporary material stockpile will be moved north-west of its position in the original scheme, adjacent to its existing location. See Map CT-05-219a, I5 to G5 and F8 to E7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

- 5.25.4 Marston North embankment transfer node will be managed from Marston North embankment satellite compound, located to the south of the HS2 route.
- 5.25.5 The land required for the relocation of the temporary material stockpile is outside the limits of the Bill. This amendment will result in a requirement for an additional 1.5ha of land, some of which will be from Yarlet Hall Farm (CA2/38). See Map CT-06-219a, I4 to G5, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.25.6 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: air quality; community; and landscape and visual. This is reported within this section.
- 5.25.7 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Air quality

Scope, assumptions and limitations

- 5.25.8 The assessment scope, key assumptions and limitations for air quality are as set out in Volume 1, the Scope and Methodology Report¹⁵¹ (SMR) and SMR Addendum¹⁵² of the main ES.
- 5.25.9 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for air quality. This section only considers effects from construction dust. Any air quality effects from construction traffic are reported in Section 7.

Existing environmental baseline

- 5.25.10 The baseline air quality information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 5 of the main ES. The updated background pollutant

¹⁵¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁵² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

concentrations from the Department for Environment, Food and Rural Affairs (Defra) have only minor changes compared to the information used in the main ES.

Future environmental baseline

Construction (2020)

- 5.25.11 The future committed development baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.
- 5.25.12 The updated background pollutant concentrations from Defra have only minor changes compared to the information used in the main ES.

Effects arising during construction

Avoidance and mitigation measures

- 5.25.13 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹⁵³ (CoCP) are required.

Assessment of impacts and effects

- 5.25.14 The main ES reported no significant effects on air quality from dust generating activities in this area. With the application of the mitigation measures, as set out in the draft CoCP, no significant effects are anticipated from dust generating activities associated with this amendment. Therefore, this amendment will not give rise to any new or different likely residual significant effects and will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix AQ-001-002.

Cumulative effects

- 5.25.15 There are no new or different likely significant cumulative effects for air quality as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Community

Scope, assumptions and limitations

- 5.25.16 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.25.17 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for community.

Existing environmental baseline

- 5.25.18 The baseline community information for the Colwich to Yarlet area is described in Volume 2, CA2, Section 6 of the main ES.

¹⁵³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

- 5.25.19 Marston and Yarlet are small adjoining hamlets made up of approximately 56 residential properties in total.

Future environmental baseline

Construction (2020)

- 5.25.20 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.25.21 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.25.22 The additional land temporarily required east of the Yarlet South cutting was not included in the original scheme and therefore the main ES did not report any significant community effects associated with it. This amendment has been assessed for potential visual effects to determine if these give rise to a new significant in-combination effect on community resources in this area. The assessment has concluded that this amendment will not give rise to any new likely residual significant effects.

Cumulative effects

- 5.25.23 There are no new or different likely significant cumulative effects for community as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Landscape and visual

Scope, assumptions and limitations

- 5.25.24 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.25.25 The amendment has the potential to give rise to new or different significant construction visual effects only. Therefore, there is no construction assessment for landscape and no operational assessment for landscape or visual.

Existing environmental baseline

- 5.25.26 The baseline landscape and visual information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 11 of the main ES.

Visual baseline

- 5.25.27 The amendment has the potential to affect two viewpoints, which are described in Volume 5: Appendix LV-001-002 of the main ES and summarised below.

View north-east from Marston House Barns, Yarlet Lane (viewpoint 013.02.006)

- 5.25.28 This viewpoint represents the view experienced by residents of properties along Yarlet Lane close to Marston House. Residents currently have views of Yarlet Lane bounded by mature hedgerows and telegraph poles. Yarlet Hill woodland (The Grove) is partially screened by the roadside hedgerow. Long distance views of the River Trent Valley are filtered by field boundary vegetation.

View north-east from A34 Stone Road/Yarlet Lane junction (viewpoint 013.04.018)

- 5.25.29 This viewpoint represents the views experienced by transport receptors at the junction of the A34 Stone Road and Yarlet Lane. Road users currently have views of the dual carriageway corridor bounded by mature hedgerows. Middle distance views are dominated by road signs, the Greyhound Inn and telegraph poles, which filter views of pastures beyond the road.

Future environmental baseline

Construction (2020)

- 5.25.30 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.25.31 No avoidance or mitigation measures additional to those reported in the main ES, and draft CoCP are required.

Assessment of impacts and effects

View north-east from Marston House Barns, Yarlet Lane (viewpoint 013.02.006) and view north-east from A34 Stone Road/Yarlet Lane junction (viewpoint 013.04.018)

- 5.25.32 The main ES reported a major adverse significant construction effect at viewpoint 013.02.006 and moderate adverse significant construction effect at viewpoint 013.04.018. This was due to the scale and proximity of construction activity associated with the A34 Stone Road temporary realignment, and associated vegetation removal, which will also open up views of construction of the A34 Stone Road overbridge and Yarlet South cutting.
- 5.25.33 The relocation of a temporary material stockpile and new transfer node, east of the Yarlet South cutting, will introduce new construction activities into the view, however the effects of these will be minimal when seen alongside the wider construction activity in this area, which will be extensive. The amendment will therefore not give rise to any new or different likely residual significant effects and will not change the level of significance of the effect reported in the main ES.
- 5.25.34 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

- 5.25.35 The view of the original scheme from viewpoint 013.02.006 during construction is illustrated on the photomontage shown in Figures LV-01-591 (SES2 and AP2 ES Volume 5: Appendix LV-001-002). For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002.

Cumulative effects

- 5.25.36 There are no new or different likely significant cumulative effects for landscape and visual as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

5.26 Additional land required within the grounds of Yarlet School during construction of utility works (AP2-002-026)

- 5.26.1 The Bill provides for the temporary offline diversion of the A34 Stone Road, for 750m in length and up to 100m west of its existing alignment, during the construction of the A34 Stone Road overbridge. This would take one year to complete. In addition, 0.4ha of land would be required temporarily within the main grounds of Yarlet School to allow safe access for school traffic along the temporary realignment of the A34 Stone Road until the A34 Stone Road overbridge is complete. See Map CT-05-219a, F4 to E4, in the main ES Volume 2: CA2 Map Book.
- 5.26.2 The AP1 revised scheme (amendment AP1-002-106: Change in Bill powers for the permanent diversion of Cadent gomm low pressure gas main diversion) provides for a change in the Bill powers from temporary to permanent rights to permanently divert an existing Cadent gomm low pressure gas main, within land required in the original scheme for access. The diversion of the utility would be 170m in length, along the access road to Yarlet School. See Map CT-06-219a, F4 to E4, in the SES and AP ES Volume 2: CA2 Map Book.
- 5.26.3 Since submission of the SES1 and AP1 ES, further engagement with the Yarlet Trust, which owns and operates Yarlet School, has identified that there is a need for an additional 5m strip of land adjacent to the access road within the grounds of Yarlet School. This will ensure access can be maintained to Yarlet School within the school grounds during the diversion of the Cadent gomm low pressure gas main, which will include the temporary storage of plant and material to be used during construction. It is assumed that the mature trees and woodland within the land required will be retained.
- 5.26.4 The amendment will be constructed over a period of one month, commencing in 2022. Works will be managed from Yarlet South Cutting satellite compound.
- 5.26.5 The land required for the diversion of the Cadent gomm low pressure gas main is outside the limits of the Bill. This amendment will result in a requirement for an additional 0.3ha of land. See Map CT-05-219a, F4 to E4, in the SES2 and AP2 Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.26.6 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.
- 5.26.7 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.27 Additional land and a change to Bill powers required along the A34 Stone Road for the provision of a new access to Yarlet School (AP2-002-027)

- 5.27.1 The majority of this amendment and all relevant potential receptors lie within the Colwich to Yarlet area, therefore a detailed description of the amendment and assessment of effects is reported below. Part of this amendment lies within the Stone and Swynnerton area (CA3) and the works associated with this amendment within the Colwich to Yarlet area are described in SES2 and AP2 ES Volume 2, Community area 3, Stone and Swynnerton.
- 5.27.2 The Bill provides for the temporary offline diversion of the A34 Stone Road, for 750m in length and up to 100m west of its existing alignment, during construction of the A34 Stone Road overbridge. At its southern end, the diversion would tie-in to the existing highway, 260m south of the A34 Stone Road and Yarlet Lane junction. At the northern end, the diversion would tie in to the existing highway, 240m north of the Yarlet School access road. Works would include carriageway widening in some locations, and vehicle speeds would be temporarily restricted to 65kph (40mph). Lane restrictions and limited overnight or weekend lane closures would be required during the works to connect the existing road into the new road alignment. The Yarlet School access would be used during construction for access during the temporary diversion of the A34 Stone Road. See Map CT-05-219a, F6 to E4, in the main ES Volume 2: CA2 Map Book.
- 5.27.3 Following construction, the A34 Stone Road would be permanently reinstated on its existing alignment to cross the HS2 route via the A34 Stone Road overbridge. See Map CT-06-219a, F6 to E4, in the main ES Volume 2: CA2 Map Book.
- 5.27.4 The AP1 revised scheme (amendment AP1-002-106: Change in Bill powers for the permanent diversion of Cadent gomm low pressure gas main diversion) provides for a change in the Bill powers to permanently divert an existing Cadent gomm low pressure gas main, for 170m in length, along the access road to Yarlet School. See Map CT-06-219a, F4 to E4, in the SES and AP ES Volume 2: CA2 Map Book. The AP2 amendment (AP2-002-026: Additional land temporarily required within the grounds of Yarlet School during construction of utility works) would change the requirements of this AP1 amendment through the provision of additional land temporarily required during construction of the low pressure gas main diversion. See Map CT-06-219a, F5 to E3, in the SES1 and AP1 ES Volume 2: CA2 Map Book.
- 5.27.5 Since the submission of the SES1 and AP1 ES, further engagement has taken place with the Yarlet Trust, which owns and operates Yarlet School. This has resulted in the

identification of an alternative access to the school on the eastern side of the A34 Stone Road, which will enable access from both carriageways to the school during construction of the works, and which will be retained permanently. The amendment will permanently require 3.8ha of additional land, and will include the following changes:

- the construction of a new junction and access road to serve Yarlet School along the southbound side of the A34 Stone Road, to the north of the HS2 route. The new junction onto the A34 Stone Road will be constructed 240m north of the existing entrance and will include an access road 160m in length and up 6m in width, which will connect into one of the existing school car parks. See Map CT-06-219a, E3 to D2, in the SES2 and AP2 ES Volume 2: CA2 Map Book;
- landscape mitigation, in the form of woodland planting, will be provided to the south of the new access road, between the access road and the A34 Stone Road, and will provide visual screening to integrate the change into the surrounding landscape. See Map CT-06-219a, E3, in the SES2 and AP2 ES Volume 2: CA2 Map Book;
- the provision of 200m of woodland habitat creation along the base of the earthworks associated with the new access road, as replacement habitat resulting from the new junction and access road. See Map CT-06-219, E3 to D2, and Map CT-06-219-R1, D10 to C9, in the SES2 and AP2 ES, Volume 2: CA2 Map Book;
- the tie-in works with the A34 Stone Road, on the northern side of the HS2 route, will be extended 650m north of its location in the original scheme, 890m north of the existing Yarlet School access road. The tie-in works with the A34 Stone Road, on the south side of the HS2 route, will be extended 30m south of its location in the original scheme, 290m south of the A34 Stone Road and Yarlet Lane junction. See Map CT-06-219, F5 to C1, and Map CT-06-219-R1, D10 to C8, in the SES2 and AP2 ES Volume 2: CA2 Map Book;
- the widening of the central reservation along the A34 Stone Road will be from between 3.5m and 10m. This will maintain access to Yarlet Bank Farm and Glencoe and will provide a new access to Yarlet School. As a result, 760m of highway on the southbound carriageway will be lowered by up to 0.5m. As a consequence of the widening and lowering of the carriageway, highway drainage will be replaced; and
- the provision of 280m of hedgerow habitat creation, to the north of the new junction on the southbound carriageway of the A34 Stone Road, as replacement habitat resulting from the carriageway widening and lowering. See Map CT-06-219, D2 to C1, and Map CT-06-219-R1, D10 to C9, in the SES2 and AP2 ES, Volume 2: CA2 Map Book.

5.27.6 The existing utilities located within the A34 Stone Road will be diverted to accommodate the new access to Yarlet School. See Map CT-06-219, F5 to C1, and Map CT-06-219-R1, D10 to C8, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

5.27.7 The amendment will be constructed over a period of one year and six months, commencing in 2020. Works will be managed from the Yarnfield North Embankment satellite compound, located within the Stone and Swynnerton area (CA3).

- 5.27.8 The works to provide a new access for Yarlet School are outside the limits of the Bill. This amendment will result in a requirement for an additional 3.8ha of land, some of which will be from the following agricultural holdings: Yarlet Hall Farm (CA2/38); Spring Farm (CA2/48); and New House Farm (CA3/1). See Map CT-06-219, F5 to C1, and Map CT-06-219-R1, D10 to C8, in the SES2 and AP2 ES, Volume 2: CA2 Map Book. It is assumed that 1.8ha of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.27.9 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: agriculture, forestry and soils; community; cultural heritage; ecology and biodiversity; landscape and visual; and traffic and transport. This is reported within this section.
- 5.27.10 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.

Agriculture, Forestry and Soils

Scope, assumptions and limitations

- 5.27.11 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the Scope and Methodology Report¹⁵⁴ (SMR) and SMR Addendum¹⁵⁵ of the main ES.
- 5.27.12 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for agriculture, forestry and soils.

Existing environmental baseline

- 5.27.13 The baseline agriculture, forestry and soils information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 4 of the main ES.
- 5.27.14 The area of land required for the amendment has soil in the Clifton association, as described in Volume 2, CA2, Section 4 of the main ES. Clifton association comprises of slowly permeable, seasonally waterlogged reddish fine and coarse loamy soils. This land is classified as good quality land in Subgrade 3a¹⁵⁶.
- 5.27.15 Two farm holdings, already affected by the original scheme, will be further affected by this amendment. Yarlet Hall Farm (CA2/38) is a 47ha dairy and beef cattle holding of

¹⁵⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁵⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁵⁶ The quality of agricultural land in England and Wales is assessed according to the Agricultural Land Classification (ALC) system, which classifies agricultural land into five grades from excellent quality Grade 1 land to very poor quality Grade 5 land. Grade 3 is subdivided into Subgrades 3a and 3b. Grades 1, 2 and 3a are defined as the best and most versatile (BMV) land. The ALC methodology is contained in: Ministry of Agriculture, Fisheries and Food (1988), *Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land*.

high sensitivity to change. New House Farm (CA3/1) is a 50ha dairy farm of high sensitivity to change. The land associated with New House Farm that will be affected by the amendment lies in the Colwich to Yarlet area, although the main base for New House Farm lies in the Stone and Swynnerton area (CA3).

- 5.27.16 One farm holding will be newly affected by this amendment. Baseline information on this holding has been established through desk based study. Spring Farm (CA2/48) is a 23ha dairy farm of high sensitivity to change.

Future environmental baseline

Construction (2020)

- 5.27.17 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.27.18 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹⁵⁷ (CoCP) are required.

Assessment of impacts and effects

- 5.27.19 The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES on best and most versatile (BMV) agricultural land or forestry land within the Colwich to Yarlet area as it is not of a scale to change the magnitude of impact. The route-wide effects on BMV land and forestry land are reported in Volume 3 of the SES2 and AP2 ES.
- 5.27.20 The main ES reported a temporary major adverse effect on Yarlet Hall Farm (CA2/38), which is significant. Approximately 14.8ha (31% of the total area of the land holding) would be required temporarily, resulting in a high impact. The amendment will require an additional 0.6ha of land temporarily from the land holding, resulting in a total area of land required temporarily of 15.4ha (33% of the total area of the land holding). The amendment will not give rise to a new or different significant temporary effect and will not change the level of significance of the effects reported in the main ES.
- 5.27.21 The main ES reported a permanent major adverse effect on Yarlet Hall Farm, which is significant. Approximately 10.4ha (22% of the total area of the land holding) would be required permanently, resulting in a high impact. The amendment will require an additional 0.6ha of land permanently from the land holding, resulting in a total area of land required permanently of 11ha (23% of the total area of the land holding). The amendment will not give rise to a new or different significant permanent effect and will not change the level of significance of the effects reported in the main ES.
- 5.27.22 The main ES reported a temporary major adverse effect on New House Farm (CA3/1), which is significant. Approximately 12.7ha (25% of the total area of the land holding) would be required temporarily, resulting in a high impact. The amendment will require

¹⁵⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

an additional 0.1ha of land temporarily from the land holding, resulting in a total area of land required temporarily of 12.8ha (26% of the total area of the land holding). The amendment will not give rise to a new or different significant temporary effect and will not change the level of significance of the effects reported in the main ES. There is no change to the permanent land required from New House Farm.

- 5.27.23 Spring Farm (CA2/48) was not reported in the main ES as it was outside the land required for the original scheme. The amendment will require 0.4ha of land temporarily and permanently from the land holding (2% of the total area of the land holding), which is a negligible impact. The amendment will give rise to a new minor adverse temporary and permanent effect, which is not significant, on this land holding.
- 5.27.24 For further information see SES2 and AP2 ES Volume 5: Appendix AG-001-000 and SES2 and AP2 ES Volume 5: agriculture, forestry and soils Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.27.25 The land required temporarily for construction will be restored to its former agricultural condition once the works are completed, following good practice techniques in handling, storing and reinstating soils on that land, as set out in the draft CoCP. No other mitigation has been identified.

Summary of likely residual significant effects

- 5.27.26 There are no changes to the likely residual significant effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.27.27 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Community

Scope, assumptions and limitations

- 5.27.28 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.27.29 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for community.

Existing environmental baseline

- 5.27.30 The baseline community information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 6 of the main ES.
- 5.27.31 Yarlet School is located to the east of the A34 Stone Road and provides independent education for children aged between two and 13 years old. The school grounds include a chapel, and overnight accommodation for part time boarding.

- 5.27.32 Marston and Yarlet are small adjoining hamlets made up of approximately 56 residential properties in total.

Future environmental baseline

Construction (2020)

- 5.27.33 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.27.34 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.27.35 The main ES reported a temporary loss of land from Yarlet School due to the construction of Yarlet South cutting and the A34 Stone Road overbridge, as well as utility works. The temporary loss of these small areas of land for up to two years would not impact on the functioning of the school and access would be maintained throughout the construction works. The main ES reported that this loss of land would result in a temporary minor adverse effect, which is not significant.
- 5.27.36 The amendment will permanently require an additional area of land from Yarlet School to provide a new access off the A34 Stone Road. This access will be mostly within a wooded area situated adjacent to the southbound carriageway of the A34 Stone Road and the existing school car park. The required land will not encroach on the sports pitches or outdoor playing fields of the school. Access to the school will be maintained throughout construction and it is considered that the school will be able to continue functioning as intended. The amendment will give rise to a different effect by increasing the area of land lost and changing the duration from temporary to permanent. However, this will not change the level of significance of the effect reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.
- 5.27.37 The main ES did not report any significant in-combination effect on properties on the A34 Stafford Road/Stone Road. The amendment will give rise to a new temporary significant in-combination effect on residential properties on the A34 Stafford Road/Stone Road. The amendment will result in a new significant temporary visual effect on six properties due to views of construction activity associated with the amendment to provide a new access to Yarlet School. One additional property will experience a significant visual effect due to the original scheme. All seven of these properties will also be subject to a significant heavy goods vehicle (HGV) effect due to changes in traffic flows. This will result in a new major adverse significant in-combination effect on the seven residential properties for up to one year and 11 months. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.27.38 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.27.39 The amendment will give rise to a new likely residual temporary significant in-combination effect on residential properties on the A34 Stafford Road/Stone Road, due to significant visual and HGV effects. This will result in a new major adverse significant in-combination effect.

Cumulative effects

- 5.27.40 There are no new or different likely significant cumulative effects for community as a result of the amendment acting in-combination with any other AP2 amendments or AP1 amendments.

Cultural heritage

Scope, assumptions and limitations

- 5.27.41 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.27.42 As the cultural heritage impacts of the amendment are not reversible, they therefore have the potential to result in new or different significant permanent construction effects only. There is no temporary construction or operational assessment for cultural heritage.

Existing environmental baseline

- 5.27.43 The baseline cultural heritage information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 7 of the main ES.
- 5.27.44 A group of earthworks, likely to represent a medieval settlement centred on Yarlet Hall (Yarlet School) (COY137), a non-designated asset of moderate value, lies partially within the land required for the amendment.
- 5.27.45 The following non-designated assets of low value lie partially within or adjacent to the land required for the amendment:
- Yarlet Hall, a 19th century manor house used as a preparatory school (Yarlet School) (COY140);
 - surviving ridge and furrow earthworks at Yarlet, to the west of the A34 Stone Road (COY141); and
 - the historic estate boundary at Yarlet (COY142).
- 5.27.46 Further information about these assets is provided in the main ES Volume 5: Appendix CH-002-002 and Map Series CH-01 in the main ES Volume 5: Cultural heritage Map Book.

Future environmental baseline

Construction (2020)

- 5.27.47 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.27.48 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

- 5.27.49 The main ES reported that there would be no effect on the group of earthworks, likely to represent a medieval settlement centred on Yarlet Hall (Yarlet School) (COY137), a non-designated asset of moderate value. Part of the asset will be removed by construction of the amendment. This will give rise to a new permanent medium adverse impact and a new permanent moderate adverse effect, which is significant.
- 5.27.50 For further information see the SES2 and Map Series CH-01 in the AP2 ES Volume 5: Cultural heritage Map Book and the SES2 and AP2 ES Volume 5: Appendix CH-003-000.

Mitigation and residual effects

Other mitigation measures

- 5.27.51 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.27.52 The amendment will give rise to a new likely residual significant permanent moderate adverse effect on the group of earthworks, likely to represent a medieval settlement centred on Yarlet Hall (Yarlet School) (COY137) by removing part of the asset during construction.

Cumulative effects

- 5.27.53 There are no new or different likely significant cumulative effects for cultural heritage as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.27.54 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).

- 5.27.55 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.27.56 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.27.57 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.27.58 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources. In addition, the baseline has been informed by additional Phase 1 habitat survey.
- 5.27.59 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in Background Information and Data (BID) document EC-019-000, including Map Series EC-02 which accompanies the SES2 and AP2 ES.
- 5.27.60 For those receptors described in the main ES, further details are provided in Volume 2, CA2, Section 8, and Volume 5: Appendix EC-001-000, including Map Series EC-01. Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12¹⁵⁸.
- 5.27.61 For those receptors described in SES1, further details are provided in Volume 2, CA2, Section 3. The baseline ecology report that accompanied SES1 and AP1 ES is provided in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12¹⁵⁹.

Designated sites

- 5.27.62 The area subject to the amendment is located within the Natural England Impact Risk Zone¹⁶⁰ for Doxey and Tillington Marshes Special Site of Scientific Interest (SSSI), which is of national value. Doxey and Tillington Marshes SSSI, covering an area of 123.9ha, is designated for its wetland habitats, which support notable breeding populations of snipe, redshank and lapwing. Doxey and Tillington Marshes SSSI was not reported in the main ES as it was not relevant to the assessment of the original scheme. Doxey and Tillington Marshes SSSI is located in north-west Stafford, approximately 4.3km south of the area subject to the amendment.

¹⁵⁸ HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

¹⁵⁹ HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands – Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

¹⁶⁰ The Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals and indicate the types of development proposal which could potentially have adverse impacts.

Habitats

- 5.27.63 Habitats within the area subject to the amendment include plantation broadleaved woodland, species-poor hedgerows, improved grassland and arable. The habitats of relevance to the assessment of the amendment are described in further detail below.
- 5.27.64 Plantation broadleaved woodland, covering an area of 1.3ha and located within the area subject to the amendment, is present on the eastern side of the A34 Stone Road at Yarlet. The woodland is of local/parish value.
- 5.27.65 Hedgerows within the area subject to the amendment are predominantly species-rich. Hedgerow with at least 80% cover of native woody species is a habitat of principal importance in Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)¹⁶¹ and a conservation priority of the Staffordshire Biodiversity Action Plan¹⁶² (BAP). These contribute towards a wider hedgerow network within the Colwich to Yarlet area that is of district/borough value.

Species

- 5.27.66 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include bats, polecat and European hedgehog.
- 5.27.67 The trees within the area subject to the amendment offer suitable habitats for bats, but do not form part of an existing bat assemblage reported within the main ES or SES1. These habitats have not been subject to survey and therefore, on a precautionary basis, are assumed to provide roosting, foraging and commuting habitat for an assemblage of bats. The assumed bat assemblage associated with woodland on the eastern side of the A34 Stone Road is of up to county value.
- 5.27.68 The main ES reported populations of other mammals including polecat and European hedgehog, identified through desk study records, as being potentially present throughout the Colwich to Yarlet area. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.

Future environmental baseline

Construction (2020)

- 5.27.69 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.27.70 The assessment assumes implementation of the measures set out within the draft CoCP.

¹⁶¹ Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

¹⁶² Staffordshire Biodiversity Partnership. *Staffordshire Biodiversity Action Plan*. Available online at: <http://www.sbap.org.uk/>

- 5.27.71 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.27.72 All of the effects within this section are reported in the absence of other mitigation.

Designated sites

- 5.27.73 Doxey and Tillington Marshes SSSI will not be directly impacted by construction of the amendment. The closest point of construction of the amendment will be utility works within the southbound A34 Stone Road verge, approximately 4.3km north of the SSSI. The amendment will therefore not give rise to new or different significant effects upon the designated features of this SSSI.

Habitats

- 5.27.74 On a precautionary basis, the main ES reported the loss of 33.9km of hedgerow habitats within the Colwich to Yarlet area, which would result in a permanent adverse effect that is significant at district/borough level. The amendment will result in the additional loss of approximately 400m of species-rich hedgerows alongside the A34 Stone Road. In the context of the hedgerow network within the Colwich to Yarlet area, this will result in a different significant effect. However, this will not change the level of significance of the effect as reported in the main ES.

- 5.27.75 It is not likely that any other effects on habitats of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Species

- 5.27.76 No effects on the assumed bat assemblage associated with woodland on the eastern side of the A34 Stone Road in the Colwich to Yarlet area were reported at the main ES. The amendment will result in the loss of mature trees which, on a precautionary basis, are assumed to support bat roosts, as well as suitable foraging and commuting habitats on the eastern side of the A34 Stone Road. The direct loss of roosting opportunities and the loss and fragmentation of foraging and commuting habitats will give rise to a new permanent adverse effect on the assumed bat assemblage associated with woodland on the eastern side of the A34 Stone Road that is significant at up to county level.

- 5.27.77 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.27.78 The amendment will result in a change in the extent and distribution of hedgerow habitat creation. The amendment will result in removal of 400m of existing hedgerow and reinstatement of 280m of native species-rich hedgerow alongside the A34 Stone

Road. The combined result of this change will be a 120m net reduction in the length of hedgerow within the area subject to the amendment, after the implementation of mitigation. In the context of the hedgerow network within the Colwich to Yarlet area, the new hedgerow planting will reduce the different significant effect resulting from this amendment upon hedgerow to a level that is not significant.

- 5.27.79 The amendment includes the provision of an additional 0.5ha of woodland habitat creation on the eastern side of the A34 Stone Road. Once established, the woodland habitat creation measure will provide suitable bat foraging and commuting habitat. Artificial roosting provision will be provided across the woodland habitat creation area to replace bat roosts that will be lost to construction, in accordance with the Ecological Principles of Mitigation within the SMR Addendum. These measures will reduce the different adverse effect resulting from this amendment on the assumed bat assemblage associated with woodland on the eastern side of the A34 Stone Road to a level that is not significant.

Summary of likely residual significant effects

- 5.27.80 With the implementation of the mitigation proposed, the ecological effects arising from the amendment are reduced to a level where they are not considered to be significant. The significant effects of the amendment in this area are therefore unchanged from those reported in the main ES.

Cumulative effects

- 5.27.81 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments. The combined effect on hedgerows as a result of the AP2 revised scheme is reported at a route-wide level in SES2 and AP2 ES, Volume 3, Route-wide effects.

Landscape and visual

Scope, assumptions and limitations

- 5.27.82 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.27.83 This amendment has the potential to give rise to new or different significant construction effects for visual only. Therefore, there is no construction assessment for landscape and no operational assessment for landscape and visual.

Existing environmental baseline

- 5.27.84 The baseline landscape and visual information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 11 of the main ES.

Visual baseline

- 5.27.85 The amendment to provide a new access for Yarlet School requires land outside of the study area for the main ES, therefore the following new viewpoint has been identified to represent the view from residential properties along the A34 Stone Road.

View south from A34 Stone Road (viewpoint 013.02.019)

- 5.27.86 This new viewpoint has been identified to represent views experienced by occupants of properties situated along the A34 Stone Road between New House Farm and Yarlet School. The view currently comprises views of a relatively straight section of busy dual carriageway road corridor. To either side of the carriageway, narrow grass verges are bounded by low hedgerows and mature trees. To the east of the road are the well-wooded grounds of Yarlet School, with views of gently rolling farmland merging into a low wooded ridgeline beyond. To the west of the road, rolling pastures bounded by robust hedgerows in the close to middle distance, foreshorten longer views.

Future environmental baseline

Construction (2020)

- 5.27.87 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.27.88 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

View south from A34 Stone Road (viewpoint 013.02.019)

- 5.27.89 The construction works will be visible from viewpoint 013.02.019, which is located on the A34 Stone Road and represents the view from nearby properties. This viewpoint was not assessed in the main ES and was unaffected by the original scheme.
- 5.27.90 The construction activity associated with the amendment will be visible in close to middle distance views. The presence of construction equipment, movement of construction vehicles and tree removal will be very noticeable. Notwithstanding the presence of the busy A34 Stone Road dual carriageway, the surrounding farmland is scenic and rural in character. The amendment will therefore give rise to a medium magnitude of visual change and a new moderate adverse significant visual effect.
- 5.27.91 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-002 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.27.92 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.27.93 The temporary residual significant effect during construction remains as described above. This effect will be temporary and reversible in nature lasting only for the duration of the construction works. This residual effect will generally arise from the

widespread presence of construction activity and construction plant within the landscape and viewed by surrounding residents, and users of public rights of way (PRoW) and main roads within the study area.

- 5.27.94 The amendment will give rise to a new likely residual significant construction effect at viewpoint 013.02.019, the view south from A34 Stone Road, which will be moderate adverse significant.

Cumulative effects

- 5.27.95 There are no new or different likely significant cumulative effects for landscape and visual as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

- 5.27.96 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.27.97 This amendment has the potential to result in new or different significant construction and operational effects for traffic and transport. Therefore, both construction and operational phases are considered in this assessment.
- 5.27.98 The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.27.99 The baseline traffic and transport information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 14 of the main ES.
- 5.27.100 The main road of relevance to the assessment of the amendment is the A34 Stone Road, which connects Stafford to Stone. Enson Lane, Yarlet Lane and Whitgreave Lane are local roads in the area which connect local settlements to the A34 Stone Road. The main road network can get busy at peak times and delays can be experienced.

Future environmental baseline

Construction (2023) and operation (2027 and 2041)

- 5.27.101 The future baseline for construction in 2023 and operation in 2027 and 2041 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.27.102 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.27.103 The construction of the access would be undertaken as part of the overall works to the A34 Stone Road and would not result in any new or different likely residual significant effects and will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and BID document BID-TR-001-000 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.27.104 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Effects arising from operation

Avoidance and mitigation measures

- 5.27.105 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 5.27.106 The main ES reported that on completion of construction works, the A34 Stone Road would be reinstated on its existing alignment, crossing over the HS2 route via the A34 Stone Road overbridge. Existing access arrangements for vehicle users of Yarlet School would be reinstated. Vehicle users arriving from the A34 Stone Road, south of the school, would be required to U-turn at the junction with Enson Lane. Vehicle users of Yarlet School leaving to the A34 Stone Road, north of the school, would be required to U-turn at the junction with Whitgreave Lane.
- 5.27.107 The amendment will provide a permanent all movement access to Yarlet School which will remove the need for vehicle users to U-turn at either the Enson Lane or Whitgreave Lane junctions with the A34 Stone Road by facilitating right-turning manoeuvres. The amendment will reduce travel distance for vehicle users by up to 3km and will give rise to a new permanent minor beneficial significant effect on traffic flows and delays to vehicle occupants due to the reduced travel distance for users of Yarlet School.
- 5.27.108 For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and the SES2 and AP2 ES Volume 5: Traffic and transport Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.27.109 No mitigation measures additional to those reported in the main ES are required.

Summary of likely residual significant effects

- 5.27.110 The amendment will result in a new likely residual permanent minor beneficial significant effect on traffic flows and delays during operation due to the reduced travel distance for vehicle users of Yarlet School.

Cumulative effects

- 5.27.111 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Monitoring

- 5.27.112 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.27.113 There are no changes to the monitoring requirements identified in the main ES for traffic and transport as a result of the amendment.

Summary of new or different likely residual significant effects as a result of the amendment

- 5.27.114 The amendment will give rise to a new likely residual significant temporary major adverse in-combination community effect on residential properties on the A34 Stafford Road/Stone Road.
- 5.27.115 The amendment will give rise to a new likely residual significant permanent moderate adverse effect on the group of earthworks, likely to represent a medieval settlement centred on Yarlet Hall (Yarlet School) (COY137) by removing part of the asset during construction.
- 5.27.116 The amendment will give rise to a new likely residual significant moderate adverse construction effect at viewpoint 013.02.019.
- 5.27.117 The amendment will give rise to a new likely residual significant permanent minor beneficial effect on traffic flows and delays during operation due to the reduced travel distance for vehicle users of Yarlet School.

5.28 Additional land required for a revised high pressure National Grid Gas Transmission Line diversion under Yarlet Central cutting and a new temporary utility compound (AP2-003-001)

- 5.28.1 The majority of this amendment and all relevant potential receptors lie within the Stone and Swynnerton area (CA3), therefore a detailed description of the amendment and assessment of effects is reported in SES2 and AP2 ES Volume 2, Community area 3, Stone and Swynnerton. Part of this amendment lies within the Colwich to Yarlet area and the works associated with this amendment within the Colwich to Yarlet area are described below.
- 5.28.2 The Bill provides for the permanent diversion of a 900mm diameter National Grid high pressure gas pipeline within the Stone and Swynnerton area for 330m in length to cross under the HS2 route, 30m south-east of its existing alignment under Yarlet central cutting. See Map CT-06-220a, H4 to H7, in the main ES Volume 2: CA2 Map Book. An ecological mitigation pond, to provide replacement habitat for reptiles and amphibians, would be provided within an area of grassland habitat creation, in proximity to the diversion to the north-east of the HS2 route. See Map CT-06-220a, H5, in the main ES Volume 2: CA2 Map Book.

- 5.28.3 Since submission of the Bill, further engagement with the utility provider has identified a requirement to reposition the locations where the diverted and existing pipelines connect, realign a 350m long section of the pipeline, and provide a new utility compound for the management of the diversion works.
- 5.28.4 To accommodate the pipeline diversion works, the ecological mitigation pond proposed in the original scheme within the Stone and Swynnerton area will be relocated 350m south-east, to an existing area of grassland habitat creation on the same side of the HS2 route, within the Colwich to Yarlet area. See Map CT-06-219a, C5 to B4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

Topics included in the AP2 assessment

- 5.28.5 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.
- 5.28.6 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6 Assessment of minor utility amendments in the Colwich to Yarlet area

6.1 Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line near Moreton Brook (AP2-002-101)

- 6.1.1 The Bill provides for the permanent diversion of a Western Power Distribution overhead line, 1.4km in length, on a route across agricultural land, near Colwich Footpath 36 diversion (east), and Bishton Lane and connecting into an existing overhead line near Moreton Brook. See Map CT-06-210, J7 to C7, in the main ES Volume 2: CA2 Map Book.
- 6.1.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion of the overhead line. The diversion of the utility will be 1.4 km in length, along Colwich Footpath 36 diversion (east), Colwich Bridleway 19, and running along an HS2 access track to a balancing pond near Moreton Brook along the southern side of the HS2 route. See Map CT-06-210, J7 to C7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.1.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.1.4 The diversion of the Western Power Distribution overhead 11kV line is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.4ha of land, some of which will be from the following agricultural holdings: Moreton House Farm (CA2/6); and Upper Moreton Farm (CA2/1). See Map CT-06-210, J7 to C7, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.1.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.2 Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line, west of Tithebarn Farm (AP2-002-102)

- 6.2.1 The Bill provides for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 200m in length, parallel to the existing overhead line,

20m east of Tithebarn Farm¹⁶³. See Map CT-06-211, H7 to E1, in the main ES Volume 2: CA2 Map Book.

- 6.2.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be 800m in length, crossing the HS2 route 280m west of Tithebarn Farm. See Map CT-06-211, H7 to E1, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.2.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.2.4 The diversion of the Western Power Distribution overhead 11kV line is outside the limits of the Bill. The amendment will require a change to Bill powers and will result in a requirement for an additional 0.1ha of land, some of which will be from Tithebarn Farm (CA2/7). See Map CT-06-211, I7 to G6, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.2.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.3 Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line, west of Great Haywood Marina (AP2-002-103)

- 6.3.1 The Bill provides for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 220m in length, parallel to the existing overhead line, 150m west of Great Haywood Marina. See Map CT-06-212, E4 to C7, in the main ES Volume 2: CA2 Map Book.
- 6.3.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be 240m in length, crossing the HS2 route at Great Haywood viaduct and located 150m west of Great Haywood Marina. See Map CT-06-212, E4 to C7, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that the diversion works will be undertaken from the western bank of the River Trent and that only overhead rights across the River Trent will be required.
- 6.3.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete.

¹⁶³ This is also shown on OS mapping as Tithe Barn Farm.

Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.

- 6.3.4 The diversion of the Western Power Distribution overhead 11kV line is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.1ha of land, some of which will be from Land at Hoo Mill Lane (CA2/19). See Map CT-05-212, E4 to C7, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.3.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.4 Additional land for the removal of a Western Power Distribution 11kV overhead line and associated infrastructure, west of Upper Hanyards Farm (AP2-002-104)

- 6.4.1 The Bill provides for the permanent removal of an existing Western Power Distribution 11kV overhead line, 350m in length, 100m west of Upper Hanyards Farm and the permanent underground diversion of a Western Power Distribution 11kV overhead line, 200m in length, parallel to the existing overhead line, 50m north of Upper Hanyards Farm. See Map CT-06-214, E6 to D6, in the main ES Volume 2: CA2 Map Book.
- 6.4.2 Since submission of the Bill, further engagement with the utility provider has identified a need to remove a longer length of a Western Power Distribution 11kV overhead line and poles. An additional 250m of the utility will be removed (in addition to a 350m section to be removed in the original scheme), running parallel 100m west of Hanyards Lane. See Map CT-06-214, E6 to D6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.4.3 The activities will require the removal of any surface material from the area of the utility to be removed (this may include vegetation, soil, and road surfacing) and the removal of existing utility infrastructure. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to remove the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.4.4 The removal of the Western Power Distribution overhead 11kV line and associated infrastructure is outside the limits of the Bill. This amendment will result in a requirement for an additional 0.3ha of land, some of which will be from Upper Hanyards Farm (CA2/25). See Map CT-06-216, E6 to D6, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.4.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.5 Additional land and a change to Bill powers for a new temporary Severn Trent Water water mains supply to the Brancote South cutting satellite compound (AP2-002-105)

- 6.5.1 The Bill provides for a new temporary 63mm diameter water mains supply, 720m in length, from Lower Hanyards Farm to the Brancote South cutting satellite compound. See Map CT-05-214, E7 to C10, and Map CT-06-214-L1, D1 to A9, in the main ES Volume 2: CA2 Map Book.
- 6.5.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the temporary water mains supply. The new temporary water mains supply will be 1.9km in total length (an additional 1.2km in length compared to the original scheme), along Hanyards Lane to the Brancote South cutting satellite compound. See Map CT-05-214, E7 to C10, Map CT-05-214-L1, D1 to A9, Map CT-05-215-L1, J3 to H10, and Map CT-05-215-L2, I1 to H2, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.5.3 The activities will require the removal of any surface material from the area of the new utility (this may include vegetation, soil, and road surfacing), and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to provide the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.5.4 The provision of a temporary Severn Trent Water water mains supply is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.6ha of land, some of which will be from Upper Hanyards Farm (CA2/25). See Maps CT-05-214-L1, D2 to CT-05-215-L1, H10 in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.5.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.6 Additional land for the underground diversion of a Western Power Distribution low voltage overhead line, west of Trent Walk underbridge (AP2-002-106)

- 6.6.1 The Bill provides for the permanent underground diversion of a Western Power Distribution low voltage overhead line, 280m in length, along Trent Walk. See Map CT-06-215, G5 to E10, in the main ES Volume 2: CA2 Map Book.
- 6.6.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be reduced by 35m compared to the original scheme, to a total length of 245m, crossing the HS2 route 50m west of Trent Walk underbridge. See Map CT-06-215, G5 to E10, in the SES and AP ES Volume 2: CA2 Map Book.
- 6.6.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of

existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.

- 6.6.4 The diversion of the Western Power Distribution low voltage overhead line is outside the limits of the Bill. This amendment will result in a requirement for an additional 0.3ha of land, some of which will be from Park Farm (CA2/26). See Map CT-06-215, G5 to E10, in the SES and AP ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.6.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.7 Additional land for the diversion of two Severn Trent Water sewers, south of Hopton (AP2-002-107)

- 6.7.1 Since submission of the Bill, further engagement with the utility provider has identified a need for additional land to permanently divert two Severn Trent Water 150mm diameter sewers, not included in the original scheme. The diversion of the utilities will be a total of 435m in length, running across agricultural land 100m south of Hopton. See Map CT-06-216, G7 to G5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.7.2 The activities will require the removal of any surface material from the area of the diversion routes (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utilities. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utilities are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.7.3 The diversion of the two Severn Trent Water sewers is outside the limits of the Bill. This amendment will result in a requirement for an additional 0.1ha of land, some of which will be from Brickhouse Farm (CA2/27). See Map CT-06-216, G7 to G5, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.7.4 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.8 Additional land for the underground diversion of a Western Power Distribution 11kV overhead line, east of Mount Edge (AP2-002-108)

- 6.8.1 The Bill provides for the permanent diversion of a Western Power Distribution 11kV overhead line, running 400m from the east of properties at Mount Edge to a farm

access track, 200m south of Lower House Farm. See Map CT-06-216, G8 to D4, in the main ES Volume 2: CA2 Map Book.

- 6.8.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be 185m in length, following an access track to a balancing pond near Hopton culvert, east of Mount Edge. See Map CT-06-216, G8 to D4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.8.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.8.4 The diversion of the Western Power Distribution overhead 11kV line is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.2ha of land, some of which will be from Brickhouse Farm (CA2/27). See Map CT-06-216, G8 to D4, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.8.5 This amendment is not considered to require reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.9 Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution 11kV overhead line, south-west of Hopton (AP2-002-109)

- 6.9.1 The Bill provides for the permanent diversion of a Western Power Distribution 11kV overhead line, running for 500m in length, 200m east of Ministry of Defence (MoD) Stafford to the west of properties along Wilmore Hill Lane and crossing the HS2 route, 400m south of Hopton Lane. See Map CT-06-216, G8 to D4 in the main ES Volume 2: CA2 Map Book.
- 6.9.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be 360m in length, along the southern side of properties along Wilmore Hill Lane, re-connecting property supplies. See Map CT-06-216, G8 to D4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.9.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and diversion of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.

- 6.9.4 The diversion of the Western Power Distribution overhead 11kV line is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.2ha of land, some of which will be from Brickhouse Farm (CA2/27). See Map CT-06-216, G8 to D4, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.9.5 This amendment is not considered to require reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.10 Additional land and a change to Bill powers for the underground diversion of a Western Power Distribution low voltage overhead line crossing Hopton Lane (AP2-002-110)

- 6.10.1 The Bill provides for the permanent overhead line diversion of a Western Power Distribution low voltage overhead line, 125m in length, crossing Hopton Lane. See Map CT-06-216, G8 to D4, in the main ES Volume 2: CA2 Map Book.
- 6.10.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be reduced by 10m from the original scheme, to a total length of 115m, crossing Hopton Lane and following the accesses to Hopton Bank and The Mount. See Map CT-06-216, G8 to D4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.10.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.10.4 The diversion of the Western Power Distribution low voltage overhead line is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 700m² of land. See Map CT-06-216, G8 to D4, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.10.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.11 Additional land for the underground diversion of a Western Power Distribution 11kV overhead line to the north and west of Sandon Road auto-transformer station (AP2-002-111)

- 6.11.1 The Bill provides for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 300m in length, crossing the HS2 route at Sandon Road auto-transformer station. See Map CT-06-216, D8 to B5, in the main ES Volume 2: CA2 Map Book.

- 6.11.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be 1km in length, from an existing overhead line 100m north of Hopton Lane diversion, following the B5066 Sandon Road diversion to the south of the HS2 route. See Map CT-06-216, D8 to B5, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.11.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.11.4 The diversion of the Western Power Distribution overhead 11kV line is outside the limits of the Bill. This amendment will result in a requirement for an additional 0.3ha of land, some of which will be from the following agricultural holdings: Lower Bridge Farm (CA2/29); and Wadden Farm (CA2/30). See Map CT-06-216, D8 to B5, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.11.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.12 Additional land and a change to Bill powers for the underground diversion of Western Power Distribution 11kV overhead line, west of the B5066 Sandon Road (AP2-002-112)

- 6.12.1 The Bill provides for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 400m in length, crossing the HS2 route 140m north-west of the B5066 Sandon Road diversion. See Map CT-06-217, J10 to H4 in the main ES Volume 2: CA2 Map Book.
- 6.12.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be 1.2km in length, along Hopton and Coton Bridleway 12 and the B5066 Sandon Road diversion, and reconnecting to an overhead line 150m south of the HS2 route. See Map CT-06-217, J10 to H4 in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.12.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.12.4 The diversion of the Western Power Distribution overhead 11kV line is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.4ha of land, some of which will be from Wadden

Farm (CA2/30). See Map CT-06-217, J10 to H4, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

- 6.12.5 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for sound, noise and vibration.

Sound, noise and vibration

- 6.12.6 SES2 identified a likely significant effect on a community basis due to construction noise at approximately 30 dwellings in Hopton, to the west and east of the HS2 route, for a period of up to one year and nine months. The amendment has the potential to result in a new or different likely significant construction noise effects at residential properties in the vicinity of Mount Edge, Hopton.
- 6.12.7 The assessment has considered the construction noise and vibration levels associated with the amendment and those identified in the main ES, the construction programme for the amendment and local mitigation identified in the main ES. The amendment will not give rise to any new or different likely residual significant effects compared to those reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

6.13 Change to Bill powers for the diversion of a Cadent¹⁶⁴ medium pressure gas main, west of Kents Barn Farm (AP2-002-113)

- 6.13.1 The Bill provides for the permanent diversion of a National Grid Gas Distribution medium pressure gas main, 140m in length, crossing the HS2 route at the Hopton and Coton bridleway 11 accommodation overbridge. See Map CT-06-217, I4 to H5 and H8 to H7, in the main ES Volume 2: CA2 Map Book.
- 6.13.2 Since submission of the Bill, further engagement with the utility provider has identified a need for a change from temporary to permanent Bill powers for the permanent diversion of a Cadent medium pressure gas main 400m west of Kents Barn Farm¹⁶⁵, 400m in length, crossing the HS2 route 190m north west of Hopton and Coton bridleway 11 accommodation overbridge, to 200m east of Newbuildings Cottage. See Map CT-06-217, I4 to H5 and H8 to H7, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.13.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.

¹⁶⁴ In 2017, National Grid Gas Distribution was rebranded as Cadent, which is an independent organisation. The two utility providers describe the same asset differently.

¹⁶⁵ This is also shown on OS mapping as Kent's Barn Farm.

- 6.13.4 The diversion of the Cadent medium pressure gas main is outside the limits of the Bill and will require a change to Bill powers.
- 6.13.5 This amendment is not considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.14 Additional land and a change to Bill powers for the underground diversion of Western Power Distribution 11kV overhead line, at Marston Bridleway 8 accommodation underbridge (AP2-002-114)

- 6.14.1 The Bill provides for the permanent underground diversion of a Western Power Distribution 11kV overhead line, 320m in length, crossing the HS2 route, 80m north-west of Marston Bridleway 8 accommodation underbridge. See Map CT-06-218, B3 to A6, in the main ES Volume 2: CA2 Map Book.
- 6.14.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be 320m in length, crossing the HS2 route at Marston Bridleway 8 accommodation underbridge and connecting into an existing overhead line. See Map CT-06-218, B3 to A6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.14.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.14.4 The diversion of the Western Power Distribution overhead 11kV line is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.4ha of land, some of which will be from Marston Farm (CA2/34). See Map CT-06-218, B3 to A6, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.14.5 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for community.

Community

- 6.14.6 The land required for the amendment will be within the boundaries of four residential properties on Marston Lane, requiring part of their outdoor space. The impact of the utility diversion at these properties will be small in scale and of short duration (approximately three months), resulting in a temporary minor adverse effect, which is not significant. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002.

6.15 Additional land for the revised underground Openreach telecommunications cable to Yarlet South cutting satellite compound (AP2-002-115)

- 6.15.1 The Bill provides for a new temporary underground Openreach telecommunications cable, 80m in length, crossing farmland west of Hilltop Farm to the Yarlet South Cutting satellite compound. See Map CT-05-219a, from G7 to D6, in the main ES Volume 2: CA2 Map Book.
- 6.15.2 Since submission of the Bill, further engagement with the utility provider has identified a need for additional land to provide a revised underground Openreach telecommunications cable to Yarlet south cutting compound. The temporary telecommunications cable will be 360m in length, from A34 Stone Road to Yarlet South cutting satellite compound and connecting to an existing telecommunications cable. See Map CT-05-219a, G7 to D6, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.15.3 The activities will require the removal of any surface material from the area of the connection route (this may include vegetation, soil, and road surfacing) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to construct the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.15.4 The revision to the underground Openreach telecommunications cable is outside the limits of the Bill. This amendment will result in a requirement for an additional 0.2ha of land, some of which will be from Hilltop Farm (CA2/41). See Map CT-05-219a, G7 to D6, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.15.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.16 Additional land for the underground and overhead diversion of Western Power Distribution low voltage overhead line from near Grove Farm to Hilltop Farm (AP2-002-116)

- 6.16.1 The Bill provides for the permanent underground diversion of a Western Power Distribution low voltage overhead line, 260m in length, crossing the HS2 route within the Yarlet south cutting, 50m south-east of the A34 Stone Road overbridge. See Map CT-06-219a, E5 to E4, in the main ES Volume 2: CA2 Map Book.
- 6.16.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The diversion of the utility will be 165m in length and will run from near Grove Farm, west across the A34 Stone Road to an existing Western Power Distribution pole near Hilltop Farm. A section of the diversion, 75m in length, will be an overhead line. See Map CT-06-219a, E5 to E4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.

- 6.16.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.16.4 The diversion of the Western Power Distribution low voltage overhead line is outside the limits of the Bill. This amendment will result in a requirement for an additional 180m² of land, some of which will be from Grove Farm (CA2/43). See Map CT-219a, E5 to E4, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.16.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

6.17 Additional land and a change to Bill powers for the underground and overhead diversion of Western Power Distribution 11kV overhead lines from Yarlet House to south-west of Yarlet auto-transformer station (AP2-002-117)

- 6.17.1 The Bill provides for the permanent diversion of an 11kV overhead line, 380m in length. The northern section of the diversion, 200m in length, would cross the HS2 route 190m west of the A34 Stone Road. The southern section of the diversion, 180m in length, south of the HS2 route, would be an overhead line. See Map CT-06-219a, E5 to E4, in the main ES Volume 2: CA2 Map Book.
- 6.17.2 Since submission of the Bill, further engagement with the utility provider has identified a need to change the alignment of the diversion. The underground and overhead diversion will be 840m in length, running from Yarlet House, crossing the A34 Stone Road and the HS2 route north-west of Yarlet auto-transformer station. Two sections of the diversion will be an overhead line, totalling 420m in length, and a further two sections of the diversion will be an underground cable, also totalling 420m in length. See Map CT-06-219a, from E5 to E4, in the SES2 and AP2 ES Volume 2: CA2 Map Book.
- 6.17.3 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.17.4 The diversion of the Western Power Distribution overhead 11kV line is outside the limits of the Bill. This amendment will require a change to Bill powers and will result in a requirement for an additional 0.8ha of land, some of which will be from the following agricultural holdings: Greenwood Farm (CA2/44); Holding no 33. (CA2/40); Yarlet Bank Farm (CA2/42); and New House Farm (CA3/1). See Map CT-06-219a, E5 to

E4, in the SES2 and AP2 ES Volume 2: CA2 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

- 6.17.5 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for community.

Community

- 6.17.6 The land required for the amendment will be within the boundary of a residential property at Yarlet Bank Farm, requiring part of their outdoor space. The impact of the utility diversion at this property will be small in scale and of short duration (approximately three months), resulting in a temporary minor adverse effect, which is not significant. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002.

7 Combined effects of changes and amendments in the Colwich to Yarlet area due to changes in construction traffic flows

7.1 Introduction

7.1.1 This section reports the combined assessment of new or different significant construction traffic effects, as a result of changes in construction traffic flows. These relate to changes associated with SES2 changes and AP2 amendments, where the change in traffic flows cannot be directly attributed to an SES2 change or an AP2 amendment.

7.1.2 The assessment has also considered any impacts in the Colwich to Yarlet area associated with SES2 changes and AP2 amendments in the adjoining community areas.

7.1.3 Traffic and transport effects are reported first, since the effects arise from changes in construction traffic flows. Other topics where a significant effect has been identified, are then reported in the following sequence:

- air quality;
- sound, noise and vibration;
- community; and
- socio-economics.

7.2 SES2 changes and AP2 amendments of relevance to this assessment

7.2.1 The assessment includes all changes to construction traffic. The primary contributors to construction traffic are the changes to the movement of excavated material, construction programme and construction assumptions. The assessment takes into account measures to reduce the need to move material by the road network and use of site haul routes to limit construction traffic on the road network.

7.2.2 Of the design changes and amendments, the following make a particular contribution to the assessment of changes in traffic flows in the Colwich to Yarlet area:

- Additional land required to relocate a temporary material stockpile and for a new transfer node, east of the Yarlet South cutting (AP2-002-025);
- New construction traffic route from Stone to Weston via Sandon (SES2-002-010);
- Additional land required for modifications to A513 Beaconside and Marston Lane junction (AP2-002-024);
- Additional land required for modifications to the A513 Beaconside/A518 Weston Road/Hydrant Way junction (AP2-002-016);

- Additional land required for modifications to A513 Beaconside and B5066 Sandon Road junction (AP2-002-021);
- Local placement of surplus excavated material to the south of Moreton cutting (SES2-002-002), to the north of Moreton cutting (SES2-002-003), to the south of Brancote North cutting (SES2-002-007) and to the north of Marston North embankment (SES2-002-008);
- compounds to support utilities works; and
- Three new working areas for the British Pipeline Agency diversion works at the Trent North embankment and Brancote South cutting (SES2-002-005).

7.3 Traffic and transport

Scope, assumptions and limitations

- 7.3.1 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the Scope and Methodology Report¹⁶⁶ (SMR) and SMR Addendum¹⁶⁷ of the main ES.

Environmental baseline

Existing baseline

- 7.3.2 The baseline traffic and transport information for the Colwich to Yarlet area is generally as described in Volume 2, CA2, Section 14 of the main ES.
- 7.3.3 Since the production of SES1, additional information on traffic flows on 15 roads and/or junctions in the Colwich to Yarlet area has been collected and an additional non-motorised user survey of one footpath in the area has been undertaken. This is set out in in Background Information and Data (BID) document TR-001-000 which accompanies SES2 and AP2 ES.
- 7.3.4 The M6 is the only strategic road that runs through the Colwich to Yarlet area. The M6 runs along a north-south alignment through the north-west section of the area. Junction 14 of the M6 is located to the west of the area.
- 7.3.5 There are three primary 'A' roads in the Colwich to Yarlet area, these are: the A34 Stone Road, which connects Stafford to Stone; the A51 Lichfield Road, which connects Stone with Rugeley via Little Haywood, Great Haywood and Sandon; and the A518 Weston Road, which connects Uttoxeter with Stafford. The strategic and primary road network, particularly around Stafford, can get busy at peak times and delays can be experienced.
- 7.3.6 The main local roads that are of relevance to the assessment are the A513 Beaconside and the B5066 Sandon Road. The A513 Beaconside connects Stafford to Rugeley, passing through the village of Milford and the northern part of Cannock Chase.

¹⁶⁶ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁶⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

The B5066 Sandon Road follows a north to south alignment and connects the A513 Beaconside, in Stafford, with the A51 Lichfield Road, near the village of Sandon. The road also passes through the smaller settlements of Hopton and Salt. The local road network in this area generally operates well although some localised delays can be experienced particularly at peak times.

- 7.3.7 There are pedestrian footways adjacent to many of the roads in the built up areas of Colwich, Little Haywood, Great Haywood, and Weston. Footways vary in width and condition within these areas. Where there is no formal footway provision adjacent to a road, non-motorised user numbers are generally low.
- 7.3.8 In the areas of Yarlet and Marston, there are a number of advisory cycle routes including Whitgreave Lane, Green Lane and March Lane. Marston Lane is also part of the National Cycle Network (NCN Route 5), which will be intersected by the HS2 route.

Future baseline

Construction (2023)

- 7.3.9 The future baseline for construction in 2023 has been updated to include the additional information gathered in the baseline traffic surveys. The approach adopted in deriving the future baseline remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 7.3.10 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice¹⁶⁸ (CoCP) are required.

Assessment of impacts and effects

Temporary effects

Construction compounds

- 7.3.11 Volume 2, CA2, Section 14 of the main ES provides details of construction compounds in the Colwich to Yarlet area. This information has been updated to reflect the provision of new compounds and changes to existing compounds resulting from the SES2 changes and AP2 amendments. This information is provided in Table 9.

¹⁶⁸ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Table 9: Typical vehicle trip generation for construction sites in the Colwich to Yarlet area

Compound type	Location	Access to / from compound to main road network	Indicative start / set up date	Estimated duration of use (years and months) ¹⁶⁹	Estimated duration of busy period (months)	Average daily combined two-way vehicle trips during busy period and within peak month of activity ¹⁷⁰	
						Cars/LGV	HGV
Satellite	Moreton auto-transformer station satellite compound	Bishton Lane and on to the A51 Wolseley Bridge	December 2024	One year and three months	7	32-44	up to 10
Satellite	Trent South utility compound	A51 Lichfield Road	March 2021	One year and nine months	1	23-30	93-93
Main	Trent South embankment main compound	A51 Lichfield Road, approximately 400m from where the A51 Lichfield Road crosses the HS2 route	Civil engineering - July 2020	Five years	14	400-550	122-160
			Site reinstatement - July 2026	Six months	3		102-135
			Rail systems - March 2025	Nine months	4		37-51
Transfer node	Transfer node associated with Trent South embankment main compound	A51 Lichfield Road	October 2021	Three years and six months	11	N/A	513-787
Satellite	Main Road utility compound	A51 Lichfield Road	September 2021	Six months	3	23-23	15-23
Satellite	Trent North embankment satellite compound (includes Mill Lane ATS)	Ingestre Park Road to Great Haywood Road, Tixall Road, Blackheath Lane and on to the A518 Weston Road	Civil engineering - January 2021	Four years and six months	1	40-55	104-104
			Site reinstatement - January 2026	Three months	1		54-54
			Rail systems - December 2024	Auto transformer station (ATS) - One year and three months	7		32-44
Satellite	Trent North utility compound	Ingestre Park Road to Great Haywood	March 2021	Nine months	1	23-30	78-78

¹⁶⁹ The Volume 2 scheme description of the construction phase represents the duration of works in a different way to the Volume 5: Transport Assessment addendum (SES2 and AP2 ES Volume 5: Appendix TR-001-000. The Volume 2 scheme description is based on quarters (each representing three months), e.g. December (Quarter 4) to February (Quarter 1) is rounded to six months, whereas the Volume 5: Transport Assessment addendum counts the absolute duration and is then rounded e.g. three months.

¹⁷⁰ For each compound the peak month of activity is the month within which HGV traffic is at its highest for that compound. The busy period is the period during which HGV traffic serving that compound will be greater than 50% of the HGV traffic in the peak month. The average daily combined two-way vehicle trips for the busy period is the lower end of the range shown in the table below. Two-way trips refer to the total number of vehicle movements in both directions (i.e. with 200 westbound vehicles and 100 eastbound vehicles, there would be 300 two-way trips).

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Compound type	Location	Access to / from compound to main road network	Indicative start / set up date	Estimated duration of use (years and months) ¹⁶⁹	Estimated duration of busy period (months)	Average daily combined two-way vehicle trips during busy period and within peak month of activity ¹⁷⁰	
						Cars/LGV	HGV
		Road, Tixall Road, Blackheath Lane and on to the A518 Weston Road					
Satellite	Hanyards Lane utility compound	Ingestre Park Road to Great Haywood Road, Tixall Road, Blackheath Lane and on to the A518 Weston Road	September 2021	Six months	3	23-26	23-28
Satellite	Ingestre Park Road utility compound	Ingestre Park Road to Great Haywood Road, Tixall Road, Blackheath Lane and on to the A518 Weston Road	March 2022	Six months	1	23-30	36-36
Satellite	Brancote South cutting satellite compound	Hanyards Lane to Tixall Road, Blackheath Lane and on to the A518 Weston Road for site set-up and servicing, followed by site haul route to the A518 Weston Road	Civil engineering - January 2021	Four years and six months	16	40-55	29-40
			Site reinstatement - January 2026	Three months	3		30-35
			Rail systems – March 2025	Nine months	7		158-160
Satellite	Hopton South cutting satellite compound	A518 Weston Road	Civil engineering - January 2021	Four years and three months	2	56-77	78-112
			Site reinstatement - February 2026	Six months	3		51-59
Transfer node	Transfer node associated with Hopton South cutting satellite compound	A518 Weston Road	October 2021	Three years and six months	9	N/A	420-497

SES2 and AP2 ES Volume 2 – Community area 2, Colwich to Yarlet

Compound type	Location	Access to / from compound to main road network	Indicative start / set up date	Estimated duration of use (years and months) ¹⁶⁹	Estimated duration of busy period (months)	Average daily combined two-way vehicle trips during busy period and within peak month of activity ¹⁷⁰	
						Cars/LGV	HGV
Satellite	Hopton North cutting satellite compound	B5066 Sandon Road and on to the A513 Beaconside	January 2021	Civil engineering- Four years and three months	13	48-66	41-66
			May 2026	Site clearance - Three months	2		57-57
Satellite	Sandon Road auto-transformer station satellite compound	Permanent maintenance access to the B5066 Sandon Road and on to the A513 Beaconside	December 2024	One year and three months	4	43-86	160-162
Satellite	Sandon Road utility compound	B5066 Sandon Road and on to the A513 Beaconside	September 2021	Six months	1	23-26	21-21
Satellite	Marston Lane utility compound	Site haul route to the A34 Stone Road	March 2021	Six months	1	23-30	68-68
Satellite	Marston South embankment satellite compound	Marston Lane to the A513 Beaconside for site set up and servicing, followed by site haul route to the A34 Stone Road	Civil engineering - January 2021	Four years and three months	6	32-44	29-58
			Site reinstatement - June 2026	Three months	1		45-45
Satellite	Marston North embankment satellite compound	Site haul route to the A34 Stone Road	Civil engineering - January 2021	Four years and three months	3	16-22	43-86
			Site reinstatement - July 2026	Three months	1		34-34
			Rail systems – March 2025	Nine months	4		37-51
Satellite	Yarlet South cutting satellite compound	A34 Stone Road	Civil engineering - January 2021	Four years	6	32-44	68-78
			Site reinstatement - August 2026	Three months	2		54-64

Compound type	Location	Access to / from compound to main road network	Indicative start / set up date	Estimated duration of use (years and months) ¹⁶⁹	Estimated duration of busy period (months)	Average daily combined two-way vehicle trips during busy period and within peak month of activity ¹⁷⁰	
						Cars/LGV	HGV
Transfer node	Transfer node associated with Yarlet South cutting satellite compound (south)	A34 Stone Road (southbound)	December 2021	Three years and three months	6	N/A	698-920
Transfer node	Transfer node associated with Yarlet South cutting satellite compound (north)	A34 Stone Road (northbound)	October 2021	Three years and six months	4	N/A	488-607
Satellite	Yarlet express feeder auto-transformer station satellite compound	A34 Stone Road	December 2024	One year and three months	7	32-44	up to 10

7.3.12 Information on the indicative construction programme is provided in Section 2 of the SES2 and the construction methodology is summarised in Volume 1, Section 6 of the main ES. This illustrates how the phasing of activities at different compounds will generally be staggered and that construction activities at individual compounds may not occur over the whole duration presented in Table 9.

7.3.13 Where construction routes serve more than one construction compound, the combined vehicle movements during the busiest period for each section of each route have been assessed. The effects resulting from changes to construction traffic have been considered and are reported in the highway network section.

Highway network

7.3.14 The main ES considered the traffic and transport effects in the area during construction. In particular, the effects associated with the combined construction traffic flows into and through the area were identified. The main ES reported effects related to increases in congestion and delay for vehicle occupants, which were significant, at the following locations:

- M6 Junction 14 – moderate adverse effect;
- A513 Beaconside/A34 Stone Road signals (Redhill roundabout proposed signalisation) – minor adverse effect;
- A513 Beaconside/B5066 Sandon Road priority junction – major adverse effect;
- A513 Beaconside/B5066 Sandon Road signals – major adverse effect;
- A513 Beaconside/Marston Lane – major adverse effect;
- A518 Weston Road/Blackheath Lane roundabout – major adverse effect;
- A518 Weston Road/A513 Beaconside roundabout – major adverse effect;

- A518 Stafford Road/A51 London Road signals – major adverse effect;
- Blackheath Lane/Baswich Lane/Tixall Road signals – major adverse effect; and
- A51 Lichfield Road/Hoo Mill Lane/Church Lane – major adverse effect.

- 7.3.15 The SES2 scheme in this area includes SES2 changes to reduce the impact of construction traffic flows. These include the provision of a new construction traffic route from Stone to Weston via Sandon (SES2-002-010) to reduce the use of the A513 Beaconside corridor, improved use of site haul routes and changes to the use and movement of surplus excavated material.
- 7.3.16 The AP2 revised scheme includes AP2 amendments to modify junctions to mitigate the impact of construction traffic, these are: the A513 Beaconside and Marston Lane junction (AP2-002-024); the A513 Beaconside/A518 Weston Road/Hydrant Way junction (AP2-002-016); and the A513 Beaconside and B5066 Sandon Road junction (AP2-002-021).
- 7.3.17 The SES2 changes and AP2 amendments will result in the following changes to the congestion and delay effects for vehicle occupants in the area, as reported in the main ES, at the following locations:
- A513 Beaconside/B5066 Sandon Road priority junction – the modifications to the A513 Beaconside/B5066 Sandon Road junction (AP2-002-021), combined with reduced construction traffic flows through the junction as a consequence of the new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the movement and use of surplus excavated material, will reduce queues at the junction to lower than the future baseline. However, the junction remains over-capacity in the 2023 assessment year with some residual queues and delays. The SES2 changes and AP2 amendments will remove the temporary major adverse significant effect at the A513 Beaconside and B5066 Sandon Road junction;
 - A513 Beaconside/B5066 Sandon Road signals – the new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the movement and use of surplus excavated material will reduce the level of significance of the effect at the A513 Beaconside/B5066 Sandon Road signals from a temporary major adverse significant effect to a temporary minor adverse effect, which is significant;
 - A513 Beaconside/Marston Lane – the modifications to the A513 Beaconside and Marston Lane junction (AP2-002-024), combined with reduced construction traffic flows through the junction as a consequence of the new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the movement and use of surplus excavated material, will reduce queues at the junction for vehicles accessing from Marston Lane and Common Lane and improve safety for turning movements. However, there remains some increase in residual queues and delays due to HS2 construction traffic. The SES2 changes and AP2 amendments will reduce the level of significance of the effect at the A513 Beaconside/Marston Lane from a temporary major adverse significant effect to a temporary minor adverse effect, which is significant;
 - A518 Weston Road/Blackheath Lane roundabout – the new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the

movement and use of surplus excavated material will remove the temporary major adverse significant effect at the A518 Weston Road/Blackheath Lane roundabout;

- A518 Weston Road/A513 Beaconside roundabout – the modifications to the A513 Beaconside/A518 Weston Road/Hydrant Way junction (AP2-002-016), combined with reduced construction traffic flows through the junction as a consequence of a new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the movement and use of surplus excavated material, will substantially reduce queues at the junction. However, there remains some increase in residual queues and delays due to HS2 construction traffic. The SES2 changes and AP2 amendments will reduce the level of significance at the A518 Weston Road/A513 Beaconside roundabout from a temporary major adverse significant effect to a temporary minor adverse effect, which is significant;
- A518 Stafford Road/A51 London Road signals – a new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the movement and use of surplus excavated material will substantially reduce queues at the junction. However, there remains some increase in residual queues and delays due to HS2 construction traffic. The SES2 changes and AP2 amendments will reduce the level of significance of the effect at the A518 Stafford Road/A51 London Road signals from a temporary major adverse significant effect to a temporary minor adverse effect, which is significant;
- Blackheath Lane/Baswich Lane/Tixall Road signals – changes to the movement and use of surplus excavated material, considered in the context of additional information on traffic flows at this junction collected since the production of SES1, will substantially reduce queues at the junction. However, there remains some increase in residual queues and delays due to HS2 construction traffic. The SES2 changes and AP2 amendments will reduce the level of significance of the effect at the Blackheath Lane/Baswich Lane/Tixall Road signals from a temporary major adverse significant effect, to a temporary minor adverse effect, which is significant; and
- A51 Lichfield Road/Hoo Mill Lane/Church Lane – a new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the movement and use of surplus excavated material will remove the temporary major adverse significant effect at the A51 Lichfield Road/Hoo Mill Lane/Church Lane junction.

7.3.18 The new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the movement and use of surplus excavated material will introduce additional construction traffic flows on to the A51 Stone Bypass/London Road which will give rise to new temporary moderate adverse congestion and delay effects for vehicle occupants, which are significant, at the following junctions:

- A51 Lichfield Road/B5066 Sandon Bank/School Lane junction;
- A51 London Road/New Road junction; and
- A51 Lichfield Road/Hilderstone Road junction.

7.3.19 There are other changes to traffic congestion and delay arising from the combination of SES2 changes and AP2 amendments. However, these do not result in new or

different significant traffic effects. Changes to traffic are reported in SES2 and AP2 ES Volume 5: Appendix TR-001-000.

7.3.20

The main ES reported traffic severance¹⁷¹ effects for non-motorised users from increases in either all traffic (including worker trips, light goods vehicles (LGV) and heavy goods vehicles (HGV) traffic) or HGV traffic, which were significant at the following locations:

- A51 Lichfield Road between the A518 Weston Road and the A460 Wolseley Road – moderate adverse effect as a result of an increase in HGV traffic;
- A518 Weston Road between the HS2 route and the A51 London Road – major adverse effect as a result of an increase in HGV traffic;
- A518 Weston Road between the HS2 route and the A513 Beaconside – major adverse effect as a result of an increase in HGV traffic;
- A513 Beaconside between the A518 Weston Road and the A34 Stone Road – moderate adverse effect as a result of an increase in HGV traffic;
- A34 Stone Road between the A513 Beaconside and Whitgreave Lane – moderate adverse effect as a result of an increase in HGV traffic;
- A34 Stone Road between M6 Junction 14 and the A513 Beaconside – moderate adverse effect as a result of an increase in all traffic;
- B5066 Sandon Road between the HS2 route and the A513 Beaconside – moderate adverse effect as a result of an increase in HGV traffic;
- Great Haywood Road/Tixall Road between Blackheath Lane and the HS2 route – moderate adverse effect as a result of an increase in HGV traffic;
- Hopton Lane between the HS2 route and the B5066 Sandon Road – minor adverse effect as a result of an increase in all traffic;
- Marston Lane between the HS2 route and the A513 Beaconside – moderate adverse effect as a result of an increase in all traffic;
- Hanyards Lane between the HS2 route and Tixall Road – moderate adverse effect as a result of an increase in all traffic; and
- Bellamour Lane between the B5013 Uttoxeter Road and the A51 Main Road – minor adverse effect as a result of an increase in all traffic.

7.3.21

Changes to construction traffic flows, as a consequence of the new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the movement and use of surplus excavated material, will result in changes to the traffic severance effects for non-motorised users, as reported in the main ES, at the following locations:

¹⁷¹ In the context of traffic and transport, severance is used to relate to a change in ease of non-motorised users due to, for example, a change in travel distance or travel time or a change in traffic levels on a route that makes it harder for non-motorised users to cross. A reference to severance does not imply a route is closed to access.

- A518 Weston Road between the HS2 route and the A51 London Road – a reduction in construction traffic flows on this section will reduce the level of significance of the effect from a temporary major adverse significant effect to a temporary moderate adverse effect, which is significant;
- A518 Weston Road between the HS2 route and the A513 Beaconside – a reduction in construction traffic flows on this section will reduce the level of significance of the effect from a temporary major adverse significant effect to a temporary minor adverse effect, which is significant;
- A513 Beaconside between the A518 Weston Road and the A34 Stone Road – a reduction in construction traffic flows on this section will reduce the level of significance of the effect from a temporary moderate adverse significant effect to a temporary minor adverse effect, which is significant;
- A34 Stone Road between the A513 Beaconside and Whitgreave Lane – an increase in construction traffic flows on this section will increase the level of significance of the effect from a temporary moderate adverse significant effect to a temporary major adverse effect, which is significant; and
- Bellamour Lane between the B5013 Uttoxeter Road and the A51 Main Road – a reduction in construction traffic flows on this section will remove the temporary minor adverse significant effect.

7.3.22 At the A51 Stone Bypass there will be an increase in HGV traffic, as a result of the new construction traffic route from Stone to Weston via Sandon (SES2-002-010) and changes to the movement and use of surplus excavated material, which will give rise to a new temporary moderate adverse traffic severance effect for non-motorised users between the A518 Weston Road and A34 Stone Road, which is significant.

7.3.23 At Ingestre Park Road there will be an increase in HGV traffic, as a result of the construction of the diversion of a National Grid gas pipeline and provision of a new utility compound (AP2-002-009) and the diversion of a Cadent gas pipeline and provision of a new utility compound (AP2-002-012), which will give rise to a new temporary moderate adverse traffic severance effect for non-motorised users of Ingestre Park Road between Great Haywood Road and the access to Ingestre Park Golf Club, which is significant.

7.3.24 There are other changes to construction traffic flows arising from the combination of SES2 changes and AP2 amendments. However, these do not result in new or different significant traffic effects. Changes to traffic are reported in SES2 and AP2 ES Volume 5: Appendix TR-001-000.

Permanent effects

7.3.25 There are no permanent traffic and transport effects resulting from changes in construction traffic flows in the Colwich to Yarlet area.

Other mitigation measures

7.3.26 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 7.3.27 The SES2 changes and AP2 amendments will remove the temporary major adverse significant congestion and delay effects on vehicle occupants, as reported in the main ES, at the following locations:
- A513 Beaconside/B5066 Sandon Road priority junction;
 - A518 Weston Road/Blackheath Lane roundabout; and
 - A51 Lichfield Road/Hoo Mill Lane/Church Lane junction.
- 7.3.28 The SES2 changes and AP2 amendments will result in the following changes to the congestion and delay effects to vehicle occupants, as reported in the main ES, at the following locations:
- A513 Beaconside/B5066 Sandon Road signals – will reduce from a temporary major adverse significant effect to a likely residual temporary minor adverse significant effect;
 - A513 Beaconside/Marston Lane – will reduce from a temporary major adverse significant effect to a likely residual temporary minor adverse significant effect;
 - A518 Weston Road/A513 Beaconside roundabout – will reduce from a temporary major adverse significant effect to a likely residual temporary minor adverse significant effect;
 - A518 Stafford Road/A51 London Road signals – will reduce from a temporary major adverse significant effect to a likely residual temporary minor adverse significant effect; and
 - Blackheath Lane/Baswich Lane/Tixall Road signals – will reduce from a temporary major adverse significant effect to a likely residual temporary minor adverse significant effect.
- 7.3.29 The SES2 changes and AP2 amendments will give rise to new likely residual temporary moderate adverse effects, which are significant, on congestion and delay to vehicle occupants at the following junctions:
- A51 Lichfield Road/B5066 Sandon Bank/School Lane junction;
 - A51 London Road/New Road junction; and
 - A51 Lichfield Road/Hilderstone Road junction.
- 7.3.30 The SES2 changes and AP2 amendments will remove the minor traffic severance significant effect for non-motorised users, as reported in the main ES, at Bellamour Lane between the B5013 Uttoxeter Road and the A51 Main Road.
- 7.3.31 The SES2 changes and AP2 amendments will result in the following changes to the traffic severance effects for non-motorised users, as reported in the main ES, at the following locations:

- A518 Weston Road between the HS2 route and the A51 London Road – will reduce from a temporary major adverse significant effect to a likely residual temporary moderate adverse significant effect;
- A518 Weston Road between the HS2 route and the A513 Beaconside – will reduce from a temporary major adverse significant effect to a likely residual temporary minor adverse significant effect;
- A34 Stone Road between the A513 Beaconside and Whitgreave Lane – will increase from a temporary moderate adverse significant effect to a likely residual temporary major adverse significant effect; and
- A513 Beaconside between the A518 Weston Road and the A34 Stone Road – will reduce from a temporary moderate adverse significant effect to a likely residual temporary minor adverse significant effect.

7.3.32 The SES2 changes and AP2 amendments will give rise to a new likely residual temporary moderate adverse effect, which is significant, on traffic severance for non-motorised users of the A51 between the A518 Weston Road and A34 Stone Road.

7.3.33 The SES2 changes and AP2 amendments will give rise to a new likely residual temporary moderate adverse effect, which is significant, on traffic severance for non-motorised users of Ingestre Park Road between Great Haywood Road and the access to Ingestre Park Golf Club.

Cumulative effects

7.3.34 This combined assessment has taken into account cumulative effects from background traffic growth, committed developments and traffic and transport impacts arising from the SES2 changes and AP2 amendments in this area and other community areas.

7.4 Air quality

Scope, assumptions and limitations

7.4.1 The assessment scope, key assumptions and limitations for air quality are as set out in Volume 1, the SMR and SMR Addendum of the main ES.

7.4.2 As set out in Volume 1, since the production of the main ES, updated background pollutant concentrations and road vehicle emission factors have become available from the Department for Environment, Food and Rural Affairs (Defra). These have been used in this assessment. The updated road vehicle emission factors are higher for NO_x than those used in the main ES, especially along motorways. Therefore, higher concentrations have been predicted for the future baseline scenario (without the HS2 scheme). At locations where NO₂ concentrations are predicted to exceed the annual mean air quality standard of 40µg/m₃ without the scheme, it is more likely that a small increase in concentrations due to the scheme will result in a significant effect.

Environmental baseline

Existing baseline

- 7.4.3 The existing baseline for air quality is as described in Volume 2, CA2, Section 5 of the main ES.
- 7.4.4 Since the production of the main ES, air quality measurements for the baseline year of 2016 have become available. There are currently eight relevant diffusion tube sites located within the Colwich to Yarlet area for monitoring NO₂ concentrations. Measured annual mean concentrations at these sites in 2016 were within the air quality standard. Details of their location and data measurements are provided in the SES2 and AP2 ES Volume 5: Appendix AQ-001-002 and Map Series AQ-01 which accompany the SES2 and AP2 ES.
- 7.4.5 The updated background concentrations from Defra¹⁷² are within the air quality standards for all pollutants in the baseline year of 2016 within the Colwich to Yarlet area. Details are provided in BID document AQ-002-000, which accompanies the SES2 and AP2 ES.

Future baseline

Construction (2020)

- 7.4.6 The updated background concentrations from Defra for the first year of construction in 2020 predict NO₂, PM₁₀ and PM_{2.5} levels in 2020 to be lower than in the 2016 baseline and within the relevant air quality standards.
- 7.4.7 Volume 5: Appendix CT-004-000 of the SES2 and AP2 ES provides details of the developments which are assumed to have been implemented by 2020 for construction, additional to those identified in the main ES. These have been included as future receptors in the assessment of air quality impacts and are detailed in Volume 5: Appendix AQ-001-002.
- 7.4.8 None of the identified developments affect the assessment of the SES2 scheme and AP2 revised scheme's likely construction impacts on air quality.

Effects arising during construction

Avoidance and mitigation measures

- 7.4.9 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

¹⁷² Department for Environment, Food and Rural Affairs (Defra) (2015) Defra Background Pollutant Concentration Maps; Available online at: <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2013>; Accessed: August 2018

Assessment of impacts and effects

Temporary effects

- 7.4.10 Construction activity could affect local air quality through the additional traffic generated on local roads as a result of construction vehicles and through changes to traffic patterns arising from temporary road diversions and realignments.
- 7.4.11 The assessment of construction traffic emissions has been undertaken for a 'without scheme' scenario and a 'with scheme' scenario. The traffic data for each scenario includes the additional traffic from future committed developments.
- 7.4.12 Construction traffic data in the area have been screened to identify roads that required further assessment and to confirm the likely effect of the change in emissions from vehicles using those roads in the construction period. These were primarily the main roads within the Colwich to Yarlet area, including the M6 Motorway, the A51 Butterhill Bank/ Main Road/ Stone Road/ Rugeley Eastern Bypass/ Lichfield Road, the A34 Stone Road, the A513 Beaconside and the A518 Weston Road/ Western Bank.
- 7.4.13 Concentrations of NO₂ are predicted to exceed the air quality standard at 13 receptors close to the M6 in Stafford. NO₂ concentrations in this area are predicted to exceed the air quality standard even without the scheme. A new significant effect is predicted at one receptor for NO₂ concentrations, close to the M6 in Stafford. Different significant effects are predicted at six receptors for NO₂ concentrations, close to the M6 in Stafford. However, the AP2 revised scheme reduces HS2 construction traffic along this section of the M6, compared to the main ES. Therefore, the new and different significant effects at this location are mainly due to changes in predicted emissions in the revised future baseline. No new or different significant effects are predicted at other receptors for NO₂ concentrations in the Colwich to Yarlet area, as the change from the AP2 revised scheme did not trigger the exceedance.
- 7.4.14 Concentrations of PM₁₀ and PM_{2.5} are predicted to be within the relevant air quality standards during construction of the AP2 revised scheme. No new or different significant effects are predicted at any receptor for PM₁₀ and PM_{2.5} concentrations during construction of the AP2 revised scheme. Details are provided in the SES2 and AP2 ES Volume 5: Appendix AQ-001-002.
- 7.4.15 No new or different significant effects are predicted at any ecological receptors during construction of the AP2 revised scheme.

Permanent effects

- 7.4.16 No permanent effects on local air quality are likely to arise from changes in construction traffic flows in the Colwich to Yarlet area.

Other mitigation measures

- 7.4.17 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 7.4.18 There will be one new and six different likely residual significant effects at residential receptors close to the M6 in Stafford in relation to exceedances of NO₂

concentrations. However, NO₂ concentrations in this area are predicted to exceed the air quality standard even without the scheme. The AP2 revised scheme reduces HS2 construction traffic along this section of the M6, compared to the main ES. Therefore, the new and different significant effects at this location are mainly due to changes in predicted emissions in the revised future baseline. No residual significant effects are anticipated at other locations in the Colwich to Yarlet area.

Cumulative effects

- 7.4.19 This combined assessment has taken into account cumulative effects from background traffic growth, committed developments and impacts related to traffic emissions arising from the SES2 changes and AP2 amendments in this area and other community areas.

7.5 Sound, noise and vibration

Scope, assumptions and limitations

- 7.5.1 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the SMR of the main ES.

Environmental baseline

Existing baseline

- 7.5.2 The baseline sound, noise and vibration information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 13 of the main ES.

Future baseline

Construction (2020)

- 7.5.3 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 7.5.4 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 7.5.5 The main ES, as amended by SES1, identified an indirect likely construction significant effect on a community basis at approximately 15 residential properties on or adjacent to Marston Lane between the HS2 route and the A513 Beaconside. This was denoted as CSV02-Co5 in the main ES Volume 5: Appendix SV-002-002. A combined construction site and traffic noise likely significant effect was identified at some of these properties.
- 7.5.6 The change reduces both the average and peak monthly construction road traffic movements on Marston Lane, and thus reduces the associated construction traffic noise levels. For further information see SES2 and AP2 ES Volume 5: Appendix SV-002-000. The reduction in construction traffic noise levels will remove the likely

indirect residual significant effect reported in the main ES on properties on Marston Lane between the HS2 route and the A513 Beaconside.

- 7.5.7 At the properties on Marston Lane where the main ES identified a combined likely significant effect (due to noise from construction activities and noise from construction traffic movements), only the construction traffic noise effect is removed. Significant effects from the construction activities at those properties remains as reported in the main ES, denoted as CSV02-Co5 in the main ES Volume 5: Appendix SV-002-002.

Other mitigation measures

- 7.5.8 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 7.5.9 The construction traffic changes will remove the indirect likely residual significant noise effect reported in the main ES at properties on or adjacent to Marston Lane, between the HS2 route and the A513 Beaconside.

Cumulative effects

- 7.5.10 This combined assessment has taken into account cumulative effects from changes in traffic flows as a result of the all SES2 changes and AP2 amendments in this area and other community areas.

7.6 Community

Scope, assumptions and limitations

- 7.6.1 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR and SMR Addendum of the main ES.

Environmental baseline

Existing baseline

- 7.6.2 The baseline community information for the Colwich to Yarlet area is as described in Volume 2, CA2, Section 6 of the main ES.
- 7.6.3 North-east of Great Haywood, east of the A51 Lichfield Road, there are approximately 13 residential properties off Toldish Lane and the A51 Lichfield Road.
- 7.6.4 Marston and Yarlet are small adjoining hamlets made up of approximately 56 residential properties in total.
- 7.6.5 Yarlet School is located to the east of the A34 Stafford Road/Stone Road and provides independent education for children aged between two and 13 years old. The school grounds include a chapel, and overnight accommodation for part-time boarding.

Future baseline

Construction (2020)

- 7.6.6 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising from construction

Avoidance and mitigation measures

- 7.6.7 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

Temporary effects

- 7.6.8 The main ES did not report any significant in-combination effects on Yarlet School as a result of the original scheme. The SES2 assessment reported a new likely temporary significant in-combination effect on the school for up to seven months, due to a combination of significant noise and visual effects.
- 7.6.9 The changes in traffic flows will give rise to a different temporary significant in-combination effect on Yarlet School. The changes in traffic flows are primarily due to the increase in construction traffic using the A34 Stafford Road/Stone Road as a construction traffic route. The increased traffic flows will result in a new significant HGV effect on the A34 Stafford Road/Stone Road between Enson Lane and Yarlet Lane for one year and 11 months. This will increase the overall duration of the in-combination effect from seven months as reported in the SES2 assessment, to up to one year and 11 months. This will give rise to a different temporary significant effect, however, this will not change the level of significance of the effect reported in the SES2 assessment. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.
- 7.6.10 The main ES did not report any significant in-combination effect on properties on the A34 Stafford Road/Stone Road.
- 7.6.11 The changes in traffic flows will give rise to a new temporary significant in-combination effect on residential properties on the A34 Stafford Road/Stone Road. The changes in traffic flows are primarily due to the increase in construction traffic using the A34 Stafford Road/Stone Road as a construction traffic route. The increased traffic flows will result in a new significant HGV effect on the residential properties fronting the A34 Stafford Road/Stone Road between Aston Lane and Yarlet Lane for one year and 11 months. Seven of these residential properties will also be subject to significant visual effects due to the original scheme and the AP2 revised scheme. This will result in a new major adverse significant in-combination effect on the seven residential properties for up to one year and 11 months. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.
- 7.6.12 The main ES reported that approximately 11 properties on Tolldish Lane would experience significant temporary adverse visual effects due to construction works.

The main ES further reported that all of these properties would experience a significant temporary adverse noise effect and six of these properties would experience a significant temporary adverse HGV effect. The in-combination effect would result in a temporary major adverse significant effect at the 11 properties.

- 7.6.13 The changes in construction traffic flows will increase the duration of the HGV effect on the six properties on the northern side of Tolldish Lane from up to two years and 10 months to up to four years and two months. The changes in traffic flows are primarily due to changes to the construction programme and movement of excavated materials. This will amend the overall duration of the in-combination effect on 11 properties on Tolldish Lane to up to four years and two months. This will give rise to a different temporary significant effect, however, this will not change the level of significance of the effect reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.

Permanent effects

- 7.6.14 The changes in traffic flows will not give rise to a new or different significant permanent effect and will not change the level of significance of the permanent effects, as reported in the main ES.

Other mitigation measures

- 7.6.15 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 7.6.16 The changes in traffic flows will give rise to a different likely residual temporary significant in-combination effect on Yarlet School, due to significant noise, visual and HGV effects. However, this will not change the level of significance of the effects reported in the main ES.
- 7.6.17 The changes in traffic flows will give rise to a new likely residual temporary significant in-combination effect on residential properties on the A34 Stafford Road/Stone, due to significant visual and HGV effects. This will result in a new major adverse significant in-combination effect.
- 7.6.18 The changes in traffic flows will give rise to different likely residual temporary in-combination effect on properties on Tolldish Lane, by increasing the duration of the in-combination effect from up to two years and 10 months to up to four years and two months. However, this will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-002 and SES2 and AP2 ES Volume 5: Community Map Book.

Cumulative effects

- 7.6.19 This combined assessment has taken into account cumulative effects from changes in traffic flows as a result of the all SES2 changes and AP2 amendments in this area and other community areas.

7.7 Socio-economics

Scope, assumptions and limitations

- 7.7.1 The assessment scope, key assumptions and limitations for socio-economics are as set out in Volume 1 and the SMR of the main ES.

Environmental baseline

Existing baseline

- 7.7.2 The existing baseline for socio-economics is as described in Volume 2, CA2, Section 12 of the main ES.

Future baseline

Construction (2020)

- 7.7.3 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 7.7.4 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

Temporary effects

- 7.7.5 Construction activity could affect businesses as a result of the environmental effects associated with the additional traffic generated on local roads by construction vehicles and changes to traffic patterns arising from temporary road diversions and realignments. These environmental effects range from additional noise, road congestion and air pollution.
- 7.7.6 A combination of these effects on businesses may lead to users to divert trade to other locations which do not experience these effects. Only certain types of businesses will be particularly sensitive to their surroundings and these will be drawn from sectors like hospitality, catering, and recreational/cultural and retail (depending on circumstances).
- 7.7.7 Businesses identified as sensitive to environmental effects with more than two significant adverse effects drawn from other environmental topics are considered to be affected by in-combination effects, as set out in the SMR and SMR Addendum of the main ES.
- 7.7.8 Based on a review of the environmental effects, no new or different significant in-combination effects are predicted at any receptors during construction of the HS2 scheme.

Permanent effects

- 7.7.9 The changes in traffic flows will not give rise to a new or different significant permanent effect and will not change the level of significance of the permanent effects, as reported in the main ES.

Other mitigation measures

- 7.7.10 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

No new or different residual significant effects are likely in the Colwich to Yarlet area as a result of changes to construction traffic flows from the SES2 design changes and AP2 amendments.

Cumulative effects

- 7.7.11 This combined assessment has taken into account cumulative effects from changes in traffic flows as a result of the all SES2 changes and AP2 amendments in this area and other community areas.

7.8 Summary of new or different likely residual significant effects as a result of combined effects due to changes in traffic flows

- 7.8.1 The SES2 changes and AP2 amendments will remove the temporary major adverse significant congestion and delay effects on vehicle occupants at the A513 Beaconside/B5066 Sandon Road priority junction; the A518 Weston Road/Blackheath Lane roundabout; and the A51 Lichfield Road/Hoo Mill Lane/Church Lane junction.
- 7.8.2 The SES2 changes and AP2 amendments will reduce the level of significance from temporary major adverse significant to likely residual temporary minor adverse significant for congestion and delay to vehicle occupants at the following locations: A513 Beaconside/B5066 Sandon Road signals; A513 Beaconside/Marston Lane; A518 Weston Road/A513 Beaconside roundabout; A518 Stafford Road/A51 London Road signals; and Blackheath Lane/Baswich Lane/Tixall Road signals.
- 7.8.3 The SES2 changes and AP2 amendments will give rise to new likely residual temporary moderate adverse effects, which are significant, on congestion and delay to vehicle occupants at the following junctions: the A51 Lichfield Road/B5066 Sandon Bank/School Lane junction; the A51 London Road/New Road junction; and the A51 Lichfield Road/Hilderstone Road junction.
- 7.8.4 The SES2 changes and AP2 amendments will remove the minor traffic severance significant effect for non-motorised users at Bellamour Lane between the B5013 Uttoxeter Road and the A51 Main Road.
- 7.8.5 The SES2 changes and AP2 amendments will reduce traffic severance effects for non-motorised users at the following locations:
- A518 Weston Road between the HS2 route and the A51 London Road - will reduce from a temporary major adverse significant effect to a likely residual temporary moderate adverse significant effect;

- A518 Weston Road between the HS2 route and the A513 Beaconside – will reduce from a temporary major adverse significant effect to a likely residual temporary minor adverse significant effect; and
 - A513 Beaconside between the A518 Weston Road and the A34 Stone Road – will reduce from a temporary moderate adverse significant effect to a likely residual temporary minor adverse significant effect.
- 7.8.6 The SES2 changes and AP2 amendments will increase traffic severance effects for non-motorised users at the A34 Stone Road between the A513 Beaconside and Whitgreave Lane. The effect will increase from a temporary moderate adverse significant effect to a likely residual temporary major adverse significant effect.
- 7.8.7 The SES2 changes and AP2 amendments will give rise to a new likely residual temporary moderate adverse effect, which is significant, on traffic severance for non-motorised users of the A51 between the A518 Weston Road and A34 Stone Road; and Ingestre Park Road between Great Haywood Road and the access to Ingestre Park Golf Club.
- 7.8.8 There will be one new and six different likely residual significant air quality effects at residential receptors close to the M6 in Stafford in relation to exceedances of NO₂ concentrations.
- 7.8.9 The construction traffic changes will remove the indirect likely residual significant noise effect at properties on or adjacent to Marston Lane, between the HS2 route and the A513 Beaconside.
- 7.8.10 The changes in construction traffic flows will give rise to a new likely residual major significant temporary in-combination effect on residential properties on the A34 Stafford Road/Stone.
- 7.8.11 The changes in traffic flows will give rise to different likely residual temporary in-combination significant effect on properties on Tolldish Lane, by increasing the duration of the in-combination effect from up to two years and 10 months to up to four years and two months, and on Yarlet School. However, this will not change the level of significance of the effects reported in the main ES.

High Speed Two (HS2) Limited
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

08081 434 434
HS2Enquiries@hs2.org.uk
www.hs2.org.uk