

STONE TOWN COUNCIL

Town Clerk

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16 April 2018

A meeting of the **GENERAL PURPOSES COMMITTEE** will be held in **St Michael's Suite at the Frank Jordan Centre, Lichfield Street, Stone**, on **TUESDAY 24 APRIL 2018 at 7:00pm**.

I trust you will be able to attend.

Les Trigg
Town Clerk

AGENDA

1. **To receive apologies for absence**
2. **Declarations of Interest**
3. **Requests for Dispensations Received**
4. **Representations from Members of the Public**
To consider representations from members of the public on items to be considered at this meeting, in accordance with the Council's scheme of public participation
5. **HS2 Phase 2a**

- a) To consider responding to the consultation regarding changes to the proposals for HS2 Phase 2a

Detailed papers have been emailed to Councillors and included in the electronic version of this agenda.

Advice from the Stone Railhead Crisis Group suggests that the main changes affecting Stone appear to be:

- The replacement of the 450m long Filly Brook viaduct with a much shorter one (80m long over the Norton Bridge to Stone Railway) and an extra 385m length embankment of either side of the railway, which will require the Filly Brook to be culverted and alternative flood storage found.
- The extension to the Yarnfield North Embankment (300m)

- Increasing the elevation of the HS2 mainline by up to 0.9m where it passes through the site.
- Moving the horizontal HS2 mainline alignment 15.5m to the northeast where it crosses the M6 at the northern end of the Stone Railhead site
- An admission by HS2 that the numbers it has presented for HGV and total traffic on the A34 through Stone is significantly understated.

A copy of the consultation return is attached.

- b) To consider submitting a second or revised petition as a result of these proposed changes.

6. Exclusion of the Press and Public

To resolve, pursuant to the Public Bodies (Admission to Meetings) Act 1960, that the Public and Press be excluded from the meeting whilst the next items of business are discussed on the grounds that publicity would be prejudicial to public interest by reason of the confidential nature of the debate

7. Crown Wharf

To consider the draft heads of terms in respect of the provision of a heritage centre on the redeveloped Crown Wharf site.



High Speed Rail (West Midlands - Crewe)

Supplementary Environmental Statement and
Additional Provision Environmental Statement

Volume 2: Community Area report

CA3: Stone and Swynnerton



High Speed Rail (West Midlands - Crewe)

Supplementary Environmental Statement and
Additional Provision Environmental Statement
Volume 2: Community Area report
CA3: Stone and Swynnerton



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.

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

ARUP



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Contents

Structure of the HS2 Supplementary Environmental Statement and Additional Provision Environmental Statement	iv
Structure of this report	vii
1 Introduction	1
Part 1: Supplementary Environmental Statement	3
2 Summary of changes in the Stone and Swynnerton area	3
2.1 New environmental baseline information	3
2.2 Changes to the construction assumptions not requiring a change to the Bill	3
2.3 Corrections to the main ES	5
3 Assessment of changes in the Stone and Swynnerton area	10
3.1 Introduction	10
3.2 Ecology and biodiversity	10
Part 2: Additional Provision Environmental Statement	15
4 Summary of amendments in the Stone and Swynnerton area	15
4.1 Introduction	15
4.2 Engineering amendments	15
4.3 Minor utility amendments	19
4.4 Other amendments requiring changes to Bill powers	23
5 Assessment of engineering amendments in the Stone and Swynnerton area	25
5.1 Additional land permanently required and a change in the powers of the Bill for the viaduct crossing of the Norton Bridge to Stone Railway and track crossovers along the HS2 route (AP-003-001)	25
5.2 Additional land permanently required for the IMB-R/Norton Bridge to Stone Railway flood mitigation measures (AP-003-002)	63
5.3 Additional land permanently required for a new junction of the A51 Bury Bank and Stone Rural BOAT 34 (AP-003-003)	73
5.4 Additional land permanently required to widen the highway verge along the A51 Stone Road (AP-003-004)	76

5.5	Additional land permanently required for the alignment of the Swynnerton Estate North green overbridge (AP-003-005)	77
5.6	Additional land permanently required for the provision of a roundabout at the junction of the realigned Dog Lane, the A51 The Rowe, Bent Lane and the A51 through Stableford (AP-003-006)	78
6	Assessment of minor utility amendments in the Stone and Swynnerton area	85
6.1	Additional land for the permanent diversion of BT Openreach overhead telecommunications cable along Stone Rural Bridleway 0.1135 (AP-003-101)	85
6.2	Additional land for the permanent diversion of BT Openreach and Zayo underground telecommunications cables along the B5026 Eccleshall Road (AP-003-102)	85
6.3	Additional land for the permanent diversion of BT Openreach overhead telecommunications cable along the realigned B5026 Eccleshall Road (AP-003-103)	86
6.4	Additional land for the permanent diversion of Western Power Distribution overhead lines parallel to the HS2 main line and connection to Micklow House Farm (AP-003-104)	87
6.5	Additional land for the permanent removal of Zayo underground telecommunications cables near Yarnfield Lane (AP-003-105)	87
6.6	Additional land and change in Bill powers for the permanent removal of a Zayo underground telecommunications cable between Yarnfield Lane and the A51 Bury Bank (AP-003-106)	88
6.7	Additional land for the permanent diversion of BT Openreach underground telecommunications cable along Swynnerton Footpath 27 accommodation underbridge (AP-003-107)	88
6.8	Additional land for the permanent diversion of three Severn Trent Water water mains south of the M6 (AP-003-108)	89
6.9	Additional land for the permanent diversion of Western Power Distribution 11kV overhead lines south of Sandyford Farm (AP-003-109)	89
6.10	Additional land for the permanent diversion of BT Openreach telecommunications cable along Tittensor Road (AP-003-110)	90
6.11	Additional land for the permanent vertical realignment of four Severn Trent Water water mains along Tittensor Road (AP-003-111)	91
6.12	Additional land for the permanent diversion of BT Openreach overhead telecommunications cable along the A519 Newcastle Road (AP-003-112)	91
6.13	Additional land for the permanent diversion of Severn Trent Water 400mm water main west of Bent Lane (South) (AP-003-113)	92
6.14	Additional land for the permanent diversion of two Severn Trent Water water mains along Swynnerton Footpath 10 accommodation underbridge (AP-003-114)	92

List of figures

Figure 1: Structure of the SES and AP ES	vi
Figure 2: Locations of engineering amendments in the Stone and Swynnerton area	18
Figure 3: Locations of minor utility amendments in the Stone and Swynnerton area	22

List of tables

Table 1: Summary of changes to the construction assumptions within the existing powers of the Bill in the Stone and Swynnerton area	5
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SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Table 2: Summary of corrections to the main ES in the Stone and Swynnerton area	6
Table 3: Summary of engineering amendments in the Stone and Swynnerton area	15
Table 4: Summary of minor utility amendments in the Stone and Swynnerton area	19
Table 5: Summary of other amendments requiring changes to Bill powers in the Stone and Swynnerton area	24

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

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

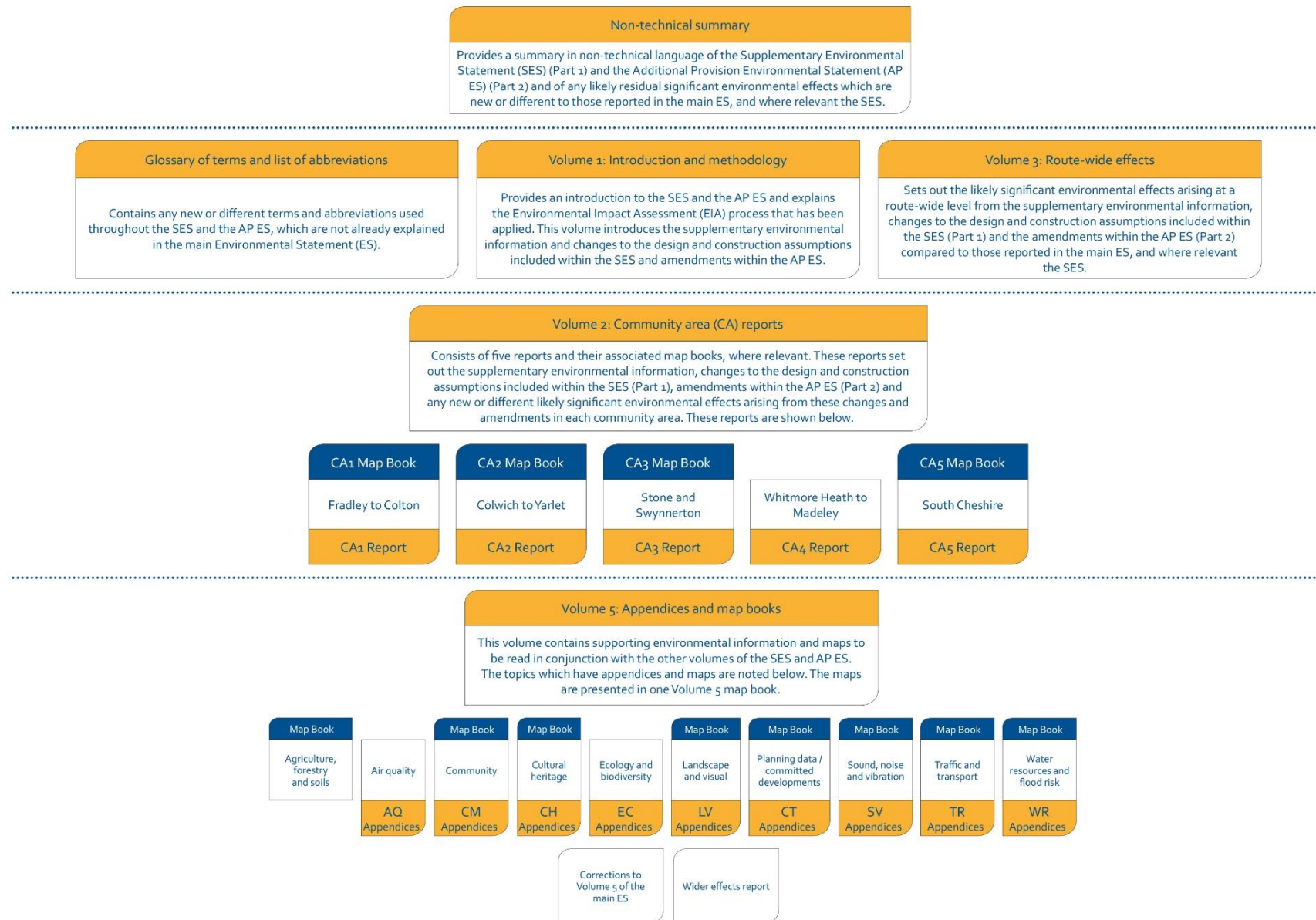
- Non-technical summary (NTS). This provides a summary in non-technical language of the SES (Part 1) and the AP ES (Part 2). It presents a summary of any likely residual significant environmental effects (i.e. effects which are likely to remain after mitigation measures are put in place), both beneficial 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'), and where relevant the SES;
- Glossary of terms and list of abbreviations. This contains any new or different terms and abbreviations used throughout the SES and the AP ES which are not already explained in the main ES;
- Volume 1: Introduction to the SES and the AP ES. This introduces the supplementary environmental information, changes to the design and construction assumptions included within the SES and amendments within the AP ES. The report explains the environmental impact assessment (EIA) process which 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 SES (Part 1), amendments within the AP ES (Part 2) and any new or different likely significant environmental effects arising from these changes and amendments in each community area. These effects are compared to those reported in the main ES, and where relevant, the SES. 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 SES (Part 1) and the amendments within the AP ES (Part 2) compared to those reported in the main ES, and where relevant the SES; 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. A separate Volume 4 has not been produced as part of the SES and AP ES as off-route effects are very limited in number and 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 SES and AP ES. These documents are available on the HS2 website. The BID documents and maps present background survey information and other relevant background material.

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Figure 1: Structure of the SES and AP ES



Structure of this report

This volume of the SES and AP ES is divided into five community area (CA) reports, which are in turn divided into two parts, except CA₄ which has no proposed amendments to the design and therefore has no Part 2.

Part 1 for each community area 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 main ES;
- changes to the design and construction assumptions which do not require changes to the Bill; and
- corrections to the main ES.

Part 2 for CAs 1, 2, 3 and 5 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 SES changes (Part 1) or the proposed amendments (Part 2) within the community area that have triggered the need for reassessment;
- an assessment of the environmental effects of the SES changes (Part 1) or the proposed 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; and
 - mitigation and residual effects; and
- a summary of any new or different likely residual significant effects as a result of the SES changes (Part 1) and the proposed amendments (Part 2).

1 Introduction

- 1.1.1 The High Speed Rail (West Midlands - Crewe) Bill was submitted to Parliament together with an Environmental Statement (ES) in July 2017 ('the main ES'). If enacted by Parliament, the Bill will provide the powers to construct, operate and maintain Phase 2a of HS2.
- 1.1.2 Since the deposit of the Bill, a number of updates or changes to environmental information, the design and construction assumptions have occurred, which may lead to new or different significant effects. These effects, depending on the type of change, are reported in the SES or the AP ES, which form Part 1 and Part 2 of this document respectively.
- 1.1.3 The SES contains updated environmental baseline information and scheme information relating to changes within the current limits and powers of the Bill, and therefore, which do not require an Additional Provision to the Bill. The SES changes within the Stone and Swynnerton area include:
- additional environmental baseline information for ecology and biodiversity;
 - changes to the construction assumptions which do not require changes to the Bill; and
 - corrections to the main ES.
- 1.1.4 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.
- 1.1.5 The purpose of the SES is to provide an assessment of any new or different likely significant environmental effects arising from the changes described.
- 1.1.6 The AP ES 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, or other extensions to the powers conferred by the Bill, making it necessary to submit an Additional Provision to the Bill.
- 1.1.7 The amendments within the Stone and Swynnerton area assessed within the AP ES include:
- additional land permanently required and a change in the powers of the Bill for the viaduct crossing of the Norton Bridge to Stone Railway and track crossovers along the HS2 route;
 - additional land permanently required for the Infrastructure Maintenance Base-Rail (IMB-R)/Norton Bridge to Stone Railway flood mitigation measures;
 - additional land permanently required for a new junction of the A51 Bury Bank and Stone Rural Byway Open to All Traffic (BOAT) 34;
 - additional land permanently required to widen the highway verge along the A51 Stone Road;
 - additional land permanently required for the alignment of the Swynnerton Estate North green overbridge;

- additional land permanently required for the provision of a roundabout at the junction of the re-aligned Dog Lane, the A51 The Rowe, Bent Lane and the A51 through Stableford;
- additional land required and change to Bill powers for works associated with new and existing minor utilities; and
- other changes to Bill powers to enable permanent access for maintenance over certain areas of land.

1.1.8 The AP ES reports the assessment of each amendment separately for all relevant topics. The purpose of the AP ES is to provide an assessment of any new or different likely significant environmental effects arising from the amendments.

1.1.9 The standard measures 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 (CoCP)¹ submitted in support of the Bill. Implementation of these measures has been assumed in this SES and AP ES.

1.1.10 The following terms are used to differentiate between changes included in the SES and those included in the AP ES:

- 'SES design changes' – changes to the scheme design reported in the SES that do not require additional powers;
- 'SES changes' – all changes reported in the SES that do not require additional powers. This may include new baseline information, changes to the design and construction assumptions, and corrections; and
- 'AP amendments' – changes to the scheme reported in the AP ES that include requirements for additional powers in the Bill.

1.1.11 In order to differentiate between the original proposals assessed as part of the main ES and subsequent changes and amendments, the following terms are used to define the scheme as it relates to the HS2 Phase 2a project:

- 'the original scheme' – the Bill scheme submitted to Parliament in July 2017, which was assessed in the main ES;
- 'the SES scheme' – the original scheme with any changes described in the SES that are within the existing powers of the Bill; and
- 'the AP revised scheme' – the original scheme as amended by the SES changes and AP amendments.

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 Summary of changes in the Stone and Swynnerton area

2.1 New environmental baseline information

Ecology and biodiversity

- 2.1.1 Since the production of the main ES ecological surveys for Phase 1 habitat, hedgerow, wintering birds, bats, great crested newt, badger, otter and water vole have been completed in the Stone and Swynnerton area.
- 2.1.2 Details of additional ecological surveys completed in the Stone and Swynnerton area are provided in Background Information and Data (BID) documents² (BID-EC-004-000 and Map Series EC-02, EC-04, EC-05, EC-10 and EC-12), which accompany the SES and AP ES.
- 2.1.3 SES and AP ES Volume 5: Appendix EC-002-000 provides a summary of additional ecological survey data, which has resulted in no change to the conclusions of the main ES. SES and AP ES Volume 5: Appendix EC-003-000 identifies additional local/parish level effects that are likely to occur as a consequence of SES changes and AP amendments but which will not be significant.
- 2.1.4 Detail of supplementary ecological information that is relevant to the SES assessment is provided in Section 3.

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

- 2.2.1 Since submission of the Bill the need to make changes to construction assumptions has been identified. These changes relate to railway systems compounds and are detailed further below. These do not require a change to the Bill.

Railway systems compounds

- 2.2.2 The Bill provides for land to be acquired for establishment and operation of a number of railway systems compounds from which railway installation works will be managed. These works include: installation of the hydraulically bound layer³ and pre-cast slab, rails (including crossovers) and overhead line equipment, installation of auto-transformer stations and changes to the existing rail network.
- 2.2.3 Since the submission of the Bill further information relating to the construction methodology for the installation of a slab track formation has required a change to the operational characteristics of one railway systems compound in the Stone and

² HS2 Ltd (2018), High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data, Available online at www.gov.uk/hs2

³ Aggregate mixture incorporating cement, lime-based or other binders, which harden in-situ by a chemical/hydraulic reaction.

Swynnerton area. The change to this compound relates to a change in the number of railway system workers (peak and/or average) and a change in railway systems construction traffic numbers (heavy goods vehicle (HGV) and cars/light goods vehicles (LGV)).

- 2.2.4 Volume 1 of the SES and AP ES provides further detail on the approach taken to considering the potential for new or different significant effects from those reported in the main ES in relation to the changes to railway systems compounds. The change to the operational characteristics of an existing compound in this area does not require a change to the Bill and is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.
- 2.2.5 While the changes to the construction methodology for the installation of a slab track formation will increase the number of railway systems HGV movements, these will be generally later in the construction programme than civil engineering HGV movements. Any increase in traffic due to these changes will generally be relatively small in comparison to the peak level of traffic generated by the civil engineering works. As there will be no increase in peak traffic levels, it is not expected that there will be any new or different significant traffic effects on the road network to those reported in the main ES.
- 2.2.6 Table 1 provides details on the changes to the operational characteristics of the existing railway systems compound in this area.

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Table 1: Summary of changes to the construction assumptions within the existing powers of the Bill in the Stone and Swynnerton area

Details of changes to construction assumptions	Description of the original scheme	Description of the SES scheme	Change to significant effects
Change to the railway system worker numbers and railway systems HGV trips for the Stone railhead main compound	<p>This railway systems compound would support an average of 225 railway systems workers per day (370 workers at peak times).</p> <p>This railway systems compound would generate 39-135 railway systems HGV trips per day during busy periods⁴ and within the peak month of activity.</p> <p>(Map CT-05-223, J9 to C7 in the main ES, Volume 2, CA3 Map Book)</p>	<p>There will be a change in the number of railway systems workers supported by this compound. The average number of railway system workers per day will increase to 255. The peak number of railway system workers will decrease to 335.</p> <p>There will be an increase in the number of railway systems HGV trips generated by this compound with 178-244 trips per day during the busy periods and within the peak month of activity.</p>	<p>No change.</p> <p>The increase in railway systems worker numbers at the compound is small in comparison to the overall construction phase employment. The consequential increase in traffic associated with the increased worker numbers is also small in relation to the peak traffic volumes in the area which will occur during the construction phase.</p> <p>The increase in railways systems HGV movements will not result in total daily HGV movements that will be greater than those assessed for the peak of civil engineering works in the original scheme.</p> <p>Therefore, the level of significance reported in the main ES with regard to worker numbers and traffic will not change.</p>

2.3 Corrections to the main ES

- 2.3.1 Since submission of the Bill, the need for a number of corrections to the contents of the main ES has been identified. Table 2 provides a list of those instances where there has been a need to correct the Volume 2 community area report for the Stone and Swynnerton area because of the potential to alter the significant environmental effects reported in the main ES or a factual inaccuracy relating to a significant effect that has been identified. Table 2 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, the reason for the correction, replicates the text from the main ES, where applicable provides revised text, and identifies whether the correction changes a significant effect reported in the main ES.

⁴ 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.

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Table 2: Summary of corrections to the main ES in the Stone and Swynnerton area

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
Overview of the area and description of the Proposed Scheme Paragraph 2.2.56, Volume 2, CA3 of the main ES	The scheme description stated that there would be 18 commercial and business properties demolished in the Stone and Swynnerton area. The correct number is 19, as listed in the Tables 1 and 2, Volume 2 of the main ES for CA3.	Paragraph 2.2.56: Demolition of five residential properties, 18 commercial and business properties (including farm outbuildings)	Paragraph 2.2.56: Demolition of five residential properties, 19 commercial and business properties (including farm outbuildings)	No change. The assessment was based on the correct number of demolitions.
Overview of the area and description of the Proposed Scheme Paragraphs 2.3.30 and Figure 8, Volume 2, CA3 of the main ES	The operational duration of the railways systems work managed from the Yarlet embankment satellite compound was incorrectly described in the scheme description. This should have been reported as commencing in 2026 and operational for six months.	Paragraph 2.3.30, first bullet: <ul style="list-style-type: none"> ... Civil engineering works will be managed from this compound for a period of three years and six months, followed by railway systems works for a period of two years; Figure 8 shows that railways systems work managed from the Yarlet embankment satellite compound would be for one year and six months, commencing 2025.	Paragraph 2.3.30, first bullet: <ul style="list-style-type: none"> ... Civil engineering works will be managed from this compound for a period of three years and six months, followed by railway systems works for a period <i>of six months</i>; Figure 8 should show that railways systems work managed from the Yarlet embankment satellite compound would be for six months, commencing 2026.	No change. The assessment was based on the correct duration.
Traffic and transport Paragraph 14.4.11 (Table 28), Volume 2, CA3 of the main ES		Paragraph 14.4.11 - Table 28, first entry: Estimated duration of use (years) – Rail systems – 1 year and 6 months	Paragraph 14.4.11 - Table 28, first entry: Estimated duration of use (years) – Rail systems – 6 months	
Overview of the area and description of the Proposed Scheme Paragraph 2.3.68, Volume 2, CA3 of the main ES	The scheme description for Yarnfield North embankment satellite compound states that the Stone Rural Footpath 33 will be subject to a temporary diversion for up to three years during construction of the scheme but that it will be reinstated on its existing alignment once construction is complete. This should have been reported that the footpath will be partly	Paragraph 2.3.68: ... On completion of construction, the footpath will be reinstated on its existing alignment.	Paragraph 2.3.68: ... On completion of construction, the footpath will be reinstated on its existing alignment <i>for 400m and then permanently diverted by 800m to the north-west of its existing alignment, running adjacent to the northern side of the route of the Proposed Scheme and crossing under the M6 Meaford viaduct, increasing journey length by 710m.</i>	No change. Elsewhere in the scheme description, the correct information was provided (for example Paragraphs 2.2.30 - bullet point seven and paragraph 2.3.80). The assessment was

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
	reinstated along its existing alignment and also subject to a permanent diversion to accommodate the Stone Infrastructure Maintenance Base - Rail.			based on the correct information. This footpath is further discussed in Section 5 of this report under AP-003-001.
Overview of the area and description of the Proposed Scheme Paragraph 2.3.92, Volume 2, CA3 of the main ES	The number of railway installation workers supported by the Swynnerton embankment satellite compound was reported as 25 workers per day in the scheme description. This should have been reported as 30 workers per day.	Paragraph 2.3.92, second bullet: <ul style="list-style-type: none">...support 25 railway installation workers per day...;	Paragraph 2.3.92, second bullet: <ul style="list-style-type: none">...support 30 railway installation workers per day...;	No change. The assessment was based on the correct number of workers.
Overview of the area and description of the Proposed Scheme Figure 8, Volume 2, CA3 of the main ES	The operational duration of the railways systems work managed from the Stone connection satellite compound was reported as commencing in 2021 and would be operational for six months in Figure 8 of the scheme description and the traffic and transport assessment. This should have been reported as commencing in 2021 and would be operational for nine months. It was correctly reported in paragraph 2.3.53 in Volume 2, CA3 of the main ES.	Figure 8 shows that railways systems work managed from the Stone connection satellite compound would be operational for six months, commencing 2021.	Figure 8 shows that railways systems work managed from the Stone connection satellite compound would be operational for <i>nine</i> months, commencing 2021.	No change. The assessment was based on the correct duration.
Traffic and transport Paragraph 14.4.11 (Table 28), Volume 2, CA3 of the main ES		Paragraph 14.4.11 - Table 28, third entry: Estimated duration of use (years) – 6 months	Paragraph 14.4.11 - Table 28, third entry: Estimated duration of use (years) – 9 months	
Ecology and biodiversity Paragraph 8.4.52, 8.4.58 and 8.4.60, Volume 2, CA3 of the main ES	Areas of woodland, grassland and hedgerow habitat creation were incorrectly reported in the ecology assessment, but were shown correctly on the Volume 2: Maps CT-06 of the main ES for CA3.	Paragraph 8.4.52: Within the Stone and Swynnerton area, approximately 22.9ha of further woodland habitat creation will be undertaken to compensate primarily for adverse effects upon non-ancient woodland at locations including the following:	Paragraph 8.4.52: Within the Stone and Swynnerton area, approximately 30.2ha of further woodland habitat creation will be undertaken to compensate primarily for adverse effects upon non-ancient woodland at locations including the following:	No change. The assessment was based on the correct areas and therefore this correction will not change the level

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
	There is no requirement for additional land as a result of this correction.	<p>Second bullet:</p> <ul style="list-style-type: none"> approximately 3.5ha of woodland will be planted to be contiguous with new grassland and hedgerow planting, which in combination will improve habitat connectivity with a currently isolated block of woodland to the north of Pool House Wood...; <p>Fourth bullet:</p> <ul style="list-style-type: none"> approximately 5.9ha of woodland will be planted in proximity to the woodland lost at Stabhill Plantation and Cash's Pit These new woodland blocks will include approximately 4.8ha either side of the Swynnerton North cutting contiguous with Cash's Pit...; <p>Seventh bullet:</p> <ul style="list-style-type: none"> Woodland planting of approximately 1.3ha will connect Swynnerton Old Park to the overbridge, on the eastern side of Hatton South cutting. Woodland planting of approximately 0.2ha will connect Hatton Common LWS to the overbridge, on the western side of Hatton South cutting. <p>Paragraph 8.4.58 - third bullet:</p> <ul style="list-style-type: none"> approximately 2.8ha of native species-rich marshy grassland will be created within the floodplain directly adjacent to the south of Highlow Meadows LWS...; <p>Paragraph 8.4.58 - fourth bullet:</p> <ul style="list-style-type: none"> approximately 8.8ha of native species-rich grassland will be created to the north-west of Clifford's Wood.... 	<p>Second bullet:</p> <ul style="list-style-type: none"> approximately 3.9ha of woodland will be planted to be contiguous with new grassland and hedgerow planting, which in combination will improve habitat connectivity with a currently isolated block of woodland to the north of Pool House Wood...; <p>Fourth bullet:</p> <ul style="list-style-type: none"> approximately 6.3ha of woodland will be planted in proximity to the woodland lost at Stabhill Plantation and Cash's Pit.... These new woodland blocks will include approximately 5.2ha either side of the Swynnerton North cutting contiguous with Cash's Pit...; <p>Seventh bullet:</p> <ul style="list-style-type: none"> Woodland planting of approximately 1.2ha will connect Swynnerton Old Park to the overbridge, on the eastern side of Hatton South cutting. Woodland planting of approximately 0.1ha will connect Hatton Common LWS to the overbridge, on the western side of Hatton South cutting. <p>Paragraph 8.4.58 – third bullet:</p> <ul style="list-style-type: none"> approximately 2.7ha of native species-rich marshy grassland will be created within the floodplain directly adjacent to the south of Highlow Meadows LWS...; <p>Paragraph 8.4.58 - fourth bullet:</p> <ul style="list-style-type: none"> approximately 10ha of native species-rich grassland will be created to the north-west of Clifford's Wood.... 	of significance of the effect reported in the main ES.

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
		<p>Paragraph 8.4.6o:</p> <p>...Approximately 34.1km of new hedgerows will be planted and the species composition will be characteristic of the surrounding area. This represents a net loss in hedgerow of approximately 11.6km after mitigation, which represents a residual adverse effect that is significant at the district/borough level....</p> <p>Paragraph 8.4.8o:</p> <p>On a precautionary basis, it is assumed that there will be a net loss in hedgerow of approximately 11.6km, which will result in a permanent adverse residual effect that is significant at the district/borough level. However, restoration of land required only for the construction of the Proposed Scheme to its current use, offers potential for reinstatement of a further 19.6km of existing hedgerow. The provision of the majority of this reinstated hedgerow would reduce the residual effect to a level that is not significant.</p>	<p>Paragraph 8.4.6o:</p> <p>...Approximately 27.5km of new hedgerows will be planted and the species composition will be characteristic of the surrounding area. This represents a net loss in hedgerow of approximately 18.2km after mitigation, which represents a residual adverse effect that is significant at the district/borough level....</p> <p>Paragraph 8.4.8o:</p> <p>On a precautionary basis, it is assumed that there will be a net loss in hedgerow of approximately 18.2km, which will result in a permanent adverse residual effect that is significant at the district/borough level. However, restoration of land required only for the construction of the Proposed Scheme to its current use, offers potential for reinstatement of a further 19.6km of existing hedgerow. The provision of the majority of this reinstated hedgerow would reduce the residual effect to a level that is not significant.</p>	

3 Assessment of changes in the Stone and Swynnerton area

3.1 Introduction

- 3.1.1 Section 3 reports the assessment for ecology and biodiversity as a result of the SES changes.

3.2 Ecology and biodiversity

Introduction

- 3.2.1 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 the original scheme. Consideration is given to the potential for impacts on habitats, species and sites designated on the basis of their importance for nature conservation.

Scope, assumptions and limitations

- 3.2.2 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the Scope and Methodology Report (SMR)⁵ and the SMR Addendum⁶ of the main ES.
- 3.2.3 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported within the SMR and SMR Addendum. This constitutes a 'reasonable worst-case' basis for the subsequent assessment.

SES changes of relevance to this assessment

- 3.2.4 New baseline information on great crested newt resulting from additional ecological surveys in the Stone and Swynnerton area is relevant to the assessment.

Environmental baseline

Existing baseline

- 3.2.5 The baseline ecology and biodiversity information for the Stone and Swynnerton area is as described in Volume 2, CA3, Section 8 of the main ES. A summary of the baseline information relevant to the assessment of the SES change is provided below.
- 3.2.6 Details of surveys completed since the production of the main ES are provided in the BID documents (BID-EC-004-000 and Map Series EC-02, EC-04, EC-05, EC-10 and EC-12), which accompany the SES and AP ES.

⁵HS2 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>

⁶HS2 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>

Species

- 3.2.7 The outcomes of additional ecological surveys undertaken for great crested newt have formed the basis of a review of the composition of metapopulations⁷ across the Stone and Swynnerton area. This review has included a consideration of the quality and connectivity of terrestrial habitat between ponds in order to determine the location of distinct clusters of ponds that are likely to support metapopulations of great crested newt. This review has resulted in changes to the composition of all metapopulations reported within the main ES, and in the addition of new metapopulations. Each metapopulation includes one or more ponds where the presence of great crested newt has been confirmed by survey, in addition to any ponds that are considered likely to support this species (on the basis of their habitat quality and quantity) and that are connected to the confirmed population (or populations) by suitable terrestrial habitat.
- 3.2.8 Many ponds described within the main ES as supporting assumed populations of great crested newt were not allocated to metapopulations due to their limited proximity to confirmed populations of great crested newt. For some of these ponds the additional surveys have confirmed the presence of great crested newt either within these ponds, or within nearby ponds connected by suitable terrestrial habitat, which has resulted in them being added to a new or revised metapopulation. Overall this means that the number of ponds associated with metapopulations, either new or revised, has increased and the number of individual assumed populations outside of metapopulations has decreased. The details of the revised composition of each metapopulation are provided within BID-EC-004-000, which accompanies the SES and AP ES. The changes to metapopulations from those described within the main ES are summarised below.
- 3.2.9 The main ES reported a great crested newt metapopulation in 60 ponds between Yarnfield and Swynnerton (assumed metapopulation (AMP) 3.1). Field surveys recorded great crested newt presence within five ponds, with the largest population being of medium size class. On a precautionary basis, the presence of medium size populations of great crested newt was assumed in 55 further ponds. This metapopulation is valued at county level in the main ES.
- 3.2.10 Additional surveys have confirmed:
- absence of great crested newt within 29 ponds where great crested newt populations were previously assumed to be present and form part of this metapopulation. These ponds no longer form part of the metapopulation;
 - presence of great crested newt within five ponds where great crested newt populations were previously assumed to be present and form part of this metapopulation. These ponds still form part of the metapopulation; and
 - presence of great crested newt within seven ponds that were not previously included within this metapopulation. These ponds are now included in this metapopulation.

⁷ A metapopulation is a group of spatially separated populations that interact.

- 3.2.11 In addition to the confirmed great crested newt populations within this metapopulation reported in the main ES (five ponds) and the confirmed populations within this metapopulation identified from additional surveys (12 ponds), there are 25 further ponds with known or assumed populations that are considered to form part of AMP 3.1. The revised metapopulation, therefore, includes 42 ponds with confirmed or assumed populations of great crested newt, with the largest population being of medium class size. This metapopulation occurs partially within the land required for the original scheme. The reduction in the number of ponds with confirmed or assumed populations of great crested newt does not change the value of AMP 3.1, as reported in the main ES.
- 3.2.12 The main ES reported a great crested newt metapopulation in four ponds to the south-west of the A519 Newcastle Road and west of the A51 Stone Road (AMP 3.3). Field surveys recorded great crested newt presence within one pond, with the largest population being of small size class. On a precautionary basis, the presence of medium size populations of great crested newt was assumed in three further ponds. This metapopulation is valued at up to county level in the main ES.
- 3.2.13 Additional surveys have confirmed the absence of great crested newt within two ponds where great crested newt populations were previously assumed to be present and form part of this metapopulation. These ponds no longer form part of the metapopulation. Furthermore, there are no other assumed populations that are considered to be associated with the confirmed population. As such metapopulation AMP 3.3 is no longer considered to exist. A single isolated population of small class size is located approximately 280m south-west of the land required for the original scheme and is valued at district/borough level.
- 3.2.14 Additional surveys have identified a new great crested newt metapopulation in 27 ponds located to the north-west of the A34 Stafford Road (AMP 3.4), not previously reported in the main ES. Additional surveys recorded great crested newt presence within 13 ponds, with the largest population being of medium size class. On a precautionary basis the presence of great crested newt is assumed to occur in 14 further ponds. This metapopulation occurs partially within the land required for the original scheme and is valued at a county level.
- 3.2.15 In addition to the known and assumed great crested newt populations that are considered to form metapopulations and the confirmed isolated population, there are eight additional ponds that occur within the land required for the original scheme in this area where the presence or absence of great crested newt has not been confirmed. On a precautionary basis, each of these ponds is assumed to support a medium size breeding population of great crested newt of up to county value.

Future baseline

Construction (2020) and operation (2027)

- 3.2.16 SES and AP ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2020 and 2027 respectively, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 3.2.17 None of the identified developments affect the assessment of the SES scheme's likely construction and operational impacts on ecology and biodiversity.

Effects arising during construction

Avoidance and mitigation measures

- 3.2.18 No further measures are applicable to this assessment, above those stated in the draft Code of Construction Practice (CoCP)⁸.

Assessment of impacts and effects

Species

- 3.2.19 The main ES reported the loss of 11 ponds associated with the great crested newt metapopulation between Yarnfield and Swynnerton (AMP 3.1), comprising two ponds with a confirmed population of great crested newt and nine ponds assumed to support great crested newt. The main ES also reported the loss of great crested newt terrestrial habitat associated with construction. This would result in a permanent adverse effect on the great crested newt metapopulation that is significant at a county level, as reported in the main ES. Following additional surveys being undertaken, the number of ponds associated with this metapopulation that will be lost as a result of the construction of the original scheme will increase to 12. The increase in the number of great crested newt populations to be impacted by the original scheme will result in a different significant effect to that reported in the main ES, however, this will not change the level of significance of the effect reported in the main ES.
- 3.2.20 The main ES reported the loss of great crested newt terrestrial habitat during construction associated with the metapopulation on the land south-west of the A519 Newcastle Road and west of the A51 Stone Road (AMP 3.3). This would result in a permanent adverse effect on the great crested newt metapopulation that is significant at a county level, as reported in the main ES. Following additional surveys being undertaken, the metapopulation has been reclassified as an isolated population centred on a single pond supporting a population of great crested newt of small class size. This pond is located approximately 280m south-west from the land required for the original scheme and the habitats lost are unlikely to be used by this isolated population. The original scheme will not have a significant effect on this population. The significant effect on AMP 3.3 reported in the main ES will no longer occur.
- 3.2.21 The presence of the great crested newt metapopulation to the north-west of the A34 Stafford Road (AMP 3.4) was not reported within the main ES. Construction of the original scheme will result in the loss of six ponds associated with this metapopulation. This will result in a new permanent adverse effect on this metapopulation that will be significant at a county level.
- 3.2.22 In summary, taking account of the baseline information from the additional surveys undertaken, there is a reduction in the number of known or assumed great crested newt ponds to be lost across the Stone and Swynnerton area as a result of construction of the original scheme. The number of great crested newt ponds that will be lost will reduce from up to 40, as reported in the main ES, to up to 27.

⁸ 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>

Other mitigation measures

Species

- 3.2.23 The main ES reported that significant effects to the great crested newt metapopulations within the Stone and Swynnerton area would be addressed by provision of measures within the ecological habitat creation areas at Walton Heath, Micklow, off Yarnfield Lane, Swynnerton, Highlow Meadows, Pire Hill, south of Lodge Covert, west of Clifford's Wood, off Bent Lane and at Closepit Plantation. These measures would comprise provision of ponds, species-rich neutral grassland and broadleaved woodland that would be designed to compensate for the loss of breeding sites, foraging habitat and places of shelter used by great crested newt and other amphibian species. Provision of these habitats will also contribute to compensation for route-wide losses of ponds, grassland and woodland. Following implementation, the adverse effects on the amphibian populations in the Stone and Swynnerton area would be reduced to a level that is not significant.
- 3.2.24 The assessment undertaken, following the consideration of additional baseline information, has concluded that the impacts of the original scheme on great crested newt will be reduced from those reported in the main ES. The provision of compensatory habitats as reported in the main ES, once established, will reduce the adverse effects on amphibian populations to a level that is not significant.

Summary of likely residual significant effects

- 3.2.25 There are no changes to the likely residual significant construction ecology and biodiversity effects identified in the main ES as a result of the new baseline information.

Cumulative effects

- 3.2.26 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the new baseline information acting in combination with any other SES changes.

Effects arising from operation

- 3.2.27 There are no new or different significant operational effects for ecology and biodiversity as a result of the new baseline information, in comparison with the main ES.

Part 2: Additional Provision Environmental Statement

4 Summary of amendments in the Stone and Swynnerton area

4.1 Introduction

4.1.1 In the Stone and Swynnerton area, the following types of amendments are proposed in the AP revised scheme:

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

4.2 Engineering amendments

4.2.1 Engineering amendments will be required in the Stone and Swynnerton area that will result in changes to the land or Bill powers required for the original scheme. Table 3 provides a summary of the engineering amendments. Figure 2 shows the locations of the engineering amendments.

Table 3: Summary of engineering amendments in the Stone and Swynnerton area

Name of amendment	Description of the original scheme	Description of the AP revised scheme
Additional land permanently required and a change in the powers of the Bill for the viaduct crossing of the Norton Bridge to Stone Railway and track crossovers along the HS2 route AP-003-001	See Part 1 to Part 3 in subsequent rows	See Part 1 to Part 3 in subsequent rows

Due to the complexity of change associated with this amendment it has been sub-divided into the following three distinct elements for ease of understanding. The AP is however assessed as one amendment to the original scheme.

A change in the powers of the Bill for the raising of the alignment of the HS2 main line from the B5026 Eccleshall Road to Meaford cutting Part 1 of AP-003-001 Map CT-06-222, F5 to D5 and D5 to A5; and Map CT-06-223, J7 to H7 in the SES and AP ES, Volume 2, CA3 Map Book	Permanent acquisition of land for the HS2 route over a distance of approximately 2km from the B5026 Eccleshall Road to Meaford cutting. The HS2 main line would cross over the Norton Bridge to Stone Railway and Filly Brook on viaduct and over Yarnfield Lane via the Yarnfield Lane underbridge. This section of the HS2 main line would allow for the provision of track crossovers ⁹ and trackside storage areas	A change in the powers of the Bill will be required to raise the HS2 main line alignment along this section by up to 0.9m. There has been a redesign of the trackside storage areas and a track crossover along the HS2 main line. Yarnfield Lane auto-transformer station will be moved approximately 5m to the south-west.
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⁹ A track crossover is a pair of switches connecting two parallel rail tracks, allowing a train on one track to cross over to the other.

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Name of amendment	Description of the original scheme	Description of the AP revised scheme
	for the maintenance of the HS2 route, as well as areas of landscape mitigation planting and landscape mitigation earthworks.	
<p>A change in the powers of the Bill for amendments to the viaduct crossing of the Norton Bridge to Stone Railway and Filly Brook</p> <p>Part 2 of AP-003-001</p> <p>Map CT-06-222, F5 to D5 and D5 to A5; and Map CT-06-223, J7 to H7 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent acquisition of land for the HS2 main line to cross the Norton Bridge to Stone Railway and the Filly Brook on viaduct.</p> <p>This section of the HS2 route would allow for the provision of Stone retaining wall 2, areas of grassland habitat creation, two replacement flood storage areas and the realignment of Filly Brook via open channel.</p>	<p>A change in the powers of the Bill consequent on the shortening of the viaduct crossing the Norton Bridge to Stone Railway and Filly Brook and associated extension of the Yarnfield North embankment and Yarnfield South embankment. The viaduct has been renamed the Norton Bridge to Stone Railway viaduct, as it will no longer cross the Filly Brook. The track crossovers located on the viaduct in the original scheme will be moved further north-west along the HS2 main line.</p> <p>A section of Filly Brook will be culverted with the HS2 main line and the Stone Infrastructure Maintenance Base-Rail (IMB-R) reception tracks crossing above. Filly Brook West underbridge (on the IMB-R reception tracks) will not be provided.</p> <p>Embankments will be extended on both sides of the new viaduct and on the embankment associated with the Stone IMB-R reception tracks where the Filly Brook West underbridge will not be provided. Stone retaining wall 2 will also not be provided.</p> <p>The replacement floodplain storage area included in the original scheme will be replaced with revised proposals (see AP-003-002). Associated landscape, ecological and flood mitigation in the original scheme will be redesigned.</p>
<p>Additional land and a change in the powers of the Bill for horizontal realignment of the HS2 main line from the northern extent of Yarnfield North embankment to Tittensor Road overbridge</p> <p>Part 3 of AP-003-001</p> <p>Map CT-06-223, H6 to B7; CT-06-224, I5 to F5, I4 to H4, E5 to B5 and B4; and Map CT-06-225, I4, I5 to G5 and F5 to E5 in the SES and AP ES Volume 2, CA3 Map Book</p>	<p>Permanent acquisition of land for the HS2 main line over a distance of approximately 3km from the northern extent of Yarnfield North embankment to Tittensor Road overbridge.</p> <p>This section of the HS2 route would include the provision for the Stone Rural Footpath 33 realignment, landscape mitigation planting and landscape mitigation earthworks, balancing ponds, Swynnerton Footpath 17 diversion, Swynnerton Estate South underbridge, Swynnerton New Bridleway, and noise barriers adjacent to the Swynnerton embankment.</p>	<p>Additional land and a change in other powers of the Bill are required for the horizontal realignment of the HS2 main line along this section to be moved in a north-easterly direction by up to 15.5m.</p> <p>There are associated design changes to a number of features, including the Stone Rural Footpath 33 realignment and Swynnerton Footpath 17 diversion, landscape mitigation planting and landscape mitigation earthworks, hedgerow and woodland habitat creation, access tracks and a turning head.</p>
<p>Additional land permanently required for the IMB-R/Norton Bridge to Stone Railway flood mitigation measures</p> <p>AP-003-002</p> <p>Map CT-06-222, B8 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent acquisition of land for provision of flood mitigation measures comprising a 430m flood mitigation bund and replacement floodplain storage area, west of the M6 and north of the realigned Yarnfield Lane.</p>	<p>Additional land for the permanent provision of flood mitigation measures. A new smaller flood storage area will replace the flood storage area west of the M6 and its associated flood mitigation bund, which were included in the original scheme. Two additional flood storage areas are proposed and two flood mitigation bunds will be required. New culverts will also be required and the culverts included in the original scheme will be amended.</p>

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

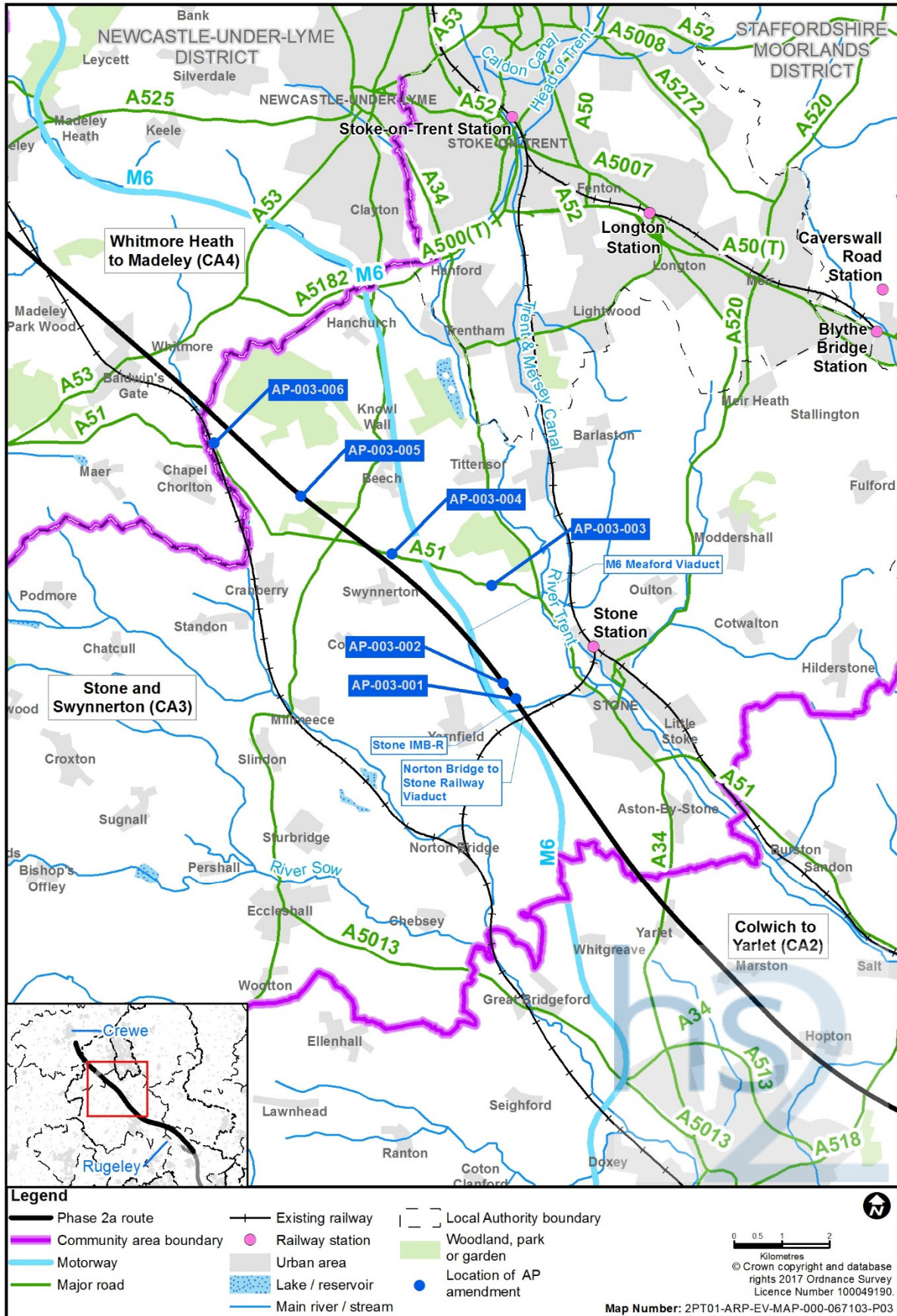
Name of amendment	Description of the original scheme	Description of the AP revised scheme
<p>Additional land permanently required for a new junction of the A51 Bury Bank and Stone Rural BOAT 34</p> <p>AP-003-003</p> <p>Map CT-06-224-R1, G5 to F7 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent acquisition of land for Stone Byway Open to All Traffic (BOAT) 34 to be widened with passing bays to provide HS2 maintenance access to the HS2 route, between the existing junction of the A51 Bury Bank and Swynnerton Footpath 27.</p>	<p>Additional land for a permanent new junction of the A51 Bury Bank and Stone Rural BOAT 34, approximately 180m to the east of the existing junction.</p>
<p>Additional land permanently required to widen the highway verge along the A51 Stone Road</p> <p>AP-003-004</p> <p>Map CT-06-225, E3 to D4 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent acquisition of land for the diverted Tittensor Road to connect to the diverted A51 Stone Road, approximately 100m west of Long Compton Farm. Landscape mitigation planting, grassland habitat creation and hedgerow habitat creation would be provided east of the diverted A51 Stone Road/diverted Tittensor Road junction.</p>	<p>Additional land for the permanent widening of the highway verge along the south edge of the A51 Stone Road to improve visibility at the junction between the diverted Tittensor Road and the A51 Stone Road.</p> <p>There will be a reduction in the landscape mitigation planting and grassland habitat creation included in the original scheme, as well as removal of a section of hedgerow habitat creation.</p>
<p>Additional land permanently required for the alignment of the Swynnerton Estate North green overbridge</p> <p>AP-003-005</p> <p>Map CT-06-227, H5 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent acquisition of land for the Swynnerton Estate North green overbridge, which would provide vehicle access to the Swynnerton Estate across the HS2 main line. There would be landscape mitigation planting on both sides and planting across the overbridge to facilitate ecological connectivity across the route.</p>	<p>Additional land for a change to the earthworks on the north side of the Swynnerton Estate North green overbridge required to raise the height of the overbridge by 1m.</p> <p>As a result of the increased area of earthworks, landscape mitigation planting will be adjusted on the southern approach, however, the overall area of landscape mitigation planting will be unchanged from the original scheme.</p>
<p>Additional land permanently required for the provision of a roundabout at the junction of the realigned Dog Lane, the A51 The Rowe, Bent Lane and the A51 through Stableford</p> <p>AP-003-006</p> <p>Map CT-06-228a, F10 to D7, F8 to E8 and C8 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent acquisition of land for the realignment of Dog Lane to pass over the HS2 main line via an overbridge and continue south to a four-arm staggered junction¹⁰ with the A51 The Rowe, Bent Lane and the A51 through Stableford.</p> <p>Permanent acquisition of land for landscape mitigation planting south of the Dog Lane overbridge, and woodland habitat creation and hedgerow habitat creation along both sides of the realigned Dog Lane.</p>	<p>Additional land permanently required for a four-armed roundabout in place of the four-arm staggered junction. There will be modifications to the alignments of the realigned Dog Lane, realigned Bent Lane (South), and the A51 The Rowe, to tie in to the roundabout. An additional junction bell-mouth¹¹ for access to and from a residential property on the A51 The Rowe will also be provided.</p> <p>There will be a slight reduction in the area of woodland habitat creation on the south-east side of the new roundabout but a net gain in hedgerow habitat creation, mainly along both sides of the Bent Lane realignment.</p>

¹⁰ An at-grade junction of three roads, at which the major road is continuous through the junction, and the minor roads connect with the major road so as to form two opposed T-junctions.

¹¹ A term used to refer to a new access junction with the highway or another access. The new carriageway for the access is shaped like a bell.

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Figure 2: Locations of engineering amendments in the Stone and Swynnerton area



4.3 Minor utility amendments

- 4.3.1 Amendments to minor utilities will be required in the Stone and Swynnerton 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 original scheme. 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 in nature. Provision of access to adjacent properties will usually be maintained during the works with alternative access arrangements being made where necessary. The implementation of the works will be subject to the appropriate traffic management measures to ensure that disruption to non-motorised users and vehicular traffic is reduced insofar as reasonably practicable. Table 4 provides a summary of the minor utility amendments and the changes to land or Bill powers required. Figure 3 shows the general location of the minor utility amendments.

Table 4: Summary of minor utility amendments in the Stone and Swynnerton area

Utility	Description of the activities	Change to Bill powers
BT Openreach overhead telecommunications cable AP-003-101 Map CT-06-221, H5 to H4 in the SES and AP ES, Volume 2, CA3 Map Book -	Permanent diversion of utility, 440m in length, along Stone Rural Bridleway 0.1135 and crossing the HS2 route within the Stone Rural Bridleway 0.1135 accommodation overbridge.	Additional land permanently required.
BT Openreach underground fibre optic and telecommunications cables and Zayo underground fibre optic telecommunications cable AP-003-102 Map CT-06-222, H3 to H1 in the SES and AP ES, Volume 2, CA3 Map Book	Permanent diversion of three utilities, 880m in length, to follow the B5026 Eccleshall Road realignment.	Additional land permanently required
BT Openreach overhead telecommunications cable AP-003-103 Map CT-06-222, H2 and G4 in the SES and AP ES, Volume 2, CA3 Map Book	Permanent diversion of utility, 170m in length, along the B5026 Eccleshall Road realignment.	Additional land permanently required
Western Power Distribution 11kV overhead lines AP-003-104 Map CT-06-222, H5 and G5 to G4 in the SES and AP ES, Volume 2, CA3 Map Book	Permanent diversion of two utilities, 660m in length, to the east of the HS2 route along the B5026 Eccleshall Road and parallel to the HS2 main line.	Additional land permanently required
Zayo underground fibre optic telecommunications cable AP-003-105 Map CT-05-222, D4 to B5 in the SES and AP ES, Volume 2, CA3 Map Book	Removal of 600m section of utility north of the HS2 route near Yarnfield Lane	Additional land temporarily required

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

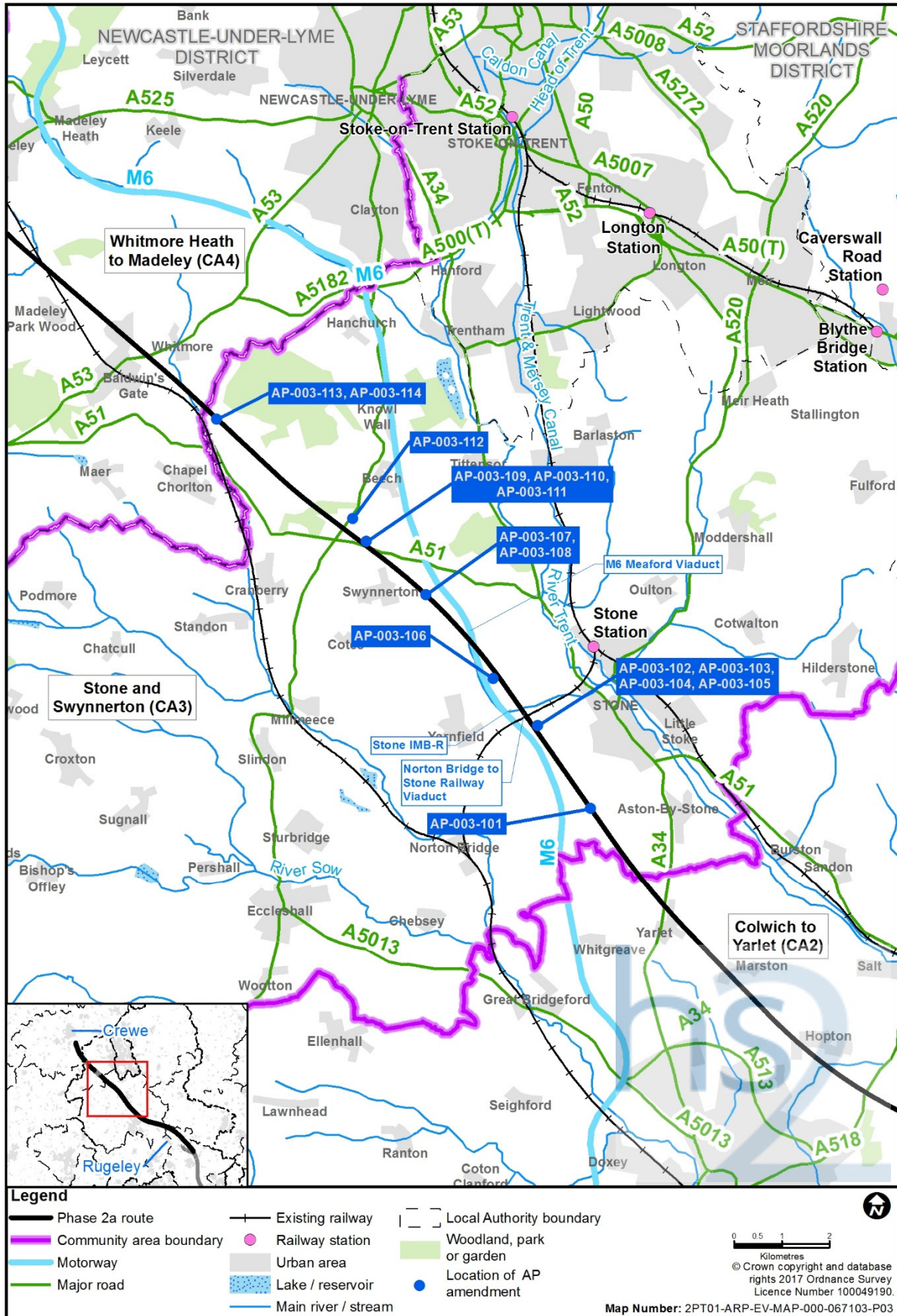
Utility	Description of the activities	Change to Bill powers
<p>Zayo underground fibre optic telecommunications cable</p> <p>AP-003-106</p> <p>Map CT-05-223, C10 to A8; Map CT-05-223-L1, I4 to G5, G5 to E2, E2 to C1 and C1 to A1; Map CT-05-224, J9 to H6 and E2 to D1; and Map CT-05-224-R1, E10 to C8 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Removal of 4.6km section of utility between Yarnfield Lane and the A51 Bury Bank</p>	<p>Additional land temporarily required and change in Bill powers at one plot of land from temporary to permanent.</p>
<p>BT Openreach underground telecommunications cable</p> <p>AP-003-107</p> <p>Map CT-06-224, E5 to E3 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent diversion of utility, 550m in length, along Swynnerton Footpath 27 accommodation underbridge</p>	<p>Additional land permanently required</p>
<p>Two Severn Trent Water 10-inch water mains and one Severn Trent Water 400mm water main</p> <p>AP-003-108</p> <p>Map CT-06-224, C6 to B7 and C5 to B4; in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent diversion of three utilities, 375m in length, crossing the HS2 route to the south of the M6 and south-west of the Swynnerton Estate South underbridge.</p>	<p>Additional land permanently required</p>
<p>Western Power Distribution 11kV overhead line</p> <p>AP-003-109</p> <p>Map CT-06-225, F4 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent diversion of utility, 250m in length, to the south of Sandyford Farm, near the Swynnerton New Bridleway accommodation underbridge.</p>	<p>Additional land permanently required</p>
<p>BT Openreach underground fibre optic telecommunications cables</p> <p>AP-003-110</p> <p>Map CT-06-225, F10 to F9 and F2 to D4 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent diversion of utility, 1.3km in length, to follow the Tittensor Road diversion.</p>	<p>Additional land permanently required</p>
<p>Severn Trent Water water mains, one 400mm main, two 10-inch mains and one 9-inch main</p> <p>AP-003-111</p> <p>Map CT-06-225, E8 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Vertical realignment of utilities, up to 1m lower than current depth, between the retained Tittensor Road and the diverted Tittensor Road.</p>	<p>Additional land permanently required</p>
<p>BT Openreach overhead telecommunications cable</p> <p>AP-003-112</p> <p>Map CT-06-226, F8 to F7 and F3 to F1 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent diversion of utility, 840m in length, along the realigned A519 Newcastle Road.</p>	<p>Additional land permanently required</p>

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Utility	Description of the activities	Change to Bill powers
<p>Severn Trent Water 400mm water main AP-003-113</p> <p>Map CT-06-228a, E9 to C8 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent diversion of utility, 400m in length, on the eastern side of the West Coast Main Line (WCML) and west of the realigned Bent Lane (South).</p>	<p>Additional land permanently required</p>
<p>Two Severn Trent Water 400mm water mains AP-003-114</p> <p>Map CT-06-228a, C7 to B6 in the SES and AP ES, Volume 2, CA3 Map Book</p>	<p>Permanent diversion of two utilities, 350m in length, crossing the HS2 route along the alignment of the Swynnerton Footpath 10 accommodation underbridge.</p>	<p>Additional land permanently required</p>

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Figure 3: Locations of minor utility amendments in the Stone and Swynnerton area



4.4 Other amendments requiring changes to Bill powers

- 4.4.1 Since submission of the Bill, the need for amendments 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') have been identified.
- 4.4.2 The amendments relate to the rights for use of certain plots 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 of the original scheme. However, it has been ascertained that these land plots 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 2-4 times per year by two light goods vehicles (LGV) (e.g. long wheel-base pick-up vehicles).
- 4.4.5 The use of these land plots 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 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 5 provides a list of those instances where there has been a need to amend the Bill plans and Schedule 8 of the Bill for the Stone and Swynnerton area.

SES and AP ES Volume 2 – Community Area 3, Stone and Swynnerton

Table 5: Summary of other amendments requiring changes to Bill powers in the Stone and Swynnerton area

Name of amendment	Description of the original scheme (Schedule 8 of the Bill)	Description of the AP revised scheme
<p>Additional access rights to land plots AP1-6; AP1-9; AP1-11; AP1-24; AP1-27; AP1-29; AP1-30; AP1-40; AP1-41; AP1-54; AP1-57; AP1-59; AP1-64; AP1-65; AP1-66; and AP1-60 in the parish of Swynnerton</p> <p>AP-003-201</p> <p>Bill plan replacement sheets 1-40; 1-41; 1-43; 1-44 and 1-45</p>	Provision of access for construction	Provision of access for construction and maintenance
<p>Additional access rights to land plot AP1-1 in the parish of Stone Rural</p> <p>AP-003-202</p> <p>Bill plan replacement sheet 1-35</p>		

5 Assessment of engineering amendments in the Stone and Swynnerton area

5.1 Additional land permanently required and a change in the powers of the Bill for the viaduct crossing of the Norton Bridge to Stone Railway and track crossovers along the HS2 route (AP-003-001)

- 5.1.1 The Bill provides for the HS2 route to continue from the B5026 Eccleshall Road overbridge in the Yarlet North cutting, passing to the south-west of Stone and east of Yarnfield, remaining on the east side of the M6. The HS2 route would then cross over the Norton Bridge to Stone Railway and Filly Brook on the Filly Brook viaduct and proceed onto the Yarnfield North embankment before crossing over the realigned Yarnfield Lane. The HS2 route would cross over the M6 on the M6 Meaford viaduct, heading in a north-west direction, passing Blakelow Farm approximately 100m to the north-east. The HS2 main line would continue past Swynnerton, which would be approximately 550m to the south-west, before continuing onto the Swynnerton embankment and into the Swynnerton North cutting to the Tittensor Road overbridge. See Map CT-06-222, H6 to Map CT-06-225, D5 in the main ES, Volume 2, CA3 Map Book.
- 5.1.2 This section of the HS2 route would be approximately 7km in length, extending from the B5026 Eccleshall Road to Tittensor Road overbridge approximately 650m north of Swynnerton.
- 5.1.3 Since the submission of the Bill, further consideration has been given to the design to enable track crossovers¹² to be relocated off the Filly Brook viaduct and away from the crossing over the Norton Bridge to Stone Railway, to optimise the design and improve the future maintenance requirements of the HS2 railway. This has resulted in the shortening of the viaduct and a change in the vertical and horizontal alignment of the HS2 main line to enable the relocation of the crossovers further north-west along the route.
- 5.1.4 Due to the complexity of change in the Stone and Swynnerton area resulting from the relocation of the track crossovers, this amendment is described in the following three parts:
- Part 1 - raising of the alignment of the HS2 main line from the B5026 Eccleshall Road to Meaford cutting;
 - Part 2- amendments to the viaduct crossing of the Norton Bridge to Stone Railway and Filly Brook;
 - Part 3 - horizontal realignment of the HS2 main line from the northern extent of Yarnfield North embankment to Tittensor Road overbridge.

¹² A track crossover is a pair of switches connecting two parallel rail tracks, allowing a train on one track to cross over to the other.

- 5.1.5 The raising of the alignment of the HS2 main line from the B5026 Eccleshall Road to Meaford cutting and the amendments to the viaduct crossing of the Norton Bridge to Stone Railway and Filly Brook will require a change in Bill powers to alter the limits of deviation¹³ as set out in the Bill.
- 5.1.6 The horizontal realignment of the HS2 main line from the northern extent of Yarnfield North embankment to Tittensor Road overbridge is outside the limits of the Bill and will result in the permanent requirement for approximately 0.7ha of additional land. This element will also require a change in Bill powers to alter to the limits of deviation as set out in the Bill.

- 5.1.7 The three parts that comprise this amendment are described in further detail below.

Part 1: Raising of the alignment of the HS2 main line from the B5026 Eccleshall Road to Meaford cutting

- 5.1.8 In this location, the Bill provides for the HS2 mainline within the Yarlet North cutting, up to 17m in depth, passing under the B5026 Eccleshall Road overbridge, and continuing onto the Yarnfield South embankment, at a height of up to 6m above existing ground level, running adjacent to Micklow House Farm. The HS2 main line would then cross the Norton Bridge to Stone Railway and the Filly Brook on the Filly Brook viaduct, at a height of up to 15m above existing ground level. The route would continue onto Yarnfield North embankment, approximately 760m in length and up to 12m in height, passing over Yarnfield Lane before entering Meaford cutting.
- 5.1.9 The Bill provides for the following:
- a track crossover, approximately 400m in length, between Stone Rural Bridleway 0.1135 accommodation overbridge and Stone Rural Footpath 32 accommodation overbridge along the HS2 route. A trackside storage area¹⁴, approximately 240m in length, would be located adjacent to the crossover at this location on the south-west side of the HS2 route. Associated access tracks from the Stone Infrastructure Maintenance Base-Rail (IMB-R) would be provided for access to the track side storage area and a balancing pond adjacent to the east of Stone Rural Footpath 0.1135, on the south-west side of the HS2 route from the Stone IMB-R. See Map CT-06-221, H5 to E6 in the main ES Volume 2, CA3 Map Book;
 - track crossovers, approximately 400m in length, to the north-west of Stone Rural Footpath 32 accommodation overbridge adjacent to Walton House Farm and Walton Heath Farm, along the HS2 route. A trackside storage area, approximately 240m in length, would be located adjacent to the crossover in this location on the north-east side of the HS2 route. An associated access road from the Stone IMB-R would be provided for access to the track side storage area, crossing over the HS2 main line via the Stone Rural Footpath 32

¹³ The design shown on the Bill drawings is a preliminary design. The powers within the Bill must therefore be sufficiently flexible to allow adjustments once detailed design has been carried out. This is achieved by including powers to deviate from the position of the works shown on the Parliamentary plans by a small amount; this deviation is restricted by the limits of deviation marked on the plans.

¹⁴ Trackside storage areas are provided alongside track crossovers for the storage of equipment and parts to be used in future maintenance and replacement of the crossovers.

accommodation overbridge. See Map CT-06-221, E5 to B6 in the main ES Volume 2, CA3 Map Book;

- a trackside storage area, approximately 240m in length, adjacent to Yarnfield South embankment on the north-east side of the HS2 route. An associated access road would be provided for access to the track side storage area, from the realigned B5026 Eccleshall Road. See Map CT-06-222, H4 to D5 in the main ES Volume 2, CA3 Map Book; and
- a trackside storage area, approximately 120m in length, to the south side of Yarnfield Lane on the north-east side of the HS2 main line. An associated access road would be provided from the realigned Yarnfield Lane for access to the track side storage area and the balancing ponds to the north and east of the track side storage area. See Map CT-06-223, J6 to H7 in the main ES Volume 2, CA3 Map Book.

- 5.1.10 Areas of landscape mitigation planting would be provided between Stone Rural Footpath 32 and the B5026 Eccleshall Road, on the north-east side of the HS2 main line at the northernmost extent of Yarnfield South embankment. See maps CT-06-221, E5 to B5 to CT-06-222, I5 to H5 in the main ES Volume 2, CA3 Map Book.
- 5.1.11 An area of landscape earthworks and landscape mitigation planting would be located adjacent to the Yarnfield North embankment, on the north-east side of the HS2 main line, between the Norton Bridge to Stone Railway and Yarnfield Lane. See maps CT-06-221, B5 to CT-06-223, I6 in the main ES Volume 3, CA3 Map Book.
- 5.1.12 Since the submission of the Bill, a requirement has been identified to increase the vertical alignment of the HS2 route between the B5026 Eccleshall Road overbridge and Meaford cutting. The change in vertical alignment is required to enable the horizontal alignment change (as described in 'horizontal realignment of the HS2 main line from the northern extent of Yarnfield North embankment to Tittensor Road overbridge') and to allow the relocation of crossovers away from the Filly Brook viaduct. The AP revised scheme will include:
- an increase in height of Yarnfield South embankment by up to 0.6m along its full length (approximately 300m); and
 - an increase in height of Yarnfield North embankment by up to 0.9m along its full length (approximately 1km).
- 5.1.13 The following amendments will be required as part of increasing the vertical alignment:
- the track crossover between Stone Rural Bridleway 0.1135 accommodation overbridge and Stone Rural Footpath 32 accommodation overbridge will be increased in length by approximately 50m, to a total length of 450m, to allow for an increase in speed through the track crossovers from 200 kilometres per hour (kph) to 230kph. The associated trackside storage area will be increased in length by approximately 25m, to a total length of approximately 265m. See Map CT-06-221, H5 to E6 in the SES and AP ES Volume 2, CA3 Map Book;

- the removal of a track crossover and trackside storage area located to the north-west of Stone Rural Footpath 32, adjacent to Walton House Farm and Walton Heath Farm. The earthworks associated with Yarlet North cutting will be reduced and an additional 0.3ha of landscape mitigation planting will be provided on the north-east side of the HS2 main line. See Map CT-06-221, E5 to C5 in the SES and AP ES Volume 2, CA3 Map Book;
- a replacement trackside storage area, approximately 125m in length, will be located on the south-west side of the HS2 main line, adjacent to the Stone headshunt¹⁵. The reception tracks for the Stone IMB-R/railhead will be reduced in length by approximately 200m at this location. See Map CT-06-221, D6 to B6 in the SES and AP ES Volume 2, CA3 Map Book;
- the removal of a trackside storage area, approximately 240m in length, located adjacent to the south end of the Yarnfield South embankment on the north-east side of the HS2 main line (see Map CT-06-222, F5 to E5 in the main ES Volume 2, CA3 Map Book). The associated access track will be amended to maintain access to the balancing ponds and maintenance access point, included in the original scheme, and will be realigned to provide a more direct route. Landscape mitigation planting on the north-east side of the HS2 main line, at the northern most extent of Yarnfield South embankment, will be re-orientated and will increase in size by approximately 0.1ha. See Map CT-06-222, H5 to D6 in the SES and AP ES Volume 2, CA3 Map Book;
- a replacement trackside storage area, approximately 125m in length, will be provided adjacent to the south end of the Yarnfield North embankment on the south-west side of the HS2 main line. See Map CT-06-222, C6 to B6 in the SES and AP ES Volume 2, CA3 Map Book;
- the relocation of the trackside storage area approximately 200m south of Yarnfield Lane, moving it 150m closer to Yarnfield Lane. The access track will be realigned to maintain access to the balancing ponds and a maintenance access point, included in the original scheme, whilst retaining access to the relocated trackside storage area. There will be an increase in landscape earthworks by approximately 90m in length, to a total of 350m. The maximum height of the earthworks will reduce by approximately 2m to a total of approximately 11m above existing ground level. See Map CT-06-222, C5 to A6 and Map CT-06-223 J6 to H7 in the SES and AP ES Volume 2, CA3 Map Book; and
- the relocation of Yarnfield Lane auto-transformer station by approximately 5m to the south-west. See Map CT-06-223, H7 in the SES and AP ES Volume 2, CA3 Map Book.

5.1.14 The activities described in this part of the amendment will be constructed within the period set out in the main ES.

¹⁵ A headshunt is a length of track provided to release trains in the direction in which they originated, as well as allowing trains to change tracks and direction.

- 5.1.15 The raising of the alignment of the HS2 main line from the B5026 Eccleshall Road to Meaford cutting will require a change to the limits of deviation as set out in the Bill. See Map CT-06-222, F5 to D5 and D5 to A5; and Map CT-06-223, J7 to H7 in the SES and AP ES Volume 2, CA3 Map Book.

Part 2: Amendments to the viaduct crossing of the Norton Bridge to Stone Railway and Filly Brook

- 5.1.16 The Bill provides for the HS2 main line to cross the Norton Bridge to Stone Railway and the Filly Brook on the Filly Brook viaduct, approximately 450m in length and up to 15m in height. Track crossovers, 150m in length, would be located on the viaduct. Stone retaining wall 2, approximately 170m in length and up to 5m in height, would be required to retain a section of the Stone IMB-R, adjacent to the Filly Brook viaduct on the south side of the HS2 main line. See Map CT-06-222, E5 to B6 in the main ES Volume 2, CA3 Map Book.
- 5.1.17 Adjacent to the Filly Brook viaduct, on the north side of the HS2 main line, an area of grassland habitat creation approximately 1ha in size, would be provided. To the south-west of the Filly Brook viaduct there would be two replacement floodplain storage areas, totalling approximately 1.7ha, adjacent to the Norton Bridge to Stone Railway. See Map CT-06-222, D4 to C8 in the main ES Volume 2, CA3 Map Book.
- 5.1.18 Reception tracks within the Stone IMB-R would cross over Filly Brook on the Filly Brook West underbridge, approximately 30m in length and up to 11m in height. See Map CT-06-222, D6 to C7 in the main ES Volume 2, CA3 Map Book.
- 5.1.19 Filly Brook would be realigned underneath the Filly Brook West underbridge and the Filly Brook viaduct via an open channel watercourse diversion to re-join the existing watercourse on the north side of the route. See Map CT-06-222, D5 to A9 in the main ES Volume 2, CA3 Map Book.
- 5.1.20 Since the submission of the Bill, it has been proposed to relocate the track crossovers 150m north-west along the route so that they are no longer on the viaduct, to optimise the design and improve the future maintenance requirements of the HS2 railway. The crossovers will remain 150m in length as per the original scheme. The following amendments to the crossing of the Filly Brook and the Norton Bridge to Stone Railway will be required:
- the Filly Brook viaduct will be shortened in length by approximately 370m and renamed the Norton Bridge to Stone Railway viaduct. The new viaduct will be approximately 80m in length and up to 15m in height. The viaduct has been renamed to reflect that the AP revised scheme will cross the railway but will no longer cross Filly Brook. The extension of Yarnfield South embankment and Yarnfield North embankment by 85m and 300m respectively will be required. Stone retaining wall 2 will be removed following the extension of the embankments. Filly Brook will pass through Yarnfield North embankment via the new Filly Brook culvert, which will be approximately 95m in length. See Map CT-06-222, E5 to C6 in the SES and AP ES Volume 2, CA3 Map Book; and
 - the Filly Brook West underbridge will be removed, with the embankments associated with this feature extended by 29m, reducing the floodplain storage area by approximately 0.3ha. Filly Brook will be diverted via the new Filly

Brook West culvert, approximately 80m in length, at the same location as the proposed watercourse channel in the original scheme. See Map CT-06-222, D6 to C7 in the SES and AP ES Volume 2, CA3 Map Book.

- 5.1.21 The following landscape, ecological and flood risk mitigation, included in the original scheme, will be amended accordingly:
- a reduction of replacement woodland habitat creation by 0.6ha on the north-east side of the HS2 main line, north-west of the Norton Bridge to Stone Railway. See Map CT-06-222, C5 to B5 in the SES and AP ES Volume 2, CA3 Map Book;
 - a reduction in grassland habitat creation by 0.2ha on the north-east side of the HS2 main line, adjacent to the north-west of the Norton Bridge to Stone Railway. See Map CT-06-222, D4 to C5 in the SES and AP ES Volume 2, CA3 Map Book; and
 - a reduction in floodplain storage area by 0.3ha, equivalent to approximately 5,000m³ of floodwater during the peak of a 1 in 100 year plus climate change event, to accommodate new earthworks on land between the HS2 main line and the M6, adjacent to the north-west side of the Norton Bridge to Stone Railway (see Map CT-06-222, D6 to C8 in the SES and AP ES Volume 2, CA3 Map Book). The proposals presented in AP-003-002 (Additional land permanently required for the IMB-R/Norton Bridge to Stone Railway flood mitigation measures) are specifically designed to ensure that any effects related to this loss of floodplain storage are mitigated.
- 5.1.22 There will be an increase in heavy goods vehicle (HGV) traffic movements resulting from the increased earthworks movements for the extension of Yarnfield South embankment and Yarnfield North embankment, and the extension of the embankment within the Stone IMB-R to support the reception track from the Stone headshunt. The increased HGV traffic movements will be via the M6.
- 5.1.23 Due to the extension of Yarnfield North embankment, one additional year will be required for the construction of this element compared to that set out in the main ES. The construction programme for the Yarnfield North embankment has been amended to start one year earlier than stated in the main ES. The Yarnfield North embankment is expected to take approximately two years to complete and will commence in 2023, with the completion date as stated in the main ES.
- 5.1.24 The replacement Norton Bridge to Stone Railway viaduct will require a reduction in the construction programme by one year and three months to that reported in the main ES due to the shortening in length of the viaduct proposed. The Norton Bridge to Stone Railway viaduct will take approximately one year and nine months to complete and will be constructed between 2022 and 2023.
- 5.1.25 The construction of Yarnfield North embankment and the Norton Bridge to Stone Railway viaduct will be managed from the Yarnfield North embankment satellite compound.

- 5.1.26 The land required for the amendments to the viaduct crossing of the Norton Bridge to Stone Railway and Filly Brook will require a change to the limits of deviation as set out in the Bill. See Map CT-o6-222, F5 to D5 and D5 to A5; and Map CT-o6-223, J7 to H7 in the SES and AP ES Volume 2, CA3 Map Book.

Part 3: Horizontal realignment of the HS2 main line from the northern extent of Yarnfield North embankment to Tittensor Road overbridge

- 5.1.27 The Bill provides for the HS2 main line to continue from the northern extent of Yarnfield North embankment through Meaford cutting, at a depth of up to 3m. The HS2 main line would continue on Meaford South embankment, at a height of up to 9m, before passing over the M6 on the M6 Meaford viaduct. The HS2 main line would continue in a north-west direction on Meaford North embankment passing Blakelow Farm 100m to the north-east and into the Swynnerton South cutting. The route would continue onto the Swynnerton embankment and Swynnerton North cutting for approximately 175m to the Tittensor Road overbridge.
- 5.1.28 The Bill provides for the following:
- the realignment of Stone Rural Footpath 33 by 800m to the north-west of its existing alignment, running adjacent to the northern side of the HS2 main line, and crossing under the M6 Meaford viaduct. See Map CT-o6-223, G7 to D8 in the main ES Volume 2, CA3 Map Book;
 - Meaford South embankment, 343m in length and up to 9m in height, with landscape earthworks and landscape mitigation planting on the north side of the HS2 main line to integrate the scheme into the surrounding landscape. See Map CT-o6-223, D7 to B7 in the main ES Volume 2, CA3 Map Book;
 - M6 Meaford viaduct, 175m in length and up to 16m in height. See Map CT-o6-223, B7 to A7 in the main ES Volume 2, CA3 Map Book;
 - Meaford North embankment, 930m in length and up to 18m in height, with associated landscape earthworks and landscape mitigation planting to integrate the scheme into the surrounding landscape. See Map CT-o6-224, I6 to E5 in the main ES Volume 2, CA3 Map Book;
 - diversion of Swynnerton Footpath 17 for 400m in length, 400m south-east of its existing alignment, joining Swynnerton Footpath 27 on the south side of the HS2 main line. See Map CT-o6-224, E4 to C6 in the main ES Volume 2, CA3 Map Book; and
 - Swynnerton embankment, 1km in length and up to 7m in height, with associated landscape earthworks to integrate the scheme into the surrounding landscape. A noise fence barrier, 3m in height and approximately 1km in length, would run along the south side of the HS2 main line to provide acoustic screening for the residents of Swynnerton. See Map CT-o6-224, C5 to A5, and Map CT-o6-225, J5 to E5, in the main ES Volume 2, CA3 Map Book.
- 5.1.29 Since submission of the Bill, a need has been identified to amend the horizontal alignment of the HS2 main line by up to 15.5m in a north-easterly direction between the northern extent of Yarnfield North embankment and Tittensor Road overbridge.

The maximum alignment change will be around Swynnerton Footpath 27 accommodation underbridge to the south-west of Blakelow Farm. The amended alignment will provide a longer straight section of track to the north of Filly Brook to enable the relocation of crossovers away from the Filly Brook viaduct. As a result of this change, the following amendments will be required:

- lengthening of Stone Rural Footpath 33 by a further 60m to extend around the revised earthworks at the M6 Meaford viaduct, a diversion of 860m in total. See Map CT-06-223, C7 to B7 in the SES and AP ES Volume 2, CA3 Map Book;
- a reduction in landscape mitigation planting by 0.2ha to accommodate the change in horizontal alignment to the north-east of the Meaford South embankment. A realignment of hedgerow habitat creation will also be required around the revised earthworks. See Map CT-06-223, D7 to B7 in the SES and AP ES Volume 2, CA3 Map Book;
- reshaping of the landscape earthworks and a balancing pond on the north-east side of the Meaford North embankment from Meaford Viaduct to Swynnerton Footpath 27 accommodation underbridge. As a result, approximately 1ha of woodland habitat creation and landscape mitigation planting included in the original scheme will no longer be implemented. See Map CT-06-224, H5 to F4 in the SES and AP ES Volume 2, CA3 Map Book;
- to the south-west of the Meaford North embankment from Meaford viaduct to approximately 200m north of Swynnerton Footpath 27 accommodation underbridge an additional 1.3ha of woodland habitat creation will be implemented as a result of the alignment moving north-west. See Map CT-06-224, I6 to D5 in the SES and AP ES Volume 2, CA3 Map Book;
- a reduction by 0.3ha of the landscape mitigation planting and landscape mitigation earthworks immediately north-west of Swynnerton Footpath 27 underbridge, on the north side of the Meaford North embankment and to the south-west of Blakelow Farm. This will avoid the requirement for additional land at Blakelow Farm as a result of the change in horizontal alignment. See Map CT-06-224, E5 to D5 in the SES and AP ES Volume 2, CA3 Map Book;
- an amendment to Swynnerton Footpath 17 diversion adjacent to the south side of the HS2 main line. The diversion of Swynnerton Footpath 17 will be slightly relocated and shortened by 10m in length to a total diversion of 390m. See Map CT-06-224, E4 to D6 in the SES and AP ES Volume 2, CA3 Map Book;
- landscape earthworks and landscape woodland mitigation planting from the southern end of Swynnerton embankment to Swynnerton new bridleway accommodation underbridge will move in a north-east direction in line with the alignment change. There will be an increase in woodland habitat creation by 0.4ha as a result. See Map CT-06-225, J5 to G5 in the SES and AP ES Volume 2, CA3 Map Book;
- the access track between Swynnerton Estate south underbridge and Swynnerton new bridleway accommodation underbridge will be relocated. The turning head, used for accessing the balancing pond adjacent to the

Swynnerton Estate South underbridge, will be relocated 37m north-east. See Map CT-06-224, B5 to A5 and Map CT-06-225, J4 to G5 in the SES and AP ES Volume 2, CA3 Map Book;

- noise barriers will be retained adjacent to the HS2 main line on the Swynnerton embankment, but will move with the main line horizontal realignment. See Map CT-06-225, I5 to D5 in the SES and AP ES Volume 2, CA3 Map Book; and
- landscape earthworks between the Swynnerton new bridleway accommodation underbridge and the existing Tittensor Road will be steepened in gradient from a 1:8 slope to a 1:4 slope on the north-east side of the HS2 main line to avoid the requirement for additional land at Sandyford Farm. See Map CT-06-225, G5 to F5 in the SES and AP ES Volume 2, CA3 Map Book.

5.1.30 The activities described in this part of the amendment will be constructed within the period set out in the main ES.

5.1.31 The change to the horizontal alignment of the HS2 main line is outside the limits of the Bill. The amendment will result in the permanent requirement for approximately 0.7ha of additional land. The amendment will also require a change to the limits of deviation as set out in the Bill. See Map CT-06-223, H6 to B7; Map CT-06-224, I5 to F5, I4 to H4, E5 to B5 and B4; and Map CT-06-225, I4, I5 to G5 and F5 to E5 in the SES and AP ES Volume 2, CA3 Map Book.

Local alternatives

5.1.32 Additional land and a change in powers of the Bill will be required for the revised alignment of the HS2 main line in the Stone and Swynnerton area. This amendment has been identified to optimise the design and improve the future maintenance requirements of the HS2 railway. Four options were considered for this amendment as follows.

5.1.33 Option B: a lowering of the alignment of the HS2 main line and adjacent reception track for the connection to the Stone IMB-R by up to 4.9m between the Stone Rural Bridleway 0.1135 and the B5026 Eccleshall Road. A raising of the alignment of the HS2 main line by up to 0.9m, from the B5026 Eccleshall Road to Meaford cutting, would be required and there would be a need to change the horizontal alignment of the HS2 main line by up to 15.5m, from the northern extent of Yarnfield North embankment to Tittensor Road overbridge. The Stone Rural Bridleway 0.1135 and Stone Rural Footpath 32 accommodation overbridges would be combined into one crossing of the HS2 main line. This option would enable the removal of the Filly Brook viaduct and Stone retaining wall 2, and would introduce a shorter viaduct to cross the Norton Bridge to Stone Railway, at a length of 93m. Filly Brook would be culverted beneath the embankment associated with the Stone IMB-R reception tracks and the extended Yarnfield North embankment associated with the shorter viaduct. This option would enable the relocation of track crossovers along the HS2 main line and the removal of a track crossover adjacent to Walton House Farm.

5.1.34 Option C: a change in the horizontal alignment of the reception track connecting the HS2 main line to the Stone IMB-R by up to 5m, and a lowering of the alignment of the

reception track by up to 2.3m. This would require a retaining wall, 870m in length and up to 2m in height, between the HS2 main line and the reception track. The Stone Rural Bridleway 0.1135 and Stone Rural Footpath 32 accommodation overbridges would be combined into one crossing over the HS2 main line. This option would allow for the removal of the Filly Brook viaduct and Stone retaining wall 2, and would introduce a shorter viaduct to cross the Norton Bridge to Stone Railway, at a length of 174m. Filly Brook would be culverted beneath the embankment associated with the Stone IMB-R reception tracks and the extended Yarnfield North embankment associated with the shorter viaduct. This option would enable the relocation of track crossovers along the HS2 main line and the removal of a track crossover adjacent to Walton House Farm.

- 5.1.35 Option D: a raising of the alignment of the HS2 main line, by up to 1.2m, from the B5026 Eccleshall Road to Meaford cutting. A change in the horizontal alignment of the HS2 main line, by up to 20.5m, would also be required from the northern extent of Yarnfield North embankment to the Tittensor Road overbridge. The alignment of the reception track connecting the HS2 main line to the Stone IMB-R would also require a change in the horizontal alignment by up to 5m. The alignment of the reception track would need to be lowered by up to 1.5m south of the B5026 Eccleshall Road and then raised by up to 1.1m from north of the B5026 Eccleshall Road. This would require a retaining wall, 910m in length and up to 1.2m in height, between the HS2 main line and the reception track connecting the HS2 mainline to the IMB-R. The Stone Rural Bridleway 0.1135 and Stone Rural Footpath 32 accommodation overbridges would be combined into one crossing over the HS2 main line. This option would enable the removal of the Filly Brook viaduct and Stone retaining wall 2, and would introduce a shorter viaduct to cross the Norton Bridge to Stone Railway, at a length of 99m. Filly Brook would be culverted beneath the embankment associated with the Stone IMB-R reception tracks and the extended Yarnfield North embankment associated with the shorter viaduct. This option would enable the relocation of track crossovers along the HS2 main line and the removal of a track crossover adjacent to Walton House Farm.
- 5.1.36 Option D1-R (AP revised scheme): a raising of the alignment of the HS2 main line, by up to 0.9m, from the B5026 Eccleshall Road to Meaford cutting. A change in the horizontal alignment in the HS2 main line, by up to 15.5m, would also be required from the northern extent of Yarnfield North embankment to the Tittensor Road overbridge. This option would enable the removal of the Filly Brook viaduct and Stone retaining wall 2, and would introduce a shorter viaduct to cross the Norton Bridge to Stone Railway, at a length of 81m. Filly Brook would be culverted beneath the embankment associated with the Stone IMB-R reception tracks and the extended Yarnfield North embankment associated with the shorter viaduct. This option would enable the relocation of track crossovers along the HS2 main line and the removal of a track crossover adjacent to Walton House Farm.
- 5.1.37 Option D1-R was identified as the preferred option, as on balance it is the most technically preferable option from a maintenance, cost and construction perspective, whilst only being a slight increase in the environmental impact in comparison to the original scheme. In comparison to option D1-R, Option B would present a significant increase in earthworks and costs, whilst also incurring likely delays in the construction of the HS2 main line. Option C would present an increase in operational complexities due to a track crossover remaining on the proposed Norton Bridge to Stone Railway

viaduct and would require the construction of a retaining wall, incurring increased costs. Option D would also require the construction of a retaining wall with the associated increased costs. Option B and Option C would require an increase in the construction programme, whilst Option B, C and D would require an increase in HGV traffic movements for earthworks. All options considered were deemed to have a slight increase in environmental impact in comparison to the original scheme. Option D1-R was, therefore, taken forward as the preferred option from a maintenance, cost and construction perspective.

- 5.1.38 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 D1-R

- 5.1.39 When compared to the original scheme, Option D1-R would represent a slight increase in visual impacts during both construction and operation on nearby receptors at Blakelow Farm and Sandyford Farm as a result of the change in the horizontal alignment of the HS2 main line. The culverting of Filly Brook would increase the impact on the existing natural vegetated ecological corridor along the brook, reducing the permeability of the scheme for wildlife dispersal. This would also result in impacts on surface water and flood risk during construction. The impact on Highlow Meadows Local Wildlife Site (LWS) and associated protected species and habitats would, however, be reduced.

- 5.1.40 Option D1-R does not introduce any technical or construction complexities, risk of safety hazards, or overall lengthening of the construction programme as set out in the main ES.

Option B

- 5.1.41 In comparison to Option D1-R, Option B would result in a substantial increase in HGV traffic movements due to the increase in earthworks required for lowering of the alignment of the HS2 main line and associated reception track. This option would also provide a single overbridge for both the Stone Rural Bridleway 0.1135 and Stone Rural Footpath 32, which would result in increased journey lengths for non-motorised users.
- 5.1.42 Option B would lengthen the construction programme and increase the costs in comparison to Option D1-R, due to the increase in earthworks.

Option C

- 5.1.43 In comparison to Option D1-R, Option C would result in an increased impact on habitats and protected species due to the increased loss of woodland at Highlow Meadow LWS. Option C would result in an increase in HGV traffic movements due to the increase in earthworks required for the change in the horizontal alignment and lowering of the vertical alignment of the reception track that connects the HS2 main line with the Stone IMB-R. This option would also provide a single overbridge for both the Stone Rural Bridleway 0.1135 and Stone Rural Footpath 32, which would result in increased journey lengths for users.
- 5.1.44 An element of the track crossover on the proposed Norton Bridge to Stone Railway viaduct would be retained, and therefore, the maintenance and operational

complexities currently present within the original scheme would remain. This would present an increase in operational complexities in comparison to Option D1-R.

- 5.1.45 Option C would also lengthen the construction programme in comparison to Option D1-R due to the increase in earthworks.

Option D

- 5.1.46 In comparison to Option D1-R, Option D would result in an increase in HGV traffic movements due to the increase in earthworks required for the change in horizontal alignment and raising of the HS2 main line and the changes in horizontal and vertical alignment of the reception track that connects the HS2 main line with the Stone IMB-R. This option would also provide a single overbridge for both the Stone Rural Bridleway 0.1135 and Stone Rural Footpath 32, which would result in increased journey lengths for users
- 5.1.47 In comparison to Option D1-R, Option D would result in increased costs due to the construction of a retaining wall.

Topics included in the AP assessment

- 5.1.48 The amendment is considered to only require reassessment of the environmental effects and mitigation in the main ES for the following topics: air quality; ecology and biodiversity; landscape and visual; sound, noise and vibration and water resources and flood risk.
- 5.1.49 The amendment will result in small changes in HGV traffic movements. However, the increased HGV movements will primarily be via the M6 and will not lead to any new or different traffic and transport significant effects.

Air quality

Scope, assumptions and limitations

- 5.1.50 The assessment scope, key assumptions and limitations for air quality are as set out in Volume 1, the Scope and Methodology Report (SMR)¹⁶, and the SMR Addendum¹⁷ of the main ES.

Existing environmental baseline

- 5.1.51 The baseline air quality information for the Stone and Swynnerton area is as described in Volume 2, CA3, Section 5 of the main ES.
- 5.1.52 The main sources of air pollution in the Stone and Swynnerton area are emissions from road vehicles and agricultural activities. The main roads within the vicinity of the amendment are the M6, the A34 Stafford Road/The Fillybrooks, the A51 Stone Road, the A519 Newcastle Road and local roads.

¹⁶ 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>

¹⁷ 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)

- 5.1.53 SES and AP ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2020 and 2027 respectively, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.1.54 None of the identified developments affect the assessment of the AP revised scheme's likely construction and operation impacts on air quality.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.55 Emissions to the atmosphere will be controlled and managed during construction through the route-wide implementation of the Code of Construction Practice (CoCP).
- 5.1.56 No further measures are applicable to this assessment, above those stated in the draft CoCP¹⁸.

Assessment of impacts and effects

- 5.1.57 Changes in construction traffic flows associated with this amendment have been assessed for their potential to give rise to new significant air quality effects. Changes in traffic flows are anticipated on the A519 Newcastle Road and Yarnfield Lane.
- 5.1.58 The changes in traffic flows are not considered to give rise to any new significant effects at any receptor in relation to annual mean NO₂, PM₁₀ and PM_{2.5}¹⁹ concentrations, in comparison to the main ES. The assessment supporting these conclusions can be found in SES and AP ES Volume 5: Appendix AQ-001-000.

Mitigation and residual effects

Other mitigation measures

- 5.1.59 No other mitigation measures are required above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.1.60 There are no changes to the likely residual significant construction air quality effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.1.61 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 amendments.

¹⁸ 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>

¹⁹ PM_{2.5} and PM₁₀ describe two size fractions of airborne particles that can be inhaled and therefore are of concern for human health. The designations refer to particles of size less than 2.5 and 10 microns in diameter.

Effects arising from operation

Avoidance and mitigation measures

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

Assessment of impacts and effects

- 5.1.63 There are no new or different significant operational effects for air quality as a result of the amendment, in comparison with the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.1.64 No other mitigation measures are required above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.1.65 There are no changes to the likely residual significant operational air quality effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.1.66 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 amendments.

Monitoring

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

Ecology and biodiversity

Scope, assumptions and limitations

- 5.1.69 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.
- 5.1.70 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported within the SMR and the SMR Addendum. This constitutes a 'reasonable worst-case' basis for the subsequent assessment. The precautionary approach to the assessment that has been adopted identifies the likely significant ecological effects of the AP revised scheme.

Existing environmental baseline

- 5.1.71 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, aerial photography, and relevant existing information from regional and local sources. In addition, the baseline has been informed by additional Phase 1 habitat, hedgerow, wintering birds, bats, badger,

great crested newt, water vole and otter surveys and updated information from national data sources held by Natural England.

- 5.1.72 A summary of the baseline information relevant to the assessment of the amendment is provided below. This takes account of any relevant new or updated baseline information provided in Background Information and Data (BID) documents²⁰ (BID-EC-004-000 and Map Series EC-02, EC-04, EC-05, EC-10 and EC-12), which accompany the SES and AP ES. For those receptors described in the main ES, further details are provided in Volume 2, CA3, Section 8 and in Volume 5, including Map Series EC-01 of the main ES. Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000 and Map Series EC-02 to EC-12²¹.

Designated sites

- 5.1.73 There are five LWS of relevance to the assessment of the amendment, each of which is of county value. They are:
- Pool House Wood LWS is located to the east of the M6 and west of Stone, within the land required for the amendment;
 - Filly Brook (west of Stone) LWS is located on the western edge of Stone, approximately 570m north-east of the land required for the amendment;
 - Highlow Meadows LWS is located to the west of the M6 and east of Swynnerton Grange, partially within the land required for the amendment;
 - Lodge Covert LWS is located east of the M6, south-east of Sandyford, approximately 120m north-east of the land required for the amendment; and
 - Closepit Plantation LWS is located off the A51 Stone Road at Long Compton, partially within the land required for the amendment.
- 5.1.74 There is one woodland, Birchwood, of potential relevance to the assessment of the amendment that was added to the ancient woodland inventory (AWI) on the basis of the heritage review undertaken by HS2 Ltd to inform the main ES. Birchwood is located adjacent to the M6, to the south of Blakelow, within the land required for the amendment, and is of up to county value.

Habitats

- 5.1.75 Habitats within the land required for the amendment include arable and improved grassland, semi-improved grassland, species-poor and species-rich hedgerows, scrub, ponds, ditches, a veteran²² tree and mixed broadleaved woodland. The habitats of potential relevance to the assessment of the amendment are described in further detail below.

²⁰ HS2 Ltd (2018). High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data, Available online at: www.gov.uk/hs2

²¹ HS2 Ltd (2017), High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data, Available online at: www.gov.uk/hs2

²² Veteran trees are younger than ancient trees, but have features found on ancient trees such as decay in the trunk, branches and/or roots.

- 5.1.76 There are four woodlands of potential relevance to the assessment that qualify or are likely to qualify as mixed broadleaved woodland, which is a habitat of principal importance listed under the provisions of Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)²³ and a conservation priority of the Staffordshire Biodiversity Action Plan (BAP)²⁴. These are:
- woodland at Pool House Wood LWS, within the land required for the amendment. The woodland is of county value;
 - a small unnamed woodland near Blakelow, partially within the land required for the amendment. The woodland is of local/parish value;
 - woodland at Lodge Covert, which is bisected by the M6, and partially within the land required for the amendment. The woodland is of up to county value; and
 - woodland at Closepit Plantation LWS, which is partially within the land required for the amendment. The woodland is of up to county value.
- 5.1.77 There is one area of semi-improved grassland of potential relevance to the assessment. Semi-improved grassland at Highlow Meadows LWS is partially within the land required for the amendment. This habitat qualifies as lowland meadow, which is a habitat of principal importance and a conservation priority of the Staffordshire BAP. The grassland is of county value.
- 5.1.78 Hedgerows within the area required for the amendment are predominantly species-rich and with good structure. The species-rich hedgerows qualify as a habitat of principal importance and a conservation priority of the Staffordshire BAP. Hedgerows within the land required for the amendment contribute towards a wider hedgerow network across the Stone and Swynnerton area that is of district/ borough value.
- 5.1.79 Filly Brook is a primary tributary of the River Trent that flows through the land required for the amendment. Filly Brook may qualify as a habitat of principal importance and as a conservation priority of the Staffordshire BAP. The watercourse is of up to county value.
- 5.1.80 A pedunculate oak, with features to indicate it may be of veteran status, is located within the land required for the amendment, to the west of the large pond south of Sandyford Farm. The tree is considered to be of up to district/borough value.

Species

- 5.1.81 Protected and notable species that are known or assumed to occur within the land required for the amendment include bats, great crested newt, barn owl, wintering and breeding birds, otter, white-letter hairstreak butterfly, badger, polecat, harvest mouse, European hedgehog, brown hare and common reptile species.
- 5.1.82 The main ES reported a bat assemblage associated with habitats present between Lodge Covert and Birchwood. Field surveys in this area recorded one tree roost supporting noctule bats and one building roost supporting an unidentified bat species.

²³ Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

²⁴ Staffordshire Biodiversity Partnership. *Staffordshire Biodiversity Action Plan* [online]. Available online at: <http://www.sbap.org.uk/>

Foraging and commuting activity was recorded by an assemblage including common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Myotis species, brown long-eared, noctule and Nyctalus/Eptesicus species bats. The land required for 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 species that are conservation priorities of the Staffordshire BAP. The bat assemblage is of county value.

- 5.1.83 The main ES reported a bat assemblage associated with habitats at Closepit Plantation and Stabhill Plantation. Field surveys recorded five tree roosts, and two confirmed building roosts. Species present within the roosts include noctule bats and another unidentified bat species. The land required for the amendment contains potential bat roosting, foraging and commuting habitats that are likely to be used by this bat assemblage. The assemblage includes species of principal importance and species that are conservation priorities of the Staffordshire BAP. The bat assemblage is of county value.
- 5.1.84 The main ES reported a bat assemblage associated with habitats at Pire Hill. Field surveys identified a roost within a building. The species of bat roosting was not able to be confirmed, however, given the intensive agriculture and urbanised landscape associated with this area it is considered unlikely that this assemblage supports large numbers of rarer bat species. The land required for the amendment contains potential bat roosting, foraging and commuting habitats that are likely to be used by this bat assemblage. The bat assemblage potentially includes species of principal importance and species that are conservation priorities of the Staffordshire BAP. The bat assemblage is of up to county value.
- 5.1.85 The main ES reported a bat assemblage associated with habitats at Pool House Wood. Field surveys identified a series of trees with potential to support roosting bats. The land required for the amendment contains potential bat roosting, foraging and commuting habitats that are likely to be used by this bat assemblage. The bat assemblage potentially includes species of principal importance and species that are conservation priorities of the Staffordshire BAP. The bat assemblage is of up to county value.
- 5.1.86 The SES reports a metapopulation²⁵ of great crested newt that occurs between Yarnfield and Swynnerton (assumed metapopulation (AMP) 3.1), comprising known or assumed populations of great crested newt within a network of 42 ponds. The land required for the amendment contains habitats with potential for great crested newt breeding, foraging and shelter, which are likely to be used by this metapopulation. Great crested newt are an Annex 2²⁶ species, a species of principal importance, and a conservation priority of the Staffordshire BAP. The metapopulation is of county value.
- 5.1.87 The main ES reported populations of amphibian species including palmate newt, smooth newt, common toad and common frog, identified through field surveys, within ponds throughout the Stone and Swynnerton area. Amphibian species are assumed to be present in ponds that have not yet been surveyed. The land required

²⁵ 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 accompanies the SES and AP ES).

²⁶ Annex 2 of the EU's Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation.

for the amendment includes ponds, grassland, hedgerow and woodland habitats that are likely to be used by these species. Common toad is a species of principal importance. The population of common amphibians throughout Stone and Swynnerton is of local/parish value.

- 5.1.88 The main ES reported populations of barn owls at Blakelow, Yarnfield and Pirehill, identified through field surveys and desk study records. The land required for the amendment includes grassland habitats that are likely to be used by foraging barn owls, and suitable trees and buildings, which may be used by nesting barn owls. Barn owls are a conservation priority of the Staffordshire BAP. The barn owl populations at Blakelow, Yarnfield and Pirehill are of county value.
- 5.1.89 The main ES reported wintering and breeding bird assemblages at Highlow Meadows, identified through field surveys. The land required for the amendment includes habitats that provide foraging and nesting opportunities for these bird assemblages. The assemblages are typical of the habitats present, but include species of principal importance and/or conservation priority species. The bird assemblages at Highlow Meadows are of local/parish value.
- 5.1.90 The main ES reported the presence of otters, identified by desk study records, in numerous locations on the River Trent and Filly Brook, which flows into the Trent. The land required for the amendment includes Filly Brook, its tributaries and nearby ponds, which provide suitable foraging, breeding and dispersal habitats for otters. Otters are an Annex 2 species, a species of principal importance and a conservation priority of the Staffordshire BAP. The otter population using the River Trent, Filly Brook, its tributaries and associated habitats is of district/borough value.
- 5.1.91 The main ES reported a population of white-letter hairstreak butterfly, identified through desk study records, at Pool House Wood. The land required for the amendment includes Pool House Wood and associated hedgerow habitats that may be used by foraging white-letter hairstreak. The white-letter hairstreak is a species of principal importance. The white-letter hairstreak population at Pool House Wood is of district/borough value.
- 5.1.92 The main ES reported an assemblage of terrestrial invertebrates, identified through field survey, at Highlow Meadows LWS. The land required for the amendment includes the habitats at Highlow Meadows LWS that support this assemblage. The terrestrial invertebrate assemblage at Highlow Meadows LWS is of local/parish value.
- 5.1.93 The main ES reported at least six social groups of badgers, identified through field surveys, throughout the Stone and Swynnerton area. The land required for the amendment includes suitable sett building and foraging habitats for badgers. The badger populations throughout the Stone and Swynnerton area are of local/parish value.
- 5.1.94 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 Stone and Swynnerton area. The land required for the amendment includes suitable habitats for these species. If present these species are of local/parish value.

- 5.1.95 The main ES reported populations of common reptile species such as grass snake, and slow worm, identified through desk study records, as being potentially present at low numbers throughout the Stone and Swynnerton area. Grass snake and slow-worm are both species of principal importance. Grass snake is also a conservation priority of the Staffordshire BAP. The land required for the amendment includes suitable habitats for these species. If present these species are of local/parish value.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.1.96 SES and AP ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2020 and 2027 respectively, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.1.97 None of the identified developments affect the assessment of the AP revised scheme's likely construction and operation impacts on ecology and biodiversity.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.98 No further measures are applicable to this assessment, above those stated in the draft CoCP.
- 5.1.99 The amendment will result in certain mitigation measures that were included within the original scheme not being provided. The main ES reported that provision of Filly Brook viaduct and the realignment of Filly Brook to flow within a naturalised open channel would reduce fragmentation and barrier effects upon wildlife associated with Filly Brook. The amendment will shorten the length of the viaduct by approximately 370m, which will prevent realignment of Filly Brook as an open naturalised channel to the same extent as was provided in the original scheme. However, 210m of deculverted open naturalised channel will still be provided between and adjacent to the additional culverts included within the AP revised scheme (Filly Brook culvert and Filly Brook West culvert).

Assessment of impacts and effects

Designated sites

- 5.1.100 The amendment will not give rise to new or different significant effects on designated sites and will not change the level of significance of the effects reported in the main ES.

Habitats

- 5.1.101 The main ES reported the loss of 3.3ha of mixed broadleaved woodland at Pool House Wood LWS resulting in a permanent adverse effect that is significant at county level. The amendment will not alter the extent of woodland loss at Pool House Wood LWS. The amendment will not give rise to any new or different significant effect on woodland at Pool House Wood, and will not change the level of significance of the effects reported in the main ES.

- 5.1.102 The main ES reported the loss of 1.9ha of mixed broadleaved woodland at Lodge Covert (0.1ha of this loss is habitat within the LWS). The wider woodland has supporting value to the LWS. The overall woodland loss at Lodge Covert was reported in the main ES as a permanent adverse effect that is significant at county level. The amendment will result in the loss of an additional 0.1ha of non-LWS woodland at Lodge Covert. Due to the small extent of habitat loss, the amendment will not give rise to any new or different significant effect on woodland at Lodge Covert and will not change the level of significance of the effects reported in the main ES.
- 5.1.103 The main ES reported the loss of 1.2ha of lowland meadow at Highlow Meadows LWS resulting in a permanent adverse effect that is significant at county level. The amendment will not alter the extent of habitat loss at Highlow Meadows LWS. The amendment will not, therefore, give rise to any new or different significant effect on lowland meadow at Highlow Meadows LWS, and will not change the level of significance of the effects reported in the main ES.
- 5.1.104 On a precautionary basis, the main ES reported a loss of 45.7km of hedgerow habitat within the land required for construction of the original scheme within the Stone and Swynnerton area, which is a permanent adverse effect that is significant at district/borough level. The amendment will result in the loss of an additional 30m of species-poor hedgerow. This will not give rise to any new or different significant effect on hedgerow, and will not change the level of significance of the effects reported in the main ES.
- 5.1.105 The main ES reported the permanent realignment of Filly Brook for approximately 1.3km via an existing culvert under the M6 through the Stone railhead/Stone IMB-R site, via the Filly Brook viaduct and Filly Brook West underbridge. A 40m section of Filly Brook and approximately 660m of a connected watercourse would be permanently realigned to allow construction of the Norton Bridge to Stone sidings. While this would include the deculverting and restoration of approximately 300m of Filly Brook it would result in the loss of the stream corridor downstream of the Stone railhead/Stone IMB-R and was reported in the main ES as an adverse effect at county level. Filly Brook viaduct and Filly Brook West underbridge will not be provided as part of the amendment. The realigned watercourse will instead pass partly through two new culverts: Filly Brook West culvert through the extended embankment associated with the former Filly Brook West underbridge; and Filly Brook culvert through the extended Yarnfield North embankment. The culverting of Filly Brook through the two embankments (80m and 95m in length, respectively) will result in a shorter length of deculverted and open naturalised channel than was part of the original scheme, however, this still represents approximately 210m of restored deculverted watercourse in this location compared to the current environmental baseline. As a result, the amendment will give rise to a different significant effect upon Filly Brook. However, this will not change the level of significance of the effect reported in the main ES.
- 5.1.106 The main ES reported the loss of the veteran tree identified south of Sandyford Farm, resulting in a permanent adverse effect at up to district/borough level. The amendment will not give rise to a new or different significant effect on this veteran tree, and will not change the level of significance of the effects reported in the main ES.

- 5.1.107 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 AP revised scheme are listed in the SES and AP ES Volume 5: Appendix EC-003-000.

Species

- 5.1.108 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 between Lodge Covert and Birchwood. In addition, the loss of woodland, scattered trees and the proximity of the original scheme to buildings was considered likely to reduce the roosting opportunities for bats within this location. In combination these effects represent a permanent adverse effect that is significant at county level. The amendment will result in loss of an additional 0.1ha of woodland at Lodge Covert, but none of the trees within this section have been identified as having bat roosting potential. The amendment will also result in the loss of 0.1ha of woodland at Blakelow, which is likely to be utilised as a foraging resource by the bat assemblage, and trees within this woodland have significant bat roosting potential. The assumed loss of additional roosts in woodland at Blakelow will result in a different significant effect on the bat assemblage between Lodge Covert and Birchwood. However, this will not change the level of significance of the effect reported in the main ES.
- 5.1.109 The main ES reported losses of bat roosting, foraging and commuting habitat used by the bat assemblages at Closepit Plantation and Stabhill Plantation, Pire Hill and Pool House Wood. A permanent adverse effect that is significant at up to county level was reported upon each of these bat assemblages. The amendment will not alter the extent of loss of habitat used by these bat assemblages. The amendment will not, therefore, give rise to new or different significant effects on the bat assemblages associated with Closepit Plantation and Stabhill Plantation, Pire Hill and Pool House Wood, and will not change the level of significance of the effects reported in the main ES.
- 5.1.110 The main ES, as updated in the SES, reports the loss of 12 ponds and associated terrestrial habitats that are known or assumed to be used by the great crested newt metapopulation between Yarnfield and Swynnerton (AMP3.1). A permanent adverse effect that is significant at up to county level was reported upon this metapopulation as a result of the new baseline information. The amendment will not impact additional ponds or associated terrestrial habitat. The amendment will not give rise to a new or different significant effect on the great crested newt metapopulation between Yarnfield and Swynnerton, and will not change the level of significance of the effects reported in the SES.
- 5.1.111 The main ES reported the loss of barn owl foraging habitat and potential roosting sites within mature trees. A permanent adverse effect identified at Blakelow and Yarnfield that is significant at up to the county level was reported on the barn owl populations. The amendment will result in additional loss of potential foraging and tree roosts at Lodge Covert and Blakelow. The assumed loss of additional tree roosts will result in a different significant effect on the barn owl populations identified at Blakelow and Yarnfield. However, this will not change the level of significance of the effect reported in the main ES.

- 5.1.112 The main ES reported the loss of potential dispersal, foraging and breeding opportunities for otter from the realignment of Filly Brook and loss of marginal habitats along the realigned section. Embedded mitigation within the original scheme included provision of a deculverted section of open naturalised channel for the realigned Filly Brook, which would have partially mitigated the effect upon otter by providing replacement habitat suitable for this species. An adverse effect upon otter at local/parish level was reported, which is not significant. The culverting of the realigned sections of Filly Brook will result in a shorter length of deculverted and open naturalised channel than was part of the original scheme, however, this still represents approximately 210m of restored and deculverted watercourse in this location compared to the current environmental baseline. The amendment will result in a different effect upon otter, however, this will remain at the local/parish level as reported in the main ES.
- 5.1.113 The main ES reported the loss of habitats utilised by white-letter hairstreak butterfly at Pool House Wood. The amendment will not alter the extent of loss of habitats at Pool House Wood used by white-letter hairstreak butterfly. The amendment will, therefore, not give rise to a new or different significant effect on white-letter hairstreak butterfly, and will not change the level of significance of the effects reported in the main ES.
- 5.1.114 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 AP revised scheme are listed in the SES and AP ES Volume 5: Appendix EC-003-000.

Mitigation and residual effects

Other mitigation measures

- 5.1.115 The main ES reported the creation of woodland habitat areas improving ecological connectivity to retained woodland parcels within the Lodge Covert area. The horizontal alignment shift associated with the amendment will result in an increase by approximately 0.4ha in the woodland habitat creation area to the south-west of the scheme at Lodge Covert.
- 5.1.116 The main ES reported woodland habitat creation on either side of Meaford North embankment to partially compensate for the loss of Birchwood ancient woodland as well as the loss of woodland across the Stone and Swynnerton area. The amendment will alter the distribution of woodland habitat creation. A 1.3ha reduction in woodland habitat creation on the northern side of the embankment will be offset by an increase by 1.3ha in woodland habitat creation on the southern side of the embankment.
- 5.1.117 A section of Filly Brook, approximately 250m in length, that runs parallel to and to the south of the Norton Bridge to Stone Railway, to the south-east of the IMB-R, will be subject to habitat enhancement measures. This section of Filly Brook is within a woodland creation area provided for landscape mitigation as part of the original scheme. The watercourse will be ecologically enhanced through appropriate river restoration techniques to include in-channel and bank vegetation management to target increased diversity and structural complexity of habitat. Enhancement of this section of Filly Brook will compensate for the loss and fragmentation of habitat and will reduce adverse effects upon Filly Brook to a level that is not significant.

- 5.1.118 The main ES reported habitat creation measures between Micklow and Sandyford (the area covered by the amendment) including the creation of species-rich grassland, ponds, and semi-natural woodland. This mitigation will compensate for the bat foraging habitats lost to the original scheme. Once established the increased area of woodland creation at Lodge Covert will compensate for the bat foraging habitats and tree roosting opportunities lost to the AP revised scheme.
- 5.1.119 The main ES reported habitat creation measures, such as grassland creation near Highlow Meadows, and woodland and hedgerow creation between Blakelow and Birchwood, as providing foraging and nesting opportunities for barn owl populations identified at Blakelow and Yarnfield. The additional woodland habitat creation associated with Lodge Covert as part of the amendment will also contribute to this provision. Once the habitats have become established, the adverse effect resulting from the loss of foraging habitat and potential nesting site associated with the AP revised scheme will be reduced to a level that is not significant.

Summary of likely residual significant effects

- 5.1.120 There are no changes to the likely residual significant construction ecology and biodiversity effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.1.121 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 amendments.

Effects arising from operation

Avoidance and mitigation measures

- 5.1.122 The main ES reported that Filly Brook viaduct would provide ecological connectivity under the HS2 route, thereby reducing habitat fragmentation and allowing free passage of wildlife, such as otter. The amendment will shorten the length of Filly Brook viaduct by approximately 370m and introduce two additional culverts. Additional mitigation measures will be required to maintain a route for free passage of wildlife along the realigned section of Filly Brook through the additional culverted sections. These mitigation measures will comprise mammal ledges or adjacent dry underpasses to provide safe passage for mammals such as otter and water vole.

Assessment of impacts and effects

- 5.1.123 There are no new or different significant operational effects for ecology and biodiversity as a result of the amendment, in comparison with the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.1.124 No other mitigation measures are required above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.1.125 There are no changes to the likely residual significant operational ecology and biodiversity effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.1.126 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 amendments.

Monitoring

- 5.1.127 Volume 1, Section 9 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.1.128 There are no changes to the monitoring requirements identified in the main ES for ecology and biodiversity as a result of this amendment.

Landscape and visual

Scope, assumptions and limitations

- 5.1.129 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the SMR, and the SMR Addendum of the main ES.

Existing environmental baseline

- 5.1.130 The baseline landscape and visual information for the Stone and Swynnerton area is as described in Volume 2, CA3, Section 11 of the main ES.
- 5.1.131 The area of land required for this amendment is located partly within the Yarnfield Settled Farmlands landscape character area (LCA) and partly within the Swynnerton Park Sandstone Hills and Heaths LCA, as described in Volume 5: Appendix LV-001-003 of the main ES.
- 5.1.132 The amendment relates to a section of the original scheme approximately 7km in length and affects a number of viewpoints, which lie in proximity to the area, as described in Volume 5: Appendix LV-001-003 of the main ES. These are:
- view east from Eccleshall Road, adjacent to Stafford North Services (viewpoint 015.04.011);
 - view north-east from Chebsey Footpath 7 (viewpoint 015.03.012);
 - view north-west from Darlaston Grange, Yarnfield Lane (viewpoint 016.02.002);
 - view east from Swynnerton Footpath 42 (viewpoint 016.03.012);
 - view east from Beech House Stud, Moss Hall Lane (viewpoint 016.02.013);
 - view north-east from Moss Lane/ Yarnfield Lane (viewpoint 016.02.014);
 - view north-east from Swynnerton Footpath 38 (viewpoint 016.03.008);
 - view east from Grange Cottages, Hall Lane (viewpoint 017.02.003);

- view south-west from Swynnerton Footpath 27 at Blakelow (viewpoint 017.02.004);
- view south-west from Stone Rural Footpath 34 at the Marlings (viewpoint 017.02.005);
- view south-west from the A51 Stone Road lay-by (viewpoint 017.04.007);
- view north-east from Swynnerton Footpath 37 (viewpoint 017.03.001);
- view north-east from Hall Lane, Stone Circles Challenge (viewpoint 017.03.014);
- view west from properties at Cumberstone Wood Farm (viewpoint 017.02.011);
- view south-west from Swynnerton Footpath 49 (viewpoint 017.03.012);
- view north-east from track towards Lodge Covert Cottages (viewpoint 017.03.016);
- view north-east from Main Street (viewpoint 017.02.017);
- view south-west from properties on Chase Lane (viewpoint 017.02.010); and
- view south-west from Sandyford Cottage, A51 Stone Road (viewpoint 017.02.013).

Future environmental baseline

Construction (2020) and operation (2027)

- 5.1.133 SES and AP ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2020 and 2027 respectively, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.1.134 None of the identified developments affect the assessment of the AP revised scheme's likely construction and operation impacts on landscape and visual.

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.1.135 No further measures are applicable to this assessment, above those stated in the draft CoCP.

Assessment of impacts and effects

Landscape assessment

- 5.1.136 Yarnfield Settled Farmlands LCA was assessed as being affected by the original scheme, and will also be affected by the AP revised scheme. The undulating rural farmland of the Yarnfield Settled Farmlands LCA is considered to be of medium sensitivity to change due to the overall scenic and tranquil nature of the landscape, with the exception of the M6, which crosses the LCA and is a prominent and intrusive feature. The main ES reported a major adverse significant effect during construction. This was due to the construction works associated with the Filly Brook and M6

Meaford viaducts and the presence of the Stone railhead main compound and satellite compounds, which would cause substantial change to the rural landscape, and erode the scenic quality and perception of tranquillity.

- 5.1.137 The construction works associated with the section of the amendment within the Yarnfield Settled Farmlands LCA are similar in nature and scale to the works associated with the original scheme. The changes include the replacement of Filly Brook viaduct with the shorter Norton Bridge to Stone Railway viaduct, the removal of Filly Brook West underbridge and the resulting extension of the embankments associated with both features. The alignment of the HS2 main line will be raised which will increase the height of the Yarnfield North and Yarnfield South embankments by up to 0.9m near Filly Brook. The changes will increase the scale of the earthworks and reduce the scale of the viaduct construction works, which will mean fewer tower cranes on the skyline. One additional year will be required for construction of Yarnfield North embankment. However, overall, the construction activities will be broadly similar to those for the original scheme and the amendment will not, therefore, give rise to any new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.1.138 Swynnerton Park Sandstone Hills and Heaths LCA was assessed as being affected by the original scheme, and will also be affected by the AP revised scheme. This landscape is considered to be of high sensitivity to change due to the largely intact historic designed landscape associated with the 18th century parkland estate of Swynnerton Park. It is a scenic and mainly tranquil landscape, although the M6 corridor creates some local disturbance along its eastern side. The main ES reported a major adverse significant effect during construction. This was due to the impacts of constructing the M6 Meaford viaduct (including the presence of tower cranes), associated embankments and cuttings. This would alter the setting of this historic designed landscape and result in the partial removal of woodland within Lodge Covert. It would also substantially change the rural landscape and erode the scenic quality and perception of tranquillity.
- 5.1.139 The amendment as it passes through Swynnerton Park Sandstone Hills and Heaths LCA generally comprises horizontal realignment of the HS2 main line by up to 15.5m in a north-easterly direction, with consequent effects on footpath alignments, access tracks and earthworks. There will be a slight net increase (0.8ha) in the land required for construction immediately adjacent to the HS2 route. However, due to the small scale change and the similar nature of construction works 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.

Visual assessment

Viewpoints 015.04.011 and 015.03.012

- 5.1.140 Construction activity associated with the amendment will be visible from viewpoints 015.04.011 and 015.03.012. These viewpoints were assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a moderate adverse significant effect for viewpoint 015.04.011 and a major adverse significant effect for viewpoint 015.03.012. This was due to the prominence of construction works associated with the B5026 Eccleshall Road overbridge, Filly Brook

viaduct (including the presence of tower cranes) and Yarnfield North embankment transfer node within these otherwise rural views.

- 5.1.141 The amendment will not significantly increase the land required for construction of the original scheme and the construction works will be broadly similar in scale and impact. The increase in the scale of the earthworks near Filly Brook to construct the raised and extended embankments will be offset by a reduction in scale of the viaduct construction works, which will mean fewer tower cranes on the skyline. Whilst the change in the type of construction activity, particularly around Filly Brook, will result in an alteration to the view, it 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.

Viewpoints 016.02.002, 016.03.012, 016.02.013 and 016.02.014

- 5.1.142 North of the Norton Bridge to Stone Railway viaduct, construction activity associated with the amendment will be visible from viewpoints 016.02.002, 016.03.012, 016.02.013 and 016.02.014. These viewpoints were assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a major adverse significant effect due to construction of the Filly Brook viaduct (including the presence of tower cranes), Yarnfield Lane realignment, Yarnfield Lane M6 overbridge replacement and Yarnfield Lane underbridge. These works would be extensive and prominent, and would introduce uncharacteristic features into the sloping rural farmland whilst interrupting long distance views towards a wooded ridgeline.

- 5.1.143 The amendment will not significantly increase the land required for construction of the original scheme and the works will be broadly similar in scale and impact. The increase in the scale of the earthworks near Filly Brook to construct the raised and extended embankments will be offset by a reduction in scale of the viaduct construction works, which will mean fewer tall cranes on the skyline. Whilst the change in the type of construction activity, particularly around Filly Brook, will result in an alteration to the view, it 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.

Viewpoints 016.03.008, 017.02.004 and 017.02.003, 017.02.005, 017.04.007 and 017.03.001

- 5.1.144 North of Yarnfield, construction activity associated with the amendment will be visible from viewpoints 016.03.008, 017.02.004 and 017.02.003. These viewpoints were assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a major adverse significant effect due to construction of the M6 Meaford viaduct (including the presence of tower cranes), a new accommodation underbridge and installation of equipment associated with underground power lines. The M6 Meaford viaduct satellite compound and Meaford North embankment satellite compound will also be apparent and the Stone railhead main compound will be visible from viewpoint 016.03.008. The construction activity would be extensive and prominent in views across the rural landscape and would interrupt views towards the woodland shelter belts at Swynnerton Old Park.

- 5.1.145 As a result of the amendment, the horizontal realignment of the HS2 main line along this section will be moved in a north-easterly direction by up to 15.5m and there will be a net increase by 0.8ha in the amount of land required. The construction works, including works to construct the Meaford North embankment will appear very similar to the original scheme other than they will be slightly displaced to the north-east. Near Blakelow Farm (viewpoint 017.02.004), the construction works will appear slightly closer and the effect will remain significant. Overall the amendment will not give rise to a new or different significant effect and will not change the level of significance reported in the main ES.
- 5.1.146 The construction activity associated with the horizontal realignment of the HS2 main line, including the works to construct the Meaford North embankment, will be visible in filtered medium range views from other viewpoints in the vicinity (viewpoints 017.02.005, 017.04.007 and 017.03.001). The main ES reported a moderate adverse significant effect. The horizontal alignment of the HS2 main line along this section will be moved in a north-easterly direction by up to 15.5m, which will move the construction works slightly to the north-east but will not increase the scale or type of works present in the views compared to the original scheme. The works will be seen in the context of the construction activity of the original scheme and will not give rise to a new or different significant effect, and will not change the level of significance reported in the main ES.

Viewpoint 017.02.013

- 5.1.147 East of Swynnerton, construction activity associated with the amendment will be visible from viewpoint 017.02.013. Residents at Sandyford Cottage are assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a major adverse significant effect due to the construction of the Swynnerton embankment, a new accommodation underbridge, Swynnerton embankment satellite compound and Swynnerton North cutting. This construction activity would result in new features that form prominent, incongruous elements in the views across the rolling rural landscape and would cause severance of views towards the parkland shelter belts associated with Swynnerton Park.
- 5.1.148 The horizontal realignment of the HS2 main line along this section will be moved in a north-easterly direction by up to 15.5m, which will move the construction works slightly to the north-east and closer to Sandyford Farm. This will increase the prominence of works in the view, but will be seen in the context of the construction activity of the original scheme. The amendment will, therefore, not give rise to a new or different significant effect and will not change the level of significance reported in the main ES.

Viewpoints 017.03.014, 017.02.010, 017.02.011, 017.03.012, 017.03.016 and 017.02.017

- 5.1.149 Construction of the amendment, specifically the horizontal realignment of the HS2 main line along this section will also be visible in filtered views from viewpoints 017.03.014, 017.02.010, 017.02.011, 017.03.012, 017.03.016 and 017.02.017. These viewpoints were assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a moderate adverse significant effect due to the scale of the construction works being undertaken.

- 5.1.150 When viewed in the context of the original scheme, the amendment represents a barely perceptible change in views from these locations, particularly since many of the views will be filtered by intervening vegetation. The amendment will, therefore, 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.

Mitigation and residual effects

Other mitigation measures

- 5.1.151 No other mitigation measures have been identified above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.1.152 There are no changes to the likely residual significant construction landscape and visual effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.1.153 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 amendments.

Permanent effects arising during operation

Avoidance and mitigation measures

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

Assessment of impacts and effects

Landscape assessment

- 5.1.155 The Yarnfield Settled Farmlands LCA was assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a moderate adverse significant effect at year 1 and year 15 of operation, reducing to non-significant at year 60 due to the screening effect of the mitigation planting, which would also help integrate the original scheme into the wider landscape. This was due to the presence of a viaduct, overbridges, associated earthworks and overhead power lines. These structures would interrupt the rural skyline, reduce scenic quality and intensify the landscape severance currently experienced due to the M6 corridor.
- 5.1.156 The amendment within the Yarnfield Settled Farmlands LCA will result in the replacement of Filly Brook viaduct with the shorter Norton Bridge to Stone Railway viaduct and the removal of Filly Brook West underbridge and the resulting extension of the embankments associated with both features. The alignment of the HS2 main line will be raised which will increase the height of the Yarnfield North and Yarnfield South embankments by up to 0.9m near Filly Brook. This will slightly increase the sense of landscape severance within the open rural farmland and interrupt the views along the Filly Brook valley. Further north, the horizontal changes to the HS2 main line will be similar in nature and scale to the original scheme. Overall, the amendment

will not give rise to a new or different significant effect on the Yarnfield Settled Farmlands LCA and will not change the level of significance reported in the main ES.

5.1.157 Swynnerton Park Sandstone Hills and Heaths LCA was assessed as being affected by the original scheme, and will also be affected by the AP revised scheme. The main ES reported a major adverse significant effect during year 1 and year 15 of operation. The effect would reduce by year 60 of operation to a moderate adverse significant effect when the mitigation planting reached maturity. This is due to the presence of the M6 Meaford viaduct, overbridges, associated earthworks and overhead power lines. These structures would interrupt the rural skyline, reduce scenic quality and perception of tranquillity currently experienced in this location.

5.1.158 The amendment as it passes through Swynnerton Park Sandstone Hills and Heaths LCA generally comprises horizontal realignment of the HS2 main line by up to 15.5m in a north-easterly direction, which will move the scheme further from Swynnerton Hall. This will not give rise to a new or different significant effect and will not change the level of significance reported in the main ES.

Visual assessment

Viewpoint 015.03.012

5.1.159 The amendment will be visible in filtered views from viewpoint 015.03.012. This viewpoint was assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a major adverse significant effect at year 1 of operation, reducing to a moderate adverse significant effect at year 15 and year 60. This was due to the presence of a new overbridge, the Filly Brook viaduct, associated embankments, overhead power lines and more distant views of the Stone IMB-R. The new infrastructure would result in a substantial change to the views across the gently sloping arable farmland, interrupting the horizon and introducing elements that are out of scale with the landscape.

5.1.160 The amendment, specifically the raising and extending of the Yarnfield North embankment and Yarnfield South embankment, will increase the foreshortening of views and increase the sense of severance created by the M6 corridor, particularly in winter when views are more open. It will not, however, give rise to a new or different significant effect and will not change the level of significance reported in the main ES.

Viewpoint 015.04.011

5.1.161 Viewpoint 015.04.011 was assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a moderate adverse significant effect in year 1 of operation, reducing to non-significant at year 15 of operation as mitigation planting matures. This was due to the introduction of incongruous features that would be intermittently visible in the rural landscape, including a new overbridge, the Filly Brook viaduct, associated embankments, overhead power lines and more distant views of the Stone IMB-R.

5.1.162 By foreshortening views and increasing the sense of severance, the AP revised scheme, including the shorter Norton Bridge to Stone Railway viaduct and the raised and extended embankments, will slightly increase the magnitude of operational effects at this viewpoint, particularly in winter when views are more open. The

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

Viewpoints 016.02.002 and 016.02.013

- 5.1.163 Viewpoints 016.02.002 and 016.02.013 were assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a major adverse significant effect at year 1, reducing to a moderate adverse significant effect at year 15 and non-significant at year 60 as the mitigation planting matures. This was due to the loss of existing woodland along the M6 corridor, which would result in more open views of the various elements of the original scheme and the introduction of features, including the Stone IMB-R, embankments, Yarnfield Lane realignment and Yarnfield Lane M6 overbridge replacement, that are out of scale and incongruous within the landscape.
- 5.1.164 The amendment, specifically the raised and extended embankments will make the AP revised scheme slightly more visible from Darlaston Grange. The amendment will not, however, give rise to a new or different significant effect and will not change the level of significance reported in the main ES.

Viewpoints 016.03.012 and 016.02.014

- 5.1.165 Viewpoints 016.03.012 and 016.02.014 were assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a moderate adverse significant effect at year 1 of operation, reducing to non-significant at year 15 of operation as mitigation planting matures. This was due to the introduction of features which are out of scale and incongruous in the rural landscape, including the Filly Brook viaduct, Stone IMB-R, associated embankments, Yarnfield Lane realignment and Yarnfield Lane M6 overbridge replacement. In addition, for viewpoint 016.02.014, the main ES reported a major adverse significant effect at year 1 night time due to the lighting associated with the Stone IMB-R.
- 5.1.166 The amendment, specifically the raised and extended embankments and the replacement of Filly Brook viaduct with Norton Bridge to Stone Railway viaduct, will be visible from these viewpoints, particularly the extended embankments, which will foreshorten medium range views towards Filly Brook and interrupt longer views across the rural farmland towards a distant wooded ridgeline. When seen in the context of the original scheme and the M6 corridor, however, 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.

Viewpoints 016.03.008, 017.02.004 and 017.02.003, 017.02.005, 017.04.007 and 017.03.001

- 5.1.167 North of Yarnfield, viewpoints 016.03.008, 017.02.004 and 017.02.003 were assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported a major adverse significant effect in year 1 of operation. This would reduce at year 15 and year 60 to moderate adverse significant at viewpoints 016.03.008 and 017.02.004 as mitigation planting matures. The effects at viewpoint 017.02.003 would remain major adverse significant at year 15, reducing to moderate adverse significant at year 60. This was due to the presence of the M6 Meaford viaduct, an accommodation underbridge and associated embankments and

cuttings. All these features would appear prominent and incongruous within the rural landscape and would interrupt views towards the shelterbelts at Swynnerton Old Park.

- 5.1.168 The amendment, specifically the horizontal realignment of the HS2 main line along this section, to be moved in a north-easterly direction by up to 15.5m and the reconfiguring of some of the earthworks, balancing pond and mitigation planting areas, will result in a slight change to the view at viewpoints 016.03.008 and 017.02.003. At Blakelow (viewpoint 017.02.004), the steepening of a section of the Meaford North embankment slope and consequent reduction in mitigation planting will mean that residents will have close range views of the embankment, overhead line equipment and passing trains. When seen in the context of the original scheme and the proximity of this viewpoint to the M6 corridor, however, 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.
- 5.1.169 The amendment, specifically the horizontal realignment of the HS2 main line along this section to be moved in a north-easterly direction by up to 15.5m and the reconfiguring of some of the earthworks, balancing pond and mitigation planting areas will also be visible in filtered medium range views from other viewpoints in the vicinity (viewpoints 017.02.005, 017.04.007 and 017.03.001). The main ES reported a moderate adverse significant effect at year 1 and year 15 of operation for all three viewpoints. This would reduce at year 60 to non-significant at viewpoints 017.02.005 and 017.04.007 as mitigation planting matures. The effects at viewpoint 017.03.001 would remain moderate adverse significant at year 60. Overall 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.

Viewpoint 017.02.013

- 5.1.170 Viewpoint 017.02.013 was assessed as being affected by the original scheme and will also be affected by the AP revised scheme. The main ES reported that residents at Sandyford Cottage would experience a moderate adverse significant effect in summer year 1 through to year 15, which would increase to major adverse significant in winter when views are more open. This would reduce at year 60 to non-significant due to the growth of mitigation planting, which would filter and screen views, whilst helping to integrate the original scheme into its wider landscape setting. This is due to the presence of a new underbridge, the Swynnerton embankment and Swynnerton North cutting. These would be prominent, incongruous elements in views across the rolling rural landscape and will interrupt views towards the parkland shelter belts associated with Swynnerton Park.
- 5.1.171 The amendment, specifically the horizontal realignment of the HS2 main line along this section to be moved in a north-easterly direction by up to 15.5m and the reconfiguring of some of the earthworks, balancing pond and mitigation planting areas, will be marginally closer to Sandyford Cottage than the original scheme but the presence of intervening trees and the nearby farm complex on the unnamed road close to the A51 Stone Road will continue to filter and block views. Overall 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.

Viewpoints 017.02.010, 017.03.014, 017.03.012 and 017.03.016

- 5.1.172 East of Swynnerton, viewpoints 017.02.010, 017.03.014, 017.03.012 and 017.03.016 were assessed as being affected by the original scheme and will also be affected by the AP revised scheme. Despite views from these locations being filtered by intervening vegetation, the main ES reported a moderate adverse significant effect from year 1 through to year 15, for all the viewpoints except for viewpoint 017.03.014, (which would reduce to non-significant at year 15, due to the maturing and screening effect of mitigation planting). This was due to the presence of the Swynnerton embankment, Swynnerton auto-transformer station, noise barriers and overhead line equipment, all of which would appear as uncharacteristic features within the rural landscape and would interrupt the characteristic hedgerow field boundaries and mature parkland shelter belts associated with Swynnerton Park. Effects at viewpoints 017.02.010, 017.03.012 and 017.03.016 would reduce to non-significant by year 60 as the mitigation planting matures.
- 5.1.173 The amendment, specifically the horizontal realignment of the HS2 main line along this section to be moved in a north-easterly direction by up to 15.5m and the reconfiguring of some of the earthworks, balancing pond and mitigation planting areas, will result in a very slight change to the view at these viewpoints. Overall, therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance reported in the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.1.174 The permanent effects of the original scheme on landscape and visual receptors would be substantially reduced through incorporation of the measures described in the main ES. Effects in year 1 of operation may be further reduced by establishing planting early in the construction programme. This will provide additional screening and greater integration of the original scheme into the landscape. However, no other mitigation measures are considered practicable due to the high visibility of elements of the original scheme and the AP revised scheme and the sensitivity of the surrounding receptors.

Summary of likely residual significant effects

- 5.1.175 There are no changes to the likely residual significant operational landscape and visual effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.1.176 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 amendments.

Monitoring

- 5.1.177 Volume 1, Section 9 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.

- 5.1.178 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

- 5.1.179 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1, the SMR, and the SMR Addendum of the main ES.

Existing environmental baseline

- 5.1.180 The baseline sound, noise and vibration information for the Stone and Swynnerton area is as described in Volume 2, CA3, Section 13 of the main ES.
- 5.1.181 Baseline sound levels representative of the assessment locations affected by the amendment have been used in the construction and operational assessments.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.1.182 SES and AP ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2020 and 2027 respectively, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.1.183 None of the identified developments affect the assessment of the AP revised scheme's likely construction and operation impacts on sound, noise, and vibration.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.184 No further measures are applicable to this assessment, above those stated in the draft CoCP.

Assessment of impacts and effects

- 5.1.185 The main ES did not report any likely significant sound, noise or vibration effects in the vicinity of this amendment.
- 5.1.186 An assessment has been undertaken to determine whether construction noise and vibration associated with the amendment 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. The construction noise results are presented in SES and AP ES Volume 5: Appendix SV-002-000.
- 5.1.187 Whilst some of the construction processes are modified by this amendment, when considered in conjunction with the unchanged works defined in the main ES they do not alter the overall construction noise levels. Therefore, no new or different significant construction noise or vibration effects have been identified as a result of the amendment.

Mitigation and residual effects

Other mitigation measures

- 5.1.188 No other mitigation measures have been identified above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.1.189 There are no changes to the likely residual significant construction noise and vibration effects identified in the main ES as a result of the amendment.

Cumulative effects

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

Effects arising from operation

Avoidance and mitigation measures

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

Assessment of impacts and effects

- 5.1.192 The main ES did not identify any likely significant sound, noise or vibration effects at properties in the area close to this amendment.
- 5.1.193 An assessment has been undertaken to determine whether operational noise and vibration associated with the amendment 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). The operational noise results are presented in SES and AP ES (Volume 5: Appendix SV-002-000).
- 5.1.194 No new or different significant operational noise or vibration effects have been identified as a result of the amendment.

Mitigation and residual effects

Other mitigation measures

- 5.1.195 No other mitigation measures are required above those reported in the main ES.

Summary of likely residual significant effects

- 5.1.196 There are no changes to the likely residual significant operational noise and vibration effects identified in the main ES as a result of the amendment.

Cumulative effects

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

Monitoring

- 5.1.198 Volume 1, Section 9 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.1.199 There are no changes to the monitoring requirements identified in the main ES for sound, noise and vibration as a result of the amendment.

Water resources and flood risk

Scope, assumptions and limitations

- 5.1.200 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR, and the SMR Addendum of the main ES.

Existing environmental baseline

- 5.1.201 The baseline water resources and flood risk information for the Stone and Swynnerton area is as described in Volume 2, CA 3, Section 15 of the main ES. Further details relating to flood risk for this area are provided in Volume 5: Appendix WR-003-003 of the main ES and the updated Flood risk assessment, Volume 5: Appendix WR-003-000 and Map Series WR-05 and WR-06 of the SES and AP ES.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.1.202 SES and AP ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2020 and 2027 respectively, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.1.203 None of the identified developments affect the assessment of the AP revised scheme's likely construction and operation impacts on water resources and flood risk.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.204 No further measures are applicable to this assessment, above those stated in the draft CoCP.

Assessment of impacts and effects

Flood risk

- 5.1.205 The amendment will result in loss of 0.3ha of the Filly Brook floodplain, which would displace approximately 5,000m³ of floodwater during the peak of a 1 in 100 (1%) annual probability flood, including an allowance for climate change. Consequently, in the absence of mitigation, the amendment will give rise to new adverse flood risk effects related to receptors in the Filly Brook catchment, which are significant.
- 5.1.206 To mitigate the significant new flood risk effects, specific mitigation measures have been provided in the amendment 'Additional land permanently required for the IMB-R/Norton Bridge to Stone Railway flood mitigation measures (AP-003-002)'.

- 5.1.207 AP-003-002 incorporates several measures to better manage flood risk to existing local receptors comprising flood embankments, replacement flood storage areas (with a capacity of over 37,000m³) and land drainage works. The measures will protect HS2 infrastructure from flooding over the scheme's lifetime and reduce flood risk to existing receptors along Filly Brook.
- 5.1.208 The measures have been designed on a precautionary basis to take account of changes in peak flow that may occur due to climate change beyond 2080.
- 5.1.209 An updated flood risk assessment has been prepared and is provided in Volume 5: Appendix WR-003-000 of the SES and AP ES. In addition, the implications of these proposals in relation to alignment with flood risk policies within the National Planning Policy Framework (NPPF)²⁷ are reported in SES and AP ES Volume 3: Route-wide effects. An updated hydraulic modelling report for Filly Brook is included in the BID reports (BID-WR-004-007: Hydraulic modelling report), which accompany the SES and AP ES.
- 5.1.210 The measures provided for in AP-003-002 will ensure that the amendment will not give rise to any new or different significant effects on flood risk.

Water Framework Directive

- 5.1.211 The original scheme provided for the restoration of approximately 300m of Filly Brook from culvert to open channel. The amendment will reduce the restored length to approximately 100m.
- 5.1.212 The amendment revises the scheme in the vicinity of Filly Brook watercourse, and therefore, requires reconsideration with regard to compliance with the objectives of the Water Framework Directive (WFD). An Addendum to the WFD compliance assessment has been prepared and is provided in SES and AP ES Volume 5: Appendix WR-001-000. This document updates the relevant sections of the WFD compliance assessment from the main ES (Volume 5: Appendix WR-001-000) to reflect the impacts of the AP revised scheme. The updated assessment concludes that the AP revised scheme will not prevent the achievement of future status objectives at water body scale. The AP revised scheme will, therefore, be compliant with the legal requirements of WFD legislation and will result in no new or different significant adverse WFD related effects.

Mitigation and residual effects

Other mitigation measures

- 5.1.213 No other mitigation measures are required above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.1.214 Following implementation of the mitigation measures described in the amendment 'Additional land permanently required for the IMB-R/Norton Bridge to Stone Railway flood mitigation measures (AP-003-002)', there are no changes to the residual likely

²⁷ Department for Communities and Local Government, National Planning Policy Framework, 2015.

significant construction water resources and flood risk effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.1.215 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 amendments.

Effects arising from operation

Avoidance and mitigation measures

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

Assessment of impacts and effects

- 5.1.217 There are no new or different significant operational effects related to water resources and flood risk as a result of the amendment, in comparison with the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.1.218 No other mitigation measures are required above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.1.219 There are no changes to the likely residual significant operational water resources and flood risk effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.1.220 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 amendments.

Monitoring

- 5.1.221 Volume 1, Section 9 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.1.222 There are no changes to the monitoring requirements identified in the main ES for water resources and flood risk as a result of the amendment.

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

- 5.1.223 The amendment will not result in a new or different likely residual significant effect or change the likely residual significance of the environmental effects as set out in the main ES.

5.2 Additional land permanently required for the IMB-R/Norton Bridge to Stone Railway flood mitigation measures (AP-003-002)

- 5.2.1 The Bill provides for a flood mitigation bund, 430m in length and 3m in height, and a replacement floodplain storage area located adjacent to the west side of the M6, approximately 125m north-west of the Yarnfield Lane M6 overbridge replacement. See Map CT-06-223, H10 to F10 and Map CT-06-223-L1, H2 to F1 in the main ES Volume 2, CA3 Map Book. The flood mitigation bund would provide flood attenuation for Filly Brook to reduce flood risk in the area. An area of wetland habitat creation would be located to the west of the M6, extending 870m north from the realigned Yarnfield Lane. A culvert would be located to the north-west of Yarnfield Lane and west of the M6 for the realignment of Filly Brook beneath the northbound M6 access. See Map CT-06-223, H10 and Map CT-06-223-L1, H1 in the main ES Volume 2, CA3 Map Book.
- 5.2.2 Since submission of the Bill, revised flood mitigation measures have been designed to further improve flood risk management in the area and specifically to avoid impacts on the M6. The flood mitigation bund and a replacement floodplain storage area adjacent to the M6, included in the original scheme, will be removed and replaced by three smaller replacement floodplain storage areas. See Map CT-06-222, C8 to C6; Map CT-06-223, F10 to E9 and Map CT-06-224, I7 to I6 in the SES and AP ES Volume 2, CA3 Map Book.
- 5.2.3 A smaller replacement floodplain storage area, contained by an earth bund approximately 210m in length, 1.5m in height and with a storage volume of approximately 7,300m³, will replace the proposals in the original scheme (a flood mitigation bund west of the M6 and associated replacement floodplain storage area). This replacement floodplain storage area will be located approximately 510m north-west of the Yarnfield Lane M6 overbridge replacement (see Map CT-06-223, F10 to E9 in the main ES Volume 2, CA3 Map Book). Reconfiguration of an area of wetland habitat creation, included in the original scheme, will be required to accommodate this new replacement flood storage area. Approximately 0.9ha of landscape mitigation planting and approximately 0.8ha of grassland habitat creation, associated with the flood mitigation bund in the original scheme, will no longer be implemented. Approximately 1.7ha of wet grassland habitat will be provided in this location.
- 5.2.4 A second replacement floodplain storage area, with capacity to temporarily contain up to 5,000 m³ of floodwater behind an earth bund approximately 1m in height and 143m in length, will be located within an area of grassland habitat creation, included in the original scheme, adjacent to the north-west abutment of the M6 Meaford viaduct (See Map CT-06-224, I7 to I6 in the SES and AP ES Volume 2, CA3 Map Book).
- 5.2.5 A third replacement floodplain storage area will be located to the east of the M6. This will be capable of containing approximately 25,000 m³ of flood water, which would be impounded behind the Yarnfield North Embankment, upstream of the Filly Brook culvert (see Map CT-06-222, C8 to C6 in the SES and AP ES Volume 2, CA3 Map Book). The storage area will extend upstream to the M6 and will be bisected by the Infrastructure Maintenance Base-Rail (IMB-R) embankment and associated Filly Brook West culvert.

- 5.2.6 To control peak flood flows, and ensure that the flood storage areas work effectively, amendments are proposed to culverts included in the original scheme as well as provision of new culverts, as follows:
- a culvert, included in the original scheme, located to the north-west of Yarnfield Lane, on the west side of the M6, will be shortened in length from 135m to 107m due to the removal of the flood mitigation bund. See Map CT-06-223, H10 and Map CT-06-223-L1, H1 in the SES and AP ES Volume 2, CA3 Map Book;
 - two new culverts, both approximately 7.5m in length and 0.6m in diameter, will be located through the bund at the south end of the smaller replacement floodplain storage area at this location (which replaces the removed flood mitigation bund west of the M6), to control peak flows passing downstream along Filly Brook. One will be positioned at bed level and the other raised approximately 0.6m above the bed level of Filly Brook. See Map CT-06-223, F10 in the SES and AP ES Volume 2, CA3 Map Book;
 - a new culvert, approximately 5.5m in length and 0.6m in diameter, is proposed to control peak flood flows in the replacement floodplain storage area adjacent to the north-west abutment of the M6 Meaford viaduct. See Map CT-06-223, A8 and Map CT-06-224, I6 in the SES and AP ES Volume 2, CA3 Map Book; and
 - a new culvert (Filly Brook culvert), as provided for in amendment AP-003-001, approximately 95m in length and 0.9m in diameter, will be used to control flows in Filly Brook and ensure that the replacement floodplain storage area in this location works effectively. See Map CT-06-222, C6 to C5 in the SES and AP ES Volume 2, CA3 Map Book.
- 5.2.7 In addition, two new flood mitigation bunds are proposed to reduce flood risk in the area west of the M6, immediately downstream of the realigned Yarnfield Lane. These comprise:
- a new flood mitigation bund, approximately 1m in height and 30m in length, located approximately 350m south-east of the Yarnfield Lane M6 overbridge replacement, adjacent to the existing culvert for Filly Brook beneath the M6. This is designed to prevent floodwater flowing westwards towards the Norton Bridge to Stone Railway. See Map CT-06-222, B8, in the SES and AP ES Volume 2, CA3 Map Book; and
 - a new flood mitigation bund, approximately 0.3m in height and 65m in length, located approximately 40m south-east of the Yarnfield Lane M6 overbridge replacement, within an area of landscape mitigation planting included in the original scheme, adjacent to the Filly Brook diversion. This bund will prevent floodwater flowing westwards towards farmland and property in this area. See Map CT-06-222, A9, and Map CT-06-223-L1, I1, in the SES and AP ES Volume 2, CA3 Map Book.
- 5.2.8 The amendment will be constructed within the period set out in the main ES.

- 5.2.9 The land required for the southernmost bund in the revised flood mitigation scheme is outside the limits of the Bill. The amendment will result in the permanent requirement for approximately 520m² of additional land. See Map CT-06-222, B8 in the SES and AP ES Volume 2, CA3 Map Book.

Topics included in the AP assessment

- 5.2.10 The amendment is considered to only require reassessment of the environmental effects and mitigation described in the main ES for ecology and biodiversity.
- 5.2.11 Water resources and flood risk is not considered in this section as this amendment is specifically designed to manage flood risk along Filly Brook. As described in the AP-003-001 assessment, the proposal will ensure that there are no increases in flood risk and that the risks posed by flooding to a number of key receptors, including the M6 and the Norton Bridge to Stone Railway, will be reduced. The issues related to the WFD are covered under amendment AP-003-001 and are documented within the updated WFD compliance assessment report SES and AP ES Volume 5: Appendix WR-001-000). This update should be read in conjunction with Volume 5: Appendix WR-001-000 from the main ES.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.2.12 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the Scope and Methodology Report (SMR)²⁸, and the SMR Addendum²⁹ of the main ES.
- 5.2.13 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported within the SMR and the SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment. The precautionary approach to the assessment that has been adopted identifies the likely significant ecological effects of the AP revised scheme.

Existing environmental baseline

- 5.2.14 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, aerial photography, and relevant existing information from regional and local sources. In addition, the baseline has been informed by additional Phase 1 habitat, hedgerow, wintering birds, bats, badger, great crested newt, water vole and otter surveys and updated information from national data sources held by Natural England.
- 5.2.15 A summary of the baseline information relevant to the assessment of the amendment is provided below. This takes account of any relevant new or updated baseline

²⁸HS2 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>

²⁹HS2 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>

information provided in Background Information and Data (BID) documents³⁰ (BID-EC-004-000 and Map Series EC-02, EC-04, EC-05, EC-10 and EC-12), which accompany the SES and AP ES. For those receptors described in the main ES, further details are provided in Volume 2, CA3, Section 8 and in Volume 5, including Map Series EC-01 of the main ES. Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000 and Map Series EC-02 to EC-12³¹.

Designated sites

- 5.2.16 There is one local wildlife site (LWS) of relevance to the assessment of the amendment, which is of county value. Highlow Meadows LWS is located to the west of the M6 and east of Swynnerton Grange, partially within the land required for the amendment.
- 5.2.17 There is one woodland, Birchwood, of relevance to the assessment of the amendment that was added to the ancient woodland inventory (AWI) on the basis of the heritage review undertaken by HS2 Ltd to inform the main ES. Birchwood is located adjacent to the M6, to the south of Blakelow, within the land required for the amendment, and is of up to county value.

Habitats

- 5.2.18 Habitats within the land required for the amendment include semi-natural broadleaved woodland, species poor and species rich hedgerows, lowland meadow, arable, ponds and minor watercourses. The habitats of potential relevance to the assessment of the amendment are described in further detail below.
- 5.2.19 National Vegetation Classification (NVC) MG4 *Alopecurus pratensis-Sanguisorba officinalis* grassland is located adjacent to the M6 and partially within the area designated as Highlow Meadows LWS. This grassland is representative of lowland meadow, which is a habitat of principal importance listed under the provisions of Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)³² and a conservation priority of the Staffordshire Biodiversity Action Plan (BAP)³³. The grassland is of county value.
- 5.2.20 Semi-improved neutral grassland is located directly adjacent to the M6 and north-east of Yarnfield. On a precautionary basis it is assumed to qualify as lowland meadow habitat of principal importance. The grassland is of district/borough value.
- 5.2.21 An unnamed belt of young mixed deciduous woodland runs along the western edge of the M6 connecting to the woodland at Fox Covert. The woodland is of local/parish value.
- 5.2.22 Hedgerows within the land required for the amendment include intact species-poor hedgerows and defunct³⁴ species-rich hedgerows. These hedgerows may qualify as a habitat of principal importance and a conservation priority of the Staffordshire BAP.

³⁰ HS2 Ltd (2018). High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data, Available online at: www.gov.uk/hs2

³¹ HS2 Ltd (2017). High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data, Available online at: www.gov.uk/hs2

³² Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

³³ Staffordshire Biodiversity Partnership. *Staffordshire Biodiversity Action Plan* [online]. Available at: <http://www.sbap.org.uk/>

³⁴ A defunct hedgerow is one that no longer functions as a stock-proof barrier due to its gappy nature.

These contribute towards a wider hedgerow network across the Stone and Swynnerton area that is of district/ borough value.

5.2.23 Ten ponds are located to the west of the M6 between Birchwood and Yarnfield Lane. On a precautionary basis it is assumed that these ponds qualify as a habitat of principal importance and a conservation priority of the Staffordshire BAP. The ponds are of up to district/borough value.

5.2.24 A series of smaller watercourses that are tributaries of Filly Brook run alongside the west of the M6. These watercourses are of district/borough value.

Species

5.2.25 Protected and notable species that are known or assumed to occur within the land required for the amendment include bats, great crested newt, common amphibians, barn owls, wintering and breeding birds, terrestrial invertebrates, badger, polecat, harvest mouse, European hedgehog, brown hare and common reptile species.

5.2.26 The main ES reported a bat assemblage associated with habitats present between Lodge Covert and Birchwood. Field surveys in this area recorded one tree roost supporting noctule bats and one building roost supporting an unidentified bat species. Foraging and commuting activity was recorded by an assemblage including common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Myotis species, brown long-eared, noctule and Nyctalus/Eptesicus species bats. The land required for 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 species that are conservation priorities of the Staffordshire BAP. The bat assemblage is of county value.

5.2.27 The SES reports a metapopulation³⁵ of great crested newt that occurs between Yarnfield and Swynnerton (assumed metapopulation (AMP) 3.1), comprising known or assumed populations of great crested newt within a network of 42 ponds. The land required for the amendment contains habitats with potential for great crested newt breeding, foraging and shelter, which are likely to be used by this metapopulation. Great crested newt are an Annex 2³⁶ species, a species of principal importance, and a conservation priority of the Staffordshire BAP. The metapopulation is of county value.

5.2.28 The main ES reported populations of amphibian species including palmate newt, smooth newt, common toad and common frog, identified through field surveys, within ponds throughout the Stone and Swynnerton area. Amphibian species are assumed to be present in ponds that have not yet been surveyed. The land required for the amendment includes ponds, grassland, hedgerow and woodland habitats that are likely to be used by these species. Common toad is a species of principal importance. The population of common amphibians throughout Stone and Swynnerton is of local/parish value.

5.2.29 The main ES reported populations of barn owl at Blakelow and Yarnfield identified through field surveys and desk study records. The land required for the amendment

³⁵ 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 accompanies the SES and AP ES).

³⁶ Annex 2 of the EU's Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation.

includes grassland habitats that are likely to be used by foraging barn owls, and suitable trees and buildings, which may be used by nesting barn owls. Barn owl is a conservation priority of the Staffordshire BAP. The barn owl populations at Blakelow and Yarnfield are of county value.

- 5.2.30 The main ES reported wintering and breeding bird assemblages at Highlow Meadows, identified through field surveys. The land required for the amendment includes habitats that provide foraging and nesting opportunities for these bird assemblages. The assemblages are typical of the habitats present, but include species of principal importance and/or conservation priority species. The bird assemblages at Highlow Meadows are of local/parish value.
- 5.2.31 The main ES reported the presence of otters, identified by desk study records, in numerous locations on the River Trent and Filly Brook, which flows into the Trent. The land required for the amendment includes tributaries of Filly Brook and nearby ponds that provide suitable foraging, breeding and dispersal habitats for otter. Otter is an Annex 2 species, a species of principal importance and a conservation priority of the Staffordshire BAP. The otter population using the River Trent, Filly Brook, its tributaries and associated habitats is of district/borough value.
- 5.2.32 The main ES reported an assemblage of terrestrial invertebrates, identified through field survey, at Highlow Meadows LWS. The land required for the amendment includes the habitats at Highlow Meadows LWS that support this assemblage. The terrestrial invertebrate assemblage at Highlow Meadows LWS is of local/parish value.
- 5.2.33 The main ES reported at least six social groups of badgers, identified through field surveys, throughout the Stone and Swynnerton area. The land required for the amendment includes suitable sett building and foraging habitats for badger. The badger populations throughout the Stone and Swynnerton area are of local/parish value.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.2.34 SES and AP ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2020 and 2027 respectively, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.2.35 None of the identified developments affect the assessment of the AP revised scheme's likely construction and operation impacts on ecology and biodiversity.

Effects arising during construction

Avoidance and mitigation measures

- 5.2.36 No further measures are applicable to this assessment, above those stated in the draft Code of Construction Practice (CoCP)³⁷.

³⁷ 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

Designated sites

- 5.2.37 The main ES reported the loss of 1.2ha (20%) of Highlow Meadows LWS. This loss was reported in the main ES as a permanent adverse effect on the structure and function of the site that is significant at county level. The amendment will result in the loss of an additional 0.2ha of the LWS. The amendment will result in a different significant effect on Highlow Meadows LWS. However, this will not change the level of significance of the effect as reported in the main ES.
- 5.2.38 The main ES reported the loss of 0.6ha (100%) of Birchwood ancient woodland. This loss was reported in the main ES as a permanent adverse effect that was significant at the county level. The amendment will not alter the extent of loss of the ancient woodland. The amendment will not give rise to a new or different significant effect on Birchwood ancient woodland, and will not change the level of significance of the effect as reported in the main ES.

Habitats

- 5.2.39 The main ES reported the loss of approximately 1.2ha of lowland meadow at Highlow Meadows LWS. This loss was reported in the main ES as a permanent adverse effect that is significant at the county level. The amendment will result in the loss of an additional 0.2ha of grassland for construction of a flood mitigation bund. The amendment will result in a different significant effect on lowland meadow habitat. However, this will not change the level of significance of the effect as reported in the main ES.
- 5.2.40 The main ES reported the permanent diversion, realignment and culverting of smaller watercourses throughout the original scheme, severing the habitat corridors that follow these watercourses. Habitat loss and fragmentation is reported in the main ES as a permanent effect that is significant at up to district/borough level. The amendment will reduce the length of a culvert, north-west of Yarnfield Lane and west of the M6, from 135m to 107m and new culverts will be provided to control water entering the flood storage area. This will increase the fragmentation and habitat loss along these watercourses resulting in a different significant effect. However, this will not change the level of significance of effect as reported for minor watercourses in the main ES.
- 5.2.41 On a precautionary basis, the assessment reported in the main ES assumes that all ponds that have not been subject to survey are habitats of principal importance, a conservation priority of the Staffordshire BAP and are each of up to district/borough value. The ponds located within the land required for the amendment will be retained within areas of grassland habitat creation. The amendment will not give rise to a new or different significant effect on ponds, and will not change the level of significance of the effect as reported in the main ES.
- 5.2.42 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 AP revised scheme are listed in the SES and AP ES Volume 5: Appendix EC-003-000.

Species

- 5.2.43 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 between Lodge Covert and Birchwood. In addition, the loss of woodland, scattered trees and the proximity of the original scheme to buildings was considered likely to reduce the roosting opportunities for bats within this location. In combination, these effects represent a permanent adverse effect that is significant at county level. The amendment will result in the loss of an additional 0.1ha of woodland from the belt that runs alongside the west of the M6 that is likely to be utilised as a foraging resource by the bat assemblage, and trees within the woodland have significant bat roosting potential. The assumed loss of additional roosts in this woodland will result in a different significant effect on the bat assemblage between Lodge Covert and Birchwood. However, this will not change the level of significance of the effect reported in the main ES.
- 5.2.44 The main ES, as updated in the SES, reports the loss of 12 ponds and associated terrestrial habitats that are known or assumed to be used by the great crested newt metapopulation between Yarnfield and Swynnerton (AMP 3.1). A permanent adverse effect that is significant at up to county level was reported upon this metapopulation as a result of the SES new baseline information. The amendment will result in the loss of an additional 0.2ha of grassland in proximity to retained ponds that support great crested newt and this represents an additional loss of core terrestrial habitats. This will result in a different significant effect on the metapopulation between Yarnfield and Swynnerton. However, this will not change the level of significance of this effect as reported in the SES.
- 5.2.45 The main ES reported the loss of barn owl foraging habitat and potential roosting sites within mature trees. A permanent adverse effect identified at Blakelow and Yarnfield that is significant at up to the county level was reported on the barn owl populations. The amendment will result in additional loss of potential foraging habitat and tree roosts at Highlow Meadows and the woodland belt along the M6. The assumed loss of additional tree roosts will result in a different significant effect on the barn owl populations identified at Blakelow and Yarnfield. However, this will not change the level of significance of the effect reported in the main ES.
- 5.2.46 The main ES reported the loss of potential dispersal, foraging and breeding opportunities for otter from the realignment of Filly Brook and loss of marginal habitats along the realigned sections. A permanent adverse local/parish level effect, that is not significant, was reported on otter. The amendment includes the reduction in length of one culvert and addition of new culverts on the tributaries of Filly Brook on the western side of the M6. The additional culverts will reduce the dispersal corridor function of the watercourses, however, the Filly Brook tributaries on this side of the M6 are considered to have lower suitability for otter due to the high levels of disturbance from the motorway. The amendment will not give rise to a new or different significant effect on otter, and will not change the level of significance of the effects reported in the main ES.

- 5.2.47 It is not likely that any other effects on species of relevance at more than local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP revised scheme are listed in SES and AP ES Volume 5: Appendix EC-003-000.

Mitigation and residual effects

Other mitigation measures

- 5.2.48 The main ES, as corrected in the SES, reported the creation of approximately 2.7ha of native species-rich marshy grassland within the floodplain directly adjacent to the south of Highlow Meadows LWS and an additional 5.5ha of grassland creation adjacent to the M6 and Meaford North embankment. This was designed to mitigate the loss of 1.2ha of lowland meadow with marshy grassland character at Highlow Meadows LWS and 3.8ha of lowland meadow at Yarnfield Lane. The amendment will remove 0.8ha of grassland habitat and 0.9ha of landscape mitigation planting on the flood mitigation bund, located adjacent to the west side of the M6. Wetland habitat creation will be extended by 1.7ha to cover the area of the former bund and landscape mitigation, which will result in a net increase in habitat creation of 0.8ha. Once established, this will compensate the additional loss of 0.2ha of grassland at Highlow Meadows LWS, and reduce the effect on the LWS to a level that is not significant.
- 5.2.49 The main ES reported that where watercourses are realigned or diverted they will be naturalised with a profile to promote the establishment of marginal vegetation and pools. This principle of mitigation has been applied to the tributaries of the Filly Brook to the west of the M6 that are impacted by the amendment. Once the vegetation has developed the adverse effect of habitat loss and fragmentation on the tributaries of Filly Brook west of the M6 will be reduced to a level that is not significant.
- 5.2.50 The main ES reported habitat creation measures between Yarnfield and Birchwood including the creation of species-rich grassland, wetland, ponds, hedgerows and semi-natural woodland. This would compensate for the bat foraging habitats lost to the original scheme. Once established, the areas of woodland creation near Birchwood, and large areas of grassland, ponds and wetland at Highlow Meadows will compensate for the additional loss of potential foraging and tree roosts at Highlow Meadows and the woodland belt along the M6. Areas of woodland creation are included in the original scheme either side of Meaford North embankment, which once established will compensate for the tree roosting opportunities lost to the amendment, and reduce the effect on the bat assemblage between Lodge Covert and Birchwood to a level that is not significant.
- 5.2.51 The main ES reported that ponds, species-rich grassland and broadleaved woodland would be created and designed to compensate for the loss of breeding sites, foraging habitat and places of shelter used by great crested newt and other amphibian species. Compensation will be provided within the ecological habitat creation area at Highlow Meadows. Additional great crested newt terrestrial habitat loss required for construction of the flood attenuation bund within Highlow Meadows will be compensated through grassland creation on the bunds and through an increase in extent of wetland habitats adjacent to the M6. Following implementation, the adverse effect on the great crested newt metapopulation between Yarnfield and Swynnerton will be reduced to a level that is not significant.

- 5.2.52 The main ES reported habitat creation measures such as grassland creation near Highlow Meadows, and woodland and hedgerow creation between Blakelow and Birchwood as providing foraging and nesting opportunities for barn owl populations identified at Blakelow and Yarnfield. The amendment will also include the creation of 1.7ha of wetland habitat creation to cover the area of the former bund and landscape mitigation, resulting in a net increase in habitat creation by 0.8ha. These areas of habitat creation, once established, will reduce the adverse effect resulting from the loss of foraging habitat and potential nesting sites associated with the AP revised scheme to a level that is not significant.

Summary of likely residual effects

- 5.2.53 There are no changes to the likely residual significant construction ecology and biodiversity effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.2.54 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 amendments.

Effects arising from operation

Avoidance and mitigation measures

- 5.2.55 The main ES reported that where the HS2 route will cross a watercourse likely to be used by mammal species such as otter and water vole, means of safe passage will be provided, such as provision of mammal ledges within a culvert, or provision of a separate dry underpass. This principle of mitigation has been applied to the locations where the route of the AP revised scheme will cross tributaries of Filly Brook to the west of the M6, in order to allow free passage for wildlife, including otter.

Assessment of impacts and effects

- 5.2.56 There are no new or different significant operational effects for ecology and biodiversity as a result of the amendment, in comparison with the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.2.57 No other mitigation measures are required above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.2.58 There are no changes to the likely residual significant operational ecology and biodiversity effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.2.59 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 amendments.

Monitoring

- 5.2.60 Volume 1, Section 9 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.2.61 There are no changes to the monitoring requirements identified in the main ES for ecology and biodiversity as a result of the amendment.

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

- 5.2.62 The amendment will not result in a new or different likely residual significant effect or change the likely residual significance of the environmental effects as set out in the main ES.

5.3 Additional land permanently required for a new junction of the A51 Bury Bank and Stone Rural BOAT 34 (AP-003-003)

- 5.3.1 The Bill provides for the permanent widening of Stone Rural Byway Open to All Traffic (BOAT) 34, which would be up to 3.5m wide with passing bays, between the A51 Bury Bank and Swynnerton Footpath 27. Stone Rural BOAT 34 would provide HS2 maintenance access to the HS2 route. See Map CT-05-224, E3 to E1 and Map CT-05-224-R1, F6 to E10 in the main ES Volume 2, CA3 Map Book.
- 5.3.2 Since submission of the Bill, a requirement has been identified to improve visibility for vehicles at the junction of the Stone Rural BOAT 34 and the A51 Bury Bank. To improve visibility at this junction, Stone Rural BOAT 34 will be permanently diverted to the east of its existing alignment, immediately adjacent to the A51 Bury Bank. A new junction will be provided 180m east of the existing junction between Stone Rural BOAT 34 and the A51 Bury Bank. See Map CT-06-224-R1, G5 to F7 in the SES and AP ES Volume 2, CA3 Map Book.
- 5.3.3 The amendment will be constructed within the period set out in the main ES.
- 5.3.4 The land required for this amendment is outside of the limits of Bill. The amendment will result in the permanent requirement for approximately 0.8ha of additional land. See Map CT-06-224-R1, G5 to F7 in the SES and AP ES Volume 2, CA3 Map Book.

Topics included in the AP assessment

- 5.3.5 The amendment is considered to only require reassessment of the environmental effects and mitigation described in the main ES for traffic and transport.

Traffic and transport

Scope, assumptions and limitations

- 5.3.6 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the Scope and Methodology Report (SMR)³⁸, and the SMR Addendum³⁹ of the main ES.

Existing environmental baseline

- 5.3.7 The baseline traffic and transport information for the Stone and Swynnerton area is as described in Volume 2 CA3, Section 14 of the main ES.
- 5.3.8 There are four primary 'A' roads that pass through the Stone and Swynnerton area including the A51 Stone Road, which connects Stone to Stableford via Swynnerton.
- 5.3.9 As in the original scheme, the HS2 route will cross the existing routes of 10 PRoW. One further PRoW, Stone Rural BOAT 34, is affected by the AP revised scheme due to a permanent upgrade for maintenance access.

Future environmental baseline

Construction (2023) and operation (2027 and 2041)

- 5.3.10 SES and AP ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2023, 2027 and 2041 respectively, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.3.11 None of the identified developments affect the assessment of the AP revised scheme's likely construction and operation impacts on traffic and transport.

Effects arising during construction

Avoidance and mitigation measures

- 5.3.12 No further measures are applicable to this assessment, above those stated in the draft Code of Construction Practice (CoCP)⁴⁰.

Assessment of impacts and effects

- 5.3.13 There are no new or different significant construction effects on traffic and transport as a result of the amendment, in comparison with the main ES.

³⁸HS2 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>

³⁹ 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>

⁴⁰ 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>

Mitigation and residual effects

Other mitigation measures

- 5.3.14 No other mitigation measures are required above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.3.15 There are no changes to the likely residual significant construction traffic and transport effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.3.16 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 amendments.

Effects arising from operation

Avoidance and mitigation measures

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

Assessment of impacts and effects

- 5.3.18 The proposed change to Stone Rural BOAT 34 will increase travel distance for non-motorised users by up to 400m, giving rise to a new minor severance effect, which is significant. See SES and AP ES Volume 5: Appendix TR-001-000; and Map TR-04-211 in the SES and AP ES Volume 5 Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.3.19 No other avoidance or mitigation measures have been identified above those reported in the main ES.

Summary of likely residual significant effects

- 5.3.20 The amended junction of the A51 Bury Bank and Stone Rural BOAT 34 introduces a new likely residual significant severance effect to non-motorised users of Stone Rural BOAT 34 due to increased travel distance.

Cumulative effects

- 5.3.21 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 amendments.

Monitoring

- 5.3.22 Volume 1, Section 9 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.

- 5.3.23 There are no changes to the monitoring requirements identified in the main ES for traffic and transport as a result of this amendment.

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

- 5.3.24 The amended junction of the A51 Bury Bank and Stone Rural BOAT 34 introduces a new likely residual significant severance effect to non-motorised users of Stone Rural BOAT 34.

5.4 Additional land permanently required to widen the highway verge along the A51 Stone Road (AP-003-004)

- 5.4.1 The Bill provides for the permanent diversion of Tittensor Road, approximately 800m in length, 375m north-west of its existing alignment. The diverted Tittensor Road would cross over the HS2 route via Tittensor Road overbridge before connecting into the diverted A51 Stone Road, approximately 100m west of Long Compton Farm. See Map CT-06-225, F9 to C4 in the main ES Volume 2, CA3 Map Book.
- 5.4.2 The Bill provides for environmental mitigation to the east of the diverted Tittensor Road/diverted A51 Stone Road junction as follows. See Map CT-06-225, D4 in the main ES Volume 2, CA3 Map Book:
- an area of landscape mitigation planting, approximately 0.1ha in area, located immediately east of the diverted Tittensor Road/diverted A51 Stone Road junction;
 - an area of grassland habitat creation, approximately 0.3ha in area, located 50m south-east of the diverted Tittensor Road/diverted A51 Stone Road junction; and
 - a section of hedgerow habitat creation, approximately 60m in length, located along the south side of the diverted A51 Stone Road, 100m east of the diverted Tittensor Road/diverted A51 Stone Road junction.
- 5.4.3 Since submission of the Bill, a requirement has been identified to improve visibility for vehicles joining the diverted A51 Stone Road from the diverted Tittensor Road. When approaching the junction from the south, the visibility of westbound traffic along the diverted A51 Stone Road would be obscured by existing hedgerow and the landscape mitigation planting and hedgerow habitat creation included in the original scheme along the south edge of the A51 Stone Road.
- 5.4.4 To improve visibility at the junction, the highway verge along the south edge of the diverted A51 Stone Road will be widened by up to 8.8m (10.3m in total including the previous 1.5m verge) for a length of 130m. To accommodate these works, the following changes to environmental mitigation included in the original scheme will be required. See Map CT-06-225, E3 to D4 in the SES and AP ES Volume 2, CA3 Map Book:
- 60m of hedgerow habitat creation along the south side of the diverted A51 Stone Road included in the original scheme will no longer be provided;

- a reduction in landscape mitigation planting in the original scheme by 521m², immediately east of the junction, and
- a reduction in grassland habitat creation in the original scheme by 38m², located 50m south-east of the junction.

5.4.5 The amendment will be constructed within the period set out in the main ES.

5.4.6 The land required for amending the junction and mitigation to improve visibility is outside the limits of the Bill. The amendment will result in the permanent requirement for approximately 900m² of additional land. See Map CT-06-225, E3 to D4 in the SES and AP ES Volume 2, CA3 Map Book.

Topics included in the AP assessment

5.4.7 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

5.5 Additional land permanently required for the alignment of the Swynnerton Estate North green overbridge (AP-003-005)

5.5.1 The Bill provides for the Swynnerton Estate North green overbridge, which would cross the HS2 route at a height of 9m above existing ground and rail levels, and lie adjacent to the Common Lane Cold War Bunkers. The overbridge would provide vehicle access to the Swynnerton Estate across the HS2 route. There would be landscape mitigation planting on both sides of the overbridge and shrub and tree planting across the overbridge to facilitate ecological connectivity across the route. Landscape earthworks would be provided on the south side of the overbridge. See Map CT-06-227, H7 to H5 in the main ES Volume 2, CA3 Map Book.

5.5.2 Since submission of the Bill, a requirement has been identified to provide a greater clearance between the rail level of the HS2 main line and the underside of the Swynnerton Estate North green overbridge by 1m. As a result, the overbridge will be at a height of 10m above both existing ground and rail levels. In raising the height of the overbridge, there will be a requirement to adjust the earthworks on the northern and southern approaches.

5.5.3 As a result of the increased area of earthworks, landscape mitigation planting will be required to be adjusted on the southern approach, however, the overall area of landscape mitigation planting will be unchanged from the original scheme. There will be no change to the shrub and tree planting across the overbridge. See Map CT-06-227, H7 to H5 in the SES and AP ES Volume 2, CA3 Map Book.

5.5.4 The amendment will be constructed within the period set out in the main ES.

5.5.5 The amendment will require additional land outside the limits of the Bill. The amendment will result in the permanent requirement for approximately 590m² of additional land. See Map CT-06-227, H5 in the SES and AP ES Volume 2, CA3 Map Book.

Topics included in the AP assessment

- 5.5.6 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

5.6 Additional land permanently required for the provision of a roundabout at the junction of the realigned Dog Lane, the A51 The Rowe, Bent Lane and the A51 through Stableford (AP-003-006)

- 5.6.1 The Bill provides for the permanent realignment of Dog Lane for approximately 950m in length, from a point approximately 125m north-west of its existing alignment. The realigned Dog Lane would cross over the HS2 route via the Dog Lane overbridge. The realigned Dog Lane would tie into the A51 The Rowe at the same point as the existing Dog Lane to the east of the West Coast Main Line (WCML), adjacent to the tie-in of Bent Lane (South) to the A51 The Rowe. See Map CT-06-228a, E3 to E9 in the main ES Volume 2, CA3 Map Book.
- 5.6.2 An area of woodland habitat creation, approximately 0.4 ha in size, would be located to the east of the junction of the A51 The Rowe and the realigned Dog Lane. In addition, approximately 665m of hedgerow habitat creation would be provided along the realigned Dog Lane. See Map CT-06-228a, E9 to E8 in the main ES Volume 2, CA3 Map Book.
- 5.6.3 Modifications to the junction of the A51 The Rowe with Dog Lane/Bent Lane (South) and the A51 through Stableford would include the provision of permanent signage to warn users of the potential hazard of heavy goods vehicles (HGV) turning into oncoming traffic. The installation of the signage would be within the existing highway boundary. See Map CT-06-252, I5 to G2 in the main ES Volume 4, Off-route Map Book.
- 5.6.4 Since submission of the Bill, it has been identified that there is a need to improve the safety of the junction between the A51 The Rowe and Dog Lane/Bent Lane (South). When approaching the junction from the south-east, traffic on the A51 The Rowe looking to turn right onto the realigned Dog Lane would have poor visibility due to the existing railway bridge. To improve the safety of the junction, a four-arm roundabout will be provided. To accommodate this change, the following amendments will be required:
- modifications to the vertical alignment of the realigned Dog Lane, Bent Lane (South), and the A51 The Rowe; increasing the height of each road by approximately 1.6m, 0.6m and 0.7m, respectively, to tie into the roundabout. See Map CT-06-228a, F10 to D7 in the SES and AP ES Volume 2, CA3 Map Book;
 - modifications to the horizontal alignment of Bent Lane (South), which will be realigned approximately 28m east, and the A51 The Rowe, which will be realigned approximately 14m east, to tie into the roundabout. See Map CT-06-228a, F10 to D7 in the SES and AP ES Volume 2, CA3 Map Book;

- removal of permanent signage on the A51 The Rowe and along the A51 through Stableford warning users of the potential hazard of HGVs turning into oncoming traffic. See Map CT-06-228a, F10 to Eg in the SES and AP ES Volume 2, CA3 Map Book;
- the addition of a junction bell-mouth⁴¹ to a residential property on the A51 The Rowe, to maintain existing access into the property from the realigned section of the A51 The Rowe. See Map CT-06-228a, F9 in the SES and AP ES Volume 2, CA3 Map Book;
- an approximately 0.1ha reduction in the woodland habitat creation, included in the original scheme, located east of the junction of the diverted Dog Lane and the A51 The Rowe. See Map CT-06-228a, E8 to Eg in the SES and AP ES Volume 2, CA3 Map Book;
- an approximately 60m reduction in hedgerow habitat creation, included in the original scheme, along the realigned Dog Lane. See Map CT-06-228a, Eg in the SES and AP ES Volume 2, CA3 Map Book; and
- approximately 500m of new hedgerow planting will be provided along both sides of the Bent Lane (South) realignment, on the approach to the roundabout. See Map CT-06-228a, Eg to D7 in the SES and AP ES Volume 2, CA3 Map Book.

5.6.5 The amendments will be constructed within the period set out in the main ES.

5.6.6 The land required for the permanent roundabout is outside the limits of the Bill. The amendment will result in the permanent requirement for approximately 1.4ha of additional land. See Map CT-06-228a, F10 to D7, F8 to E8 and C8 in the SES and AP ES Volume 2, CA3 Map Book.

Topics included in the AP assessment

5.6.7 The amendment is considered to only require reassessment of the environmental effects and mitigation in the main ES for landscape and visual.

5.6.8 The amendment has been subject to traffic capacity assessment and the modifications are shown to operate within capacity during construction and operation. Details of the capacity assessment are provided in the Transport Assessment Addendum (SES and AP ES Volume 5: Appendix TR-001-000).

⁴¹ A term used to refer to a new access junction with the highway or another access. The new carriageway for the access is shaped like a bell.

Landscape and visual

Scope, assumptions and limitations

- 5.6.9 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the Scope and Methodology Report (SMR)⁴², and the SMR Addendum⁴³ of the main ES.

Existing environmental baseline

- 5.6.10 The baseline landscape and visual information for the Stone and Swynnerton area is as described in Volume 2, CA3, Section 11 of the main ES.
- 5.6.11 The area of land required for the amendment is located within the Meece Brook Valley Sandstone Hills and Heaths landscape character area (LCA), as described in Volume 5: Appendix LV-001-003 of the main ES.
- 5.6.12 The amendment affects a number of viewpoints, which lie in proximity to the area, as described in Volume 5: Appendix LV-001-003 of the main ES. These are:
- view east from the edge of Stableford (viewpoint 019.02.012, located within the Whitmore Heath to Madeley area (CA4));
 - view east from Chapel and Hill Chorlton Footpath 12 (viewpoint 019.03.010);
 - view north-east from Dog Lane (viewpoint 019.04.009);
 - view west from Dog Lane (viewpoint 019.04.006); and
 - view south-west from a route with public access to Swynnerton Old Park (viewpoint 019.03.007).

Future environmental baseline

Construction (2020) and operation (2027)

- 5.6.13 SES and AP ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2020 and 2027 respectively, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.6.14 None of the identified developments affect the assessment of the AP revised scheme's likely construction and operation impacts on landscape and visual.

⁴²HS2 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>

⁴³HS2 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>

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.6.15 No further measures are applicable to this assessment, above those stated in the draft Code of Construction Practice (CoCP)⁴⁴.

Assessment of impacts and effects

Landscape assessment

- 5.6.16 The Meece Brook Valley Sandstone Hills and Heaths LCA was assessed as being affected by the original scheme and will also be affected by the AP revised scheme. This LCA is considered to be of medium sensitivity to change. The main ES reported a moderate adverse significant effect. This was due to the construction works associated with the Dog Lane overbridge, the realignment of Dog Lane, Bent Lane (South) and the A51, and the associated earthworks, which would introduce uncharacteristic features within the landscape and would add to the indirect effects caused by the presence of the HS2 main line construction works in the adjacent LCA.
- 5.6.17 The amendment will result in a slight increase in the footprint of the construction works, resulting in the removal of an additional small section of hedgerow along Dog Lane. Overall, however, when considered in the context of the works taking place as part of the original scheme, construction of the amendment will be noticeable at close range but will not affect the character of the Meece Brook Valley Sandstone Hills and Heaths LCA. The amendment will not give rise to a new or different significant effect or change the level of significance of the effects reported in the main ES.

Visual assessment

Viewpoints 019.04.009 and 019.04.011

- 5.6.18 Construction activity associated with the amendment, will be visible from viewpoints 019.04.009 and 019.04.011. These viewpoints were assessed as being affected by construction of the original scheme and will also be affected by the AP revised scheme. The main ES reported a major adverse significant effect due to the construction of the Dog Lane overbridge, the realignment of Dog Lane, Bent Lane and the A51 Stone Road, and the associated earthworks impacting views across the rural landscape, albeit in the context of the existing WCML.
- 5.6.19 The amendment will introduce additional construction activity into the view, specifically construction of a new roundabout, modifications to the original road realignments and provision of a junction bell-mouth for access to a residential property on the A51 The Rowe. When viewed in the context of other construction activity taking place as part of the original scheme, they will be noticeable but will not give rise to a new or different significant effect or change the level of significance of the effects reported in the main ES.

⁴⁴ 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>

Viewpoints 019.03.010, 019.04.006 and 019.03.007

- 5.6.20 Construction activity associated with the amendment, specifically the provision of a junction bell-mouth for access to a residential property on the A51 The Rowe, will also be visible in filtered views from viewpoints 019.03.010, 019.04.006 and 019.03.007. These viewpoints were assessed as being affected by construction of the original scheme and will also be affected by the AP revised scheme. The main ES reported a moderate adverse significant effect due to the construction of the Dog Lane overbridge, the realignment of Dog Lane, Bent Lane and the A51, and the associated earthworks impacting views across the rural landscape, albeit in the context of the existing WCML.
- 5.6.21 When viewed in the context of other construction activity taking place as part of the original scheme, the amendment represents a barely perceptible change in views from these locations, particularly since many of the views will be filtered by intervening vegetation. 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.

Mitigation and residual effects

Other mitigation measures

- 5.6.22 No other mitigation measures have been identified above the measures reported in the main ES.

Summary of likely residual significant effects

- 5.6.23 There are no changes to the likely residual significant construction landscape and visual effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.6.24 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 amendments.

Permanent effects arising during operation

Avoidance and mitigation measures

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

Assessment of impacts and effects

Landscape assessment

- 5.6.26 The Meece Brook Valley Sandstone Hills and Heaths LCA was assessed as being affected by the original scheme and will also be affected by the AP revised scheme. This LCA is considered to be of medium sensitivity to change. The main ES reported a moderate adverse significant effect at year 1 of operation, reducing to non-significant at year 15 of operation as mitigation planting matures. This was due to the presence of the Dog Lane overbridge, the realignment of existing highways, and the indirect

effects caused by the presence of the HS2 main line in the adjoining LCA reducing the perception of tranquillity and impacting on views and the quality of the landscape.

- 5.6.27 The amendment will introduce new features into the landscape, but these will be in the context of the original scheme and the urbanising effect of the nearby WCML. Overall, in the context of the wider LCA and the components of the original scheme, these features will be inconsequential and 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.

Visual assessment

Viewpoints 019.04.009 and 019.04.011

- 5.6.28 The amendment will be visible from viewpoints 019.04.009 and 019.04.011. These viewpoints were assessed as being affected by the presence of the original scheme and will also be affected by the AP revised scheme. The main ES reported a moderate adverse significant effect for viewpoint 019.04.009 (before reducing to non-significant at year 60) and a moderate adverse significant effect in winter of year 1 reducing to non-significant in summer of year 1 through to year 60 for viewpoint 019.04.011. This is due to the presence of the Dog Lane overbridge, the realignment of Dog Lane, Bent Lane (South) and the A51 Stone Road, and the associated earthworks, all of which would noticeably change the current rural views (albeit in the context of the WCML) and reducing reduce scenic quality.

- 5.6.29 The amendment is in a location where the rural character of the view is already eroded by the presence of the WCML, multiple roads, including the A51 Stone Road, and two static caravan parks. The amendment will not appear uncharacteristic and will not affect the quality of the views. 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.

Viewpoints 019.03.010, 019.04.006 and 019.03.007

- 5.6.30 The amendment will be visible in filtered views from viewpoints 019.03.010, 019.04.006 and 019.03.007. These viewpoints were assessed as being affected by the presence of the original scheme and will also be affected by the AP revised scheme. The main ES reported a moderate adverse significant effect at year 1 reducing to non-significant by year 60 for viewpoint 019.04.006 due to the maturing of mitigation planting as reported in the main ES. For viewpoints 019.03.010 and 019.03.07 the effect was assessed as moderate adverse significant at year 1 (winter) reducing to non-significant from year 1 (summer) through to year 60 due to the screening effect of arable crops. When viewed in the context of the original scheme, the amendment represents a barely perceptible change in the medium range views from these locations, particularly since many of the views will be filtered by intervening vegetation. For viewpoints 019.04.006 and 019.03.007 the amendment will also be seen in the context of the HS2 main line, which will further reduce its perceptibility. The amendment will, therefore, 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.

Mitigation and residual effects

Other mitigation measures

- 5.6.31 No other mitigation measures are required above the measures reported in the main ES.

Summary of likely significant residual effects

- 5.6.32 There are no changes to the likely residual significant operational landscape and visual effects identified in the main ES as a result of the amendment.

Cumulative effects

- 5.6.33 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 amendments.

Monitoring

- 5.6.34 Volume 1, Section 9 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 5.6.35 There are no changes to the monitoring requirements identified in the main ES for landscape and visual as a result of the amendment.

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

- 5.6.36 The amendment will not result in a new or different likely residual significant effect or change the likely residual significance of the environmental effects as set out in the main ES.

6 Assessment of minor utility amendments in the Stone and Swynnerton area

6.1 Additional land for the permanent diversion of BT Openreach overhead telecommunications cable along Stone Rural Bridleway 0.1135 (AP-003-101)

- 6.1.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert an existing BT Openreach overhead telecommunications cable. This will include an underground diversion of an existing overhead telecommunications cable. The diversion of the utility will be 440m in length, running along Stone Rural Bridleway 0.1135 and crossing the HS2 route within the Stone Rural Bridleway 0.1135 accommodation overbridge. See Map CT-06-221, I6 to H4 in the SES and AP ES Volume 2, CA3 Map Book. Approximately 0.1ha of additional land will be permanently required (see Map CT-06-221, H5 to H4 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.1.2 The activities will require the removal of existing utility infrastructure (where necessary), the removal of any surface material from the area of the diversion 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 divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.1.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.2 Additional land for the permanent diversion of BT Openreach and Zayo underground telecommunications cables along the B5026 Eccleshall Road (AP-003-102)

- 6.2.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert two existing BT Openreach underground telecommunications cables and an existing Zayo underground fibre optic telecommunication cable. The diversion of the utilities will be 880m in length; following the route of the B5026 Eccleshall Road realignment and connecting to Walton House Farm on the eastern side of the HS2 route (see Map CT-06-222, H1 to G7 in the SES and AP ES Volume 2, CA3 Map Book). Approximately 0.2ha of additional land will be permanently required (see Map CT-06-222, H3 to H1 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.2.2 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 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 diversion is complete. Activities to divert the utilities are currently planned to be carried out in 2021-2023 and are expected to take approximately 13 months in total to complete, however, the work will take place over an approximate 20-month period.

- 6.2.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.3 Additional land for the permanent diversion of BT Openreach overhead telecommunications cable along the realigned B5026 Eccleshall Road (AP-003-103)

- 6.3.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert an existing BT Openreach overhead telecommunications cable and for the re-establishment of a utility connection to a residential property at Micklow House Farm, to the north of the B5026 Eccleshall Road. This will include an underground diversion of an existing overhead telecommunications cable. The diversion of the utility will be 170m in length, running along the realigned B5026 Eccleshall Road. An underground connection from the diverted utility to Micklow House Farm will be provided. See Map CT-06-222, H2 in the SES and AP ES Volume 2, CA3 Map Book. Approximately 0.3ha of additional land will be permanently required (see Map CT-06-222, H2 and G4 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.3.2 The activities will require the removal of existing utility infrastructure (where necessary), the removal of any surface material from the area of the diversion 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 divert the utility are currently planned to be carried out in 2022-2023 and are expected to take approximately seven months to complete.
- 6.3.3 The amendment is considered to only require reassessment of the environmental effects and mitigation in the main ES for community and ecology and biodiversity.

Community

- 6.3.4 The amendment will result in additional land for the construction of the AP revised scheme, which will be within the boundary of a residential property. The impact of the utility diversion at this property will be small in scale and of short duration (up to three months), resulting in minor adverse effects, which are not significant. A description of the affected property is included in SES and AP ES Volume 5: Appendix CM-001-000.

Ecology and biodiversity

- 6.3.5 Construction associated with the amendment will result in additional habitat losses to those reported in the main ES, including approximately 20m of hedgerow including two trees, approximately three further scattered trees and 0.1ha of grassland. The trees have the potential to support roosting bats and barn owl, and the grassland is within proximity of ponds used by great crested newt. The loss of these habitats will,

therefore, result in different significant effects upon these species. However, this will not change the level of significance of the effects, which are each reported in the main ES as being of significance at up to county level.

- 6.3.6 Separately, the main ES reported the creation of 0.9ha of grassland and two ponds around a retained pond at Micklow House Farm. The amendment will remove the ability to deliver 0.3ha of this habitat creation in advance of construction. The temporary reduction in this area will have an adverse impact upon its function as mitigation for the loss of habitats associated with the great crested newt metapopulation⁴⁵ that is reported within the main ES as subject to a county level effect. This will, therefore result in a different significant effect upon this metapopulation, but it will not change the level of significance of effects reported in the main ES.

6.4 Additional land for the permanent diversion of Western Power Distribution overhead lines parallel to the HS2 main line and connection to Micklow House Farm (AP-003-104)

- 6.4.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert two Western Power Distribution 11kV overhead lines. This will include an underground diversion of a section of the existing overhead lines. The diversion of the utilities will be 660m in length, to the east of the HS2 route along the B5026 Eccleshall Road and parallel to the HS2 main line. The diverted utilities will reconnect to the existing overhead lines to the east of the B5026 Eccleshall Road and the existing overhead lines at Micklow House Farm. See Map CT-06-222, H5 to G4 in the SES and AP ES Volume 2, CA3 Map Book. Approximately 0.2ha of additional land will be permanently required (see Map CT-06-222, H5 and G5 to G4 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.4.2 The activities will require the removal of existing utilities infrastructure (where necessary), the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing) 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 2022-2023 and are expected to take approximately seven months to complete.
- 6.4.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.5 Additional land for the permanent removal of Zayo underground telecommunications cables near Yarnfield Lane (AP-003-105)

- 6.5.1 Since submission of the Bill, a requirement has been identified for additional land to permanently remove an existing Zayo fibre optic telecommunications cable. A 600m

⁴⁵ A metapopulation is a group of spatially separated populations that interact.

section of the existing utility will be removed to the north of the HS2 route, near Yarnfield Lane. See Map CT-05-222, D4 to B5 in the SES and AP ES Volume 2, CA3 Map Book). Approximately 0.4ha of additional land will be temporarily required (see Map CT-05-222, D4 to B5 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.

6.5.2 The activities will require removal of the utility through existing utility ducts. Activities to remove the utility are currently planned to be carried out in 2023-2024 and are expected to take approximately six months to complete.

6.5.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.6 Additional land and change in Bill powers for the permanent removal of a Zayo underground telecommunications cable between Yarnfield Lane and the A51 Bury Bank (AP-003-106)

6.6.1 Since submission of the Bill, a requirement has been identified for additional land and a change in Bill powers from temporary (access rights) to permanent (surface works in highways) at one plot of land to permanently remove an existing Zayo fibre optic telecommunication cables. A 4.6km section of the existing utility will be removed between Yarnfield Lane and the A51 Bury Bank. See Map CT-05-223, D10 to A8; Map CT-05-223-L1, I6 to A1; Map CT-05-224, E2 to D1 and J9 to H6; and Map CT-05-224-R1, E10 to C8 in the SES and AP ES Volume 2, CA3 Map Book. Approximately 3.7ha of additional land will be temporarily required. See Map CT-05-223, C10 to A8; Map CT-05-223-L1, I4 to G5, G5 to E2, E2 to C1 and C1 to A1; Map CT-05-224, J9 to H6 and E2 to D1; and Map CT-05-224-R1, E10 to C8 in the SES and AP ES Volume 2, CA3 Map Book. The additional land and Bill powers needed to meet this requirement are not included within the Bill, hence the need for this amendment.

6.6.2 The activities will require removal of the utility through existing utility ducts. Activities to remove the utility are currently planned to be carried out in 2023-2024 and are expected to take approximately six months to complete.

6.6.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.7 Additional land for the permanent diversion of BT Openreach underground telecommunications cable along Swynnerton Footpath 27 accommodation underbridge (AP-003-107)

6.7.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert an existing underground BT Openreach telecommunication cables. The diversion of the utility will be 550m in length, following the route of the Swynnerton Footpath 27 accommodation underbridge and connecting to Blakelow Farm. A section of the existing utility will be removed where it will cross the HS2 route. See Map CT-06-224, E6 to E3 in the SES and AP ES Volume 2, CA3 Map Book). Approximately 0.3ha of additional land will be permanently required see Map CT-06-

224, E5 to E3 in the SES and AP ES Volume 2, CA3 Map Book. The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.

- 6.7.2 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.
- 6.7.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.8 Additional land for the permanent diversion of three Severn Trent Water water mains south of the M6 (AP-003-108)

- 6.8.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert two existing Severn Trent Water 10-inch water mains and one existing Severn Trent Water 400mm water main. The diversion of the utilities will be 375m in length, crossing the HS2 route to the south of the M6 and south-west of the Swynnerton Estate South underbridge. See Map CT-06-224, C7 to B4 in the SES and AP ES Volume 2, CA3 Map Book. Approximately 0.7ha of additional land will be permanently required (see Map CT-06-224, C6 to B7 and C5 to B4 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.8.2 The activities will require the removal of any surface material from the area of the diversion (this may include vegetation, soil, and road surfacing), the removal of existing utilities 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.
- 6.8.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.9 Additional land for the permanent diversion of Western Power Distribution 11kV overhead lines south of Sandyford Farm (AP-003-109)

- 6.9.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert an existing Western Power Distribution 11kV overhead line. This will include an underground diversion of a section of the existing overhead line to the south of Sandyford Farm. The diversion of the utility will be 250m in length, to the south of Sandyford Farm, near the Swynnerton New Bridleway accommodation underbridge. See Map CT-06-225, F4 in the SES and AP ES Volume 2, CA3 Map Book.

Approximately 250m² of additional land will be permanently required to provide access to the existing overhead lines from Tittensor Road (see Map CT-06-225, F₄ in the SES and AP ES Volume 2, CA₃ Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.

- 6.9.2 The activities will require the removal of existing utility infrastructure, the removal of any surface material from the area of the diversion 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 divert the utility are currently planned to be carried out in 2021 - 2022 and are expected to take approximately six months to complete.
- 6.9.3 The amendment is considered to only require reassessment of the environmental effects and mitigation in the main ES for community.

Community

- 6.9.4 The amendment will result in additional land for the construction of the AP revised scheme, which will be within the boundary of a residential property. The impact of the utility diversion at this property will be small in scale and of short duration (up to three months), resulting in minor adverse effects, which are not significant. A description of the affected property is included in SES and AP ES Volume 5: Appendix CM-001-000.

6.10 Additional land for the permanent diversion of BT Openreach telecommunications cable along Tittensor Road (AP-003-110)

- 6.10.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert existing BT Openreach underground telecommunications cables. The diversion of the utility will be 1.3km in length, following the Tittensor Road diversion. See Map CT-06-225, D₁₀ to F₂ in the SES and AP ES Volume 2, CA₃ Map Book. Approximately 0.5ha of additional land will be permanently required (see Map CT-06-225, F₁₀ to F₉ and F₂ to D₄ in the SES and AP ES Volume 2, CA₃ Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.10.2 The activities will require the removal of existing utility infrastructure (where necessary), removal of any surface material from the area of the diversion 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 divert the utility are currently planned to be carried out in 2021 - 2022 and are expected to take approximately six months to complete.
- 6.10.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.11 Additional land for the permanent vertical realignment of four Severn Trent Water water mains along Tittensor Road (AP-003-111)

- 6.11.1 Since submission of the Bill, a requirement has been identified for additional land for the permanent vertical realignment of four existing Severn Trent Water water mains, one 400mm main, two 10-inch mains and one 9-inch main, between the retained Tittensor road and the diverted Tittensor Road, on the south-western side of the HS2 route. The utilities will be reinstalled along their existing alignment at up to 1m lower than the current depth. See Map CT-06-225, F8 to E8 in the SES and AP ES Volume 2, CA3 Map Book. Approximately 280m² of additional land will be permanently required (see Map CT-06-225, E8 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.11.2 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), excavation and reinstallation 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 vertically realign the utilities are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.11.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.12 Additional land for the permanent diversion of BT Openreach overhead telecommunications cable along the A519 Newcastle Road (AP-003-112)

- 6.12.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert a section of an existing BT Openreach telecommunications cables. This will include an underground diversion of a section of the existing overhead lines. The diversion of the utility will be 840m in length, following the A519 Newcastle Road realignment, between Bottom Lane and the A51 Stone Road. See Map CT-06-226, F8 to F1 in the SES and AP ES Volume 2, CA3 Map Book. Approximately 0.4ha of additional land will be permanently required (see Map CT-06-226, F8 to F7 and F3 to F1 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.12.2 The activities will require the removal of any existing utility infrastructure (where necessary), the removal of any surface material from the area of the diversion 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 divert the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.

- 6.12.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.13 Additional land for the permanent diversion of Severn Trent Water 400mm water main west of Bent Lane (South) (AP-003-113)

- 6.13.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert a Severn Trent Water 400mm water main. The diversion of the utility will be 400m in length, running along the eastern side of the West Coast Main Line (WCML) and to the west of the realigned Bent Lane (referred to as Bent Lane (South)), passing around a balancing pond for railway drainage. See Map CT-06-228a, D9 to C7 in the SES and AP ES Volume 2, CA3 Map Book. Approximately 1.1ha of additional land will be permanently required (see Map CT-06-228a, E9 to C8 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.13.2 The activities will require the removal of any surface material (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.
- 6.13.3 The amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES with respect to any environmental topics.

6.14 Additional land for the permanent diversion of two Severn Trent Water water mains along Swynnerton Footpath 10 accommodation underbridge (AP-003-114)

- 6.14.1 Since submission of the Bill, a requirement has been identified for additional land to permanently divert two existing 400mm Severn Trent Water water mains. The diversion of the utilities will be 350m in length, crossing the HS2 route within the Swynnerton Footpath 10 accommodation underbridge and connecting to Shelton-under-Harley Farm. See Map CT-06-228a, C7 to B5 in the SES and AP ES Volume 2, CA3 Map Book. Approximately 700m² of additional land will be permanently required (see Map CT-06-228a, C7 to B6 in the SES and AP ES Volume 2, CA3 Map Book). The additional land needed to meet this requirement is not included within the Bill, hence the need for this amendment.
- 6.14.2 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 utilities 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 diversion is 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.

- 6.14.3 The amendment is considered to only require reassessment of the environmental effects and mitigation in the main ES for sound, noise and vibration.

Sound, noise and vibration

- 6.14.4 The main ES reported that Camelot Cottage and Honeysuckle Cottage at Shelton under Harley Farm, Shelton under Harley would experience construction noise levels above the eligibility criteria for noise insulation as defined in the HS2 noise insulation and temporary rehousing policy⁴⁶. No other likely significant construction sound, noise or vibration significant effects are predicted in the vicinity of the amendment.
- 6.14.5 As a result of the amendment, when considered in combination with the construction works described in the main ES, in addition to those properties identified in the main ES, Shelton under Harley Farm, Shelton Under Harley (assessment location ref.: 13166) is forecast to experience construction noise levels above the eligibility criteria for noise insulation as defined in the draft Code of Construction Practice (CoCP)⁴⁷. The mitigation measures reported in the draft CoCP, including noise insulation for the additional residential property, will reduce noise inside the dwelling such that it does not reach a level where it will significantly affect residents. This will not change the level of significance as reported in the main ES.

⁴⁶ Further information is provided in HS2 Phase 2a Information Paper E13: Control of construction noise and vibration.

⁴⁷ 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>

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High Speed Rail (West Midlands - Crewe) Supplementary Environmental Statement and Additional Provision Environmental Statement Non-technical summary

March 2018

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High Speed Rail
(West Midlands - Crewe)
Supplementary Environmental Statement and
Additional Provision Environmental Statement
Non-technical summary



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Contents

1. Introduction to the Supplementary Environmental Statement and the Additional Provision Environmental Statement	1	4. Colwich to Yarlet, Community Area 2	17
1.1 Purpose of this Non-technical summary	1	4.1 New environmental baseline information	17
1.2 Background to High Speed Two	1	4.2 Changes to the design and construction assumptions within the existing powers of the Bill	17
1.3 Terminology used to describe the Proposed Scheme	2	4.3 Corrections to the main ES	19
1.4 The Supplementary Environmental Statement and the Additional Provision Environmental Statement	3	4.4 Summary of residual environmental effects for Supplementary Environmental Statement changes	19
1.5 Structure of the Supplementary Environmental Statement and the Additional Provision Environmental Statement	4	5. Stone and Swynnerton, Community Area 3	23
1.6 Approach to mitigation	6	5.1 New environmental baseline information	23
1.7 Approach to monitoring	6	5.2 Changes to the design and construction assumptions within the existing powers of the Bill	23
1.8 Consultation	6	5.3 Corrections to the main ES	25
1.9 Assessment approach	6	5.4 Summary of residual environmental effects for Supplementary Environmental Statement changes	25
1.10 Assessment methodology	7	6. Whitmore Heath to Madeley, Community Area 4	27
2. Introduction to the Supplementary Environmental Statement	9	6.1 New environmental baseline information	27
3. Fradley to Colton, Community Area 1	11	6.2 Changes to the design and construction assumptions within the existing powers of the Bill	27
3.1 New environmental baseline information	11	6.3 Corrections to the main ES	27
3.2 Changes to the design and construction assumptions within the existing powers of the Bill	11	6.4 Summary of residual environmental effects for Supplementary Environmental Statement changes	27
3.3 Corrections to the main ES	14		
3.4 Summary of residual environmental effects for Supplementary Environmental Statement changes	14		

7. South Cheshire, Community Area 5	31	11. Stone and Swynnerton, Community Area 3	57
7.1 New environmental baseline information	31	11.1 Summary of engineering amendments within the Additional Provision	57
7.2 Changes to the design and construction assumptions within the existing powers of the Bill	31	11.2 Assessment of engineering amendments	63
7.3 Corrections to the main ES	33	11.3 Summary of minor utility amendments within the Additional Provision	63
7.4 Summary of residual environmental effects for Supplementary Environmental Statement changes	33	11.4 Assessment of minor utility amendments	67
8. Additional Provision Environmental Statement	37	11.5 Other amendments requiring changes to Bill powers	67
8.1 Introduction	37	12. South Cheshire Area, Community Area 5	69
9. Fradley to Colton, Community Area 1	39	12.1 Summary of engineering amendments within the Additional Provision	69
9.1 Summary of engineering amendments within the Additional Provision	39	12.2 Assessment of engineering amendments	72
9.2 Assessment of engineering amendments	42	12.3 Summary of minor utility amendments within the Additional Provision	72
9.3 Summary of minor utility amendments within the Additional Provision	43	12.4 Assessment of minor utility amendments	77
9.4 Assessment of minor utility amendments	46	12.5 Other amendments requiring changes to Bill powers	78
9.5 Other amendments requiring changes to Bill powers	46	13. Volume 3: Route-wide Effects	81
10. Colwich to Yarlet, Community Area 2	49	13.1 Ecology	81
10.1 Summary of engineering amendments within the Additional Provision	49	13.2 Water resources and flood risk	81
10.2 Assessment of engineering amendments	52		
10.3 Summary of minor utility amendments within the Additional Provision	52		
10.4 Assessment of minor utility amendments	55		
10.5 Other amendments requiring changes to Bill powers	55		

List of Figures

Figure 1: Phase 2a route showing community areas with SES changes and/or AP amendments	5
Figure 2: Location of change to railway systems compound within the Fradley to Colton area	13
Figure 3: Locations of engineering amendments within the Fradley to Colton area	41
Figure 4: Locations of minor utility amendments within the Fradley to Colton area	45
Figure 5: Locations of engineering amendments within the Colwich to Yarlet area	51
Figure 6: Locations of minor utility amendments within the Colwich to Yarlet area	54
Figure 7: Locations of engineering amendments within the Stone and Swynnerton area	62
Figure 8: Locations of minor utility amendments within the Stone and Swynnerton area	66
Figure 9: Locations of engineering amendments within the South Cheshire area	71
Figure 10: Locations of minor utility amendments within the South Cheshire area	76

List of Tables

Table 1: Summary of changes to the design and construction assumptions within the Fradley to Colton area	12
Table 2: Summary of changes to construction assumptions within the Colwich to Yarlet area	18
Table 3: Summary of changes to construction assumptions within the Stone and Swynnerton area	24
Table 4: Summary of changes to construction assumptions within the South Cheshire area	32
Table 5: Summary of engineering amendments within the Fradley to Colton area	40
Table 6: Summary of minor utility amendments within the Fradley to Colton area	44
Table 7: Summary of engineering amendments within the Colwich to Yarlet area	50
Table 8: Summary of minor utility amendments within the Colwich to Yarlet area	53
Table 9: Summary of engineering amendments within the Stone and Swynnerton area	58
Table 10: Summary of minor utility amendments within the Stone and Swynnerton area	64
Table 11: Summary of engineering amendments within the South Cheshire area	70
Table 12: Summary of minor utility amendments within the South Cheshire area	73

1. Introduction to the Supplementary Environmental Statement and the Additional Provision Environmental Statement

1.1 Purpose of this Non-technical summary

This document is the Non-technical summary (NTS) of the Supplementary Environmental Statement (SES) and the Additional Provision Environmental Statement (AP ES), which the Government has submitted to Parliament in support of the High Speed Rail (West Midlands – Crewe) Bill ('the Bill'). Its main purpose is to provide a summary, in non-technical language, of any new or different likely residual significant environmental effects arising from the updates and changes reported in the SES, and the amendments reported in the AP ES. These effects are compared to those contained within the Environmental Statement which accompanied the Bill submitted to Parliament in July 2017 ('the main ES').

1.2 Background to High Speed Two

High Speed Two (HS2) is a new high speed railway proposed by the Government to connect major cities in Britain. HS2 will be built in phases. Phase One comprises the first section of the network and will run between London and the West Midlands. Initial works for Phase One are now proceeding in accordance with the High Speed Rail (London – West Midlands) Act 2017.

Phase Two of HS2 will extend the line to the north-west and north-east: to Manchester with connections to the West Coast Main Line (WCML) at Crewe and Golborne; and to Leeds with a connection to the East Coast Main Line approaching York.

Phase Two will be constructed in two phases:

- Phase 2a: the western section of Phase Two between the West Midlands and Crewe, comprising approximately 36 miles (58km) of HS2 main line and two spurs (approximately 4 miles (6km)) south of Crewe that will allow trains to transfer between the HS2 main line and the existing WCML. Construction is planned to commence in 2020 ahead of the rest of Phase Two, with operation planned to start in 2027; and
- Phase 2b: comprising the remainder of Phase Two, between Crewe (where it would connect with Phase 2a) and Manchester, and between the West Midlands and Leeds. Phase 2b will be the subject of a separate hybrid Bill with construction expected to commence in 2023 and operation planned to start in 2033.

The Bill was introduced into Parliament together with the main ES in July 2017. If enacted by Parliament, the Bill will provide the powers to construct, operate and maintain Phase 2a of HS2. The main ES presented the findings of the environmental impact assessment (EIA) for the scheme proposed at the time of deposit of the Bill, outlining the assessment scope and methodology, identifying likely significant environmental effects, mitigation measures to avoid, prevent or reduce likely significant environmental effects, and any residual significant environmental effects that remain after all mitigation has been put in place.

Since deposit of the Bill in July 2017, a number of changes to the design and construction assumptions have occurred. New environmental baseline information has also become available since the production of the main ES and the need for a number of corrections to the main ES has been identified.

Any new or different significant effects that are likely to result from changes to the design and construction assumptions within the existing

Bill powers and limits, and as a result of the new environmental baseline information and corrections, are reported in the SES. In a number of other cases, changes to the Bill are needed in order to make amendments to the original proposals and these require the submission of an Additional Provision ('the AP'). The AP ES reports the likely significant environmental effects of these amendments having taken into account the environmental information in the SES.

The SES and the AP ES are separate environmental statements, but have been produced as combined volumes. Both the SES and AP ES provide an update to the main ES and should be read in conjunction with it. The SES is presented first, and the AP ES follows and bases its comparison upon effects reported in the main ES, as amended by the SES.

The SES and the AP ES will each be the subject of a public consultation in accordance with Parliamentary procedure.

Persons whose property or interests are specially and directly affected by the amendments to the

Bill for which powers are sought under the AP have the right to petition against the AP. Any petitions against these changes will be heard by the Select Committee in due course.

1.3 Terminology used to describe the Proposed Scheme

The following terms are used to differentiate between changes included in the SES and amendments included in the AP ES:

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

In order to differentiate between the original proposals assessed as part of the main ES and subsequent changes, the following terms are used throughout the SES and the AP ES to define the scheme as it relates to the HS2 Phase 2a project:

- 'the original scheme' - the Bill scheme submitted to Parliament in July 2017, which was assessed in the main ES;
- 'the SES scheme' – the original scheme with any design changes described in the SES that are within the existing powers of the Bill; and
- 'the AP revised scheme' – the original scheme as amended by the SES design changes and AP amendments.

1.4 The Supplementary Environmental Statement and the Additional Provision Environmental Statement

Supplementary Environmental Statement

The SES reports any new or different likely significant environmental effects arising from SES changes compared to the main ES. The SES changes include:

- updated and new environmental baseline information that has become available from surveys completed and desk based research undertaken since production of the main ES. This includes additional information concerning the environmental conditions for the following environmental topics:
 - agriculture, forestry and soils;
 - community;
 - ecology and biodiversity; and
 - water resources and flood risk.
- changes to the design or construction assumptions that do not require changes to the Bill, including those resulting from further work on the construction methodology for the implementation of slab track as the track form; and
- corrections to the main ES.

Additional Provision Environmental Statement

The AP ES reports any new or different likely significant environmental effects due to the amendments proposed in the AP. The AP amendments include engineering and minor utility amendments that require a change to

Bill powers and other changes to Bill powers to enable permanent access for maintenance over certain areas of land. The AP ES bases its comparison upon effects reported in the main ES, as amended by the SES. The AP ES reports the main reasonable local alternatives that have been considered, where relevant.

The AP amendments proposed are in community areas 1, 2, 3 and 5. There are no amendments proposed in community area 4. The amendments that require additional land and/or changes to Bill powers include:

- temporary laydown works, diversion works and other works to utilities such as gas mains, water mains, overhead electricity lines and telecommunications cables;
- relocation of balancing ponds;
- construction traffic routes, maintenance access routes and a Network Rail access road;
- highway improvements, including: improving visibility at highway junctions; widening of highway verges; highway realignments; and a roundabout at the junction of the re-aligned Dog Lane, the A51 The Rowe, Bent Lane and the A51 through Stableford;

- the viaduct crossing of the Norton Bridge to Stone Railway and track crossovers along the HS2 route. This includes: the raising of the alignment of the HS2 main line from the B5026 Eccleshall Road to the northern extent of Yarnfield North embankment; amendments to the viaduct crossing of the Norton Bridge to Stone Railway and Filly Brook; and the horizontal realignment of the HS2 main line from the northern extent of Yarnfield North embankment to Tittensor Road overbridge;
- revised flood mitigation measures around the Stone Infrastructure Maintenance Base – Rail (IMB-R) and Norton Bridge to Stone Railway;
- a new junction of the A51 Bury Bank and Stone Rural Byway Open to All Traffic (BOAT) 34; and
- a change to the earthworks on the northern and southern approaches of the Swynnerton Estate North green overbridge.

1.5 Structure of the Supplementary Environmental Statement and the Additional Provision Environmental Statement

The SES and the AP ES are separate documents. However, they are bound together and presented in a number of volumes. Each volume generally

contains an introduction and separate SES and AP ES sections, presented as Part One and Part Two respectively. The introductory sections in each volume apply to both the SES (Part 1) and the AP ES (Part 2) sections.

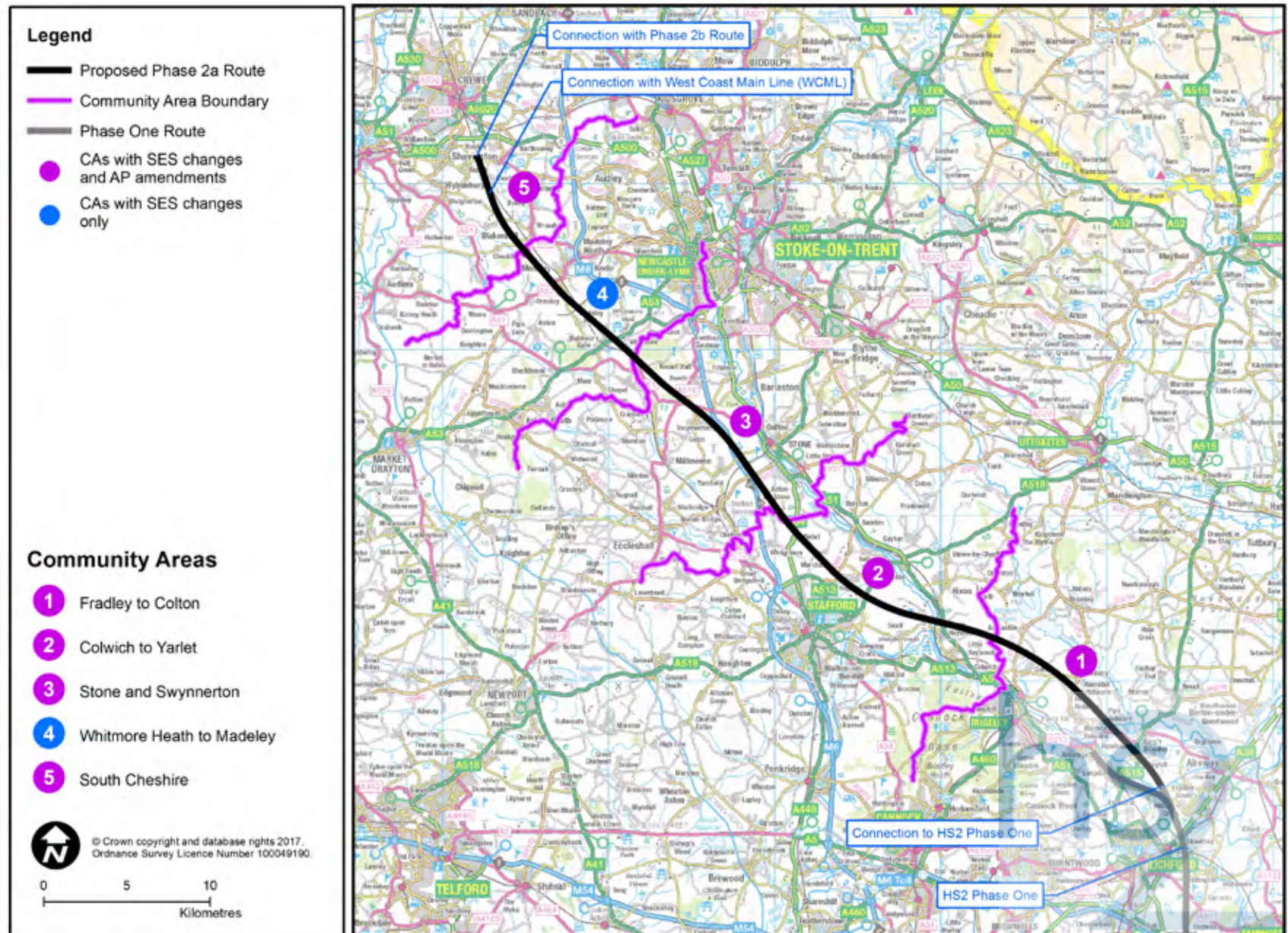
The SES and the AP ES comprise:

- This Non-technical summary (NTS). This provides a summary in non-technical language of the SES (Part 1) and the AP ES (Part 2). It presents a summary of any likely residual significant environmental effects (i.e. effects that 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 main ES, and, where relevant, the SES;
- Glossary of terms and list of abbreviations. This contains any new or different terms and abbreviations used throughout the SES and the AP ES, which are not already explained in the main ES;
- Volume 1: Introduction to the SES and the AP ES. This introduces the supplementary environmental information, changes to the design and construction assumptions included within the SES and amendments

within the AP 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 SES (Part 1), amendments within the AP ES (Part 2) and any new or different likely significant environmental effects that arise from these changes and amendments in each community area. These effects are compared to those reported in the main ES and, where relevant, the SES. Figure 1 shows the phase 2a route and the community areas with SES changes and/or AP amendments. The maps relating 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

Figure 1: Phase 2a route showing community areas with SES changes and/or AP amendments



SES (Part 1) and the amendments within the AP ES (Part 2) compared to those reported in the main ES and, where relevant, the SES; 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. A separate Volume 4 has not been produced as part of the SES and AP ES as off-route effects are very limited in number and so are reported in the most relevant Volume 2 community area report.

Background information and data

Certain reports and maps containing background information and data (BID) have been produced, which do not form part of the SES and AP ES. These documents are available on the HS2 website. The BID documents and maps present background survey information and other relevant background material.

1.6 Approach to mitigation

The measures that will be used to mitigate likely significant adverse environmental effects during construction and operation of this phase of the

railway are described in the main ES, including the NTS and the draft Code of Construction Practice (CoCP), which sets out measures to manage and control the effects of construction. These were submitted as part of the Bill deposit. The same general mitigation measures described in the main ES still apply. Specific mitigation measures are described within volumes 2 and 3 of the SES and the AP ES, where required.

1.7 Approach to monitoring

The draft CoCP includes commitments to monitoring significant effects during construction. In addition, general monitoring measures to be implemented during construction and operation for each environmental topic are described in the main ES. The same approach to monitoring measures described in the draft CoCP and main ES still applies.

1.8 Consultation

A formal public consultation is required by Parliament on both the SES and the AP ES. Members of the public will have a period of at least 42 days within which to make representations following the deposit of the SES and AP ES in Parliament and the first publication

of the necessary newspaper notices that follows. Parliamentary officials have appointed an independent assessor who will summarise the issues raised in representations received from members of the public and provide a report to Parliament before the Third Reading of the Bill.

There will also be a separate petitioning period. Within this period, persons whose property or interests are specially and directly affected by the amendments to the Bill for which powers are sought under the AP have the right to petition against the AP.

More information on who may petition against the AP, and how to do so, is available on Parliament's website www.parliament.uk.

1.9 Assessment approach

Scope of the assessment

A scoping exercise has been undertaken by environmental technical specialists to determine whether or not the SES changes and the AP amendments have the potential to give rise to any new or different likely significant environmental effects. The scoping exercise considered the construction and operational

effects of the SES changes and AP amendments for the following environmental topics:

- agriculture, forestry and soils;
- air quality;
- climate (assessed at a route-wide level, rather than at the community area level);
- community;
- cultural heritage;
- ecology and biodiversity;
- electromagnetic interference;
- health;
- land quality;
- landscape and visual;
- major accidents and natural disasters (assessed at a route-wide level, rather than at the community area level);
- socio-economics;
- sound, noise and vibration;
- traffic and transport;
- waste and material resources (assessed

at a route-wide level, rather than at the community area level); and

- water resources and flood risk.

Those SES changes and the AP amendments identified as having the potential to result in new or different likely significant environmental effects have been subject to further assessment work.

The proposed SES changes and the AP amendments are described in Volume 2 of the SES and the AP ES and summarised in this NTS.

1.10 Assessment methodology

The EIA process for the SES and the AP ES has followed that used for the main ES, as described in the Scope and Methodology Report (SMR) and the SMR Addendum, both in Volume 5 of the main ES.

Part 1: Supplementary Environmental Statement

2. Introduction to the Supplementary Environmental Statement

This part of the NTS relates to the SES. It reports whether the updates, changes to the design and construction assumptions, or corrections (the SES changes), would result in any new or different likely residual significant environmental effects from those reported in the main ES.

The SES provides additional information to that provided in the main ES. This NTS should be read in conjunction with the main ES NTS.

Part 1 of this NTS is presented on a community area basis, in sections 3 to 7. For each community area, with the exception of community area 4 where there are no changes to the design or construction assumptions, the following information is included:

- new baseline information where it is relevant to the reporting of likely significant residual environmental effects that are new or different to those reported in the main ES;
- a summary list of changes to construction assumptions that can be made within the existing powers of the Bill. These include changes to railway systems compounds as a result of further work on the construction methodology for the implementation of slab track as the track form;
- corrections to the main ES; and
- details of any new or different likely residual significant effects from those reported in the main ES which are a result of the updated or new baseline information, changes or corrections identified in the SES.

The SES changes are not considered to result in any new or different likely residual significant route-wide effects from those presented in Volume 3 of the main ES.

3. Fradley to Colton, Community Area 1

3.1 New environmental baseline information

Since the production of the main ES, additional baseline information has become available that relates to the following environmental topics in the Fradley to Colton area:

- community – additional information on the locations of four walking routes (promoted by the Kings Bromley Horticultural Society) has been received;
- ecology and biodiversity – ecological surveys for Phase 1 habitat, hedgerow, great crested newt, wintering birds, bats, water vole, badger and otter have been completed; and
- water resources and flood risk – additional information relating to a spring located north-east of Rugeley Trent Valley Station and south-west of Old Wood Farm has been received.

3.2 Changes to the design and construction assumptions within the existing powers of the Bill

Since the submission of the Bill, further information relating to the construction methodology for the installation of a slab track formation has required a change to the operational characteristics of one railway systems compound within the Fradley to Colton area. The change to this compound relates to: a change to the operational period (duration and start/end date); a change in the number of railway system workers (peak and/or average); and change in railway systems construction traffic peak numbers (heavy goods vehicles (HGV) and cars/light goods vehicles (LGV)).

In addition, in this area, there is a need for a new railway systems compound at Stockwell Heath which will be located within land included in the Bill for the provision of a civil engineering compound.

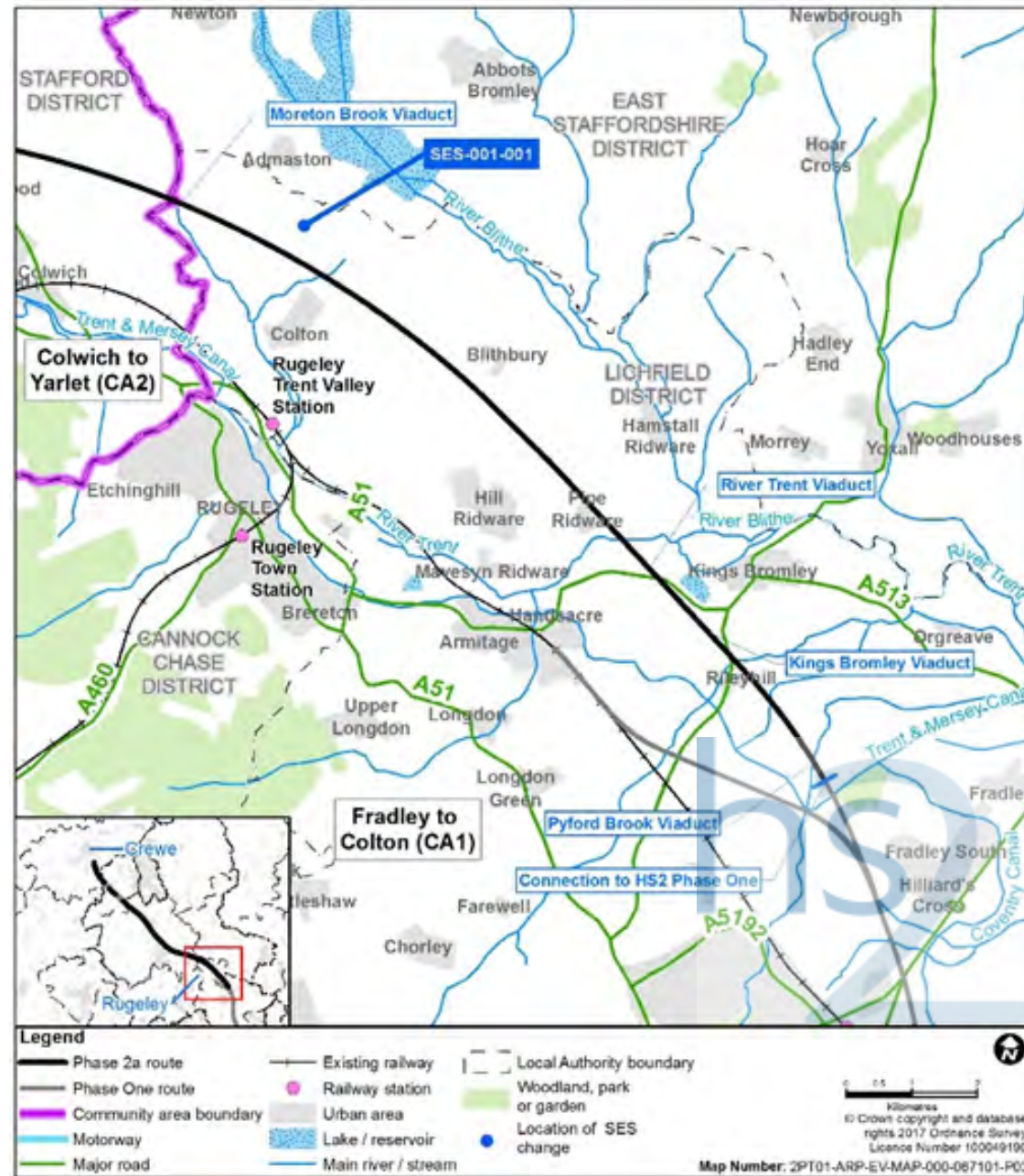
Table 1 presents a summary of the changes to the design and construction assumptions within the Fradley to Colton area and provides a description of the original scheme and the SES scheme.

Figure 2 shows the approximate location of the new railway systems compound within the Fradley to Colton area.

Table 1: Summary of changes to the design and construction assumptions within the Fradley to Colton area

Details of changes to the design and construction assumptions	Description of the original scheme	Description of the SES scheme
Change to the operational duration, railway system worker numbers, and railway systems HGV trips for the Pyford North embankment satellite compound	<p>This compound would be operational for a total of five years, commencing during 2021. Civil engineering works would be managed from this compound for a period of three years and nine months, followed by railway installation works for a period of one year and three months.</p> <p>The compound would support an average of 25 civil engineering workers per day (35 workers at peak times) and an average of 30 railway systems workers per day (45 workers at peak times).</p> <p>The compound would generate 99-111 civil engineering HGV trips per day and up to 10 railway systems HGV trips per day during busy periods and within the peak month of activity.</p>	<p>There are no changes to the operational characteristics for this compound related to civil engineering works.</p> <p>The railway installation works will be undertaken for a period of one year and six months, commencing during 2024. The compound will be operational for a total of five years and three months, an increase in three months from that stated in the main ES.</p> <p>There will be an increase in the number of railway systems workers supported by this compound with an average of 40 railway systems workers per day (60 workers at peak times).</p> <p>There will be an increase in the number of railway systems HGV trips generated by this compound with 82-84 trips per day during the busy periods and within the peak month of activity.</p> <p>This compound will support the implementation of track works.</p>
Provision of a new railway systems compound at Stockwell Heath cutting satellite compound (SES-001-001)	<p>Provision of a civil engineering compound only.</p> <p>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>This compound would support an average of 25 civil engineering workers per day (35 workers at peak times).</p> <p>This compound would generate 66-87 civil engineering HGV trips per day during busy periods and within the peak month of activity.</p>	<p>There are no changes to the operational characteristics for this compound related to civil engineering works.</p> <p>A new railway systems compound will be provided within the footprint of the Stockwell Heath 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 one year and three months, commencing during 2025; - support an average of 30 railway system workers per day (50 workers at peak times); - be accessed via the B5013 Uttoxeter Road; - generate 158-160 railway systems HGV trips during the busy periods and within the peak month of activity; - generate 23-38 railway systems car/LGV trips during busy periods and within the peak month of activity; - be managed from the Stone railhead main compound (in the Stone and Swynnerton area); and - support the implementation of track works.

Figure 2: Location of change to railway systems compound within the Fradley to Colton area



3.3 Corrections to the main ES

Since submission of the Bill, the need for a number of corrections to the contents of the main ES has been identified. The corrections include instances where there has been a need to correct the Volume 2 community area report for the Fradley to Colton area because of the potential to alter the significant environmental effects reported in the main ES or a factual inaccuracy relating to a significant effect that has been identified. Corrections also clarify elements of the scheme description reported in the main ES.

Each correction has been reviewed to consider whether there is potential for any likely new or different significant environmental effects from those described in the main ES. Where relevant, these corrections have been taken into account in the technical assessments reported within the SES.

3.4 Summary of residual environmental effects for Supplementary Environmental Statement changes

The additional baseline information and changes to the design and construction assumptions have been reviewed and do not give rise to any new or different likely significant residual environment effects within the Fradley to Colton area.

While the changes to the construction methodology for the installation of a slab track formation will increase the number of rail systems HGV movements, these will be generally later in the construction programme than civil engineering HGV movements. Any increase in traffic due to these changes will be relatively small in comparison to the peak level of traffic generated by the civil engineering works. Therefore, it is not expected that there will be any new or different significant effects on the road network to those reported in the main ES.

In a number of cases, new or different residual significant effects have been identified as a result of corrections within the Fradley to Colton area. These are set out according to the environmental topic concerned.

Landscape and visual

Effects arising during construction

The main ES did not include the viewpoint at Woodhouse Farm, Blithbury within the landscape and visual assessment. Residents at Woodhouse Farm will have close range views of construction activity, reducing scenic quality and interrupting views to Cannock Chase Area of Outstanding Natural Beauty (AONB).

This will result in a high magnitude of visual change and a new major adverse effect on this viewpoint, which is significant.

Effects arising from operation

The main ES did not include the viewpoint at Woodhouse Farm, Blithbury within the landscape and visual assessment. Residents at Woodhouse Farm will have close range views of features of the original scheme. These features will appear prominent and incongruous within the rural landscape. Long distance views to Cannock Chase AONB will also be interrupted. This will result in a high magnitude of visual change and a new major adverse effect during operation of the original scheme in year 1, which is significant.

By year 15, the scheme will become less noticeable as the maturing hedgerow and tree planting will help to integrate it within its wider visual context. Operation of the scheme in years 15 and 60 will reduce to a medium magnitude of visual change and moderate adverse visual effect, which is significant.

Sound, noise and vibration

Effects arising during construction

The main ES reported a major adverse construction noise effect on seven proposed dwellings at Woodhouse Farm, Blithbury on the basis that these had planning permission for development as holiday lets. However, the restrictive planning condition allowing the holiday lets to be used as permanent residential properties has been removed, which means these properties could be used as either holiday lets or permanent residential properties. The assessment of these properties as permanent residential properties was not considered within the main ES.

Where a receptor has multiple uses the assessment is based on the most sensitive use. The most sensitive use for the construction assessment is as holiday lets. If they are used as holiday lets, the significant construction noise effects reported in the main ES would remain. If the properties are used as permanent residential properties, no significant construction noise effect would occur.

Effects arising from operation

The most sensitive use for the operation assessment of the seven proposed dwellings at Woodhouse Farm is as permanent residential properties. On this basis, a re-assessment of operational sound, noise and vibration on properties at Woodhouse Farm, Blithbury, based on the potential permanent residential use of the seven properties previously identified as holiday lets, has been undertaken. When considered in conjunction with The Bungalow and Woodhouse Farm, the residential use of the properties will result in a new likely significant operational noise effect on the community and their shared external community spaces. Mitigation of this effect will be provided in the form of a noise fence barrier or landscape earthworks.

Community

Effects arising during operation

The removal of the restrictive planning condition at Woodhouse Farm, Blithbury, means that seven proposed dwellings, assessed as holiday lets in the main ES, may be used as permanent residential properties. This assessment reflects that potential use. Approximately nine residential properties at Woodhouse Farm will be in proximity to the HS2 route. Residents will experience a permanent in-combination effect associated with significant operation noise and visual effects, which will result in a new major adverse community effect, which is significant.

The main ES reported in-combination effects associated with significant operational noise and visual effects for seven residential properties north and south of Blithbury Road and 20 residential properties in Stockwell Heath and Hamley House. The correct number of properties affected is six and 19 respectively. This will result in different significant community effects due to a reduction in the number of properties reported to be affected, but will not change the level of significance of the effects (major adverse) reported in the main ES.

4. Colwich to Yarlet, Community Area 2

4.1 New environmental baseline information

Since the production of the main ES, additional baseline information has become available that relates to ecology and biodiversity only in the Colwich to Yarlet area. Ecology surveys for Phase 1 habitat, hedgerow, great crested newt, wintering birds, bats, water vole, badger and otter have been completed.

4.2 Changes to the design and construction assumptions within the existing powers of the Bill

There are no SES design changes within the Colwich to Yarlet area.

Since the submission of the Bill, further information relating to the construction methodology for the installation of a slab track formation has required a change to the operational characteristics of one railway systems compound in the Colwich to Yarlet area.

The change to this compound relates to: a change to the operational period (duration and start/end date); a change in the number of railway system workers (peak and/or average); and change in railway systems construction traffic numbers (heavy goods vehicles (HGV) and cars/light goods vehicles (LGV)).

Table 2 presents a summary of the changes to construction assumptions for the Colwich to Yarlet area and provides a description of the original scheme and the SES scheme.

Table 2: Summary of changes to construction assumptions within the Colwich to Yarlet area

Details of changes to construction assumption	Description of the original scheme	Description of the SES scheme
Change to the operational duration, railway systems worker numbers, and railway systems HGV trips for the Sandon Road auto-transformer station satellite compound	<p>This railway systems compound would be operational for a total of one year and three months, commencing during 2024.</p> <p>This railway systems compound would support an average of 30 railway systems workers per day (40 workers at peak times).</p> <p>This railway systems compound would generate up to 10 railway systems HGV trips per day during busy periods and within the peak month of activity.</p>	<p>This compound will be operational for a total of one year and six months, commencing during 2024.</p> <p>There will be an increase in the number of railway systems workers supported by this compound with an average of 55 railway systems workers per day (80 workers at peak times).</p> <p>There will be an increase in the number of railway systems HGV trips generated by this compound with 161-164 trips per day during the busy periods and within the peak month of activity.</p> <p>This compound will support the implementation of track works.</p>

4.3 Corrections to the main ES

Since submission of the Bill, the need for a number of corrections to the contents of the main ES has been identified. The corrections include 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 a factual inaccuracy relating to a significant effect that has been identified. Corrections also clarify elements of the scheme description reported in the main ES.

Each correction has been reviewed to consider whether there is potential for any likely new or different significant environmental effects from those described in the main ES. Where relevant, these corrections have been taken into account in the technical assessments reported within the SES.

4.4 Summary of residual environmental effects for Supplementary Environmental Statement changes

The additional baseline information and changes to construction assumptions have been reviewed

and do not give rise to any new or different likely significant residual environment effects within the Colwich to Yarlet area.

While the changes to the construction methodology for the installation of a slab track formation will increase the number of railway systems HGV movements, these will be generally later in the construction programme than civil engineering HGV movements. Any increase in traffic due to these changes will be relatively small in comparison to the peak level of traffic generated by the civil engineering works. Therefore, it is not expected that there will be any new or different significant effects on the road network to those reported in the main ES.

In a number of cases, new or different residual significant effects have been identified as a result of corrections in the Colwich to Yarlet area. These are set out according to the environmental topic concerned.

Sound, noise and vibration

Effects arising during construction

The main ES reported that approximately 10 properties at Hopton would be subject to a significant construction airborne noise effect.

Since the submission of the main ES, it has been identified that seven (rounded to 10) additional properties at Hopton should have been included in the assessment of construction airborne noise, making a total of approximately 20 residential properties at Hopton predicted to experience significant construction airborne noise effects. This will give rise to a different residual significant effect due to the increase in the number of properties reported to be affected, but will not change the level of significance of the effect reported in the main ES.

The main ES also reported eight residential properties in the Colwich to Yarlet area that are predicted to experience noise above the eligibility criteria as defined in the HS2 noise insulation and temporary rehousing policy. Two additional properties have been identified (Bank Top House, Hopton and Hill Top Farm, Yarlet) as being subject to a significant effect and will also be eligible for noise insulation. Mitigation measures, including noise insulation, will reduce noise inside the residential properties such that it will not reach a level where it would significantly affect residents.

Effects arising from operation

The main ES reported that approximately 10 properties in the vicinity of Moreton/Bishton Lane would experience a significant operational noise effect. Since the submission of the main ES, it has been identified that an additional two properties should have been included in the assessment of operational noise, making a total of approximately 15 residential properties (the sound, noise and vibration assessment rounds numbers of properties up to the nearest 5) at Moreton/Bishton Lane predicted to experience significant operational noise effects. This will give rise to a different residual significant effect due to an increase in the number of properties reported to be affected, but will not change the level of significance of the effect reported in the main ES.

Community

Effects arising during construction

The main ES reported in-combination effects associated with significant construction noise and visual effects for 11 residential properties in Hopton. This should have been reported as nine residential properties on the basis of the construction noise assessment. Since

the submission of the main ES, an additional seven properties have been identified in the construction noise assessment and therefore, the correct number of residential properties affected is 16 (rounded to 20 in the construction noise assessment). This will result in a different significant community effect due to an increase in the number of properties reported to be affected, but will not change the level of significance of the effect (major adverse) reported in the main ES.

Effects arising from operation

The main ES reported in-combination effects associated with significant operation noise and visual effects for 30 residential properties in Marston and Yarlet. Since submission of the main ES, it has been identified that the correct number of residential properties affected in Marston and Yarlet is 28. This will result in a different significant effect due to a reduction in the number of properties reported to be affected, but will not change the level of significance of the effect (major adverse) reported in the main ES.

The main ES also reported in-combination effects associated with significant operational noise and visual effects for 10 residential properties

in Moreton. Since submission of the main ES, it has been identified that the correct number of residential properties affected at Moreton is 12. This will result in a different significant effect due to an increase in the number of properties reported to be affected, but will not change the level of significance of the effect (major adverse) reported in the main ES.

Traffic and transport

Effects arising during construction

The temporary diversion of a Public Right of Way (PRoW) at Yarlet was incorrectly described in the main ES as Marston Footpath 2, but should have been reported as Whitgreave Footpath 2. The temporary diversion of this PRoW was not included in the traffic and transport assessment. This PRoW will be affected temporarily during construction and there will be an increase in travel distance for non-motorised users. This will result in a new minor adverse effect, which is significant. This correction will not require any change to mitigation reported in the main ES.

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5. Stone and Swynnerton, Community Area 3

5.1 New environmental baseline information

Since the production of the main ES, additional baseline information has become available that relates to ecology and biodiversity only in the Stone and Swynnerton area. Ecology surveys for Phase 1 habitat, hedgerow, wintering birds, bats, great crested newt, badger, water vole and otter, have been completed.

5.2 Changes to the design and construction assumptions within the existing powers of the Bill

There are no SES design changes in the Stone and Swynnerton area.

Since the submission of the Bill, further information relating to the construction methodology for the installation of a slab track formation has required a change to the operational characteristics of one railway systems compound within the Stone and Swynnerton area. The change to this compound

relates to: a change to the operational period (duration and start/end date); a change in the number of railway system workers (peak and/or average); and a change in railway systems construction traffic numbers (heavy goods vehicles (HGV) and cars/light goods vehicles (LGV)).

Table 3 presents a summary of the changes to the construction assumptions for the Stone and Swynnerton area, and provides a description of the original scheme and the SES scheme.

Table 3: Summary of changes to construction assumptions within the Stone and Swynnerton area

Details of changes to construction assumption	Description of the original scheme	Description of the SES scheme
Change to the railway system worker numbers and railway systems HGV trips for the Stone railhead main compound	<p>This railway systems compound would support an average of 225 railway systems workers per day (370 workers at peak times).</p> <p>This railway systems compound would generate 39-135 railway systems HGV trips per day during busy periods and within the peak month of activity.</p>	<p>There will be change in the number of railway systems workers supported by this compound. The average number of railway system workers per day will increase to 255. The peak number of railway system workers will decrease to 335.</p> <p>There will be an increase in the number of railway systems HGV trips generated by this compound with 178-244 trips per day during the busy periods and within the peak month of activity.</p>

5.3 Corrections to the main ES

Since submission of the Bill, the need for a number of corrections to the contents of the main ES has been identified. The corrections include instances where there has been a need to correct the Volume 2 community area report for the Stone and Swynnerton area because of the potential to alter the significant environmental effects reported in the main ES or a factual inaccuracy relating to a significant effect that has been identified. Corrections also clarify elements of the scheme description reported in the main ES.

Each correction has been reviewed to consider whether there is potential for any likely new or different significant environmental effects from those described in the main ES. Where relevant, these corrections have been taken into account in the technical assessments reported within the SES.

5.4 Summary of residual environmental effects for Supplementary Environmental Statement changes

The additional baseline information, changes to construction assumptions and corrections have been reviewed and do not give rise to any new or different likely significant residual environment effects within the Stone and Swynnerton area.

While the changes to the construction assumptions for the installation of a slab track formation will increase the number of railway systems HGV movements, these will be generally later in the construction programme than civil engineering HGV movements. Any increase in traffic due to these changes will be relatively small in comparison to the peak level of traffic generated by the civil engineering works. Therefore, it is not expected that there will be any new or different significant effects on the road network to those reported in the main ES.

6. Whitmore Heath to Madeley, Community Area 4

6.1 New environmental baseline information

Since the production of the main ES, additional baseline information has become available that relates to ecology and biodiversity only in the Whitmore Heath to Madeley area. Ecology surveys for Phase 1 habitat, hedgerow, great crested newt, wintering bird, bat, water vole, badger and otter have been completed.

6.2 Changes to the design and construction assumptions within the existing powers of the Bill

There are no changes to the design or construction assumptions within the Whitmore Heath to Madeley area.

6.3 Corrections to the main ES

Since submission of the Bill, the need for a number of corrections to the contents of the main ES has been identified. The corrections include instances where there has been a need to correct the Volume 2 CA report for the Whitmore Heath to Madeley area because of the potential to alter the significant environmental effects reported in the main ES or a factual inaccuracy

relating to a significant effect that has been identified. Corrections also clarify elements of the scheme description reported in the main ES.

Each correction has been reviewed to consider whether there is potential for any likely new or different significant environmental effects from those described in the main ES. Where relevant, these corrections have been taken into account in the technical assessments reported within the SES.

6.4 Summary of residual environmental effects for Supplementary Environmental Statement changes

The additional baseline information has been reviewed and does not give rise to any new or different likely significant residual environment effects within the Whitmore Heath to Madeley area.

In a number of cases, new or different residual significant effects have been identified as a result of corrections within the Whitmore Heath to Madeley area. These are set out according to the environmental topic concerned.

Sound, noise and vibration

Effects arising during construction

The main ES reported that approximately 50 dwellings located immediately adjacent to Manor Road, Madeley, between the junction with the A525 Bar Hill Road and the A53 Newcastle Road at Baldwin's Gate, would experience a significant construction noise effect as a result of a change in road traffic noise levels. Since the submission of the main ES, it has been identified that a section of this road was incorrectly identified and assessed as a HGV construction traffic route. The construction traffic route should have been shown as the section from the A525 Bar Hill Road to the access to the River Lea viaduct satellite compound. The remaining section, including the route past Madeley Park Wood, should not have been included, and will not be used as an HGV construction traffic route. This correction results in the removal of the significant construction traffic noise effect reported in the main ES.

Community

Effects arising during construction

A need for corrections to a number of the community assessments in the Whitmore Heath to Madeley area has been identified. These relate to changes in the numbers of properties identified in the sound, noise and vibration assessment, and the traffic and transport assessment, and the resulting change to in-combination effects reported in the community assessment.

The main ES reported in-combination effects associated with significant construction noise and visual effects for 20 residential properties on a section of Manor Road. Since the submission of the main ES, it has been identified that this section of road was incorrectly identified and assessed as a HGV construction traffic route. It will not be used as a construction traffic route and this correction results in the removal of the significant construction traffic noise effect on the group of properties, thereby removing the significant temporary in-combination effect. The visual effect will remain and is reported in the landscape and visual assessment in the main ES.

The main ES reported in-combination effects associated with significant construction noise and visual effects for 29 properties in Whitmore and Whitmore Heath. Since the submission of the main ES, it has been identified that the correct number of properties experiencing significant noise effects is 25 and therefore the number of properties experiencing in-combination effects is also 25. This will result in a different significant community effect due to the reduction in number of properties reported to be affected, but will not change the level of significance of the effect (major adverse) reported in the main ES.

The main ES reported in-combination effects associated with significant construction visual and HGV effects for 43 properties located on the A525 Bar Hill Road and Mallard Close, and that 42 of these properties would also experience noise effects, in addition to the visual and HGV effects. Since the submission of the main ES, it has been identified that the correct number of properties affected by visual, HGV and noise effects is 43. This will result in a different significant community effect due to an increase in the number of properties affected by the contributing noise effect, but will not change the level of significance of the effect (major adverse) reported in the main ES.

The main ES reported in-combination effects associated with significant construction noise, visual and HGV effects for approximately five properties at Moor Hall Farm and Bower End Farm. This assessment should not have reported the significant noise effect as part of the in-combination community effect. This will result in a different significant community effect due to the removal of the noise effect as a contributing factor to the in-combination effect, but will not change the level of significance of the effect (major adverse) reported in the main ES.

Effects arising from operation

The main ES reported in-combination effects associated with significant operational noise and visual effects for seven properties on Snape Hall Road in Whitmore Heath. Since the submission of the main ES, it has been identified that the correct number of properties affected is six. This will result in a different significant community effect due to the reduction in the number of residential properties reported to be affected, but will not change the level of significance of the effect (major adverse) reported in the main ES.

The main ES reported in-combination effects associated with significant noise and visual effects for 14 properties on the A525 Bar Hill Road and Red Lane in Madeley. Since the submission of the main ES, it has been identified that the correct number of properties affected is 11. This will result in a different significant community effect due to the reduction in the number of residential properties reported to be affected, but will not change the level of significance of the effect (major adverse) reported in the main ES.

7. South Cheshire, Community Area 5

7.1 New environmental baseline information

Since the production of the main ES, additional baseline information has become available that relates to the following environmental topics in the South Cheshire area:

- agriculture, forestry and soils: additional information relating to agricultural farm holdings in the South Cheshire area has been obtained; and
- ecology and biodiversity: ecological surveys for Phase 1 habitat, hedgerow, great crested newt, wintering birds, bats, water vole, badger and otter have been completed.

7.2 Changes to the design and construction assumptions within the existing powers of the Bill

There are no SES design changes in the South Cheshire area.

Since the submission of the Bill, further information relating to the construction methodology for the installation of a slab track formation has required a change to the operational characteristics of three railway systems compounds within the South Cheshire area. The changes to these compounds relate to: a change to the operational period (duration and start/end date); a change in the number of railway system workers (peak and/or average); and a change in railway systems construction traffic numbers (heavy goods vehicles (HGV) and cars/light goods vehicles (LGV)).

Table 4 presents a summary of the changes to the construction assumptions for the South Cheshire area, providing a description of the original scheme and the SES scheme.

Table 4: Summary of changes to construction assumptions within the South Cheshire area

Details of change to construction assumption	Description of the original scheme	Description of the SES scheme
Change to the operational duration, railway systems worker numbers, and railway systems HGV trips for the Checkley Lane West satellite compound	<p>This railway systems compound would be operational for one year and three months, commencing during 2025.</p> <p>This railway systems compound would support an average of 15 railway systems workers per day (30 workers at peak times).</p> <p>This railway systems compound would generate 19-34 railway systems HGV trips per day during busy periods and within the peak month of activity.</p>	<p>Railway installation works managed from this compound will commence earlier in the construction programme and will be undertaken over a longer period of time than stated in the main ES. This compound will be operational for a total of one year and six months, commencing during 2024.</p> <p>There will be a decrease in the number of railway systems workers supported by this compound with an average of 10 railway systems workers per day (20 workers at peak times).</p> <p>There will be an increase in the number of railway systems HGV trips generated by this compound with 44 to 48 trips per day during the busy periods and within the peak month of activity.</p> <p>This compound will support the implementation of track works.</p>
Change to the railway systems worker numbers and railway systems HGV trips for the Checkley Lane East main compound	<p>This compound would be operational for a total of six years, commencing during 2020. Civil engineering works would be managed from this compound for a period of four years and three months, followed by railway installation works for a period of two years. The compound would support an average of 20 civil engineering workers per day (30 workers at peak times) and an average of 35 railway systems workers per day (50 workers at peak times).</p> <p>The compound would generate 16-34 civil engineering HGV trips per day and 16-34 railway systems HGV trips during busy periods and within the peak month of activity.</p>	<p>There are no changes to the operational characteristics for this compound related to civil engineering works.</p> <p>There will be a decrease in the number of railway systems workers supported by this compound with an average of 25 railway systems workers per day (30 workers at peak times).</p> <p>There will be an increase in the number of railway systems HGV trips generated by this compound with 44-48 trips per day during the busy periods and within the peak month of activity.</p> <p>This compound will support the implementation of track works.</p>
Change to the operational duration, railway systems worker numbers, and railway systems HGV trips for the Heath Farm satellite compound	<p>This railway systems compound would be operational for nine months, commencing during 2025.</p> <p>This railway systems compound would support an average of 15 railway systems workers per day (15 workers at peak times).</p> <p>This railway systems compound would generate 28-32 railway systems HGV trips per day during busy periods and within the peak month of activity.</p>	<p>Railway installation works managed from this compound will commence earlier in the construction programme and will be undertaken over a longer period of time than stated in the main ES. This compound will be operational for a total of one year, commencing during 2025.</p> <p>There will be an increase in the number of railway systems peak workers supported by this compound (30 per day). There will be no change to the average number of railway systems workers.</p> <p>There will be an increase in the number of railway systems HGV trips generated by this compound with 70-80 trips per day during the busy periods and within the peak month of activity.</p> <p>This compound will support the implementation of track works.</p>

7.3 Corrections to the main ES

Since submission of the Bill, the need for a number of corrections to the contents of the main ES has been identified. The corrections include instances where there has been a need to correct the Volume 2 community area report for the South Cheshire area because of the potential to alter the significant environmental effects reported in the main ES or a factual inaccuracy relating to a significant effect that has been identified. Corrections also clarify elements of the scheme description reported in the main ES.

Each correction has been reviewed to consider whether there is potential for any likely new or different significant environmental effects from those described in the main ES. Where relevant, these corrections have been taken into account in the technical assessments reported within the SES.

7.4 Summary of residual environmental effects for Supplementary Environmental Statement changes

The changes to construction assumptions have been reviewed and do not give rise to any new or different likely significant residual environment effects within the South Cheshire area.

While the changes to the construction assumptions for the installation of a slab track formation will increase the number of railway systems HGV movements, these will be generally later in the construction programme than civil engineering HGV movements. Any increase in traffic due to these changes will be relatively small in comparison to the peak level of traffic generated by the civil engineering works. Therefore, it is not expected that there will be any new or different significant effects on the road network to those reported in the main ES.

In a number of cases, new or different residual significant effects have been identified as a result of additional baseline information and corrections within the South Cheshire area. These are set out according to the environmental topic concerned.

Agriculture, forestry and soils

Effects arising from operation

The main ES did not report the demolition of an outbuilding at Basford Hall in the agriculture, forestry and soils assessment. A high infrastructure impact due to the demolition of this building at Basford Hall will have a moderate adverse permanent effect on the holding, which is significant. This correction does not result in any change to mitigation reported in the main ES.

The main ES reported that the original scheme required 0.6ha of land from land south of A500 Shavington Bypass during construction, and that there would be a high severance impact on the arable field identified, resulting in a major/moderate adverse construction effect, which is significant. A reassessment was undertaken as a result of new baseline information which confirmed that the 4ha arable field identified forms part of Forge Mill Farm, which is 105ha in total area. Following reassessment, the temporary residual significant severance effect during construction reported in the main ES is removed as it will be possible to access the land from elsewhere on the farm.

Community

Effects arising during construction

The main ES reported an in-combination effect associated with significant noise and visual effects for 12 residential properties on Den Lane, north of Wrinehill. Since the submission of the main ES, it has been identified that the correct number of residential properties affected

is 11. This will result in a different significant community effect due to the reduction in the number of residential properties reported to be affected during construction but will not change the level of significance of the effect (major adverse) reported in the main ES.

Ecology and biodiversity

Effects arising during construction

The main ES reported that there would be approximately 13.1km of hedgerows within the land required in the South Cheshire area. This was reported as a residual adverse effect, significant at the district/borough level. This figure has been corrected to 21.9km of hedgerows within the land required. This correction will result in a different significant effect due to a change in the amount of hedgerow habitat reported to be lost, but will not change the level of significance of the effect.

Sound, noise and vibration

Effects arising during construction

The main ES listed six residential properties that are forecast to experience noise above the eligibility criteria as defined in the HS2 noise insulation and temporary rehousing policy. Three additional properties on Newcastle Road have been identified: Basford House, Oakleigh Cottage and Casey Lane Stables. These properties are identified as subject to a significant adverse effect and are likely to qualify for noise insulation. Mitigation measures, including noise insulation, will reduce noise inside the residential properties such that it will not reach a level where it would significantly affect residents.

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Part 2: Additional Provision Environmental Statement

8. Additional Provision Environmental Statement

8.1 Introduction

Since the production of the main ES in July 2017, a number of amendments to the original scheme have been identified. These amendments include requirements to use land outside the existing powers of the Bill, additional access rights or other extensions of the powers conferred by the Bill. Powers to make these amendments to the Bill are now being sought under the AP.

Part 2 of this NTS is presented on a community area basis, in sections 9 to 12. For each community area, with the exception of community area 4, where there are no AP amendments, the following information is included:

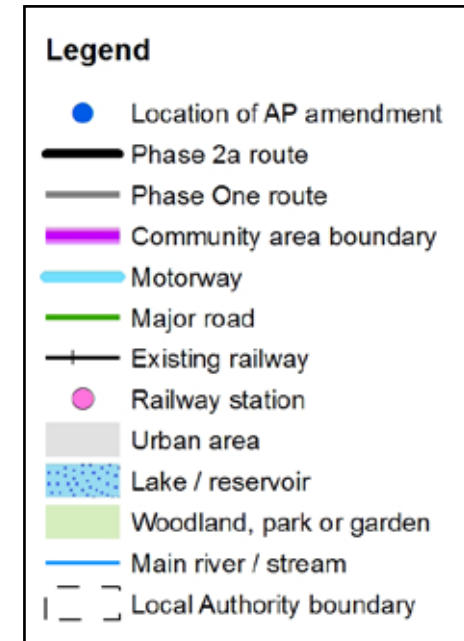
- a summary list of all engineering amendments that require an additional provision to be included within the Bill;
- a summary list of all utility amendments that require an additional provision to be included within the Bill;

- a summary of other amendments that require an additional provision to the Bill to enable permanent access for maintenance over certain areas of land; and
- a summary of residual environmental effects for amendments that require an additional provision to be included within the Bill.

The need for other amendments to the Bill plans and to Schedule 8 of the Bill ('Lands where powers of acquisition are limited to acquisition of rights or impositions of restrictive covenants') has also been identified since submission of the Bill.

Part 2 of this NTS also provides, in section 13, a summary of any route-wide effects that result from the amendments within the AP.

Figures 3 to 10 show the approximate location of the AP amendments within each of the community areas. The legend below is common to each figure in this section.



9. Fradley to Colton, Community Area 1

9.1 Summary of engineering amendments within the Additional Provision

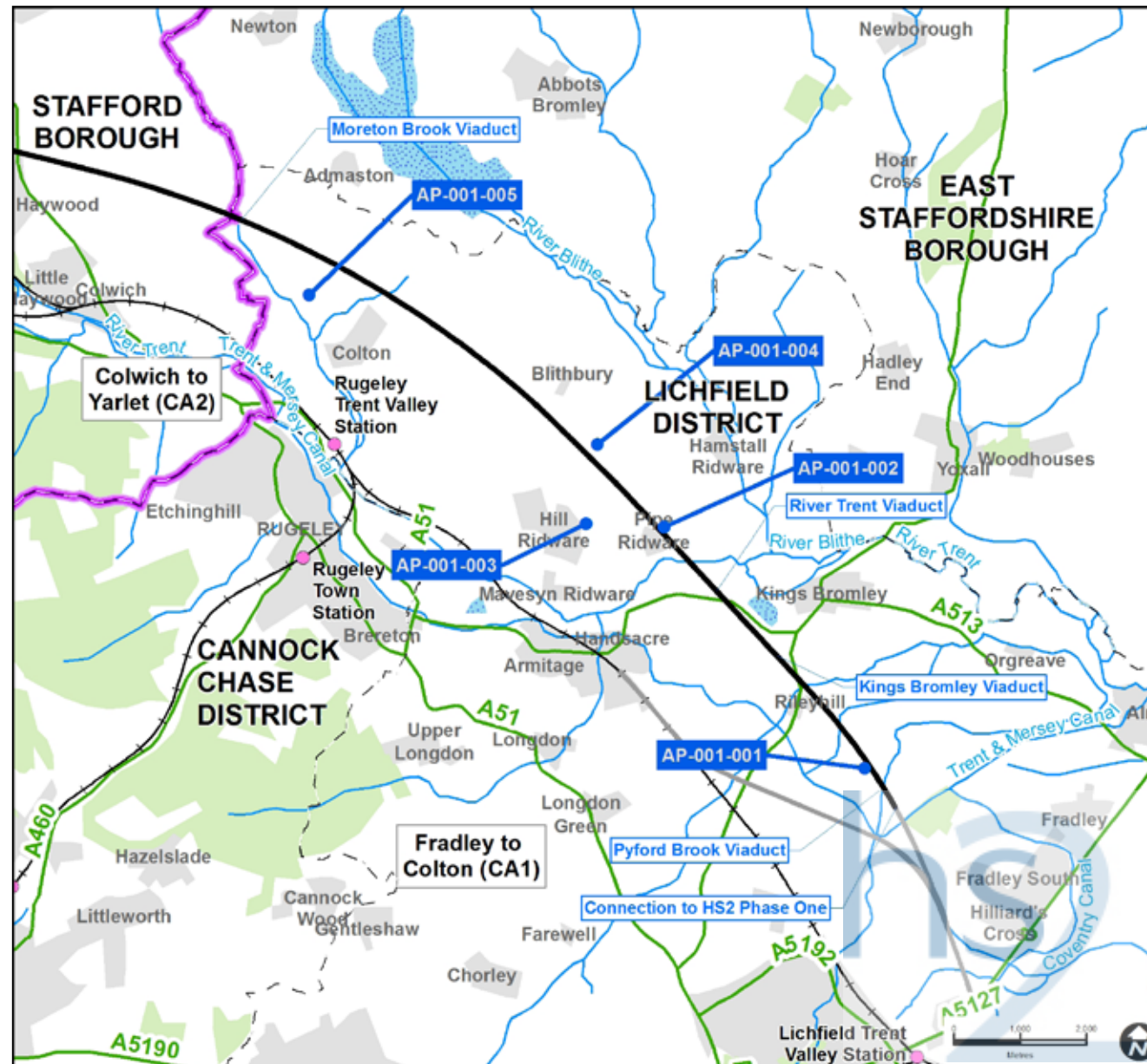
Table 5 provides a summary of each engineering amendment reported within the AP ES, along with a description of the 'original scheme'.

Figure 3 shows the approximate location of each amendment within the Fradley to Colton area.

Table 5: Summary of engineering amendments within the Fradley to Colton area

Name of amendment	Description of the original scheme	Description of the AP revised scheme
Additional land required for a temporary laydown area and a change to Bill powers at Pyford North embankment (AP-001-001)	The main ES indicates the permanent acquisition of land is required for the permanent diversion of a fuel pipeline crossing the HS2 route at Pyford North embankment.	Additional land is required during construction for a temporary laydown area. A change to Bill powers is required for the extension of the 10-inch diameter pipeline diversion on both sides of the HS2 route.
Additional land permanently required for the relocation of a balancing pond and provision of highway access with turning head from Pipe Lane, Pipe Ridware (AP-001-002)	The main ES indicates the permanent acquisition of land is required for a balancing pond, associated maintenance access area and lay-by, located on the west side of the diverted Pipe Lane.	Additional land is required for the permanent relocation of a balancing pond to the eastern side of the diverted Pipe Lane and provision of highway access with new turning head. The maintenance access area and lay-by, described in the original scheme, will not be provided.
Additional land permanently required for a new site haul route and HS2 maintenance access route from Pipe Lane and modifications to existing highways (AP-001-003)	The main ES indicates permanent acquisition of land is required for highway modifications along Common Lane, B5014 Ridware Road/Uttoxeter Road and Pipe Lane, south of the HS2 route. (Note: these works were reported in Volume 4, Off-route effects, of the main ES).	Additional land is required for the permanent provision of a new site haul route and HS2 maintenance access route, and the widening of Common Lane and a section of Pipe Lane. Highway modifications along Pipe Lane, between Pipe Ridware and the junction with Common Lane, will no longer be required. The B5014 Uttoxeter Road temporary modifications at Hill Ridware will also not be required.
Additional land permanently required to improve the visibility at the junction of Pipe Lane and an existing accommodation track (AP-001-004)	The main ES indicates permanent acquisition of land is required to upgrade the junction of an existing accommodation access track with Pipe Lane, located north-west of the HS2 route.	Additional land is required for the permanent replacement of existing hedgerow and proposed hedgerow habitat creation, included in the original scheme, to improve visibility at the junction of an existing accommodation track with Pipe Lane.
Additional land permanently required to improve the visibility at the junctions of Moor Lane and Lount Lane with the B5013 Uttoxeter Road (AP-001-005)	The main ES indicates permanent acquisition of land is required for the realignment of the B5013 Uttoxeter Road, which would tie-in the existing junctions with Moor Lane and Lount Lane, on the south side of the HS2 route.	Additional land is required for the permanent reinstatement of existing hedgerow and realignment of proposed hedgerow habitat creation, included in the original scheme, to improve visibility at the junction of Moor Lane and the B5013 Uttoxeter Road and the junction of Lount Lane with the B5013 Uttoxeter Road.

Figure 3: Locations of engineering amendments within the Fradley to Colton area



9.2 Assessment of engineering amendments

Agriculture, forestry and soils

Effects arising during construction

Construction of AP-001-003 (a new site haul route and HS2 maintenance access route from Pipe Lane and modifications to existing highways), will temporarily require an additional 0.2ha from the farm holding, Land at Luthbar. This will result in a new temporary moderate adverse effect, which is significant. The land required will be restored to its former agricultural condition once the works are completed, as set out in the draft CoCP.

Cultural heritage

Effects arising during construction

Construction of AP-001-003, will introduce two new permanent moderate adverse significant effects on heritage assets of low value: the cropmark remains of an Iron Age square barrow and field system west of Parva House, Pipe Ridware; and a mortuary enclosure, ring ditches and pit alignment to the west of Pipe Ridware.

No other mitigation measures are required beyond the measures reported in the main ES.

Ecology and biodiversity

Effects arising during construction

Construction of AP-001-003 will result in the net loss of approximately 400m of hedgerow, which is assumed to be species-rich hedgerow. The SES reports a net loss of 13.9km of hedgerow across the Fradley to Colton area, which represents an adverse effect that is significant at county level. The net loss of hedgerow habitat from the amendment will contribute to the net loss of 14.7km of hedgerow after mitigation across the Fradley to Colton area. This represents a different residual significant effect due to the additional loss of hedgerow, but will not change the level of significance of the residual effect on hedgerows, as reported in the main ES.

The main ES reported the loss of 40m of hedgerow habitat from Pipe Wood Lane local wildlife site (LWS), a permanent adverse effect on site integrity, which would be significant at district/county level. The additional loss, due to the construction of AP-001-004, comprises

approximately 80m of hedgerow habitat for which the site is designated. The amendment will result in a different significant effect on Pipe Wood Lane LWS due to the additional loss of hedgerow. However, this will not change the level of significance of the residual effect, as reported in the main ES.

Health

Effects arising during construction

AP-001-003 will remove HGV construction traffic through Hill Ridware. This will remove the adverse health effects reported in the main ES on residents of Hill Ridware associated with concerns about road safety and the perception of reduced neighbourhood quality in the village.

Traffic and transport

Effects arising during construction

AP-001-003 will remove the major adverse significant traffic severance effect on the B5014 Uttoxeter Road between Stonyford Lane and Common Lane and the moderate adverse traffic severance effects on the B5014 Uttoxeter Road between Stonyford Lane and the HS2 route and

Pipe Lane between School Lane and Pipe Wood Lane, as reported in the main ES. However, the amendment will give rise to a new moderate adverse significant traffic severance effect for non-motorised users on Common Lane between the B5014 Uttoxeter Road and Pipe Lane, as a result of an increase in HGV traffic on this section of the road.

9.3 Summary of minor utility amendments within the Additional Provision

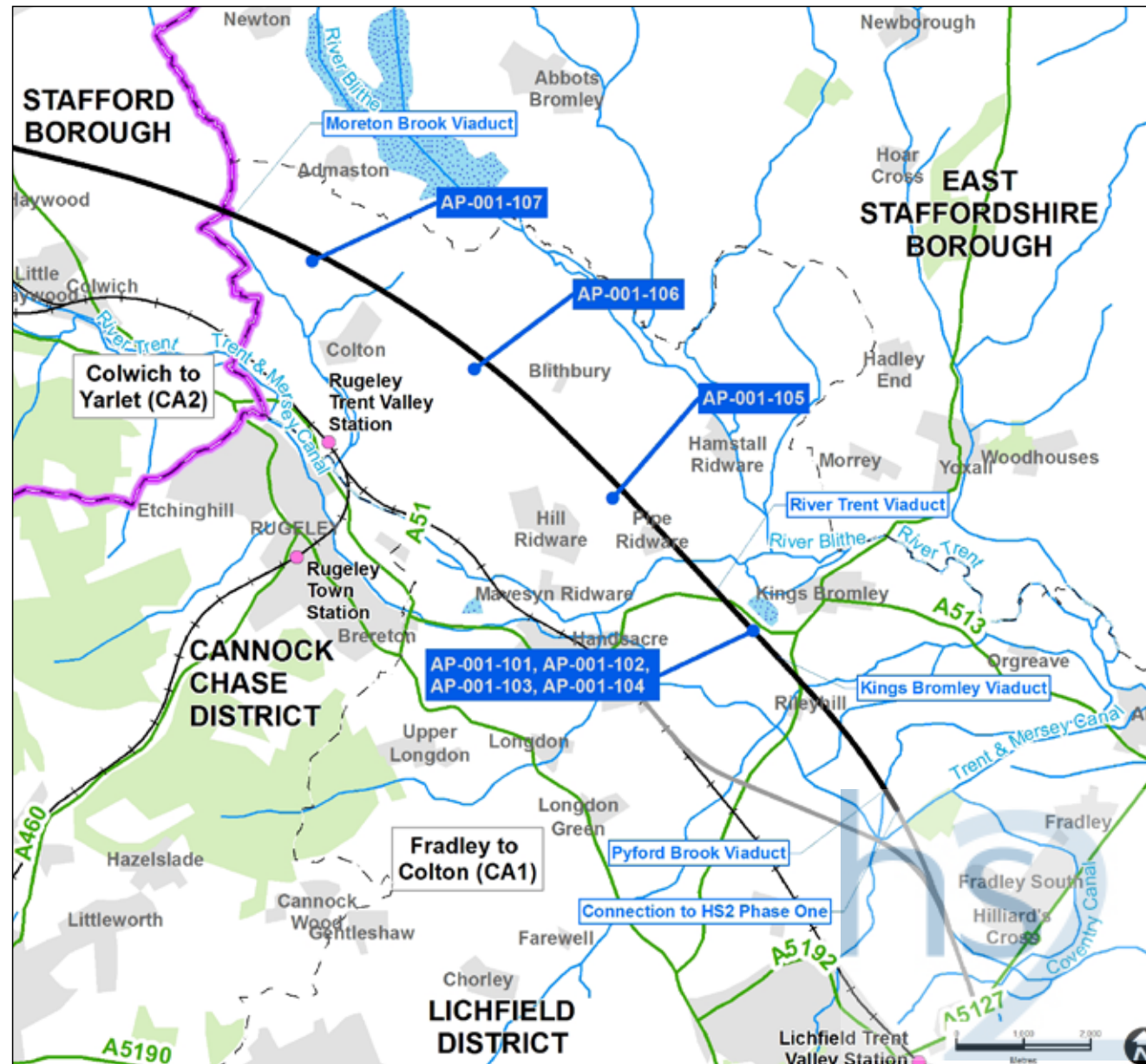
Table 6 provides a summary of each minor utility amendment reported within the AP ES.

Figure 4 shows the approximate location of each amendment within the Fradley to Colton area.

Table 6: Summary of minor utility amendments within the Fradley to Colton area

Utility	Description of the activities	Change to Bill powers
South Staffordshire Water 33-inch water mains AP-001-101	Permanent diversion of utility, 425m in length, crossing the HS2 route under the River Trent viaduct.	Additional land permanently required.
Two South Staffordshire Water 36-inch water mains AP-001-102	Permanent diversion of two utilities, both 175m in length, crossing the HS2 route under the River Trent viaduct.	Additional land permanently required.
South Staffordshire Water 6-inch water mains AP-001-103	Permanent diversion of utility, 100m in length, to run parallel to the A513 Rugeley Road.	Additional land permanently required.
BT Openreach overhead telecommunications cable AP-001-104	Permanent diversion of utility, 650m in length, parallel to the A513 Rugeley Road and within an access road serving Echills Farm.	Additional land permanently required.
BT Openreach overhead telecommunications cable AP-001-105	Permanent diversion of utility, 620m in length, along the access road to Quintons Orchard Farm.	Additional land permanently required.
BT Openreach overhead telecommunications cable AP-001-106	Permanent diversion of utility, 500m in length, along Hadley Gate Lane.	Additional land permanently required.
South Staffordshire Water 400mm, 200mm and 6-inch water mains AP-001-107	Permanent diversion of three utilities, 1.1km in length, to follow the B5013 Uttoxeter Road realignment.	Additional land permanently required.

Figure 4: Locations of minor utility amendments within the Fradley to Colton area



9.4 Assessment of minor utility amendments

Cultural heritage

Effects arising during construction

AP-001-102 requires additional land for the diversion of two water mains under the River Trent viaduct. The main ES reported a minor adverse effect, which is not significant, on possible field boundaries, west of Kings Bromley. The amendment will extend the land required for the AP revised scheme and increase the extent of the impact on the asset. As a result, the level of the effect will increase, from that reported in the main ES, to a moderate adverse significant effect.

In addition, the main ES reported a major adverse significant effect on buried archaeological deposits associated with the cropmark remains of four Bronze Age round barrows north-west of Echills. AP-001-102 will extend the land required for the AP revised scheme and increase the extent of the impact on the asset, which is a different effect. However, it will not change the level of the effect, which remains a major adverse significant effect, as reported in the main ES.

AP-001-105 requires additional land to permanently divert an overhead telecommunications cable. The main ES reported a moderate adverse significant effect on Pipehall moated site, north-west of Pipe Ridware. The construction of the amendment will result in a new impact on the setting of the asset. This will result in a different significant effect, however it will not change the level of the effect which remains a moderate adverse significant effect, as reported in the main ES.

Ecology and biodiversity

Effects arising during construction

The main ES reported no loss of habitat from Kings Bromley Pit (north-west of Manor Park) LWS, as this site was located outside of the land required for the construction of the original scheme. This site is of county value. AP-001-102 will extend the land required for the AP revised scheme and result in a loss of 400m² of semi-natural broadleaved woodland habitat from the LWS (a habitat of principal importance), for which the site is designated. Therefore, the amendment would result in a new significant effect upon this feature at up to a county level.

The habitat creation measures within the original scheme will compensate for the loss of semi-natural broadleaved woodland habitat from the LWS. This will reduce the level of effect such that it is not significant.

9.5 Other amendments requiring changes to Bill powers

Other amendments are required to the Bill and the parliamentary plans to enable permanent access for maintenance over certain areas of land (for example to habitat creation areas; line-side equipment; railway drainage system; and utilities). In the Fradley to Colton area these relate to plots of land in the parishes of Kings Bromley, Mavesyn Ridware, Armitage with Handsacre and Brereton and Ravenhill.

The use of these land plots for maintenance and operation access was considered in the preparation of the main ES. Given the limited frequency of access that would be required (typically 2-4 times per year by two light goods vehicles), it was concluded that this would not result in any significant effects.

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10. Colwich to Yarlet, Community Area 2

10.1 Summary of engineering amendments within the Additional Provision

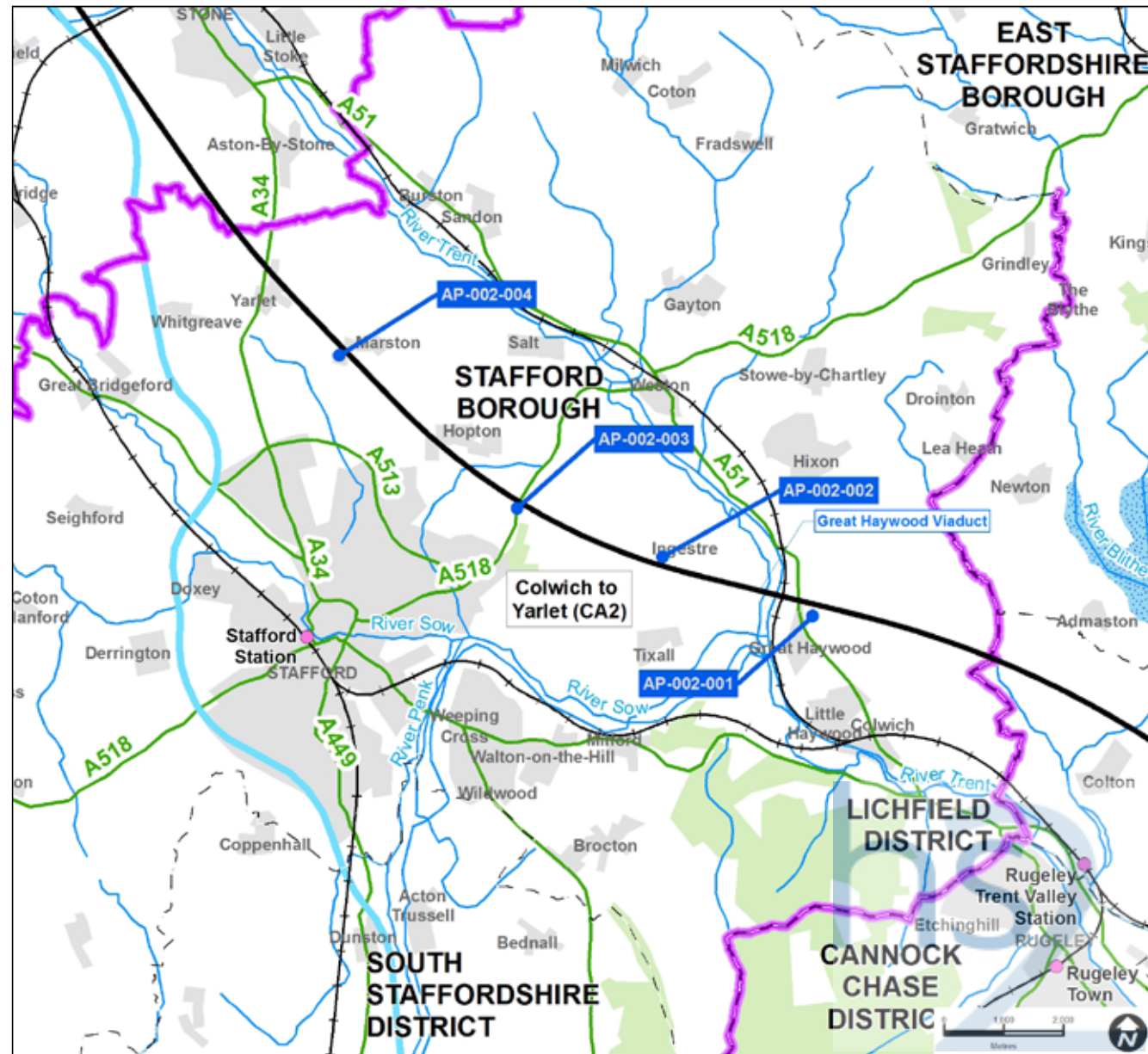
Table 7 provides a summary of each engineering amendment reported within the AP ES, along with a description of the original scheme.

Figure 5 shows the approximate location of each engineering amendment within the Colwich to Yarlet area.

Table 7: Summary of engineering amendments within the Colwich to Yarlet area

Name of amendment	Description of the original scheme	Description of the AP revised scheme
Additional land permanently required for amendment to a fuel pipeline diversion, A51 Lichfield Road (AP-002-001)	The main ES indicates the permanent acquisition of land is required for the diversion of a fuel pipeline crossing the A51 Lichfield Road.	Additional land is required for the permanent diversion of a section of the fuel pipeline.
Additional land required for a temporary laydown area at Trent North embankment (AP-002-002)	The main ES indicates the permanent acquisition of land is required for the diversion of a fuel pipeline crossing the HS2 route beneath the Trent North embankment.	Additional land is required for a temporary laydown area during construction of the fuel pipeline diversion.
Additional land permanently required for the A518 Weston Road realignment (AP-002-003)	<p>The main ES indicates the permanent acquisition of land is required for the realignment of the A518 Weston Road.</p> <p>Access to the Staffordshire County Showground would be provided off the realigned A518 Weston Road.</p>	<p>Additional land is required on the south side of the HS2 route to permanently extend the A518 Weston Road realignment, south-west of its existing alignment, and for the realignment of existing and proposed hedgerow habitat at the junction between A518 Weston Road and Trent Walk.</p> <p>Additional land on the north side of the HS2 route is required to improve visibility, at the access road junction with the realigned A518 Weston Road.</p>
Additional land permanently required for a turning head near Homestall Barn (AP-002-004)	<p>The main ES indicates the permanent acquisition of land is required for the realignment of Marston Lane, north of its existing alignment, crossing the HS2 route via the Marston Lane underbridge.</p> <p>A section of Marston Lane, south of the HS2 route, would be retained for access to properties but closed to through-traffic.</p>	Additional land is required for a turning head at the eastern end of the retained Marston Lane near Homestall Barn, east of its junction with the realigned Marston Lane.

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



10.2 Assessment of engineering amendments

There are no new or different significant residual effects that will occur as a consequence of the engineering amendments within the Colwich to Yarlet area.

10.3 Summary of minor utility amendments within the Additional Provision

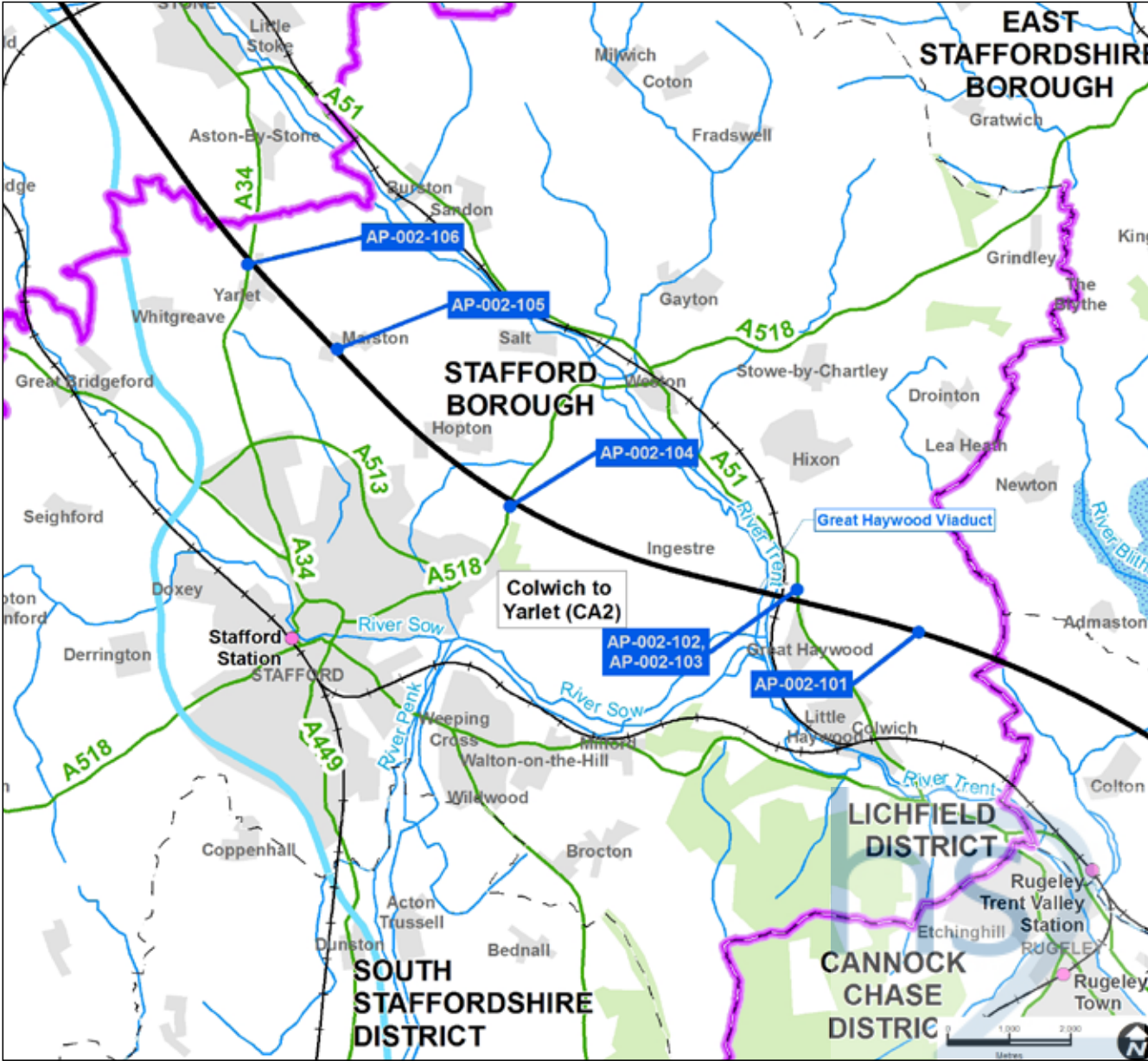
Table 8 provides a summary of each minor utility amendment reported within the AP ES.

Figure 6 shows the approximate location of each amendment within the Colwich to Yarlet area.

Table 8: Summary of minor utility amendments within the Colwich to Yarlet area

Utility	Description of the activities	Change to Bill powers
BT Openreach overhead telecommunications cable AP-002-101	Permanent diversion of utility, 1.3km in length, to follow the alignment of Moreton Lane.	Additional land permanently required.
Two Severn Trent Water rising foul sewers and one Severn Trent Water gravity foul sewer AP-002-102	Permanent diversion of three utilities, 880m in length, to run adjacent to the Macclesfield to Colwich Line.	Additional land permanently required.
BT Openreach underground fibre optic telecommunications cable and BT Openreach overhead telecommunications cable AP-002-103	Permanent underground diversion of two utilities, 1.2km in length, to follow the alignment of the A51 Lichfield Road and cross the HS2 route along the A51 Lichfield Road underbridge alignment.	Additional land permanently required.
BT Openreach overhead telecommunications cable AP-002-104	Permanent diversion of utility, 420m in length, within the Staffordshire County Showground.	Additional land permanently required.
BT Openreach overhead telecommunications cable AP-002-105	Permanent diversion of utility, 1.2km in length, along Yarlet Lane.	Additional land permanently required.
Cadent 90mm low pressure gas main AP-002-106	Permanent diversion of utility, 170m in length, along the access road to Yarlet School.	Change in Bill powers to acquire three plots of land permanently rather than temporarily.

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



10.4 Assessment of minor utility amendments

Sound, noise and vibration

Effects arising during construction

Construction of AP-002-106 involves the permanent diversion of a low pressure gas main along the access road to Yarlet School. This results in the identification of a new construction significant noise effect at Yarlet School for a duration of approximately one month. The works will be undertaken in accordance with the measures defined in the draft CoCP.

10.5 Other amendments requiring changes to Bill powers

Other amendments are required to the Bill and the parliamentary plans to enable permanent access for maintenance over certain areas of land (for example to habitat creation areas; line-side equipment; railway drainage system; and utilities). In the Colwich to Yarlet area these relate to plots of land in the parishes of Colwich, Tixall, and Hopton and Coton.

The use of these land plots for maintenance and operation access was considered in the preparation of the main ES. Given the limited frequency of access that would be required (typically 2-4 times per year by two light goods vehicles), it was concluded that this would not result in any significant effects.

11. Stone and Swynnerton, Community Area 3

11.1 Summary of engineering amendments within the Additional Provision

Table 9 provides a summary of each engineering amendment reported within the AP ES, along with a description of the original scheme.

Figure 7 shows the approximate location of each amendment within the Stone and Swynnerton area.

Table 9: Summary of engineering amendments within the Stone and Swynnerton area

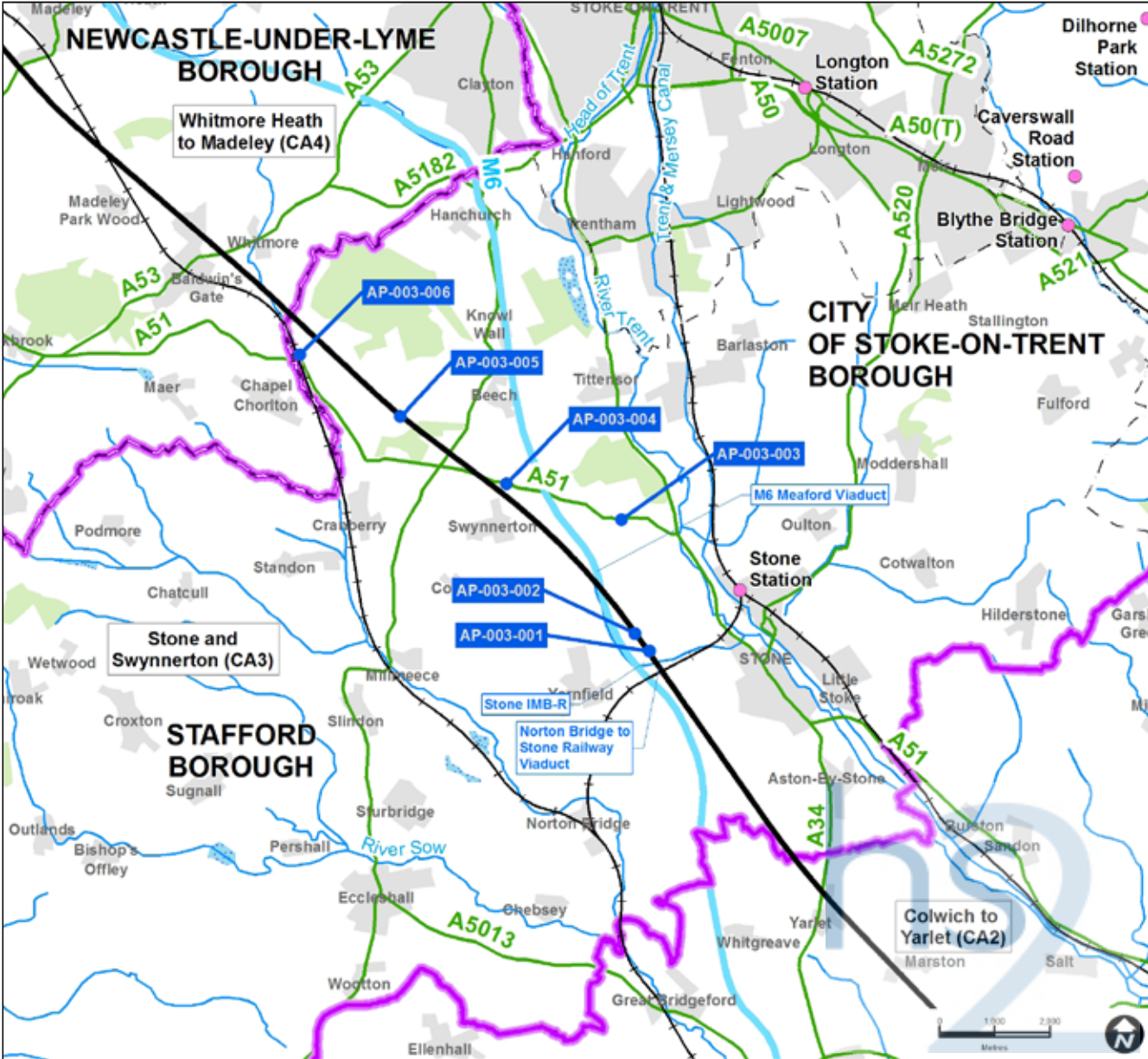
Name of amendment	Description of the original scheme	Description of the AP revised scheme
Additional land permanently required and a change in the powers of the Bill for the viaduct crossing of the Norton Bridge to Stone Railway and track crossovers along the HS2 route AP-003-001	See Part 1 to Part 3 in subsequent rows	See Part 1 to Part 3 in subsequent rows
Due to the complexity of change associated with this amendment it has been sub-divided into the following three distinct elements for ease of understanding. The AP is however assessed as one amendment to the original scheme. AP-003-001		
Part 1 of AP-003-001 A change in the powers of the Bill for the raising of the alignment of the HS2 main line from the B5026 Eccleshall Road to Meaford Cutting	<p>The main ES indicates permanent acquisition of land for the HS2 route over a distance of approximately 2km from the B5026 Eccleshall Road to Meaford North cutting. The HS2 main line would cross over the Norton Bridge to Stone Railway and Filly Brook on viaduct and over Yarnfield Lane via the Yarnfield Lane underbridge.</p> <p>This section of the HS2 main line would allow for the provision of track crossovers and trackside storage areas for the maintenance of the HS2 route, as well as areas of landscape mitigation planting and landscape mitigation earthworks.</p>	A change in the powers of the Bill will be required to raise the HS2 main line alignment along this section by up to 0.9m. There has been a redesign of the trackside storage areas and a track crossover along the HS2 main line. Yarnfield Lane auto-transformer station will be moved approximately 5m to the south-west.

Name of amendment	Description of the original scheme	Description of the AP revised scheme
<p>Part 2 of AP-003-001</p> <p>A change in the powers of the Bill for amendments to the viaduct crossing of the Norton Bridge to Stone Railway and Filly Brook</p>	<p>The main ES indicates permanent acquisition of land is required for the HS2 main line to cross the Norton Bridge to Stone Railway and the Filly Brook on viaduct.</p> <p>This section of the HS2 route would allow for the provision of Stone retaining wall 2, areas of grassland habitat creation, two replacement flood storage areas and the realignment of Filly Brook via open channel.</p>	<p>A change in the powers of the Bill consequent on the shortening of the viaduct crossing the Norton Bridge to Stone Railway and Filly Brook and associated extension of the Yarnfield North embankment and Yarnfield South embankment. The viaduct has been renamed the Norton Bridge to Stone Railway viaduct, as it will no longer cross the Filly Brook. The track crossovers located on the viaduct in the original scheme will be moved further north-west along the HS2 main line.</p> <p>A section of Filly Brook will be culverted with the HS2 main line and the Stone IMB-R reception tracks crossing above. Filly Brook West underbridge (on the IMB-R reception tracks) will not be provided.</p> <p>Embankments will be extended on both sides of the new viaduct and on the embankment associated with the Stone IMB-R reception tracks where the Filly Brook West underbridge will not be provided. Stone retaining wall 2 will also not be provided.</p> <p>The replacement floodplain storage area included in the original scheme will be replaced with revised proposals (see AP-003-002) Associated landscape, ecological and flood mitigation in the original scheme will be redesigned.</p>
<p>Part 3 of AP-003-001</p> <p>Additional land and a change in the powers of the Bill for horizontal realignment of the HS2 main line from the northern extent of Yarnfield North embankment to Tittensor Road overbridge</p>	<p>The main ES indicates permanent acquisition of land is required for the HS2 main line over a distance of approximately 3km from the northern extent of Yarnfield North embankment to Tittensor Road overbridge.</p> <p>This section of the HS2 route would include the provision for the Stone Rural Footpath 33 realignment, landscape mitigation planting and landscape mitigation earthworks, balancing ponds, Swynnerton Footpath 17 diversion, Swynnerton Estate South underbridge, Swynnerton New Bridleway, and noise barriers adjacent to the Swynnerton embankment.</p>	<p>Additional land and a change in other powers of the Bill are required for the horizontal realignment of the HS2 main line along this section to be moved in a north-easterly direction by up to 15.5m.</p> <p>There have been associated design changes to a number of features, including the Stone Rural Footpath 33 realignment and Swynnerton Footpath 17 diversion, landscape mitigation planting and landscape mitigation earthworks, hedgerow and woodland habitat creation, access tracks and a turning head.</p>

Name of amendment	Description of the original scheme	Description of the AP revised scheme
<p>Additional land permanently required for the IMB-R/Norton Bridge to Stone Railway flood mitigation measures</p> <p>AP-003-002</p>	<p>The main ES indicates permanent acquisition of land is required for provision of flood mitigation measures comprising a 430m flood mitigation bund and replacement floodplain storage area, west of the M6 and north of the realigned Yarnfield Lane.</p>	<p>Additional land is required for the permanent provision of flood mitigation measures. A new smaller flood storage area will replace the flood storage area west of the M6 and its associated flood mitigation bund, which were included in the original scheme. Two additional flood storage areas are proposed and two flood mitigation bunds will be required. New culverts will also be required and the culverts included in the original scheme will be amended.</p>
<p>Additional land permanently required for a new junction of the A51 Bury Bank and Stone Rural Byway Open to All Traffic (BOAT) 34</p> <p>AP-003-003</p>	<p>The main ES indicates permanent acquisition of land is required for Stone BOAT 34 to be widened with passing bays to provide HS2 maintenance access to the HS2 route, between the existing junction of the A51 Bury Bank and Swynnerton Footpath 27.</p>	<p>Additional land is required for a permanent new junction of the A51 Bury Bank and Stone Rural BOAT 34, approximately 180m to the east of the existing junction.</p>
<p>Additional land permanently required to widen the highway verge along the A51 Stone Road</p> <p>AP-003-004</p>	<p>The main ES indicates permanent acquisition of land is required for the diverted Tittensor Road to connect to the diverted A51 Stone Road, approximately 100m west of Long Compton Farm. Landscape mitigation planting, grassland habitat creation and hedgerow habitat creation would be provided east of the diverted A51 Stone Road/diverted Tittensor Road junction.</p>	<p>Additional land is required for the permanent widening of the highway verge along the south edge of the A51 Stone Road to improve visibility at the junction between the diverted Tittensor Road and the A51 Stone Road.</p> <p>There will be a reduction in the landscape mitigation planting and grassland habitat creation included in the original scheme, as well as removal of a section of hedgerow habitat creation.</p>
<p>Additional land permanently required for the alignment of the Swynnerton Estate North green overbridge</p> <p>AP-003-005</p>	<p>The main ES indicates permanent acquisition of land is required for the Swynnerton Estate North green overbridge, which would provide vehicle access to the Swynnerton Estate across the HS2 main line. There would be landscape mitigation planting on both sides and planting across the overbridge to facilitate ecological connectivity across the route.</p>	<p>Additional land is required for a change to the earthworks on the north side of the Swynnerton Estate North green overbridge required to raise the height of the overbridge by 1m.</p> <p>As a result of the increased area of earthworks, landscape mitigation planting will be adjusted on the southern approach, however, the overall area of landscape mitigation planting will be unchanged from the original scheme.</p>

Name of amendment	Description of the original scheme	Description of the AP revised scheme
<p>Additional land permanently required for the provision of a roundabout at the junction of the re-aligned Dog Lane, the A51 The Rowe, Bent Lane and the A51 through Stableford</p> <p>AP-003-006</p>	<p>The main ES indicates permanent acquisition of land is required for the realignment of Dog Lane to pass over the HS2 main line via an overbridge and continue south to a four-arm staggered junction with the A51 The Rowe, Bent Lane and the A51 through Stableford.</p> <p>The main ES also indicates permanent acquisition of land for landscape mitigation planting south of the Dog Lane overbridge, and woodland habitat creation and hedgerow habitat creation along both sides of the realigned Dog Lane.</p>	<p>Additional land is permanently required for a four-armed roundabout in place of the four-arm staggered junction. There will be modifications to the alignments of the realigned Dog Lane, realigned Bent Lane (South), and the A51 The Rowe, to tie in to the roundabout. An additional bell-mouth junction for access to and from a residential property on the A51 The Rowe will also be provided.</p> <p>There will be a slight reduction in the area of woodland habitat creation on the south-east side of the new roundabout but a net gain in hedgerow habitat creation, mainly along both sides of the Bent Lane realignment.</p>

Figure 7: Locations of engineering amendments within the Stone and Swynnerton area



11.2 Assessment of engineering amendments

Traffic and transport

Effects arising during operation

AP-003-003 requires additional land for a new junction between the A51 Bury Bank and Stone Rural BOAT 34. The proposed change to Stone Rural BOAT 34 will increase travel distance for non-motorised users by up to 400m, giving rise to a new minor severance effect, which is significant.

11.3 Summary of minor utility amendments within the Additional Provision

Table 10 provides a summary of each minor utility amendment reported within the AP ES.

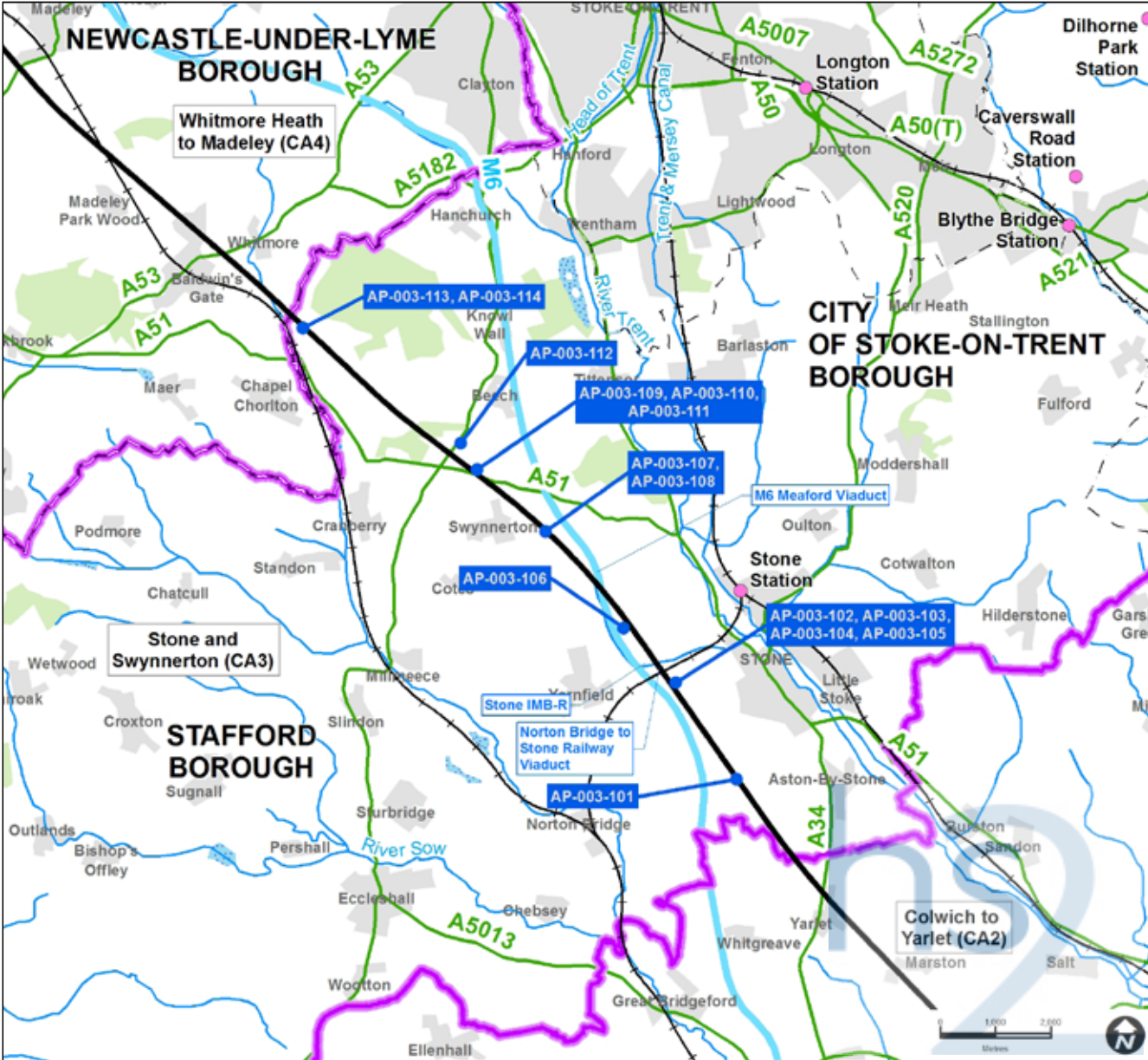
Figure 8 shows the approximate location of each amendment within the Stone and Swynnerton area.

Table 10: Summary of minor utility amendments within the Stone and Swynnerton area

Utility	Description of the activities	Change to Bill powers
BT Openreach overhead telecommunications cable AP-003-101	Permanent diversion of utility, 440m in length, along Stone Rural Bridleway 0.1135 and crossing the HS2 route within the Stone Rural Bridleway 0.1135 accommodation overbridge.	Additional land permanently required.
BT Openreach underground fibre optic and telecommunications cables and Zayo underground fibre optic telecommunications cable AP-003-102	Permanent diversion of three utilities, 880m in length, to follow the B5026 Eccleshall Road realignment.	Additional land permanently required
BT Openreach overhead telecommunications cable AP-003-103	Permanent diversion of utility, 170m in length, along the B5026 Eccleshall Road realignment.	Additional land permanently required
Western Power Distribution 11kV overhead lines AP-003-104	Permanent diversion of two utilities, 660m in length, to the east of the HS2 route along the B5026 Eccleshall Road and parallel to the HS2 main line.	Additional land permanently required
Zayo underground fibre optic telecommunications cable AP-003-105	Removal of 600m section of utility north of the HS2 route near Yarnfield Lane	Additional land temporarily required
Zayo underground fibre optic telecommunications cable AP-003-106	Removal of 4.6km section of utility between Yarnfield Lane and the A51 Bury Bank	Additional land temporarily required and a change in Bill powers at one plot of land from temporary to permanent.
BT Openreach underground telecommunications cable AP-003-107	Permanent diversion of utility, 550m in length, along Swynnerton Footpath 27 accommodation underbridge	Additional land permanently required
Two Severn Trent Water 10-inch water mains and one Severn Trent Water 400mm water mains AP-003-108	Permanent diversion of three utilities, 375m in length, crossing the HS2 route to the south of the M6 and south-west of the Swynnerton Estate South underbridge.	Additional land permanently required
Western Power Distribution 11kV overhead line AP-003-109	Permanent diversion of utility, 250m in length, to the south of Sandyford Farm, near the Swynnerton New Bridleway accommodation underbridge.	Additional land permanently required

Utility	Description of the activities	Change to Bill powers
BT Openreach underground fibre optic telecommunications cables AP-003-110	Permanent diversion of utility, 1.3km in length, to follow the Tittensor Road diversion.	Additional land permanently required
Severn Trent Water water mains, one 400mm main, two 10-inch mains and one 9-inch main AP-003-111	Vertical realignment of utilities, up to 1m lower than current depth, between the retained Tittensor Road and the diverted Tittensor Road.	Additional land permanently required
BT Openreach overhead telecommunications cable AP-003-112	Permanent diversion of utility, 840m in length, along the realigned A519 Newcastle Road.	Additional land permanently required
Severn Trent Water 400mm water main AP-003-113	Permanent diversion of utility, 400m in length, on the eastern side of the West Coast Main Line and west of the realigned Bent Lane (South).	Additional land permanently required
Two Severn Trent Water 400mm water mains AP-003-114	Permanent diversion of two utilities, 350m in length, crossing the HS2 route along the alignment of the Swynnerton Footpath 10 accommodation underbridge.	Additional land permanently required

Figure 8: Locations of minor utility amendments within the Stone and Swynnerton area



11.4 Assessment of minor utility amendments

Ecology and biodiversity

AP-003-002 requires additional land for the diversion of three utilities. The main ES reported the loss of 1.2ha (20%) of Highlow Meadows LWS. This loss was reported as a permanent adverse effect on the structure and function of the site that is significant at county level. AP-003-002 will result in the loss of an additional 0.2ha of the LWS. The amendment will result in a different significant effect on Highlow Meadows LWS due to the increase in the amount of land required. However, this will not change the level of significance of the effect as reported in the main ES. Extended wetland habitat creation will, once established, compensate for the additional loss of 0.2ha of grassland at Highlow Meadows LWS and reduce the effect on the LWS to a level that is not significant.

AP-003-103 requires additional land for the diversion of an overhead telecommunications cable along the realigned B5026 Eccleshall Road and will result in additional habitat losses to those reported in the main ES. These include a loss of approximately 20m of hedgerow, trees and 0.1 ha of improved grassland. The trees have the potential to support roosting bats and barn owls and the grassland is within proximity of

ponds used by great crested newts. The loss of these habitats will, therefore, result in different significant effects upon these species, but will not change the level of significance of the effects, which are reported in the main ES as up to county value.

The main ES reported the creation of 0.9ha of grassland and two ponds around a retained pond at Micklow House Farm. AP-003-103 will remove the ability to deliver 0.3ha of this habitat creation in advance of construction (it will still be provided once the utility works are complete). This will have an adverse impact upon its function as mitigation for the loss of habitats associated with great crested newts, reported in the main ES as subject to a county level effect. An alternative existing habitat creation area will be used to receive translocated great crested newts instead. This will result in a different significant effect upon great crested newts, but will not change the level of significance of effects reported in the main ES.

Sound, noise and vibration

Effects arising during construction

AP-003-114 requires additional land for the permanent diversion of two water mains along Swynnerton Footpath 10. When considered in combination with the construction works

described in the main ES, Shelton under Harley Farm is also forecast to experience construction noise levels above the eligibility criteria for noise insulation as defined in the draft CoCP. The mitigation measures reported in the draft CoCP will reduce noise inside the dwelling at Shelton under Harley Farm such that it does not reach a level where it will significantly affect residents. This will not change the level of significance reported in the main ES.

11.5 Other amendments requiring changes to Bill powers

Other amendments are required to the Bill and the parliamentary plans to enable permanent access for maintenance over certain areas of land (for example to habitat creation areas; line-side equipment; railway drainage system; and utilities). In the Stone and Swynnerton area these relate to plots of land in the parishes of Stone Rural and Swynnerton.

The use of these land plots for maintenance and operation access was considered in the preparation of the main ES. Given the limited frequency of access that would be required (typically 2-4 times per year by two light goods vehicles), it was concluded that this would not result in any significant effects.

12. South Cheshire Area, Community Area 5

12.1 Summary of engineering amendments within the Additional Provision

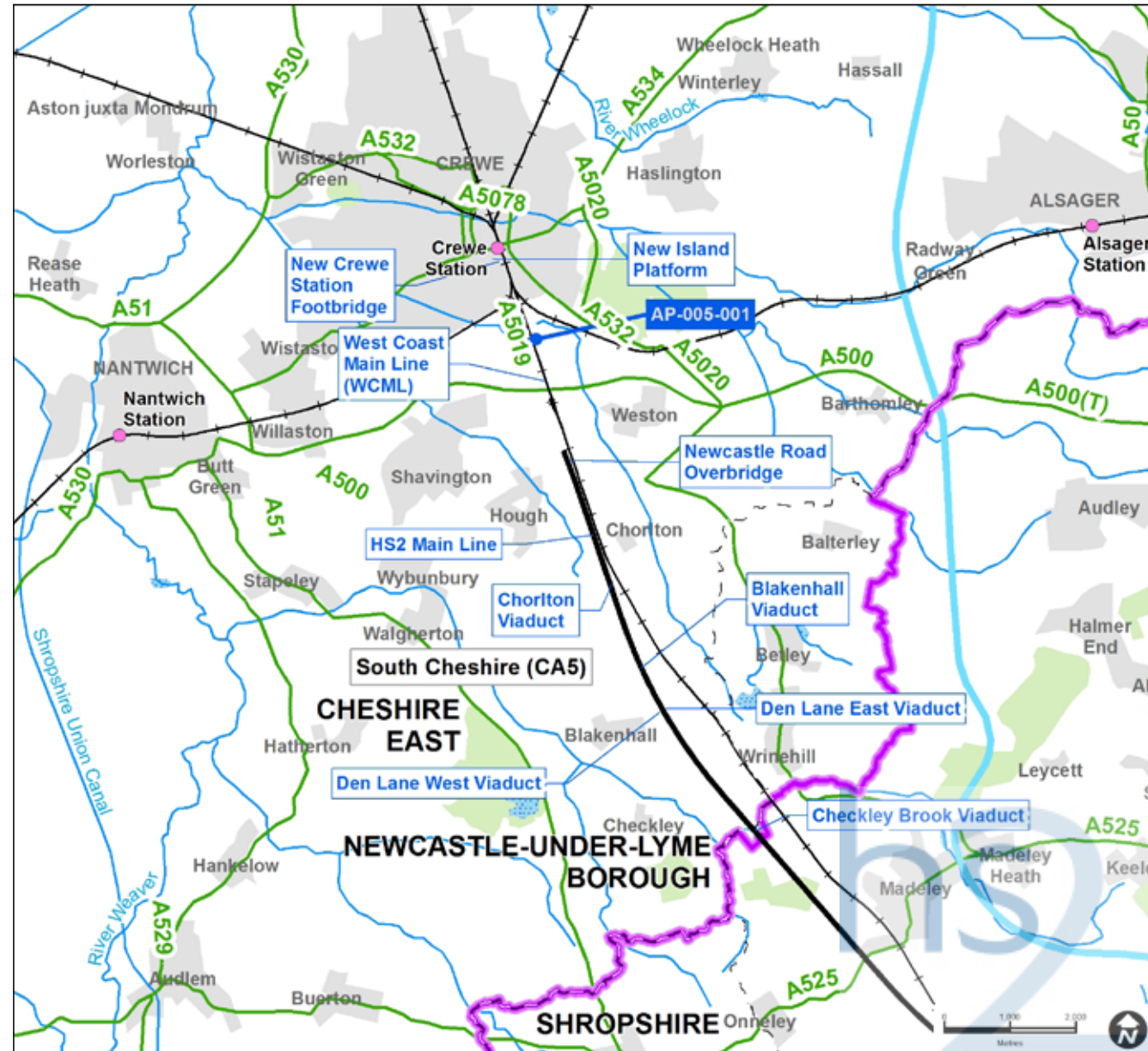
Table 11 provides a summary of each engineering amendment reported within the AP ES, along with a description of the original scheme.

Figure 9 shows the approximate location of each amendment within the South Cheshire area.

Table 11: Summary of engineering amendments within the South Cheshire area

Name of amendment	Description of the original scheme	Description of the AP revised scheme
Additional land permanently required associated with amendment to the Network Rail access road. (AP-005-001)	The main ES indicates permanent acquisition of land is required for a Network Rail access road from the A5020 David Whitby Way to the Crewe Railway West Coast Main Line Depot, located east of the West Coast Main Line and north of the A500 Shavington Bypass.	Additional land permanently required for engineering earthworks associated with the Network Rail access road.

Figure 9: Locations of engineering amendments within the South Cheshire area



12.2 Assessment of engineering amendments

There are no new or different significant residual effects that will occur as a consequence of the engineering amendments within the South Cheshire area.

12.3 Summary of minor utility amendments within the Additional Provision

Table 12 provides a summary of each minor utility amendment reported within the AP ES.

Figure 10 shows the approximate location of each amendment within the South Cheshire area.

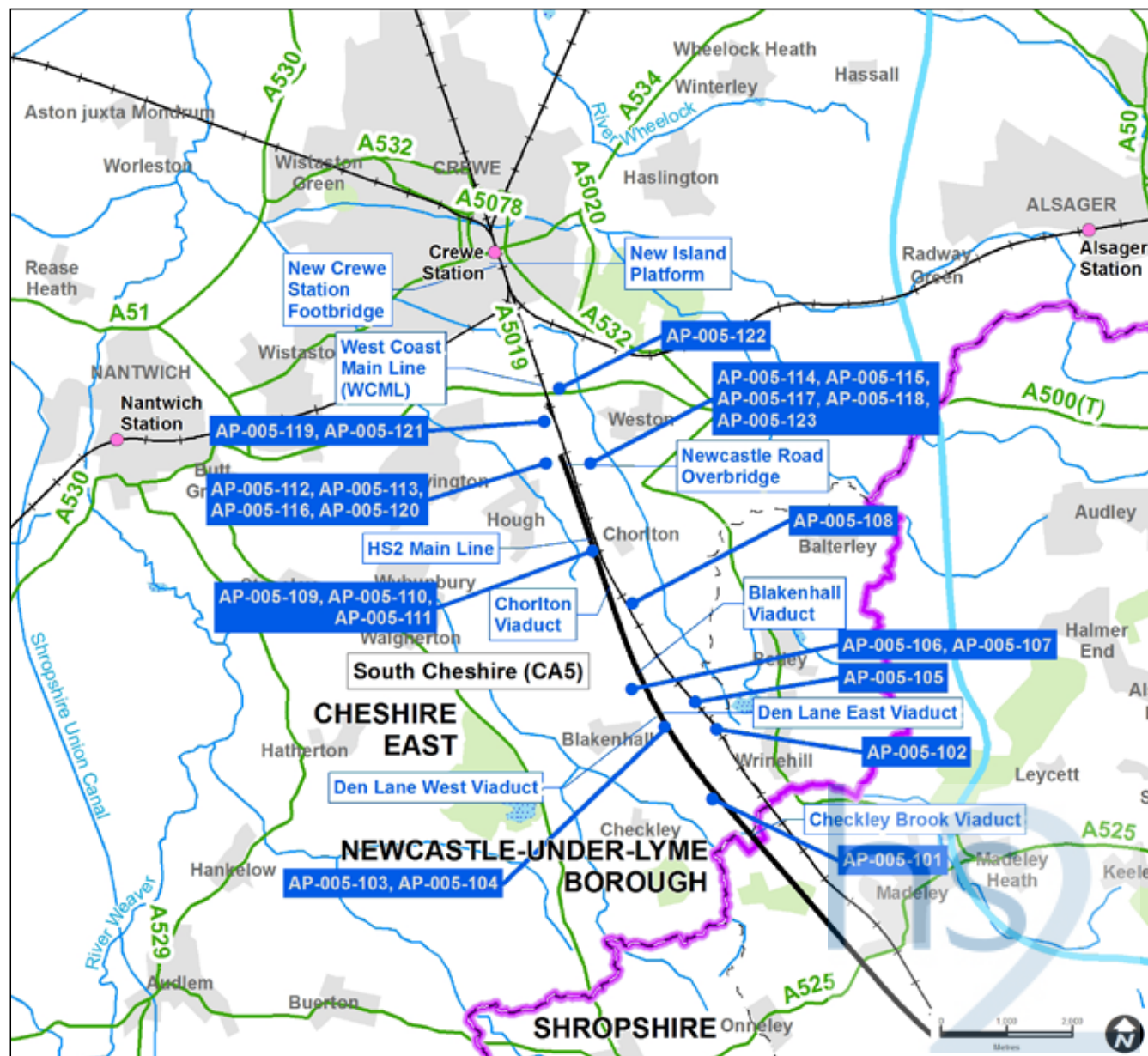
Table 12: Summary of minor utility amendments within the South Cheshire area

Utility	Description of the activities	Change to Bill powers
Scottish Power Energy Networks 11kV overhead line AP-005-101	Permanent diversion of utility, 850m in length, along Checkley Lane realignment.	Additional land permanently required.
United Utilities 63mm water mains AP-005-102	Permanent diversion of utility, 700m in length, parallel to existing utility alignment between the West Coast Main Line and Den Lane.	Additional land permanently required.
Scottish Power Energy Networks 11kV overhead line AP-005-103	Permanent diversion of utility, 1.1km in length, along Mill Lane and Den Lane.	Additional land permanently required.
Scottish Power Energy Networks 11kV underground line AP-005-104	New power supply to Blakenhall northbound spur satellite compound.	Additional land permanently required.
Scottish Power Energy Networks 11kV underground line AP-005-105	New power supply to Blakenhall cutting satellite compound.	Additional land permanently required.
Scottish Power Energy Networks 11kV underground line AP-005-106	New power supply to the South Crewe mid-point auto-transformer station.	Additional land permanently required.
United Utilities water mains AP-005-107	New water mains supply to the Crewe South cutting satellite compound.	Additional land permanently required.
Scottish Power Energy Networks 11kV underground line AP-005-108	New underground power line to the Waybutt Lane satellite compound.	Additional land permanently required.
Scottish Power Energy Networks 11kV overhead line AP-005-109	Permanent diversion of utility, 670m in length, along Chorlton Lane.	Additional land permanently required.
Severn Trent Water 27-inch water mains AP-005-110	Permanent diversion of utility, 700m in length, along Chorlton Lane and crossing under the HS2 route and West Coast Main Line.	Additional land permanently required.
BT Openreach overhead and underground telecommunications cable AP-005-111	Permanent diversion of utilities, 300m in length, along Chorlton Lane connecting to Dairy Farm and properties on Chorlton Lane.	Additional land permanently required.

Utility	Description of the activities	Change to Bill powers
BT Openreach overhead telecommunications cable AP-005-112	Permanent diversion of utility, 250m in length, to follow the Newcastle Road realignment.	Additional land permanently required.
Scottish Power Energy Networks 11kV overhead line AP-005-113	Permanent diversion of utility, 240m in length, under the retained Casey Lane south-west of the West Coast Main Line.	Additional land permanently required.
Scottish Power Energy Networks 11kV overhead line AP-005-114	Permanent diversion of utility, 240m in length, under the diverted Casey Lane and along the Casey Lane extension, north-east of West Coast Main Line.	Additional land permanently required.
Scottish Power Energy Networks 11kV overhead line AP-005-115	Permanent diversion of utility, 140m in length, along Weston Lane.	Additional land permanently required.
Scottish Power Energy Networks 11kV overhead line AP-005-116	Permanent diversion of utility, 1.2km in length, along realigned Newcastle Road	Additional land permanently required.
Scottish Power Energy Networks 11kV overhead line AP-005-117	Permanent diversion of utility, 340m in length, around the perimeter of Chorlton cutting satellite compound.	Additional land permanently required.
United Utilities 200mm, 300mm and 900mm sewers AP-005-118	Permanent diversion of utilities, 1.2km in length, along Newcastle Road and the diverted Casey Lane.	Additional land permanently required.
Scottish Power Energy Networks 33kV overhead line AP-005-119	Permanent diversion of utility, 890m in length, to follow the alignment of site haul routes between the A500 Shavington Bypass and Weston Lane overbridge.	Additional land permanently required.
Scottish Power Energy Networks 11kV line and Scottish Power Energy Networks 11kV line AP-005-120	New power supply to Crewe South portal satellite compound and a new permanent supply to HS2 pump station.	Additional land permanently required.
United Utilities water mains AP-005-121	New water mains supply to Basford cutting main compound and a batching plant.	Additional land permanently required.

Utility	Description of the activities	Change to Bill powers
United Utilities water main and Scottish Power Energy Networks power supply AP-005-122	New water and power supplies to the Crewe South crossovers railway systems compound.	Additional land permanently required.
Zayo underground telecommunications cable AP-005-123	Permanent diversion of utility, 1.5km in length, along the realigned Newcastle Road.	Additional land permanently required.

Figure 10: Locations of minor utility amendments within the South Cheshire area



12.4 Assessment of minor utility amendments

Sound, noise and vibration

Effects arising during construction

AP-005-105 requires additional land for a new power line to Blakenhall cutting satellite compound. The main ES reported a significant construction airborne noise effect on the community at Wrinehill, including Lower Den Farm, for up to one year and seven months. As a result of the amendment, Lower Den Farm is predicted to experience construction noise levels above the eligibility criteria as defined in the HS2 noise insulation and temporary rehousing policy. The mitigation measures reported in the draft CoCP, including noise insulation for the residential property, will reduce noise inside the dwelling such that it does not reach a level where it will significantly affect the residents. Therefore, the amendment will not change the level of significance of this effect reported in the main ES.

AP-005-108 requires additional land for a new underground power line to Waybutt Lane satellite compound. The main ES reported a significant construction airborne noise effect on

the community at Wychwood Park / Chorlton for up to one year and four months. As a result of the amendment, a new construction noise impact is identified at a further four residential properties on Hampstead Drive and Ferndown Way, Chorlton for up to one month. This will result in a different significant effect for properties in this area, but will not change the level of significance of this effect reported in the main ES.

AP-005-109 requires additional land for the permanent diversion of an 11kV overhead line along Chorlton Lane. The main ES reported a significant construction airborne noise effect on the community at Wychwood Park/Chorlton for up to one year and four months. As a result of the amendment, a new airborne construction noise impact is identified at a further six residential properties on Henley Road, Chorlton for up to two months. This will result in a different significant effect for approximately 40 properties in this area, but will not change the level of significance of this effect reported in the main ES.

The combination of AP-005-108 and the permanent diversion of an overhead line along Chorlton Lane (AP-005-109) will result in a different significant effect for a further

four properties at Wychwood Park/Chorlton, approximately 45 properties in total, for up to one year and four months. However, this will not change the level of significance of this effect reported in the main ES.

As a result of AP-005-109, when considered in combination with the works identified in the main ES, there are two residential properties in Chorlton: Bridge Cottage, Chorlton Lane and Jubilee Farm that are forecast to experience airborne construction noise levels above the eligibility criteria as defined in the draft CoCP. The mitigation measures reported in the draft CoCP, including noise insulation for the residential properties, will reduce noise inside the dwellings such that it does not reach a level where it will significantly affect the residents.

AP-005-121 requires additional land for a new water main supply to the Basford cutting main compound and a temporary batching plant located within the compound. As a result of the amendment, a new construction noise effect, which is significant on a community basis, is identified at approximately 30 residential properties on Larch Avenue, Basford and Weston Lane, Basford. No additional mitigation has been identified beyond that set out in the draft CoCP.

12.5 Other amendments requiring changes to Bill powers

Other amendments are required to the Bill and the parliamentary plans to enable permanent access for maintenance over certain areas of land (for example to habitat creation areas; line-side equipment; railway drainage system; and utilities). In the South Cheshire area these relate to plots of land in the parishes of Chorlton and Basford and in the towns of Crewe and Sandbach.

The use of these land plots for maintenance and operation access was considered in the preparation of the main ES. Given the limited frequency of access that would be required (typically 2-4 times per year by two light goods vehicles), it was concluded that this would not result in any significant effects.

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13. Volume 3: Route-wide Effects

13.1 Ecology

Effects arising during construction

Designated sites

One additional non-statutory wildlife site to those reported in Volume 3 of the main ES, Kings Bromley Pit (north-west of Manor Park) LWS, will be significantly affected by the AP revised scheme (AP-001-102). The AP revised scheme will, therefore, result in significant loss and/or fragmentation effects to 16 LWS, compared to 15 LWS reported in the main ES. The additional site affected by the AP amendments is within Staffordshire. The number of LWS affected by the AP revised scheme equates to approximately 2% of the total LWS within Staffordshire. The additional loss of habitat from a non-statutory wildlife site required for the AP revised scheme represents a different significant adverse effect on the ecological networks of which the LWS form a part, but will not change the level of significance of this effect reported in the main ES.

Habitats

In comparison with the original scheme, the AP amendments will increase the loss of habitats of principal importance listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act, by approximately 5.9ha. The total loss, therefore, will increase to approximately 115.8ha, which includes approximately 50.9ha of lowland mixed deciduous woodland and 38.8ha of lowland meadows. Several of the proposed AP amendments also involve revisions to the ecological compensation areas included within the original scheme. Consequently, the AP revised scheme will result in the creation of approximately 478.8ha of habitats of principal importance, a net reduction of approximately 2.2 ha, compared to the SES scheme.

The AP revised scheme will also result in the loss of approximately 187km of hedgerows compared with 189km lost to the original scheme, as corrected by the SES. The loss of hedgerows across the AP revised scheme remains approximately 0.04% of the resource in England.

The changes in the extent of habitat losses and creation of ecological compensation areas, which will occur as a result of the AP amendments, are unlikely to generate any new or different significant effects at a route-wide level.

13.2 Water resources and flood risk

Effects arising from operation

The AP amendments (AP-003-001 and AP-003-002) at the Filly Brook Crossing will extend the Yarnfield South embankment and Yarnfield North embankment near Stone, crossing the floodplain and channel of Filly Brook. The extension of the embankments was considered to have the potential to impact on the assessment of compliance with the Water Framework Directive (WFD) and relevant flood risk policies in the National Planning Policy Framework (NPPF), which have been assessed on a route-wide basis.

WFD compliance

Six features of these amendments were identified as having the potential to have effects on WFD status and status objectives. Five of these are located on the Filly Brook and one on a previously unassessed unnamed tributary of Filly Brook (located on the south side of the Norton Bridge to Stone Railway). Both of these watercourses are located within the Trent from Tittensor to River Sow WFD surface water body.

The changes on Filly Brook include the addition of two new culverts, the Filly Brook Culvert and Filly Brook West Culvert, which replace the Filly Brook Viaduct and the Filly Brook West Underbridge proposed under the original scheme, respectively. As a result of the addition of these culverts, the length of the proposed realignment of the watercourse has increased by approximately 175m at this location. Two new, small culverts have also been included within a newly proposed replacement floodplain storage feature located upstream of Yarnfield Lane. Upstream of the culverts, the existing Filly Brook channel will be realigned and improved over approximately 238m, in conjunction with the

wetland habitat creation proposed. Changes on the unnamed tributary of Filly Brook comprise the removal of the existing culvert underneath the Norton Bridge to Stone Railway at the existing confluence with Filly Brook and the diversion of the watercourse along the southern side of the Norton Bridge to Stone Railway to join Filly Brook further to the north-east.

An assessment of the likely compliance of the AP revised scheme against the objectives of the WFD has concluded that the AP revised scheme will not cause a deterioration of the current status of the Trent from Tittensor to River Sow water body or prevent the water body from achieving its status objectives. The AP revised scheme will therefore be compliant with the objectives of the WFD.

Route-wide flood risk

The NPPF advises that essential infrastructure should only be located in floodplain areas in exceptional circumstances. Extending the Yarnfield South and Yarnfield North embankments southwards over Filly Brook floodplain has potential implications for flood

risk. Approximately 0.3 hectares of floodplain, within the area required for the AP revised scheme, will be raised above flood level, with a consequent loss of natural floodplain attenuation.

Flood management measures have been developed to reduce flood risk to the scheme and to a number of existing local receptors, including farmland and properties on Yarnfield Lane, the M6 and existing rail infrastructure. These measures will ensure the effective management of the AP revised scheme within the floodplain of Filly Brook and accord with the technical guidance that accompanies the NPPF.

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Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA

08081 434 434
HS2Enquiries@hs2.org.uk

High Speed Rail (West Midlands - Crewe)

Consultation on the Supplementary Environmental Statement and Additional Provision Environmental Statement

Response form

We would like to know your views on the documents that make up the High Speed Rail (West Midlands - Crewe) Supplementary Environmental Statement and Additional Provision Environmental Statement.

This consultation will close at 23:45 on Monday 14 May 2018.

For more information, please visit www.gov.uk/hs2 or call 08081 434 434 at any time.

You can comment on the Supplementary Environmental Statement and Additional Provision Environmental Statement:

Online

<https://ipsos.uk/HS2Phase2aAPMarch2018>

By email

By sending this form to HS2Phase2aAPMarch2018@ipsos.com

On paper

By posting this form to **FREEPOST HS2 PHASE 2A MARCH 2018**

High Speed Rail (West Midlands - Crewe)

Supplementary Environmental Statement (SES) and Additional Provision Environmental Statement (AP ES)

The Government is consulting on an SES and AP ES that accompany the Additional Provision we have now introduced into Parliament.

The SES and AP ES report the environmental impacts of planned amendments to the new railway between the West Midlands and Crewe (known as HS2 Phase 2a), and our proposals to avoid, prevent or reduce these impacts.

Your responses to this consultation will go to an independent assessor, who will summarise the issues raised in your comments in a report. This report will be sent to Parliament.

The questions on which we are asking for your views are set out in part two below. **Please write your response clearly in black ink** within the boxes and, if you need to, attach additional evidence to the response form - clearly stating the question to which it refers.

Confidentiality and data protection

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act (DPA) 1998, and the Environmental Information Regulations 2004).

If you want us to treat the information you provide as confidential, please tick ☒ the box below.

Please be aware that, under the FOIA, there is a statutory Code of Practice that public authorities must comply with and which, among other things, deals with obligations of confidence.

In view of this, it would be helpful if you could explain here why you view the information you have provided as confidential. If we receive a request to disclose the information, we will take full account of your explanation but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, in itself, be regarded as binding on the Department for Transport or on HS2 Limited.

The Department for Transport and HS2 Limited will process your personal data in accordance with the DPA 1998. In the majority of circumstances, this will mean that your personal data will not be disclosed to third parties.

I wish my response to be treated as confidential.

Please write your reasons below, and attach additional pages as required.

PART ONE

Your information

Please provide your name, address and full postcode in the box below.

While these details are not compulsory, if you can provide your contact details, these may be used to inform you of the outcomes of the consultation.

Please note that your response may be subject to publication or appear in the final report, unless you have requested confidentiality on this form.

Your contact details

Name
Address
Postcode
Email

Are you responding on behalf of an organisation or group?

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

If yes, please state the name of your organisation:

--

Please note: if you are providing a response on behalf of an organisation or group, the name and details of the organisation or group may be subject to publication or appear in the final report.

What category of organisation or group are you representing?

Please tick ☒ one box that applies:

Academic (includes universities and other academic institutions)

Action group (includes rail and action groups specifically campaigning on the high speed rail network proposals)

Business (local, regional, national or international)

Elected representative (includes MPs, MEPs, and local councillors)

Environment, heritage, amenity or community group (includes environmental groups, schools, church groups, residents' associations, recreation groups, rail user groups and other community interest organisations)

Local government (includes county councils, district councils, parish and town councils and local partnerships)

Other representative group (includes chambers of commerce, trade unions, political parties and professional bodies)

Statutory agency

Real estate, housing associations or property-related organisations

Transport, infrastructure or utility organisation (includes transport bodies, transport providers, infrastructure providers and utility companies)

Other

Prefer not to say

Please tell us whom the organisation or group represents and, where applicable, how you assembled the views of members.

Please write in the box below, and attach additional pages if you need to.

PART TWO

Consultation questions

The SES and AP ES report the likely significant environmental effects of the amendments to the planned new railway – referred to as Phase 2a – between the West Midlands and Crewe. It also reports how we plan to avoid, prevent or reduce these effects.

It includes assessments of impacts in five geographical areas into which the route has been divided, known as Community Areas. It also includes a route-wide assessment that describes the impacts at a geographical scale greater than the Community Areas.

The report content and Community Areas are listed below:

- Non-technical summary (NTS)
- Volume 1: Introduction and Methodology
- Volume 2: Community Area (CA) reports and map books:
 - CA 1 – Fradley to Colton
 - CA 2 – Colwich to Yarlet
 - CA 3 – Stone and Swynnerton
 - CA 4 – Whitmore Heath to Madeley (does not include map book)
 - CA 5 – South Cheshire
- Volume 3: Route-wide effects
- Volume 5: Technical appendices and map books

The consultation questions begin on the next page.

Please let us know your views on the SES and AP ES by responding to these questions:

Question 1

Please let us know your comments on the Non-technical summary (NTS).

Please write in the box below, and attach additional pages if you need to.

Question 2

Please let us know your comments on Volume 1 – Introduction and methodology.

Please write in the box below, and attach additional pages if you need to.

Question 3

Please let us know your comments on Volume 2: Community Area (CA) reports and map books.

You are welcome to comment on one or more of the CAs listed below.

If making comments on more than one CA, please indicate clearly in your response which CA report each comment relates to.

Please tick ☒ the CAs you wish to comment on below:

CA 1 – Fradley to Colton

CA 4 – Whitmore Heath to Madeley

CA 2 – Colwich to Yarlet

CA 5 – South Cheshire

CA 3 – Stone and Swynnerton

Not sure

My comments on the CAs ticked above are:

Please write in the box below, and attach additional pages if you need to.

Question 4

Please let us know your comments on Volume 3: Route-wide effects.

Please write in the box below, and attach additional pages if you need to.

Question 5

Please let us know your comments on Volume 5: Technical appendices and map book.

Please indicate in your response which report(s) and/or map(s) you wish to comment on.

Please write in the box below, and attach additional pages if you need to.

PART THREE

Submitting your response

Thank you for completing the response form. If you're sending your comments by post, please send this form to:

FREEPOST FREEPOST HS2 PHASE 2A MARCH 2018

Please note: no additional address information is required and you do not need a stamp.

Please use capital letters. Responses sent by FREEPOST will be considered as long as they are sent on or before the closing date.

You can also email your response to HS2Phase2aAPMarch2018@ipsos.com

This consultation will close at **23:45** on **Monday 14 May 2018**.

Please remember to send your response by this date.

Please only use the response mechanisms described here when responding to this consultation.

We cannot guarantee that responses sent to other addresses will be included in this consultation.

Draft Additional Provisions Petition

Hybrid Bill Petition

House of Commons

Session 2017-19

High Speed Rail (West Midlands – Crewe) Bill

Do not include any images or graphics in your petition. There will be an opportunity to present these later if you give evidence to the committee.

Your bill petition does not need to be signed.

Expand the size of the text boxes as you need.

1. Petitioner information

In the box below, give the name and address of each individual, business or organisation(s) submitting the petition.

Stone Town Council, 15 Station Rd, Stone ST15 8JP

Email: clerk@stonetowncouncil.org.uk

Chebsey Parish Council, The Dove, Chebsey, Nr Stafford, ST21 6JU

Email: lzharringtonjones@hotmail.co.uk

Swynnerton Parish Council, Swynnerton,

Email: lzharringtonjones@hotmail.co.uk

Petition contact email : fraserj1911@gmail.com

.

In the box below, give a description of the petitioners. For example, “we are the owners/tenants of the addresses above”; “my company has offices at the address above”; “our organisation represents the interests of...”; “we are the parish council of...”.

Stone Town Council

Representing the community of Stone, Staffordshire.

Chebsey Parish Council

Representing the villages and surrounding communities of Chebsey, Cold Norton, Hilcote, Norton Bridge and Shallowford in the County of Staffordshire.

Swynnerton Parish Council

Representing the villages and surrounding communities of Swynnerton, Yarnfield Barlaston and Tittensor in the County of Staffordshire.

Chebsey Parish Council, at a meeting held on the 5 February 2018 resolved that they petition the High Speed Rail (West Midlands – Crewe) Bill Select Committee for changes to the High Speed Rail (West Midlands – Crewe) Bill.

Draft Additional Provisions Petition

Stone Council, at a meeting held on the 24 April 2018 resolved that they petition the High Speed Rail (West Midlands – Crewe) Bill Select Committee for changes to the High Speed Rail (West Midlands – Crewe) Bill.

Swynnerton Parish Council, at a meeting held on the 26 April 2018 resolved that they petition the High Speed Rail (West Midlands – Crewe) Bill Select Committee for changes to the High Speed Rail (West Midlands – Crewe) Bill.

2. Objections to the Bill

In the box below, write your objections to the Bill and why your property or other interests are specially and directly affected. Please number each paragraph.

Only objections outlined in this petition can be presented when giving evidence to the committee. You will not be entitled to be heard on new matters.

- 2.0 This petition should be read in conjunction with the Petition HS2-P2A-128-1 which set out the principle objections to the construction of the Railhead and IMB-R near to Stone, Staffordshire.
- 2.1 The parish councils of Chebsey, Stone and Swynnerton object to the proposed additional provisions contained in High Speed Rail (West Midlands - Crewe) Supplementary Environmental Statement and Additional Provision Environmental Statement Volume 2: Community Area report CA3: Stone and Swynnerton:-
- (a) The replacement of the 450m long Filly Brook viaduct with a much shorter one (80m long over the Norton Bridge to Stone Railway) and an extra 385m length embankment of either side of the railway, which will require the Filly Brook to be culverted and alternative flood storage found.
 - (b) The extension to the Yarnfield North Embankment (300m)
 - (c) Increasing the elevation of the HS2 mainline by up to 0.9m where it passes through the site.
 - (d) Moving the horizontal HS2 mainline alignment 15.5m to the northeast where it crosses the M6 at the northern end of the Stone Railhead site
- 2.2 The proposals are objectionable for the following reasons:
- 2.2.1 The replacement of the Filly Brook viaduct with a much shorter one and an extra 385 m length of embankment on either side of the railway seriously compromise the flood plain of the Filly Brook.
 - 2.2.2 The additional provisions will result in earthworks movements arising from the extension of Yarnfield South embankment and Yarnfield North embankment, and the extension of the embankment within the Stone IMB-R to support the reception track from the Stone.
 - 2.2.3 Increasing the elevation of the HS2 mainline by up to .9m will require the importing additional material to stabilize and build in addition to that already required. This will add to the number of HGV movements on Yarnfield Lane.

Draft Additional Provisions Petition

2.2.4 The increased height of the HS2 track about the existing ground level will have an adverse impact in visual and landscape terms.

2.3 .

3. What do you want to be done in response?

In the box below, tell us what you think should be done in response to your objections. You do not have to complete this box if you do not want to.

The committee cannot reject the Bill outright or propose amendments which conflict with the **principle of the Bill**. But it can require changes to the Government's plans in response to petitioners' concerns, which can take the form of amendments to the Bill or commitments by HS2 Ltd.

You can include this information in your response to section two 'Objections to the Bill' if you prefer. Please number each paragraph.

- 3.0 We consider that the proposals set out in our first petition, (HS2-P2A-128-1), provide a far superior alternative location for a Railhead and IMB-R from an engineering, environmental and economic perspective which would overcome the problems created by the additional provisions.
- 3.1 If the proposals for the alternative location of the Railhead/IMB-R at Aldersey's Rough are rejected we request that:
- 3.1.1 The construction of the Yarnfield South and Yarnfield North embankments is not proceeded with and that the longer viaduct over the Filly Brook is retained.
- 3.1.2 The increase in the elevation of the HS2 track by up to .9m is not proceeded with and the existing alignment, as proposed in the HS2 Bill, is retained.
- 3.1.3 The Promoter provides an undertake that the new north and south bound M6 slip roads will be in place and operational to enable the construction of the Stone Railhead and IMB-R without the need for HGV traffic to either cross or travel along Yarnfield Lane to access, or egress the site

If you have already petitioned against the High Speed Rail (West Midlands – Crewe) Bill, please give your petition number:

HS2-P2A-128-1

Next steps

Draft Additional Provisions Petition

Once you have completed your petition template please save it and go to our website to submit it during the petitioning period.