

HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement and Additional Provision 2 Environmental Statement

Volume 2 | Community forum area report
CFA16 | Ladbroke and Southam

July 2015

SES and AP2 ES 3.2.1.16



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Department
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AECOM

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CAPITA



ineco



**PARSONS
BRINCKERHOFF**



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

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

Telephone: 020 7944 4908

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.gov.uk/hs2

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

The Supplementary Environmental Statement (SES) and Additional Provision 2 Environmental Statement (AP2 ES) comprises:

- non-technical summary (NTS). This provides a summary in non-technical language of the SES (Part 1) and AP2 ES (Part 2) and of any likely significant environmental effects, both beneficial and adverse, which are new or different to those reported in the High Speed Two (HS2) Phase One Environmental Statement (ES) submitted to Parliament in November 2013 in support of the hybrid Bill ('the Bill') for Phase One of HS2 (hereafter referred to as 'the main ES') and where relevant the AP ES submitted in September 2014 (hereafter referred to as 'the AP1 ES');
- Volume 1: introduction to the SES and AP2 ES. This introduces the supplementary environmental information and design changes included within the SES and amendments which have resulted in the need to amend the Bill within the AP2 ES. It also explains any changes to the scope, methodology, assumptions and limitations required for the environmental impact assessment;
- Volume 2: community forum area (CFA) reports and map books. These describe the supplementary environmental information and design changes included within the SES (Part 1), amendments within the AP2 ES (Part 2) and report any new or different likely significant environmental effects arising from these changes in each CFA compared to those reported in the main ES, and where relevant, the AP1 ES. The main local alternatives that have been considered are described, where relevant;
- Volume 3: route-wide effects. This reports new or different likely significant route-wide effects arising from the supplementary environmental information and design changes included within the SES (Part 1) and amendments within the AP2 ES (Part 2) compared to those reported in the main ES, and where relevant, the AP1 ES;
- Volume 4: off-route effects. This reports new or different likely significant off-route effects arising from the amendments within the AP2 ES compared to those reported in the main ES, and where relevant, the AP1 ES;
- Volume 5: appendices and map books. This contains supporting environmental information and associated maps; and

- glossary of terms and list of abbreviations. This contains any new or different terms and abbreviations used throughout the SES and AP2 ES compared to those included in the main ES and AP1 ES.

Structure of this report

This volume of the SES and AP2 ES is divided into CFA reports, which are in turn divided into two parts.

Part 1 provides supplementary environmental information relating to:

- new baseline information with respect to European Protected Species surveys, additional cultural heritage and ecology data relating to ancient woodlands, geophysical and walk-over surveys for cultural heritage undertaken since the submission of the Bill;
- changes to the design or construction assumptions which do not require changes to the Bill; and
- corrections to the main ES.

Part 1 of each CFA report includes, where relevant:

- a description of the changes or updates within the CFA that have triggered the need for reassessment;
- an assessment of the environmental effects of the changes for relevant environmental topics considering the:
 - scope, assumptions and limitations of the SES assessment;
 - changes of relevance to 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 changes.

Part 2 provides environmental assessment information relating to proposed amendments to the design, which have resulted in the need to alter the powers conferred by the Bill. The following is included, where relevant:

- a summary of the proposed amendments within each CFA that have triggered the need for reassessment;
- a description of each amendment;
- an assessment of the environmental effects of each amendment for relevant environmental topics considering the:
 - scope, assumptions and limitations of the AP2 ES 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 each proposed amendment.

1 Introduction

- 1.1.1 The Bill for High Speed Rail between London and the West Midlands was submitted to Parliament together with the main ES in November 2013. The AP1 ES, which was submitted in September 2014, contained generally minor amendments to the design of the original scheme (i.e. the scheme submitted in November 2013). The Bill and associated Additional Provisions to the Bill, if enacted by Parliament, will provide the powers to construct, operate and maintain Phase One of HS2.
- 1.1.2 Since the submission of the main ES and AP1 ES, a number of changes or updates to environmental information and scheme design or assumptions have occurred, which may lead to new or different significant effects. These effects, depending on the type of change, are reported in the SES (Part 1) or AP2 ES (Part 2) of this document.
- 1.1.3 The SES contains updated environmental baseline information and scheme information relating to changes that have occurred within the current limits and powers of the Bill, and therefore do not require an Additional Provision to the Bill. This includes:
- additional environmental baseline information;
 - changes to the design or construction assumptions which do not require changes to the Bill; and
 - corrections to the main ES.
- 1.1.4 The changes are described in Part 1 under a series of sub-headings and assessed on a topic by topic basis 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 AP2 ES reports 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 assessed within the AP2 ES include:
- provision of a cycleway; and
 - reconfiguration of a road junction.
- 1.1.8 The AP2 ES assesses each amendment separately for all relevant topics. The purpose of the AP2 ES is to provide an assessment of any new or different likely significant environmental effects arising from the amendments.
- 1.1.9 The standard measures that will be used to mitigate likely significant adverse environmental effects during construction and operation are described in the main ES, Volume 1, Section 9 and the draft Code of Construction Practice (CoCP) submitted in support of the Bill. Implementation of these measures has been assumed in this SES and AP2 ES.

- 1.1.10 It should be noted that, since submission of the Bill, the scheme design has been revised by SES design changes and amendments described in the AP2 ES (AP2 amendments). For this CFA there were no AP1 changes.
- 1.1.11 In order to differentiate between the original proposals and subsequent changes, the following terms are used:
- 'the original scheme' - the Bill scheme submitted to Parliament in November 2013, which was assessed in the main ES;
 - 'the AP1 revised scheme' - the original scheme as amended by the AP submitted in September 2014;
 - 'the SES scheme' - the original scheme with the design changes described in the SES; and
 - 'the AP2 revised scheme' - the original scheme as amended by the SES scheme and AP2.

Part 1: Supplementary Environmental Statement

2 Summary of changes

2.1 New environmental baseline information

Cultural heritage

- 2.1.1 Geophysical and walk-over surveys have been undertaken in this CFA since submission of the main ES. In addition, a further review of historic mapping and other available historic data sources has been carried out to verify the status of a number of sites in the vicinity of the route, which are being considered for listing on the ancient woodland inventory.
- 2.1.2 Details of survey and desk-based work undertaken in this CFA since production of the main ES (September 2013) are provided in Volume 5: Appendix CH-004-016 and Volume 5 map series CH-07; CH-09 and CH-10 where this is relevant to the assessment of a new or different significant effect.
- 2.1.3 Details of supplementary cultural heritage information from these sources that is relevant to the SES assessment are provided in Section 3 under 'Cultural heritage'.

Ecology

- 2.1.4 Surveys for bats and great crested newt have been undertaken in this area since September 2013. Habitat survey has been undertaken at Fox Covert (Glyn Davies Wood) in CFA15 to assist in determining if these areas represent ancient woodland. (This area is relevant to CFA16 due to an AP2 amendment considered in this report that crosses the CFA15/CFA16 boundary.) In addition, new information is available from a review of historic documents in relation to Lodge Spinney woodland which is being considered for inclusion on the ancient woodland inventory.
- 2.1.5 Details of all survey work and desk-study information gathered since September 2013, which is relevant to this area, are provided in SES and AP2 ES Volume 5: Appendix EC-001-003 and Volume 5 map series: EC-04; EC-05; EC-11 and EC-12.
- 2.1.6 Further details of supplementary ecological information that is relevant to the SES assessment are included within Section 3 under 'Ecology'. This includes details of all potential changes relating to the status of ancient woodland.
- 2.1.7 SES and AP2 ES Volume 5: Appendix EC-002-003 provides a summary of additional baseline survey data collected since September 2013, which has resulted in no change to the conclusions of the main ES. SES and AP2 ES Volume 5: Appendix EC-002-003 identifies additional local/parish level effects which occur as a consequence of SES changes but which are not significant.

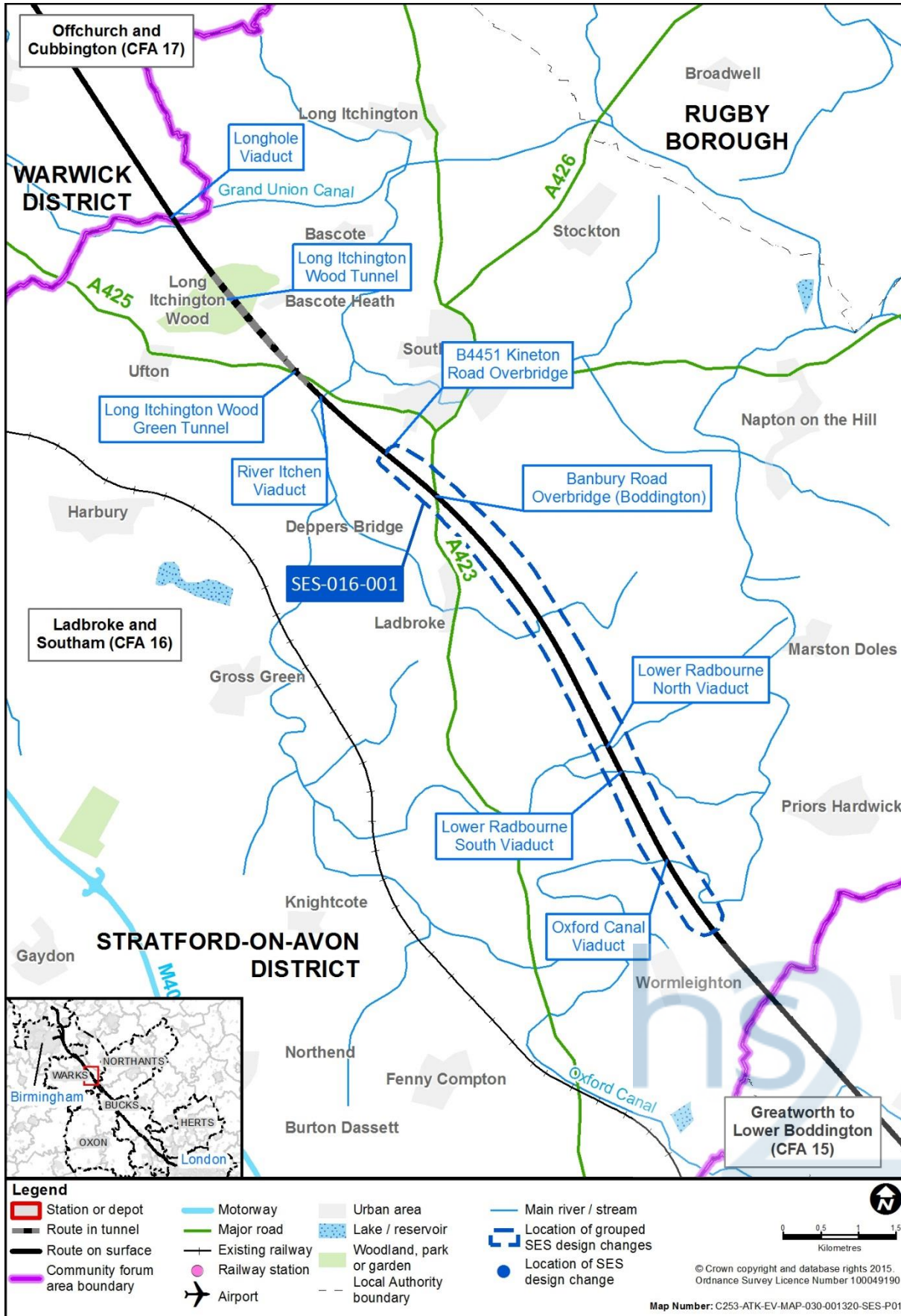
2.2 Changes to the design or construction assumptions not requiring a change to the Bill

- 2.2.1 Table 1 provides a summary of the changes to the design or construction assumptions not requiring a change to the Bill which result in new or different significant effects in the Ladbroke and Southam CFA (CFA16) and Figure 1 shows the locations.

Table 1: Summary of changes to the design or construction assumptions not requiring a change to the Bill in CFA16

Name of design change or construction assumption	Description of the original scheme	Description of the SES scheme
<p>Increase to the bund crest heights on both sides of the HS2 route in the vicinity of Ladbroke and Wormleighton.</p> <p>(SES-016-001)</p>	<p>The sections of earthworks embankments affected by the change are shown in the main ES, Volume 2, CFA16 on maps CT-06-080 and CT-06-081, CT-06-083, CT-06-084 and CT-06-085.</p> <p>The embankments are located approximately as follows: from south of the Footpath SM116a realignment to south of the Oxford Canal viaduct; from north of the Oxford Canal viaduct to south of the Lower Radbourne South viaduct; from north of the Lower Radbourne South viaduct to just north of the Lower Radbourne Farm accommodation overbridge; from north of the Ladbroke Grove Farm accommodation overbridge to south of the realigned Windmill Lane; and from the end of the Windmill Hill cutting to the B4451 Kineton Road overbridge.</p>	<p>Increase in height of earthworks at Ladbroke and Wormleighton/Priors Hardwick to enhance mitigation of the visual effects of the HS2 route where it runs on embankment. Embankment heights will be increased by up to 3m in the following approximate locations:</p> <ul style="list-style-type: none"> • from south of the Footpath SM116a realignment to south of the Lower Radbourne South viaduct; • from approximately the A423 Banbury Road overbridge to the B4451 Kineton Road overbridge; • from north of the Lower Radbourne South viaduct to just north of the Lower Radbourne Farm accommodation overbridge; and • from the end of Windmill Hill cutting to the A423 Banbury Road overbridge. <p>The raised earthworks will be contained within the same footprint as the original scheme by steepening slope gradients. Slopes too steep for agricultural use (greater than 18 degrees) will be planted as appropriate to the location.</p> <p>The layout of balancing ponds and access tracks will need adjustment on the western side of the HS2 route at the Oxford canal crossing; between Wills Pastures Road and Lower Radbourne South viaduct; near Radbourne autotransformer station (ATS) and west of the Banbury Road realignment, all within the existing limits of the Bill.</p>

Figure 1: Locations of design changes not requiring a change to the Bill in CFA16



Description of changes to the design or construction assumptions

Increase to the bund crest heights on both sides of the HS2 route in the vicinity of Ladbroke and Wormleighton (SES-016-001)

- 2.2.2 The Bill provides for earthwork embankments to mitigate the effects of the original scheme through the Ladbroke and Wormleighton areas of CFA16 as shown in the main ES, Volume 2 CFA16 map book, maps CT-06-080 to CT-06-085. The embankments are approximately located as follows: from south of the Footpath SM116a realignment to south of the Oxford Canal viaduct; from north of the Oxford Canal viaduct to south of the Lower Radbourne South viaduct; from north of the Lower Radbourne South viaduct to just north of the Lower Radbourne Farm accommodation overbridge; from north of the Ladbroke Grove Farm accommodation overbridge to south of the realigned Windmill Lane; and from the end of the Windmill Hill cutting to the B4451 Kineton Road overbridge.
- 2.2.3 Since submission of the Bill, an opportunity to provide greater mitigation of visual effects in this area has been identified. This will be achieved through an increase in the heights of these earthwork embankments to provide greater mitigation of visual effects. The changed areas are shown on maps CT-05-080, CT-05-081, CT-05-082 and CT-06-080, CT-06-081, CT-06-082, CT-06-83 and CT-06-084 in the SES and AP2 ES Volume 2 CFA16 Map Book. The following approximate changes are proposed to the height of mitigation earthwork crest levels:
- from between 3m and 5m above rail level to between 4m and 6m above rail level on the west side of the HS2 route from south of the Footpath SM116a realignment to south of the Windmill Lane realignment;
 - from 3m above rail level to 4m above rail level on the east side of the HS2 route from south of the Footpath SM116a realignment to south of the Lower Radbourne North viaduct;
 - from 3m above rail level to 5m above rail level on the east side of the HS2 route from the A423 Banbury Road overbridge to the B4451 Kineton Road overbridge;
 - from 5m above rail level to 6m above rail level on the west side of the HS2 route from the A423 Banbury Road overbridge to the B4451 Kineton Road overbridge;
 - from 4m above rail level to 5m above rail level on the east side of the HS2 route from north of the Lower Radbourne North viaduct to south of the Windmill Lane realignment;
 - from between 3m and 6m above rail level to a minimum of 5m above rail level on the east side of the HS2 route from the end of the Windmill Hill cutting to the A423 Banbury Road overbridge, or 6m where the embankment in the original scheme is already 6m; and
 - from between 5m and 8m above rail level to 8m above rail level on the west side of the HS2 route from the end of the Windmill Hill cutting to the A423 Banbury Road overbridge. (In the original scheme design, the height of the

mitigation earthworks in this section varies between 5 and 8m above rail level. For this SES design change, the height is increased to 8m above rail level in this section of the route).

- 2.2.4 The embankment slope gradients will be steepened to ensure that the raised earthworks will be contained within the same footprint as the original scheme embankments. Slopes greater than 11 degrees will remain usable for agriculture, but the grade of the land, and thus its usefulness, will be reduced. Any slopes steeper than 18 degrees will no longer be of use for agriculture and any such areas would be planted for landscape mitigation as appropriate to the area (refer to agriculture assessment in Section 3). These areas are shown on maps CT-05-080, CT-05-081, CT-05-082 and CT-06-080, CT-06-081, CT-06-082, CT-06-83 and CT-06-084 in the SES and AP2 ES Volume 2 Map Book.
- 2.2.5 In addition to the increase in embankment heights, a short length of low screen fencing will be added along the crest near the existing residential buildings near the A423 (see CT-06-084 in the SES and AP2 ES Map Book). Fencing will be added where the full 6m height cannot be achieved in parts of this section of embankment due to the presence of HS2 route crossings.
- 2.2.6 The changes will necessitate alterations to the layout of balancing ponds and access tracks in four areas, all within the existing limits of the Bill. The changes in each of the four areas are set out below.
- 2.2.7 The changes at the Oxford Canal crossing on the west side of the HS2 route are:
- railway balancing pond reshaped, with the same capacity, and relocated to the west of Bridleway SM116 and the HS2 maintenance access;
 - mitigation earthwork lengthened to meet Bridleway SM116. Localised steepening of earthworks will no longer be required in this location; and
 - railway balancing pond and turning head access reconfigured.
- 2.2.8 The changes on the west side of the HS2 route between Wills Pastures Road and Lower Radbourne South viaduct are:
- railway balancing pond reshaped, with the same capacity, and relocated closer to the HS2 route;
 - HS2 balancing pond access road straightened and the turning head reconfigured; and
 - mitigation planting extended over entire outward facing side slope.
- 2.2.9 On the west side of the HS2 route near the Radbourne ATS the changes are:
- ATS relocated approximately 100m south of original scheme location;
 - HS2 ATS access road reconfigured;
 - railway balancing pond reshaped, with the same capacity, and relocated further away from the HS2 route to accommodate raised and improved mitigation earthworks; and

- HS2 maintenance access and turning head reconfigured as well as Radbourne Lane realigned.

2.2.10 On the west side of the HS2 route, west of A423 Banbury Road realignment the changes are:

- railway balancing pond and pumping station relocated further from the HS2 route to accommodate raised mitigation earthwork; and
- HS2 maintenance access and turning head reconfigured.

2.2.11 The proposed increase in the heights of these earthwork embankments results in new or different significant effects for: agriculture, forestry and soils; and landscape and visual.

2.3 Corrections to the main ES

2.3.1 Since the submission of the Bill, the need for a number of corrections in the contents of the main ES have been identified. Table 2 provides a list of those instances where there has been a need to correct the Volume 2 CFA report for Ladbroke and Southam because of the potential to alter the significant environmental effects reported in the main ES or a factual inaccuracy relating to significant effects has been identified. The table gives the location of 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. Where relevant, these corrections have been taken into account in the technical assessments contained within Section 3 of this SES.

Table 2: Summary of corrections to the main ES in CFA16

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
Sound, noise and vibration Vol 2, Section 11	One noise insulation qualifier not included in Volume 2 text (but reported in NTS and Volume 5).	Taking account of the avoidance and mitigation measures incorporated into the Proposed Scheme, the assessment has identified two residential dwellings, close to the Proposed Scheme, where noise would exceed the daytime trigger threshold set in the Regulations. It is therefore estimated that these buildings are likely to qualify for noise insulation under the Regulations. These dwellings are indicated on Volume 5: Map Book – Sound, noise and	Taking account of the avoidance and mitigation measures incorporated into the Proposed Scheme, the assessment has identified three residential dwellings, close to the Proposed Scheme, where noise would exceed the daytime trigger threshold set in the Regulations. It is therefore estimated that these buildings are likely to qualify for noise insulation under the Regulations. These dwellings are indicated on Volume 5: Map Book Sound, noise and vibration, Map series SV-05: • Chapel Bank, Lower	Yes. One additional dwelling is identified as being subject to a significant adverse effect, and is consequently estimated to be likely to qualify for noise insulation. The mitigation measures, including noise insulation will reduce noise inside all dwellings such that it will not reach a level where it would significantly affect residents. Refer to SES and AP2 ES Map series SV01, SV-02 and SV05 (Volume 5, Sound, Noise and Vibration Map Book).

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
		vibration, Map series SV-05: <ul style="list-style-type: none"> • Chapel Bank, Lower Radbourne; and • Field Cottage, B4451 Kineton Road, Southam. 	Radbourne; <ul style="list-style-type: none"> • Field Cottage, B4451 Kineton Road, Southam; and • Stoneythorpe Lodge, Southam. 	
Cultural heritage Vol 2, Section 6, paragraph 6.3.6	Omission of three archaeological assets and one area of historic landscape from the Volume 2 text.	<ul style="list-style-type: none"> • Twelve archaeological assets (LBS002, LBS003, LBS009, LBS024, LBS045, LBS049, LBS055, LBS058, LBS071, LBS072, LBS078 and LBS084); • two built heritage assets: Church Farm Barns (LBS023) and Field Cottage (LBS061); and • one area of historic landscape: Ladbroke open fields (LBS100). 	<ul style="list-style-type: none"> • fifteen archaeological assets (LBS002, LBS003, LBS009, LBS024, LBS045, LBS049, LBS055, LBS058, LBS071, LBS072, LBS078 LBS084, LBS102, LBS105, and LBS112); • two built heritage assets: Church Farm Barns (LBS023) and Field Cottage (LBS061); and • two areas of historic landscape: Ladbroke open fields (LBS100) and Long Itchington assarts (woodland clearance) and woodland enclosures (LBS101). 	No, the text omitted relates to baseline, not impact assessment, impacts on these assets were accounted for. No further mitigation is required.
Cultural heritage Vol 2, Section 6, paragraph 6.4.6	Omission of text on impact on Windmill Hill (LBS102).	Omitted from Volume 2 of main ES.	Archaeological remains at Windmill Hill (LBS102), an asset of low value, will be crossed by a cutting resulting in almost total loss of the below ground remains. This will constitute a high adverse impact and moderate adverse effect.	No, this significant effect was included in Volume 5 of the main ES. No further mitigation is required.

2.4 Topics included in the SES assessment

- 2.4.1 The changes described in Section 2.1 to 2.3 require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: agriculture, forestry and soils; cultural heritage; ecology; and landscape and visual.

3 Assessment of changes

3.1 Agriculture, forestry and soils

Introduction

- 3.1.1 This section of the report provides a description of the environmental baseline in relation to agriculture, forestry and soils that is relevant to the assessment. In addition, it identifies any new or different likely significant environmental effects resulting from the changes described in Section 2 compared to the original scheme, and then separately considers the SES scheme.

Scope, assumptions and limitations

- 3.1.2 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

Changes of relevance to this assessment

- 3.1.3 The increase in the bund crest heights on both sides of the HS2 route at Ladbroke and Wormleighton (SES-016-001) is relevant to this assessment. As described earlier, the embankment slope gradients will be steepened to ensure that the raised earthworks will be contained within the same footprint as the original scheme embankments. Slopes greater than 11 degrees will remain usable for agriculture, but the grade of the land, and thus its usefulness, will be reduced. Any slopes steeper than 18 degrees will no longer be of use for agriculture and any such areas would be planted for landscape mitigation as appropriate to the area.

Environmental baseline

Existing baseline

- 3.1.4 The underlying geology in this area consists of Jurassic mudstone and occasional limestone of the Charmouth Mudstone Formation. Superficial deposits underlying the scheme in the Ladbroke and Southam area are largely confined to Alluvium (clay, silt, sand and gravel) in river valleys.
- 3.1.5 The characteristics of the soils are described by the Soil Survey of England and Wales¹ and shown on the National Soil Map². The soils are grouped into associations of a range of soil types.
- 3.1.6 The soils are of the Denchworth association. They have mainly stoneless to slightly stony, heavy clay loam or clay topsoil over clay subsoil, which are slowly permeable and waterlogged for long periods in winter, and are most commonly assessed as being

¹ Soil Survey of England and Wales (1984), Soils and their Use in Midland and Western England, Bulletin 12.

² Cranfield University (2001), The National Soil Map of England and Wales 1:250,000 scale, National Soil Resources Institute, Cranfield University, UK.

of Wetness Class (WC) IV³. Land within the Denchworth soil association is almost entirely Subgrade 3b in this area.

- 3.1.7 This SES design change (SES-016-001) will affect four agricultural holdings, namely: The Hall Farm (CFA16/1), Stoneton Moat Farm (CFA16/3), Radbourne Grounds Farm (CFA16/4) and Upper Radbourne Farm (CFA16/5). Hall Farm (546.3ha) and Radbourne Grounds Farm (175.7ha) are mainly arable, while Stoneton Moat Farm (323.8ha) and Upper Radbourne Farm (202.3ha) are mixed arable and livestock enterprises.

Future baseline

Construction (2017)

- 3.1.8 SES and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed will have been implemented by 2017, additional to those reported in the main ES (Volume 5: Appendix CT-004-000).
- 3.1.9 None of the identified developments affects the assessment of the AP2 scheme's likely construction impacts on agriculture, forestry and soils.
- 3.1.10 Most existing environmental stewardship agreements will expire in 2015 and be replaced by a new environmental land management scheme (countryside stewardship) which is voluntary. It is more targeted than previous schemes, with its priorities being to protect and enhance biodiversity and water quality.
- 3.1.11 The widespread basic environmental management associated with entry level stewardship will be replaced by a new concept of greening introduced by Common Agricultural Policy reform, which will now be the main means by which farmers will provide environmental benefits in return for their direct support payments. Greening will encourage the retention of permanent grasslands, greater crop diversification and the creation of Ecological Focus Areas. These changes will affect the detailed management of individual farm holdings but are not expected to change fundamentally the baseline circumstances described.

Operation (2026)

- 3.1.12 SES and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those reported in the main ES (Volume 5: Appendix CT-004-000).
- 3.1.13 None of the identified developments affects the assessment of the AP2 scheme's likely operational impacts on agriculture, forestry and soils.

Effects arising during construction

Avoidance and mitigation measures

- 3.1.14 Where the gradient of restored slopes allows, the land required temporarily for construction will be restored to its former agricultural use once the works are

³ The Wetness Class (WC) of a soil is classified in Appendix II of Hodgson, J.M. (1977), The Soil Survey Field Handbook. Soil Survey and Land Research Centre, Technical Monograph No.5, according to the depth and duration of waterlogging in the soil profile and has six bands ranging from Wetness Class I (well drained) to Wetness Class VI (permanently waterlogged).

completed. The soil handling will involve stripping, storing and reinstating topsoils on land required for the temporary works, following best practice guidance for handling soil set out in the draft CoCP.

Assessment of impacts and effects

Temporary effects

- 3.1.15 There will be no change in the area of agricultural land required temporarily by this SES design change (SES-016-001). Therefore, this will not cause any new or different significant effects or change the level of significance of the effects on the best and most versatile agricultural land reported in the main ES.
- 3.1.16 The SES design change (SES-016-001) will not change the amount of agricultural land required temporarily during construction for any agricultural holding. Therefore, there will be no new or different significant effects or change to the level of significance of the effects on agricultural holdings reported in the main ES.

Permanent effects

- 3.1.17 Due to the gradient of the embankments constructed as part of this SES design change (SES-016-001), the quality of some (i.e. less than 1ha in total) agricultural land to be returned to agriculture will be reduced from its current quality (Subgrade 3b) to Grade 4, where the angle of slope will be between 11 and 18 degrees. Any areas that are made too steep for agricultural use will be planted for landscape mitigation as appropriate to the area. This minor change will not cause any new or different significant effects or change the level of significance of the effects on the best and most versatile agricultural land reported in the main ES.
- 3.1.18 The SES design change (SES-016-011) will result in changes to four agricultural holdings with a small increase in the land required permanently from that reported in the main ES. The increase in the land required permanently will be 0.3 ha (or 0.06% of the holding) at The Hall Farm, 1.0ha (or 0.3% of the holding) at Stoneton Moat Farm, 0.9ha (or 0.5% of the holding) at Radbourne Grounds Farm, and 0.2ha (or 0.1% of the holding) at Upper Radbourne Farm. However, these changes are negligible and so there will be no new or different significant effects on agricultural holdings and no change to the level of significance of the effects reported in the main ES or the AP1 ES.

Other mitigation measures

- 3.1.19 No other mitigation measures are necessary.

Cumulative effects

- 3.1.20 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the SES design change acting in combination with another amendment in the SES, or as a result of any relevant committed developments.

Summary of likely residual significant effects

- 3.1.21 The SES scheme will result in no change in the residual significant effects reported in the main ES.

Effects arising from operation

- 3.1.22 There are no new or different operational effects for agriculture, forestry and soils as a result of the SES change (SES-016-0).

3.2 Cultural heritage

Introduction

- 3.2.1 This section of the report describes the environmental baseline in relation to cultural heritage that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 2, compared to the original scheme. Consideration is given to effects upon the value of heritage assets, including through changes to their setting, as a result of the additional changes.

Scope, assumptions and limitations

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

Changes of relevance to this assessment

- 3.2.3 The following changes are relevant to this assessment:
- results of geophysical surveys undertaken; and
 - review of historic mapping and other available historic data sources.

Environmental baseline

Existing baseline

- 3.2.4 The cultural heritage baseline for the assessment takes into account information collected in support of the main ES, which included walk-over survey, geophysical survey, remote-sensing data, and data from national and local registers. A full list of heritage assets is provided in Volume 2 CFA16, Section 6.3 of the main ES. In addition, the baseline has been updated with the results of further survey work comprising geophysical and walk-over surveys for archaeology; and a further review of historic mapping and other available historic data sources to verify the status of a number of sites, which are being considered to be added to the ancient woodland inventory.
- 3.2.5 A summary of the baseline information relevant to the assessment of new or different effects is provided below. Further details of additional baseline information obtained since the main ES is provided in SES and AP2 ES Volume 5: Appendix CH-002-016 and shown on map CH-01-105a. For those assets described in the main ES, further details are provided in the baseline reports, gazetteer of heritage assets, impact assessment tables and survey reports in Volume 5 of the main ES and are shown on maps CH-01, CH-02 and CH-03.

Designated assets

- 3.2.6 In addition to the designated assets reported in the main ES, an area of woodland has been identified as likely to meet the criteria for designation as ancient woodland,

which may result in it being added to the ancient woodland inventory. This is Lodge Spinney (asset reference: LBS113⁴), which is located approximately 1.4km east of Wormleighton Village and approximately 600m north of Hill Farm. This is a new heritage asset which has been assumed to be of high value.

- 3.2.7 Fox Covert (Glyn Davies Wood) (asset reference GLB211⁵) has also been identified as likely to be added to the ancient woodland inventory. This woodland lies within the Greatworth to Boddington area (CFA15). The asset has already been identified as an asset of moderate value in the main ES for its archaeology, cropmarks of a curvilinear enclosure and other features. The likely addition of this asset to the ancient woodland inventory changes the heritage value of the asset from moderate to high. Further detail can be found in Table 3 of the SES and AP2 Volume 2 report for CFA15. For the purpose of the assessment both Lodge Spinney and Fox Covert (Glyn Davies Wood) are considered as ancient woodland.

Non-designated assets

- 3.2.8 In addition to the non-designated assets reported in the main ES, following the results of geophysical survey new non-designated assets have been identified at three locations off Welsh Road, between Long Itchington Wood and the Grand Union Canal (CN005, CN006 and CN007⁶) which are relevant to this assessment.
- 3.2.9 The surveys conducted at CN005, CN006 and CN007 (asset reference LBS114) revealed some archaeological anomalies⁷ and possible archaeology⁸. At sites CN005 and CN007, these anomalies have been interpreted as pit-like features and areas of identified ridge and furrow. The survey at CN006 revealed archaeological anomalies (indicative of ditch-like features). The ditches are concentrated towards the southern and south-eastern portion of the survey area. They include a curvilinear U-shaped ditch and two other linear ditches, identified as of archaeological origin. An L-shaped ditch and several linear ditches have also been identified as of possible archaeological origin. These ditches have been interpreted as potential evidence of enclosures and could relate to the two enclosures recorded on the Historic Environment Record (HER) (100m north of Wood Farm, HER asset reference MWA 6788). Collectively these site features are of low value.

Future baseline

Construction (2017)

- 3.2.10 No committed developments have been identified in this local area that will materially alter the baseline conditions in 2017.

⁴ New cultural heritage assets unique reference code LBS; further detail on these assets can be found in the gazetteer update in Appendix CH-002-016 that accompanies this SES and AP2 ES.

⁵ Cultural heritage assets are identified with a unique reference code, LBSXXX; further detail on these assets can be found in the gazetteer in Volume 5 of the main ES: Appendix CH-002-015.

⁶ This is a reference to the unique geophysical survey land parcel.

⁷ Geophysical responses that differ to the relative background values and are interpreted as being of anthropogenic origin and generally dating to before 1900.

⁸ A feature that has been interpreted as being of possible anthropogenic origin, and generally dating to before 1900.

Operation (2026)

- 3.2.11 No committed developments have been identified in this local area that will materially alter the baseline condition in 2026.

Effects arising during construction

Avoidance and mitigation measures

- 3.2.12 The assessment assumes implementation of the measures set out within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES).

Assessment of impacts and effects

Temporary effects

- 3.2.13 The new baseline information 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.

Permanent effects

- 3.2.14 Fox Covert (Glyn Davies Wood) (asset reference GLB211) is partially within the land required for the scheme. The land required is approximately 1.9ha which is 58% of the total woodland. In addition to this is the removal of 20% of the cropmarks as reported in the main ES. This will result in the loss of a significant area of the asset which will noticeably alter the value of the asset. This will give rise to a different significant effect than that reported in the main ES. The main ES reported a medium adverse impact with a moderate adverse effect. The increase in the value of the asset from moderate to high will result in a high adverse impact with a major adverse effect.
- 3.2.15 Lodge Spinney (asset reference LBS113) will not be impacted by the original or SES scheme, and its likely status as ancient woodland will not result in any new or different significant effects.
- 3.2.16 There is potential for new significant permanent effects on non-designated assets.
- 3.2.17 The potential buried archaeological remains in this location (asset reference LBS114) would be removed by construction, as well as groundworks for preparing stockpile and compound sites. Landscape mitigation planting is also proposed in this area in connection with the original scheme which has potential to disturb archaeological remains. As a result of the new geophysical survey information there is a new high adverse impact on this asset of low value, constituting a new moderate adverse effect, which is significant (refer to SES and AP2 ES Volume 5: Appendix CH-003-016).

Other mitigation measures

- 3.2.18 No additional mitigation measures are required as a result of additional baseline information.

Cumulative effects

- 3.2.19 There are no new or different likely significant cumulative effects for cultural heritage as a result of the SES changes, or as a result of any relevant committed developments.

Summary of likely residual significant effects

- 3.2.20 As Fox Covert (Glyn Davies Wood) (asset reference GLB211) is likely to be added to the ancient woodland inventory, the land required for the scheme will give rise to a different residual significant effect as its heritage value has increased from moderate to high. This will change the level of significance of the residual effects reported in the main ES from moderate adverse to major adverse.
- 3.2.21 There will be a new moderate adverse significant residual effect as a result of impacts on the site of archaeological interest off Welsh Road (LBS114).

Effects arising from operation

- 3.2.22 The new baseline information will not give rise to a new or different significant effects from operation and will not change the level of significance of the effects reported in the main ES.

3.3 Ecology

Introduction

- 3.3.1 This section of the report describes the environmental baseline in relation to ecology that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 2, compared to the original scheme. Consideration is given to the potential for impacts on species, habitats and sites designated on the basis of their importance for nature conservation.

Scope, assumptions and limitations

- 3.3.2 The assessment scope for ecology is as set out in Volume 1 of the SES and AP2 ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/01) and the SMR Addendum (Volume 5: Appendix CT-001-000/02) of the main ES.
- 3.3.3 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported in the main ES, Volume 5: Appendix CT-001-000/2. 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 SES change.

Changes of relevance to this assessment

- 3.3.4 The following changes are relevant to this assessment:
- new baseline surveys relating to great crested newt and bats undertaken since submission of the main ES; and
 - additional cultural heritage and ecological baseline relating to ancient woodland within CFA16 (and within the adjacent CFA15).

Environmental baseline

Existing baseline

- 3.3.5 The ecological baseline for the assessment takes into account baseline information collected in support of the main ES, which included field survey data, aerial photography and relevant existing information gathered from national organisations and from regional and local sources. A full list of data sources that informed the main ES is provided in Volume 2, CFA16, Section 7 of the main ES.
- 3.3.6 The assessment also takes into account additional desk-study and survey information collected since September 2013. Supplementary information relevant to the assessment in this area includes additional surveys for great crested newt and bats and a review of further heritage and ecological data relating to the status of Lodge Spinney woodland and Fox Covert (Glyn Davies Wood) immediately adjacent to CFA16 in CFA15.
- 3.3.7 A summary of the baseline information relevant to the assessment of new or different significant effects is provided below. Further details of additional baseline information obtained since the main ES are provided in SES and AP2 ES Volume 5: Appendix EC-001-003. For those receptors described in the main ES, further details are provided in Volume 2, CFA16, Section 7 and in Volume 5, including maps EC-01 to EC-12, Map Book Ecology.

Designated sites

- 3.3.8 Further survey and a review of historic documents undertaken since publication of the main ES has identified that Fox Covert (Glyn Davies Wood), which is wholly within the adjacent CFA15, is likely to be ancient and is likely to be added to the ancient woodland inventory. For the purposes of assessment it is considered as ancient woodland.
- 3.3.9 A review of historic documents undertaken since publication of the main ES has concluded that Lodge Spinney woodland, which is approximately 250m from land required for construction of the scheme, is likely to be ancient and is likely to be added to the ancient woodland inventory. For the purposes of assessment it is considered as ancient woodland.
- 3.3.10 Statutory and non-statutory designated sites within this area are described in the main ES, Volume 2, CFA16, Section 7 and are shown on maps EC-01-040b to EC-01-044a, Volume 5, Map Book Ecology.

Habitats

- 3.3.11 The main ES identified Fox Covert (Glyn Davies Wood) as being of district/borough value. Since submission of the main ES, it has been identified that it is likely to be ancient. As an uncommon habitat in the wider landscape and on a precautionary basis the value of the receptor has been increased to county/metropolitan.
- 3.3.12 Lodge Spinney is contiguous with Berryhill Plantation and Fox Covert (Glyn Davies Wood), east of Wormleighton and approximately 250m from land required for the construction of the SES scheme. Lodge Spinney was not surveyed for the main ES due to lack of access. Given the likely change in status of Lodge Spinney to ancient, which

gives the woodland greater potential for ecological interest, the evaluation of Lodge Spinney is of up to county/metropolitan level.

Protected and/or notable species

- 3.3.13 Survey work undertaken since the main ES has identified the following additional great crested newt populations:
- a small population of great crested newt in a pond east of Wormleighton, 120m west of the land required for construction of the scheme; this population is of value at a district/borough level;
 - a medium population of great crested newt in a pond north of Wormleighton, less than 5m west of the land required for construction of the scheme; this population is of county/metropolitan value; and
 - a small population of great crested newt in a pond south of Upper Radbourne Farm, 250m east of the land required for construction of the scheme; this population is not part of an amphibian metapopulation described in the main ES and is of value at a district/borough level.
- 3.3.14 Bat surveys undertaken since the main ES have identified a new confirmed transitional or day pipistrelle bat roost in a barn at Church Farm to the north-east of Wormleighton, within the land required for construction of the scheme. In addition, trees with high and moderate potential to support bat roosts were identified during 2014 survey work. Both the barn and trees are part of habitat used by a bat assemblage described in the main ES as associated with roosting, foraging and commuting habitat around Stoneton and Wormleighton. The assemblage was reported in the main as being of district/borough value.
- 3.3.15 In addition, bat surveys undertaken since the main ES have identified two new bat populations at Fields Farm, west of Southam, within the land required for construction of the scheme. Both roosts were in ash trees and were confirmed by the presence of droppings, which were too degraded for DNA analysis. One population associated with the transitional roost used by noctules is of county/metropolitan value. The other population is associated with a *Myotis* maternity roost. Based on existing survey information and following the precautionary approach, this population is assumed to contain a roost of a rarer bat species, which is of up to regional value.

Future baseline

Construction (2017)

- 3.3.16 SES and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in Volume 2, CFA16, Section 7 of the main ES. None of the identified developments affect the assessment of the SES scheme's likely construction impacts on ecology.

Operation (2026)

- 3.3.17 SES and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to

those identified in Volume 2, CFA16, Section 7 of the main ES. None of the identified developments affect the assessment of the SES scheme's likely operational impacts on ecology.

Effects arising during construction

Avoidance and mitigation measures

- 3.3.18 The assessment assumes implementation of the measures set out within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES), which includes translocation of protected species where appropriate.

Assessment of impacts and effects

Designated sites

- 3.3.19 The new baseline data 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 in CFA16 and CFA15.

Habitats

- 3.3.20 The loss of 1.9ha of woodland from within Fox Covert (Glyn Davies Wood) as a result of the original scheme was reported in the Greatworth to Lower Boddington area report (CFA15) and was assessed as being of significance at a district/borough level. While the extent of the land required has not changed, the valuation of the receptor has increased due to it being likely to be added to the ancient woodland inventory. Therefore, the scheme will now result in the loss of 1.9ha of ancient woodland. This is a different significant effect on the conservation status of broadleaved woodland and a new effect on ancient woodland. This will result in effects that will be significant at the county/metropolitan level.
- 3.3.21 Lodge Spinney will not be impacted by the scheme, and thus its likely status as ancient woodland will not result in any new or different significant effect. No effect on Lodge Spinney is expected, as reported in the main ES.
- 3.3.22 It is unlikely that the SES changes will result in any other new or different effects on habitat receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from SES changes are listed in SES and AP2 ES: Appendix EC-003-003.

Protected and/or notable species

- 3.3.23 A new amphibian metapopulation (AMP36) has been identified since the main ES to the north of Wormleighton. AMP36 has two water bodies, one of which supports a confirmed medium sized breeding population of great crested newt and is of county/metropolitan value. AMP36 also supports smooth newt. The pond that supports great crested newt is located 5m from land required for the scheme. Approximately 25% (5ha) of terrestrial habitat will be lost from within AMP36. Habitat lost comprises arable land with some field boundary hedges.
- 3.3.24 The SES scheme will result in the loss of terrestrial habitat for amphibians within AMP36 and will result in an adverse effect on the conservation status of the amphibians within this metapopulation that is significant at the county/metropolitan

level. This is a different significant effect to that reported in the main ES. A new small great crested newt population has been identified since the main ES to the south of Upper Radbourne Farm and 250m east of the land required for the scheme. Approximately 1.3% (0.3ha) of land will be lost, comprising hardstanding from the farm track. The effect on the conservation status of this population of great crested newt will be negligible. The new baseline data will not give rise to any new or different significant effects.

- 3.3.25 Since submission of the main ES, two new bat populations at Fields Farm have been confirmed (i.e. they are not reported in the main ES). Whilst the species utilising tree roosts have not been confirmed, they are considered likely to be noctule and *Myotis* bats; the latter as a maternity roost. These populations do not form part of any assemblages reported in the main ES. The tree roosts are within the land required for the scheme.
- 3.3.26 The loss of the *Myotis* maternity roost will result in an adverse effect on the conservation status of this population of *Myotis* bats that is significant at up to a regional level. This is a new significant effect that is not reported in the main ES.
- 3.3.27 The small transitional noctule roost at Fields Farm, is only likely to support low numbers of bats and be utilised on an occasional basis. The loss of the roost is not reported in the main ES, but is unlikely to result in a significant adverse effect on the conservation status of the population.
- 3.3.28 Trees with high and moderate potential to support bat roosts and the barn at Church Farm to the north-east of Wormleighton that supports a transitional or day roost for pipistrelle bats, identified as a result of the additional surveys in 2014, are part of the assemblage associated with roosting, foraging and commuting habitat around Stoneton and Wormleighton, which is of district/borough value. The main ES reported a significant effect on this assemblage due to loss of key foraging and commuting habitat. The barn falls partially within the land required for the SES scheme, but will not be demolished. Disturbance to this roost and the loss of trees with high and moderate potential to support bat roosts will result in a different significant effect on the assemblage. However this change will not alter the overall level of significance of effects on the assemblage reported in the main ES.
- 3.3.29 It is unlikely that the SES changes will result in any other new or different effects on species receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from SES changes are listed in SES and AP2 ES: Appendix EC-003-003.

Cumulative effects

- 3.3.30 There are no new or different likely cumulative effects for ecology as a result of the SES changes or as a result of any relevant committed development.

Other mitigation measures

- 3.3.31 Ancient woodland is irreplaceable. Ancient woodland soil from the 1.9ha of ancient woodland lost at Fox Covert (Glyn Davies Wood) will (where appropriate) be salvaged and translocated with its associated seed bank to the compensation areas either side of the realigned Stoneton Lane. These areas are adjacent to Fox Covert (Glyn Davies

Wood). Measures such as planting native tree and shrub species of local provenance and translocation of coppice stools and dead wood will be undertaken in accordance with the ecological principles of mitigation (main ES Volume 5: Appendix CT-001-000/2).

- 3.3.32 In addition the original scheme also includes approximately 4ha of woodland planting between the realigned Wormleighton Road and the HS2 route, and large areas of additional planting further north within CFA16.
- 3.3.33 Whilst not replicating the ancient woodland that will be lost, the large increase in woodland extent will maintain the conservation status of woodland. The area of woodland creation will provide sufficient mitigation for the loss of breeding and terrestrial habitat for a population of great crested newt in the vicinity of Fox Covert (Glyn Davies Wood).
- 3.3.34 The new significant effects on *Myotis* bats as a result of the loss of a maternity roost can be mitigated without the need for additional land, as can the loss of trees with moderate and high potential to support roosts of rarer bat species. Replacement roost provision will be provided in accordance with the Ecological Principles of Mitigation (refer to Volume 1, Section 9 of the main ES).
- 3.3.35 Different significant effects are predicted on great crested newt using AMP36 as a result of the new baseline information, compared to the main ES. However, landscape planting of woodland and hedges in areas adjacent to the AMP will be available for use by great crested newts to mitigate for the loss of terrestrial habitat in the long term.

Summary of likely residual significant effects

- 3.3.36 With the implementation of the mitigation measures proposed, the new and different ecological effects arising from the updated survey data are reduced to a level where they are not significant, except for the loss of ancient woodland at Fox Covert (Glyn Davies Wood) within the adjacent CFA15. Ancient woodland is an irreplaceable resource and the loss of 1.9ha at this location represents a new residual effect compared to those reported in the main ES.

Effects arising from operation

- 3.3.37 There are no new or different operational effects for ecology as a result of new baseline information.

3.4 Landscape and visual assessment

Introduction

- 3.4.1 This section of the report describes the environmental baseline in relation to landscape and visual that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 2, compared to the original scheme. Consideration is given to the changes on landscape character and views and to the identification of new visual receptors not previously included in the main ES.

Scope, assumptions and limitations

- 3.4.2 The assessment scope, key assumptions and limitations for the landscape and visual assessment are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES. An update to the methodology for the landscape and visual assessment is also described in Volume 1 of the AP1 ES.

Changes of relevance to this assessment

- 3.4.3 The increase in bund crest heights near Wormleighton and Southam is relevant to this assessment.

Environmental baseline

Existing baseline

- 3.4.4 The landscape and visual baseline for the assessment takes into account information collected in support of the main ES, which included field survey data, panoramic photographs, aerial photography and relevant existing information gathered from national organisations and from regional and local sources. A full list of information is provided in the main ES (Volume 2, CFA16, Section 9.3).
- 3.4.5 The landscape baseline is as described in the main ES (Volume 2, CFA16, Section 9.3). The visual baseline comprises descriptions of views available from various representative receptors and is detailed in full in the main ES (Volume 5: Appendix LV-001-016 Part 2).
- 3.4.6 The area is located within Radbourne Ironstone Fringe Landscape Character Area (LCA) and Southam Village Farmlands LCA, as described in the main ES (Volume 2, CFA16, Section 9.3).
- 3.4.7 The majority of the viewpoints in this CFA that have been assessed as experiencing significant visual change as a result of the scheme are located within approximately 1km of these proposed landscape earthworks. These viewpoints are described in the main ES (Volume 5: Appendix LV-001-016 Part 2).

Future baseline

Construction (2017)

- 3.4.8 The future baseline for construction in 2017 remains unchanged from that reported in the main ES (Volume 2, CFA16, Section 9.3).

Operation (2026)

- 3.4.9 No committed developments have been identified in this local area that will materially alter the baseline conditions in 2026.

Temporary effects arising during construction

Avoidance and mitigation measures

- 3.4.10 The measures that have been incorporated into the draft CoCP to avoid or reduce landscape and visual effects during construction remain as stated in the main ES (Volume 2, CFA16, Section 9.4).

Assessment of impacts and effects

- 3.4.11 As defined in the main ES, this assessment of landscape and visual effects during construction has been based on the activities occurring during the peak construction phase, which is defined as the period during which the main construction works will take place.
- 3.4.12 As is commonplace with major infrastructure works, the scale of the construction activities means that works will be visible in many locations and will have the potential to give rise to significant temporary effects which cannot be mitigated practicably. For further details refer to the main ES (Volume 2, CFA16, Section 9.4).

Landscape assessment

- 3.4.13 The nature of the construction activities undertaken will be very similar to those required for the bund formation in the original scheme. Therefore, the proposed increase to bund crest heights in the vicinity of Ladbroke and Wormleighton will not give rise to a new or different significant landscape effect on the Radbourne Ironstone Fringe LCA and Southam Village Farmlands LCA, and will not change the moderate adverse level of significance of the landscape effects reported in the main ES.

Visual assessment

- 3.4.14 Construction activity for the SES scheme will be similar to the original scheme including plant on haul roads, excavation of cuttings, forming of embankments, road diversions, overbridges and viaducts, as well as bund forming. The difference in the height and form of the bunds will not change the overall scale of construction activity.
- 3.4.15 Therefore, the proposed increase in bund crest heights in the vicinity of Ladbroke and Wormleighton will not give rise to a new or different significant visual effect and will not change the level of significance of the effects on viewpoints reported in the main ES.

Other mitigation measures

- 3.4.16 To further mitigate the significant effects of the scheme, consideration of where planting can be established early in the construction programme will be given during the detailed design stage. This may include consideration of early planting in landscape and ecological mitigation planting sites which would have the additional benefit of providing some visual screening. However, not all landscape and visual effects can be practicably mitigated due to the visibility of construction activity and the sensitivity of surrounding receptors.

Cumulative effects

- 3.4.17 There are no new or different likely cumulative effects for landscape and visual as a result of the SES changes acting in combination with AP1, or as a result of any relevant committed developments.

Summary of likely residual significant effects

- 3.4.18 The proposed change to increase bund crest heights near Ladbroke and Wormleighton will not give rise to any new or different residual significant

construction effect and will not change the level of significance of the effects reported in the main ES.

Permanent effects arising during operation

Avoidance and mitigation measures

- 3.4.19 The SES change to increase bund crest heights near Ladbroke and Wormleighton is a visual mitigation measure and has been designed to integrate with the surrounding landscape.

Assessment of impacts and effects

Landscape assessment

- 3.4.20 The extensive raised earthworks in the main ES were considered to be a partial alteration to the gently undulating landform of the Radbourne Ironstone Fringe LCA. Other changes in this LCA included vegetation loss, introduction of new built form, numerous road realignments, alteration of Windmill Hill and reduced tranquillity, and the main ES assessed the overall changes as resulting in a moderate adverse effect on the LCA in Year 1 of operation. It was not anticipated that this effect would be changed even as planting matures.
- 3.4.21 The extensive cuttings and embankments and localised hedgerow and tree loss in the Southam Village Farmlands LCA were considered in the main ES to be at variance with the existing undulating agricultural landform and vegetation. The medium magnitude of change, assessed alongside the medium sensitivity of the character area, was assessed in the main ES as a moderate adverse effect in year 1 of operation with this declining to non-significant by year 15 due to maturing vegetation.
- 3.4.22 The change of form of the raised earthworks near Ladbroke and Wormleighton will include both increased bund heights and steeper slopes, emphasising the alteration to the undulating landform noted in the main ES. However, the degree of change is not considered to be of sufficient scale within this landscape character context to give rise to a new or different significant effect on the Radbourne Ironstone Fringe or Southam Village Farmlands LCAs.

Visual assessment

- 3.4.23 The increased bund crest heights and steepened slopes near Ladbroke and Wormleighton will provide varying degrees of screening of the railway depending on the height of the bund relative to the viewpoint. For some viewpoints, this will create a slight beneficial difference when compared to the original scheme. However, these modified bunds may be more prominent within views due to their scale and steepness in comparison to those in the original scheme. For some viewpoints, this will create a slight adverse difference when compared to the original scheme. These differences are not sufficient to cause any new or different significant effects or change the level of significance of the visual effects reported in the main ES.

Other mitigation measures

- 3.4.24 The SES scheme incorporates further enhancements to mitigation measures and no further mitigation measures are considered necessary.

Cumulative effects

- 3.4.25 There are no new or different likely cumulative effects for landscape and visual as a result of the SES scheme, or as a result of any relevant committed developments.

Summary of likely residual significant effects

- 3.4.26 The increase in bund crest heights near Wormleighton and Southam does not cause any new or different landscape or visual effects, or change the level of significance of the effects reported in the main ES.

Part 2: Additional Provision 2 Environmental Statement

4 Summary of amendments

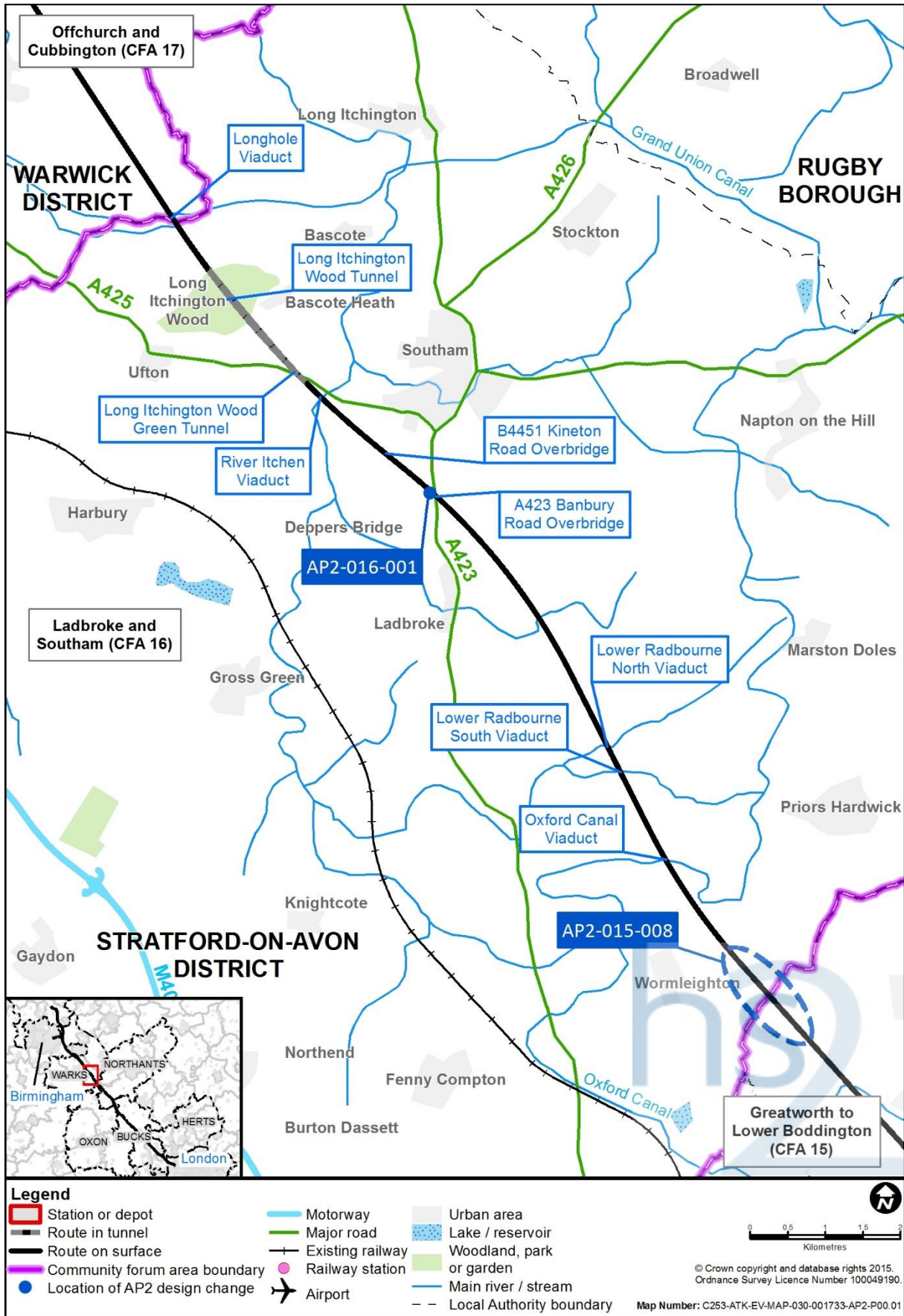
- 4.1.1 Table 3 provides a summary of the amendments in the Ladbroke and Southam CFA (CFA16) and Figure 2 shows the locations.

Table 3: Summary of amendments in CFA16

Name of amendment	Description of the original scheme or AP1 revised scheme	Description of the AP2 revised scheme
<p>Cycleway between Ladbroke and Southam (AP2-016-001)</p>	<p>A permanent 1.5m wide footway along the western verge of the permanently realigned A423 Banbury Road to accommodate realigned Footpath SM33 and the stopped-up section of the SM89. The extent of highway improvement works would be about 1,250m, and at the southern end, include a connection to Footpath SM89.</p> <p>Footpath SM89 to be permanently stopped up and partially stopped-up temporarily during construction.</p>	<p>Permanent provision of a shared use cycleway/footway alongside the realigned A423 Banbury Road, comprising a 2m wide shared use path in place of the originally proposed 1.5m wide footway. The shared use cycleway/footway will be extended at the Southam end to meet the current SM33 route. This amendment has been made to accommodate consented housing development near to this location that includes the upgrade of Footpath SM33 outside of Bill limits to a segregated footway/cycleway. The proposed upgrade to the footpath within the Bill limits area will ensure consistency of the facility provided on Footpath SM33. Additionally, the 1.5m footpath at the southern end near Southam Road will be widened to 2m.</p> <p>Footpath SM89 will be maintained during operation of the AP2 revised scheme, with an extension to be provided to join the existing route to the realigned Banbury Road, including a non-signalised crossing point over the realigned Banbury Road to join SM89 with the combined footway/cycleway. Footpath SM89 will be temporarily stopped up during construction of the AP2 revised scheme.</p> <p>No additional permanent or temporary land will be required.</p>
<p>Reconfiguration of the Warwick Road and Banbury Road junction AP2-015-008</p>	<p>A permanent 1.3km cutting; maintenance loops; and new permanent road realignments between Lower Boddington and Wormleighton. The road arrangements include</p> <ul style="list-style-type: none"> • realignment of approximately 1km of Banbury Road (from Claydon Road) between the existing junction of Wormleighton Road and Stoneton Lane; • junction rearrangements so Banbury Road joins with Wormleighton Road and Warwick Road connects via T-junction into the rearranged Stoneton Lane; • a new Banbury Road/Wormleighton Road overbridge over the HS2 route west of Hill Farm; • provision of an access to Hill Farm from the realigned Stoneton 	<p>The AP2 revised scheme amends the original scheme junction priority at the intersection of Warwick Road and Banbury Road to reflect the dominant traffic movement through the junction. The revised through-route priority is changed from Lower Boddington to Wormleighton, to Upper Boddington to Wormleighton. The amendment comprises the following permanent changes to the original scheme:</p> <ul style="list-style-type: none"> • realignment of Banbury Road to follow the existing alignment closer to the HS2 route between Claydon Road and Warwick Road and connect to Warwick Road. Banbury Road will be upgraded; • altering the Warwick Road/Banbury Road junction to allow priority traffic flow along Warwick Road to continue across the overbridge over the HS2 route and connect to Wormleighton Road; • provision of Stoneton Lane green overbridge, a single span structure

Name of amendment	Description of the original scheme or AP1 revised scheme	Description of the AP2 revised scheme
	<p>Lane, rather than the existing Warwick Road; and</p> <ul style="list-style-type: none"> tree planting will be carried out on both sides of the HS2 route from Culworth Road to the proposed Boddington auto-transformer station south of Wormleighton. 	<p>with an overall length of 150m, across the HS2 route. The originally proposed realignment of Stoneton Lane through Fox Covert (Glyn Davies Wood) will no longer be required, the removal of this realignment will necessitate a temporary diversion of Banbury Road from near the existing junction with Stoneton Lane to near the proposed new permanent junction with Stoneton Lane;</p> <ul style="list-style-type: none"> provision of an access road to Hill Farm from the upgraded Warwick Road; relocation of Boddington ATS closer to Stoneton Lane; additional mitigation planting along the CFA15/CFA16 boundary to the west of the realigned Wormleighton Road/Banbury Road to link into existing hedgerows; removal of the Stoneton Lane link to Banbury Road to the north-east of the proposed route; and alteration of the Banbury Road crossing so it is no longer a green bridge. <p>The proposed change will reduce the area of land permanently required by 2.7ha and temporarily required by 0.8ha compared to the original scheme.</p>

Figure 2: Locations of amendments in CFA16



5 Assessment of amendments

5.1 Cycleway between Ladbroke and Southam (AP2-016-001)

- 5.1.1 The Bill provides for the permanent realignment of the A423 Banbury Road to the west of the existing highway route, including a 1.5m wide footway along the west verge to accommodate the realigned Footpath SM33. The highway improvement works are about 1,250m in length, and include a connection to Footpath SM89 at the southern end (refer to the main ES, Volume 2, CFA16, Map Book, maps CT-06-082 to CT-06-084). Under the original scheme, a section of Footpath SM89 was to be stopped up permanently during operation and temporarily during construction.
- 5.1.2 Since submission of the Bill it has been identified as desirable for provision of a cycleway between Ladbroke and Southam to improve connectivity. This relates to a consented housing development near to this location that includes the upgrade of Footpath SM33 outside of Bill limits to a segregated footway/cycleway. The proposed upgrade to the footpath within the Bill limits will ensure continuation of the facility provided on Footpath SM33.
- 5.1.3 The width of the footway as described in the original scheme (and as assessed in the main ES) will be increased to 2m to accommodate the change from a footway to a shared use cycleway/footway. The length of the shared use cycleway/footway will be extended beyond the end of the highway improvements at the Southam end to meet the current SM33 route.
- 5.1.4 A 2m-wide shared use cycleway/footway will be provided from the limit of the original scheme at the A423 Banbury Road in Ladbroke to the limit of the original scheme at the Southam end of the Footpath SM33 diversion, via the A423 Banbury Road highway diversion. The shared use cycleway/footway will be provided on completion of the A423 Banbury Road realignment works.
- 5.1.5 In addition, Footpath SM89 will be temporarily stopped up during construction and reinstated during operation of the scheme. A permanent extension will be provided to Footpath SM89 to meet the realigned Banbury Road, including a non-signalised crossing point over the realigned Banbury Road to join the combined footway/cycleway.
- 5.1.6 No additional land will be required temporarily or permanently. However, modifications are required to be made to the Bill to implement these changes, hence the need for this amendment. The AP2 revised scheme is shown on maps CT-05-084, CT-05-084-L1, CT-05-085, CT-06-084, CT-06-084-L1 and CT-06-085 in the SES and AP2 ES Volume 2 CFA16 Map Book.
- 5.1.7 The permanent provision of a shared use cycleway/footway and maintaining Footpath SM89 during operation are not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: agriculture, forestry and soils; air quality; community; cultural heritage; ecology; land quality; landscape and visual; socio-economics; sounds, noise and vibration; and water resources and flood risk. However, reassessment was considered to be required in respect of: traffic and transport.

Traffic and transport

Scope, assumptions and limitations

- 5.1.8 The assessment scope, key assumptions and limitations of the traffic and transport assessment are set out in Volume 1, the SMR (Volume 5: Appendix CT-0001-000/1) and the SMR Addendum (Volume 5: Appendix CT-0001-000/2) of the main ES.

Existing baseline

- 5.1.9 The existing baseline is as described in Volume 2, CFA16, Section 12 of the main ES.
- 5.1.10 A survey of non-motorised users of this footpath showed that 23 users, all pedestrians, used footpath SM33, which runs between Ladbroke and Southam.

Future baseline

Construction

- 5.1.11 The future baseline for traffic and transport is as described in the main ES, Volume 2 CFA16, Section 12. There is no change to the future baseline for construction as reported in the main ES.

Operation (2026 and 2041)

- 5.1.12 The future baseline for traffic and transport is set out in the main ES, Volume 2, CFA16, Section 12. There is no change to the future baseline for operation as reported in the main ES.

Effects arising during construction

- 5.1.13 There are no new or different temporary significant effects arising from this amendment.
- 5.1.14 The provision of the cycleway as a shared cycleway/footway will be constructed with the permanent realignment of the A423 as described above and is considered under operation below.

Effects arising from operation

- 5.1.15 The shared cycleway/footway will provide improved facilities for existing cyclists using the A423 resulting in the potential for road safety benefits. This will also encourage additional cycling between Ladbroke and Southam. In addition with this amendment footpath SM89 will be reinstated. There were no significant effects arising from operation of the original scheme reported in the main ES, and even with the improved cycle connectivity and reinstatement of footpath SM89 this will remain the case for the AP2 revised scheme.

Mitigation and residual effects

- 5.1.16 No changes to the mitigation described in the main ES (Volume 2 CFA16, Section 12) are required.
- 5.1.17 There are no new or different significant residual effects as a result of this amendment.

Cumulative effects

- 5.1.18 Cumulative effects are reported in Section 12, Volume 2, CFA16 of the main ES. The assessment includes the cumulative effects of planned development by taking this into account within the background traffic growth. The assessment also considers in combination effects by taking into account traffic and transport movements from nearby areas. However, in this regard there are no impacts from other areas.

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

- 5.2.1 The widening and extension of the footway and conversion to a shared use cycleway/footway and associated changes to footpaths SM89 and SM33 and Banbury Road does not change the significance of the environmental effects or proposed mitigation as set out in the main ES (Volume 2, CFA16 Ladbroke and Southam).

5.3 Reconfiguration of the Warwick Road and Banbury Road junction (AP2-015-008)

- 5.3.1 The Bill provides for:
- a 1.3km cutting; maintenance loops;
 - the permanent realignment of approximately 1km of Banbury Road (from Claydon Road) and Wormleighton Road with alteration of the Banbury Road/Warwick Road junction;
 - a new green overbridge over the HS2 route; and .
 - the permanent realignment of Banbury Road between the existing junction of Wormleighton Road and Stoneton Lane to the east of Wormleighton (as shown in maps, CT-06-079a and CT-06-079b in the main ES Volume 2, CFA15 Map Book and CFA16 Map Book).
- 5.3.2 This AP2 amendment includes changes in both CFA15 (Greatworth to Lower Boddington) and CFA16 (Ladbroke and Southam) and the assessment for receptors in both CFA15 and CFA16 is reported in both CFA Volume 2 reports.
- 5.3.3 Following deposit of the Bill, a requirement has been identified to amend the original scheme junction priority at the intersection of Warwick Road and Banbury Road to reflect the dominant traffic movement through the junction. The revised through-route priority is changed from Lower Boddington to Wormleighton, to Upper Boddington to Wormleighton. This change re-provides the existing through-route and will require additional land outside of Bill limits (see CT-05-079b and CT-06-079b in the SES and AP2 ES Volume 2 Map Book).
- 5.3.4 The amendment involves permanent alteration of the Warwick Road/Banbury Road junction to allow priority traffic flow along Warwick Road across the overbridge passing over the HS2 route and will connect to Wormleighton Road. The changes are as follows:
- Banbury Road will follow its current alignment closer to the HS2 route

between Claydon Road and Warwick Road and connect to Warwick Road; and

- an access road to Hill Farm from Warwick Road will be provided.

- 5.3.5 The diversion of Stoneton Lane will be rerouted from its original scheme location on the north-east side of the HS2 route, to cross Boddington cutting on a green highway bridge perpendicular to a junction with Banbury Road to the south-west of the cutting. This overbridge (Stoneton Lane green overbridge) will comprise a single span structure with an overall length of 150m across the HS2 route.
- 5.3.6 The original highway realignment of Stoneton Lane is no longer required. Banbury Road overbridge was a green bridge in the original scheme and will now be a standard highway overbridge as habitat connectivity will now be provided across the cutting by the Stoneton Lane green overbridge.
- 5.3.7 The removal of the Stoneton Lane diversion through Fox Covert (Glyn Davies Wood) will necessitate a temporary diversion of Banbury Road during construction. The temporary diversion will comprise the realignment of Banbury Road from near the existing junction of Banbury Road with Stoneton Lane to near the proposed new permanent junction of Banbury Road with Stoneton Lane.
- 5.3.8 The Boddington ATS will be located closer to Stoneton Lane. Additional mitigation planting will be included along the CFA15/16 boundary west of the realigned Wormleighton/Banbury Road to improve connectivity of hedgerows.
- 5.3.9 This amendment will reduce the area of land permanently required by 2.7ha and the area of land temporarily required by 0.8ha compared to the original scheme.
- 5.3.10 The works are currently planned to start in 2018 and are expected to take approximately four years and 10 months to complete.
- 5.3.11 This amendment is not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: air quality; land quality; socio-economics; sound, noise and vibration; and water resources and flood risk assessment. However, reassessment is considered to be required in respect of: agriculture, forestry and soils; community; cultural heritage; ecology; landscape and visual; and traffic and transport.

Agriculture, forestry and soils

- 5.3.12 There are no new or different significant effects on holdings or best and most versatile agricultural land in CFA16 as a result of the proposed amendment. Assessment of new or different significant effects on holdings and best and most versatile agricultural land in CFA15 is reported in the SES and AP2 ES Volume 2 CFA15 document.

Community

- 5.3.13 There are no new or different significant community effects in CFA16 as a result of the proposed amendment. Assessment of new or different significant community effects in CFA15 is reported in the SES and AP2 ES Volume 2 CFA15 document.

Cultural heritage

- 5.3.14 There are no new or different significant cultural heritage effects in CFA16 as a result of the proposed amendment. Assessment of new or different significant cultural heritage effects in CFA15 is reported in the SES and AP2 ES Volume 2 CFA15 document.

Ecology

Scope, assumptions and limitations

- 5.3.15 The assessment scope for ecology is as set out in Volume 1 of the SES and AP2 ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/01) and the SMR Addendum (Volume 5: Appendix CT-001-000/02) of the main ES.
- 5.3.16 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported in the main ES, Volume 5: Appendix CT-001-000/2. 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 AP2 revised scheme.

Existing baseline

- 5.3.17 The ecological baseline of the land required for the AP2 revised scheme has been based on field data collated for the main ES, aerial photography and relevant existing information gathered from national organisations and from regional and local sources including: Northamptonshire Wildlife Trust; Northamptonshire Biodiversity Records Centre; Northamptonshire Bat Group; Warwickshire County Council (Warwickshire Biological Records Centre) and Warwickshire Wildlife Trust.
- 5.3.18 The assessment also takes into account additional survey work for bats and great crested newt undertaken from September 2013 to September 2014 in CFA15 and from April 2014 to September 2014 in CFA16.
- 5.3.19 A summary of the baseline information relevant to the assessment of the AP2 revised scheme is provided below. This takes account of any new or updated baseline information provided in SES and AP2 ES Volume 5: Appendix EC-001-002 and SES and AP2 Volume 5: Appendix EC-001-003. For those receptors described in the main ES, further details are provided in Volume 2, CFA16, Section 7 and CFA15, Section 7.3 and in Volume 5, including maps EC-01 to EC-12.

Designated sites

- 5.3.20 As reported in the SES, since the main ES, Fox Covert (Glyn Davies Wood) in CFA15 has been identified as ancient woodland and is likely to be included on the ancient woodland inventory. The woodland is located 85m east of the Stoneton Lane realignment and green overbridge.
- 5.3.21 There are no designated sites within 500m of the AP2 revised scheme within CFA16. Statutory and non-statutory designated sites in CFA15 are described in the main ES,

Volume 2, CFA15, Section 7 and are shown on maps EC-01-035b to EC-01-041a, Volume 5, Map Book Ecology.

Habitats

- 5.3.22 The land required for the Stoneton Lane realignment and the Stoneton Lane green overbridge within CFA15 comprises primarily arable land of negligible ecological value. A small area of Fox Covert (Glyn Davies Wood) is also required. This woodland is likely to be added to the ancient woodland inventory and is assumed to be ancient for the purposes of this assessment. It has been valued as being of county/metropolitan value since the main ES (see the SES, Section 3.3 in Part 1 of this document). Where the overbridge joins the realigned Wormleighton Road (to be realigned as part of the original scheme) there is a small area of broadleaved trees of local/parish value. There are a five water bodies within 250m of this area including one pond within Fox Covert (Glyn Davies Wood). No ponds will be lost as a result of the AP2 revised scheme. Within CFA16, land required for the Stoneton Lane realignment and overbridge comprises primarily arable land of negligible value and roadside and field boundary hedges of local/parish value.
- 5.3.23 The land required for the Warwick Road/Banbury Road realignment within CFA15 comprises primarily arable land of negligible value. Sections of hedgerow will be lost at Hill Farm, to the north and south of Banbury Road and to the north and south of Warwick Road. There are three water bodies within 250m of this area, two ponds and one ditch. No ponds will be lost as a result of the amendment.
- 5.3.24 For CFA15, habitats surrounding the land required for the AP2 revised scheme are described in the main ES, Volume 2, CFA15, Section 7 and are shown on maps EC-02-35b to EC-02-41a, Volume 5, Map Book Ecology. For CFA16, they are described in Volume 2, CFA16, Section 7 and are shown on maps EC-02-040b to EC-02-044a, Volume 5, Map Book Ecology.

Protected and/or notable species

- 5.3.25 The main ES for CFA15 identified three bat populations/assemblages which may be utilising the habitats in and around the land required for the amendment:
- a noctule bat population comprising a maternity roost within Fox Covert (Glyn Davies Wood) which is part of a population reported in the main ES as being of county/metropolitan value;
 - a common pipistrelle bat roost (likely a summer/transient roost) is located within Fox Covert (Glyn Davies Wood) and is part of a population of local/parish value; and
 - low to moderate levels of commuting and foraging brown long-eared bats were recorded within and around Fox Covert (Glyn Davies Wood). This activity is associated with a population that is reported to be of local/parish value in the main ES.
- 5.3.26 Bat surveys undertaken in CFA16 since the main ES have identified a new confirmed transitional or day pipistrelle bat roost in a barn at Church Farm to the north-east of Wormleighton, within the land required for construction of the original scheme. In

addition, trees with high and moderate potential to support bat roosts were identified during 2014 survey work. Both the barn and trees are part of habitat used by an assemblage described in the main ES as the bat assemblage associated with roosting, foraging and commuting habitat around Stoneton and Wormleighton. The assemblage was reported in the main as being of district/borough value.

- 5.3.27 The land required for the AP2 revised scheme is likely to contain suitable reptile habitat along arable field margins. The main ES reports assumed populations of common reptile species are of local/parish value.
- 5.3.28 Breeding willow tits in Fox Covert (Glyn Davies Wood) are reported in the main ES as being of county/metropolitan value, as numbers recorded represent more than 1% of the county population. The willow tits may utilise the land required for the amendment for foraging.
- 5.3.29 The badger population in the area is of local/parish value as reported in the main ES.

Future baseline

Construction (2017)

- 5.3.30 The future baseline for construction in 2017 remains unchanged from that reported in the main ES (Volume 2, CFA16 and CFA15, Section 7.3).

Operation (2026)

- 5.3.31 The future baseline for operation in 2026 remains unchanged from that reported in the main ES (Volume 2, CFA16 and CFA15, Section 7.3).

Effects arising during construction

Avoidance and mitigation measures

- 5.3.32 The assessment assumes implementation of the measures set out within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES), which includes translocation of protected species where appropriate.

Designated sites

- 5.3.33 There will be no change to the effects on designated sites during construction reported in Volume 2, CFA15 or CFA16 of the main ES.

Habitats

- 5.3.34 The SES reports a loss of woodland at Fox Covert (Glyn Davies Wood) for the scheme, which will result in a permanent adverse effect which is significant at county/metropolitan level. The AP2 revised scheme reduces the total habitat loss within Fox Covert (Glyn Davies Wood), by 0.6ha to approximately 1.2ha. The AP2 revised scheme will give rise to a different significant effect, but this does not change the level of significance of the effects reported in the SES.
- 5.3.35 The AP2 revised scheme will result in the loss of arable land, improved grassland and roadside and field boundary hedgerows. The overall amount of habitat lost is similar to that lost as a result of the original scheme. The AP2 revised scheme will not give rise

to any new or different effects and will not change the level of significant effects on these habitats reported in the main ES..

- 5.3.36 It is unlikely that the AP2 revised scheme will result in any additional effects on habitats of relevance at more than the local/parish level. Additional local/parish level effects to those identified in the main ES amended by the SES arising from survey data collected since the main ES are listed in Volume 5: Appendix EC-005-002, ES 3.5.2.7-15.5.

Species

- 5.3.37 The main ES reports that construction of the original scheme would result in the loss of the noctule maternity roost in Fox Covert (Glyn Davies Wood), which would result in a permanent adverse effect significant at county/metropolitan level. The AP2 revised scheme would result in a reduction in the area of habitat loss from the woodland, however this will not give rise to any new or different significant effects or change the significant effects reported in the main ES, as the roost will still be lost.
- 5.3.38 The main ES reports there would be no significant effects on the common pipistrelle and brown long-eared populations using Fox Covert (Glyn Davies Wood). The common pipistrelle roost will be retained, and the AP2 revised scheme will result in a reduced area of habitat loss within the woodland for those pipistrelles utilising the roost, and for foraging and commuting brown long-eared bats. The reduction in habitat loss will increase the overall remaining habitat available for foraging and will maintain habitat connectivity to the north towards Berryhill Plantation and Lodge Spinney. Overall, the amendment will not give rise to any new or different significant effects and will not change the effects reported in the main ES.
- 5.3.39 The effects on the bat assemblage associated with roosting, foraging and commuting habitat around Stoneton and Wormleighton of the loss of trees with high and moderate potential to support rarer bat roosts, as a result of the original scheme, is of significance at a district/borough level. The AP2 revised scheme will not result in any new or different significant effects.
- 5.3.40 The main ES reports the construction of the original scheme would remove the pond containing great crested newts and surrounding woodland within Fox Covert (Glyn Davies Wood). These impacts would result in a permanent adverse effect on the conservation status of the great crested newt population at Fox Covert (Glyn Davies Wood) that would be significant at a district/borough level. The AP2 revised scheme will reduce the amount of terrestrial habitat loss from the woodland by 0.7ha. This represents a different significant effect. However, the level of significance of effects is unchanged from those reported in the main ES.
- 5.3.41 It is unlikely that the AP2 revised scheme will result in any additional effects (i.e. in addition to those identified in the main ES as amended by the SES) on species of relevance at more than the local/parish level. Additional local/parish level effects arising from survey data collected since the main ES are listed in Volume 5: Appendix EC-005-002, ES 3.5.2.7-15.5.

Cumulative effects

- 5.3.42 There are no new or different likely cumulative effects for ecology as a result of the AP2 revised scheme acting in combination with another amendment in AP2 or any relevant committed development.

Mitigation and residual effects

Other mitigation measures

- 5.3.43 No additional mitigation is required as a result of the AP2 amendment. The mitigation described for the SES scheme in Part 1 remains sufficient in extent. The revised SES scheme identifies that Fox Covert (Glyn Davies Wood) is likely to be ancient woodland, and the AP2 amendment reduces the extent of woodland loss by 0.6ha, to 1.2ha. A reduction in the area of mitigation is not required as the ecological value of the woodland has increased on the basis that it is likely to be ancient woodland. Woodland soils will be translocated to a single area adjacent to Fox Covert (Glyn Davies Wood). This was reported in the SES as compensation areas on either side of the realigned Stoneton Lane as proposed by the original scheme; however the realignment is rerouted by this amendment, so the area of compensation is consolidated into one area.

Summary of likely residual effects

- 5.3.44 The SES reports a loss of woodland at Fox Covert (Glyn Davies Wood) for the scheme, which will result in a permanent adverse effect which is significant at county/metropolitan level. The AP2 revised scheme reduces the total habitat loss within Fox Covert (Glyn Davies Wood), by 0.6ha to approximately 1.2ha. The AP2 revised scheme will give rise to a different significant effect, but this does not change the level of significance of the effects reported in the SES.
- 5.3.45 Ancient woodland is an irreplaceable resource and as such the AP2 revised scheme will give rise to a different (reduced) permanent residual effect on ancient woodland at Fox Covert (Glyn Davies Wood) that is significant at county/metropolitan level. This does not change the level of significance of the effects reported in the SES.
- 5.3.46 With the implementation of the mitigation measures proposed in the SES, the other different ecological effects arising from the AP2 revised scheme are reduced to a level where they are not significant. The other significant effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES and SES.

Effects arising from operation

- 5.3.47 There are no new or different operational effects for ecology as a result of the AP2 revised scheme.

Landscape and visual assessment

- 5.3.48 There are no new or different significant landscape and visual effects in CFA16 as a result of the proposed amendment. Assessment of new or different significant landscape and visual effects in CFA15 is reported in the SES and AP2 ES Volume 2 CFA15 document.

Traffic and transport

- 5.3.49 The assessment scope, key assumptions and limitations of the traffic and transport assessment are set out in Volume 1, the SMR (Volume 5: Appendix CT-0001-000/1) and the SMR Addendum (Volume 5: Appendix CT-0001-000/2) of the main ES.

Existing baseline

- 5.3.50 The existing baseline is as described in the main ES Volume 2 CFA15 and CFA16.

Future baseline

Construction

- 5.3.51 The future baseline for construction remains unchanged from that reported in the main ES (Volume 2, CFA16 and CFA15, Section 12.3).

Operation (2026 and 2041)

- 5.3.52 The future 2026 and 2041 baselines for operation remains unchanged from that reported in the main ES (Volume 2, CFA16 and CFA15, Section 12.3).

Effects arising during construction

- 5.3.53 The main ES reported that there would be overnight and/or weekend closures on Wormleighton Road and Stoneton Lane in CFA16. The effects of these off peak closures on traffic flows and delays to vehicle occupants, in terms of the diversions and traffic congestion, were not found to be significant. This is unchanged with the AP2 revised scheme.
- 5.3.54 The main ES reported no significant effects in CFA16 or CFA15 during construction of the original scheme, relevant to this amendment and this remains unchanged with the AP2 revised scheme.

Effects arising from operation

- 5.3.55 The AP2 revised scheme changes do not create any new or different significant effects in comparison to either the existing road layout or the original scheme. The AP2 revised scheme has operational advantages since Warwick Road has higher traffic flows than Banbury Road to the south, but this is not significant.
- 5.3.56 There were no significant effects arising from the road realignments identified in the main ES and this remains the same with the AP2 revised scheme.

Mitigation and residual effects

- 5.3.57 No changes to mitigation are required in addition to those described in the main ES (Volume 2 CFA15 and CFA16, Chapter 12). There are no new or different residual significant effects as a result of the proposed amendment.

Cumulative effects

- 5.3.58 As reported in Volume 2, CFA15 and CFA16 of the main ES, the assessment includes the cumulative effects of planned development during construction and operation by taking account of background traffic growth. The assessment also includes in-

combination effects by taking into account traffic and transport impacts of works being undertaken in neighbouring areas. The above assessment has taken account of these cumulative effects.

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

- 5.4.1 The reconfiguration of the Warwick Road and Banbury Road junction and associated changes will give rise to a different (reduced) permanent residual effect on ancient woodland at Fox Covert (Glyn Davies Wood) that is significant at county/metropolitan level. This does not change the level of significance of the effects reported in the SES.
- 5.4.2 The reconfiguration of the Warwick Road and Banbury Road junction and associated changes do not change the significance of the environmental effects or proposed mitigation as set out in the main ES (Volume 2, CFA16 Ladbroke and Southam) for agriculture, forestry and soils; cultural heritage; landscape and visual; and traffic and transport.
- 5.4.3 A summary of new or different significant effects and mitigation in CFA15 as a result of the reconfiguration of the Warwick Road and Banbury Road junction and associated changes is provided in the SES and AP2 ES Volume 2 CFA15 document.

6 Combined effects of amendments in this CFA due to changes in traffic flows

- 6.1.1 All of the effects of the changes proposed in this CFA have been described above and there are no further combined effects to report.

High Speed Two (HS2) Limited

One Canada Square
London E14 5AB

T 020 7944 4908

E hs2enquiries@hs2.org.uk

X22