

# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

## Supplementary Environmental Statement and Additional Provision 2 Environmental Statement

Volume 2 | Community forum area report

CFA18 | Stoneleigh, Kenilworth and Burton Green

July 2015

SES and AP2 ES 3.2.1.18



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**AECOM**

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**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](mailto:HS2enquiries@hs2.org.uk)

Website: [www.gov.uk/hs2](http://www.gov.uk/hs2)

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# Contents

<b>Structure of the HS2 Supplementary Environmental Statement and Additional Provision 2 Environmental Statement</b>	<b>1</b>
<b>Structure of this report</b>	<b>3</b>
<b>1 Introduction</b>	<b>5</b>
<b>Part 1: Supplementary Environmental Statement</b>	<b>7</b>
<b>2 Summary of changes</b>	<b>7</b>
2.1 New environmental baseline information	7
2.2 Changes to the design or construction assumptions not requiring a change to the Bill	8
2.3 Corrections to the main ES	11
2.4 Topics included in the SES assessment	15
<b>3 Assessment of changes</b>	<b>16</b>
3.1 Agriculture, forestry and soils	16
3.2 Community	18
3.3 Cultural heritage	22
3.4 Ecology	26
3.5 Sound, noise and vibration	31
<b>Part 2: Additional Provision 2 Environmental Statement</b>	<b>35</b>
<b>4 Summary of amendments</b>	<b>35</b>
<b>5 Assessment of amendments</b>	<b>42</b>
5.1 Relocation of the Footpath K29 overbridge in the vicinity of Kingswood Farm House, (AP2-018-001)	42
5.2 Relocation of the woodland habitat creation area in the vicinity of Kingswood Farm House (AP2-018-002)	42
5.3 Summary of new or different likely residual significant effects as a result of the amendment	52
5.4 Revision to gradient and construction phasing of eastern approach to Bridleway W164 overbridge (AP-018-003)	52
5.5 Summary of new or different likely residual significant effects as a result of the amendment	64

5.6	Burton Green area amendment (AP2-018-004)	64
5.7	Summary of new or different likely residual significant effects as a result of the amendment	106
<b>6</b>	<b>Combined effects of amendments in this CFA due to changes in traffic flows</b>	<b>108</b>

#### List of figures

Figure 1:	Locations of design changes not requiring a change to the Bill in CFA18	9
Figure 2:	Locations of amendments in CFA18	41

#### List of tables

Table 1:	Summary of changes to the design or construction assumptions not requiring a change to the Bill in CFA18	8
Table 2:	Summary of corrections to the main ES in CFA18	12
Table 3:	Summary of amendments in CFA18	36
Table 4:	Assets in the vicinity of Burton Green area amendment AP2-018-004	83
Table 5:	Assessment of construction noise at residential receptors and non-residential receptors	98

# 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 the 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 and 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 design change assessed within the SES is the revised location of the replacement Burton Green village hall.
- 1.1.5 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.
- 1.1.6 The purpose of the SES is to provide an assessment of any new or different likely significant environmental effects arising from the changes described.
- 1.1.7 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.
- 1.1.8 The amendments assessed within AP2 ES include:
- modifications to the Burton Green 'green' tunnel, including changes to its vertical alignment and an increase in length as it passes through Burton Green;
  - changes to the locations of temporary diversions or permanent realignments of roads and public rights of way (PRoWs); and
  - the provision of additional or alternative mitigation, such as landscape planting and habitat creation areas.
- 1.1.9 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.

- 1.1.10 The standard measures that will be used to mitigate likely significant adverse environmental effects during construction and operation of the scheme are described in the main ES, Volume 1, Section 9 and the draft Code of Construction Practice (CoCP) submitted in support of the Bill. Implementation of these measures has been assumed in this SES and AP2 ES.
- 1.1.11 It should be noted that, since submission of the Bill, the scheme design has been revised by SES design changes, amendments described in the AP1 ES (AP1 amendments) and amendments described in the AP2 ES (AP2 amendments).
- 1.1.12 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 AP1 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 surveys have been undertaken in the Stoneleigh, Kenilworth and Burton Green area (CFA18) 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 the Woodland Trust believe to be ancient woodland that are not currently listed on the ancient woodland inventory.

2.1.2 Details of work undertaken in this CFA since production of the main ES (September 2013) are provided in SES and AP2 Volume 5: Appendix CH-002-018, Appendix CH-003-018, Appendix CH-004-018 and Volume 5 map series CH-01; CH-02 and CH-03, where this is relevant to the assessment of a new or different significant effect.

2.1.3 A summary of the supplementary cultural heritage information from these sources that is relevant to the SES assessment is provided in Section 3 under 'Cultural heritage'.

#### Ecology

2.1.4 Surveys for bats, great crested newt and hazel dormouse have been undertaken in this area since September 2013. In addition, habitat surveys have been undertaken at selected woodland locations to assist in determining if these areas represent ancient woodland.

2.1.5 Details of all survey work and desk-study information gathered since September 2013 which is relevant to this area is provided in SES and AP2 Volume 5: Appendix EC-001-003 and Volume 5 map series EC-04, EC-05 and EC-12.

2.1.6 A summary of the supplementary ecological information that is relevant to the SES assessment is included within Section 3.4 under 'Ecology'. This includes details of all changes relating to the status of ancient woodland.

2.1.7 SES and AP2 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 Volume 5: Appendix EC-003-003 identified additional local/parish level effects which occur as a consequence of SES changes but are not significant.

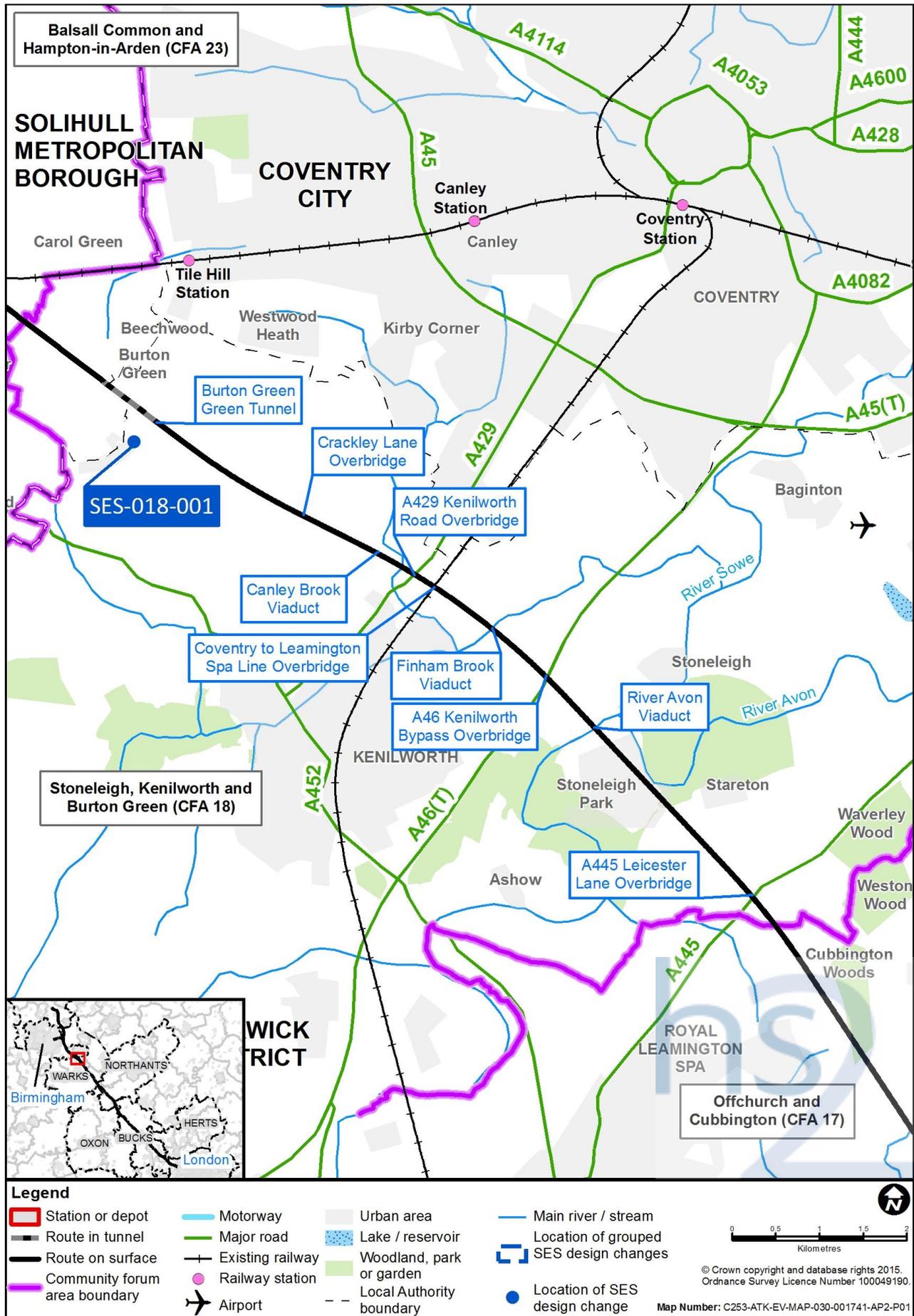
## 2.2 Changes to the design or construction assumptions not requiring a change to the Bill

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 will result in new or different significant effects in the Stoneleigh, Kenilworth and Burton Green CFA (CFA18). Figure 1 shows the locations.

Table 1: Summary of changes to the design or construction assumptions not requiring a change to the Bill in CFA18

Name of design change or construction assumption	Description of the original scheme	Description of the SES scheme
Revised location of replacement Burton Green village hall  (SES-018-001)	Demolition of the existing Burton Green village hall at Hodgett's Lane. The Bill makes provision for a replacement hall on land adjacent to the Burton Green Church of England Primary School at Hob Lane.	A revised location is proposed for a replacement village hall on land at Red Lane, Burton Green.  The site now being considered is included within the limits of land required for the AP1 revised scheme as part of an earlier amendment (AP1-018-030 entitled 'Land to facilitate pipeline diversion adjacent to Burton Green 'green tunnel')

Figure 1: Locations of design changes not requiring a change to the Bill in CFA18



## Description of changes to the design or construction assumptions

### *Relocation of replacement Burton Green village hall (SES-018-001)*

- 2.2.2 The Bill provides for works which necessitate the demolition of the Burton Green village hall, which is currently situated at Hodgett's Lane, Burton Green. The main ES assessed the loss of this facility as giving rise to a major adverse community effect. To mitigate this significant effect, the Bill made provision to acquire an area of land adjacent to the Church of England primary school at Hob Lane, on which a replacement facility could be provided (refer to main ES map CT-05-099, H10, in the main ES, Volume 2, CFA18 map book).
- 2.2.3 Since submission of the Bill, consideration has been given to a number of changes at Burton Green. Whilst demolition of the current village hall continues to be unavoidable, an alternative location for the replacement hall has been identified to address concerns expressed about the suitability of the site originally proposed at Hob Lane. Land has been identified as part of the SES scheme at Red Lane, Burton Green for the replacement of the hall instead of land at Hob Lane (refer to map CT-05-099, grid reference H8, in the SES and AP2 ES, Volume 2, CFA18 map book). The land at Hob Lane will no longer be required and can continue to be available for the primary school.
- 2.2.4 The site now identified is situated on the east side of Red Lane, close to the junction between Red Lane, Cromwell Lane and Hob Lane. The site is bounded to the north by residential properties, by Red Lane to the west and to the east by a new area of landscaping to be provided as part of the SES scheme. A further strip of proposed landscaping abuts the site to the south, beyond which lie the grounds of 'Le Van', a mobile home/caravan park and the Two Oaks Day Nursery further south.
- 2.2.5 The land identified for the replacement village hall has already been included within the Bill limits as part of an amendment published in the AP1 revised scheme. The AP1 amendment (AP1-018-030 – Land to facilitate pipeline diversion adjacent to Burton Green green tunnel) requires the land to provide sufficient working space for the assembly and testing of pipework required for the diversion of a nearby fuel pipeline. The AP1 ES reported that this land would be restored to its former use following the pipeline works but as part of the AP2 revised scheme it will be required permanently for the replacement village hall.
- 2.2.6 It is anticipated that construction works for the Burton Green green tunnel will commence following completion of the fuel pipeline diversion works. Works will commence at the southern end of the proposed tunnel at Burton Green, progressing in a northerly direction. This phasing of the works will allow for the replacement hall to be built and made available for use ahead of the demolition of the existing facility at Hodgett's Lane. This will avoid the need for any temporary loss of use during the construction period. Where required, temporary noise barriers will be provided around the boundary of the construction works for the green tunnel, which once the hall becomes operational, will provide mitigation for users of the facility whilst construction works for the scheme continue nearby.
- 2.2.7 Although not forming part of the original scheme, the proposed replacement village hall will now be constructed as part of the SES scheme. The replacement village hall will be a single storey building, similar to the existing hall, but will be sized as

appropriate to comply with modern building standards. The site will also include parking facilities, a children's play area and suitable landscape planting at the boundary of the site.

## **2.3 Corrections to the main ES**

- 2.3.1 Since submission of the Bill, the need for a number of corrections in the contents of the main ES has been identified. Table 2 provides a list of those instances where there has been a need to correct the Volume 2 CFA18 report for Stoneleigh, Kenilworth and Burton Green 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 CFA18

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
Agriculture Volume 2, CFA18 report, Table 12	Correction to the amount of land reported as required permanently from Land south of Hodgett's Lane (CFA18/26).	Last row of Table 12 reads as:  CFA18/26 land required 0.2ha – 22%	Last row of Table 12 to read as:  CFA18/26 land required 0.6ha – 72%	No change to significance of effect (moderate adverse).
Community Volume 2, CFA18 report, paragraph 5.4.19.	Corrections to reporting of temporary amenity effects on residential properties at Cromwell Lane arising during construction.	Paragraph 5.4.19 1st sentence reads as:  At Cromwell Lane, in the centre of the village, a group of 14 residential properties either side of the tunnel construction area and works to reconstruct the Cromwell Lane bridge are likely to be affected by a combination of significant noise and/or vibration and visual effects.  The properties that are likely to be affected by a combination of significant amenity effects are nos. 293-301 (odd numbers) and no. 402, which are situated to the north of the Proposed Scheme; and nos. 307-323 (odd numbers) which are situated to the south of the Proposed Scheme.	Paragraph 5.4.19 1st sentence to read as:  At Cromwell Lane, in the centre of the village, a group of 22 residential properties either side of the tunnel construction area and works to reconstruct the Cromwell Lane bridge are likely to be affected by a combination of significant noise and/or vibration and visual effects.  The properties that are likely to be affected by a combination of significant amenity effects are nos. 279-301 (odd numbers) and no. 402, which are situated to the north of the Proposed Scheme; and nos. 307-327 (odd numbers) which are situated to the south of the Proposed Scheme.	No change to significance of major adverse effects at Cromwell Lane, however the correction increases the total number of properties likely to be affected temporarily by a change in amenity during construction of the original scheme.  The AP2 revised scheme will avoid a combination of significant amenity effects on some of these additional properties. Refer to AP2, Part 2 of this ES (Section 5.4, AP2-018-004).
Community Volume 2, CFA18 report, paragraph 5.4.37.	To correct the assessment to take account of a significant indirect noise effect at Waste Lane (from construction traffic noise) reported in the main ES, Sound, noise and vibration assessment, not previously taken into account in the community assessment.	Paragraph 5.4.37, from 2nd sentence reads as:  During construction, a group of 16 residential properties at the B4101 Waste Lane on either side of the Proposed Scheme are likely to be affected by a combination of visual effects together with significant	Paragraph 5.4.37 from 2nd sentence to read as:  During construction, a group of 9 residential properties to the west of the Proposed Scheme on the B4101 Waste Lane are likely to be affected by a combination of significant indirect noise and HGV construction traffic	Removal of a major adverse significant residual effect for properties to the east of the B4101 Waste Lane.  New major adverse significant residual effect on properties on the west of B4101 Waste Lane.

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
	<p>In addition, to amend the assessment to take account of subsequent confirmation that there would be no significant construction traffic flows along that section of Waste Lane east of the scheme as reported in paragraph 12.4.17 of the Volume 2 CFA18 report in the main ES.</p> <p>The properties previously reported as being affected were situated predominantly to the east of the scheme. Those now identified as being affected are located on the west of the scheme. These properties would be affected by a different combination of amenity effects.</p>	<p>increase in HGV construction traffic using the road. The works, which include the construction of the B4101 Waste Lane overbridge, the formation of a temporary route for the Kenilworth Greenway together with the operation of a satellite construction compound on the west side of the Proposed Scheme are expected to last for at least 12 months. During this time, the combination of significant visual and HGV traffic effects will give rise to a major adverse effect on the amenity of residents in this area. Properties at Waste Lane that are likely to be affected by a combination of significant amenity effects include: Little Beanit Farm, Squirrels Jump, Field House, Fairways, Batavia House, Almond House, Gillingwood, Brendon Cottage, Saddlestones, Braeburn, Castlemorton, Burnley Gap, Brentwood, Fieldgate, Silver Birches and Old Hall.</p>	<p>effects. The works, which include construction of the B4101 Waste Lane overbridge, the formation of a temporary route for the Kenilworth Greenway together with the operation of a satellite construction compound and roadhead, are expected to last for at least 12 months. During this time, the combination of a significant indirect noise effect and increased heavy goods vehicles (HGV) construction traffic will give rise to a major adverse effect on the amenity of residents in this area. The properties at Waste Lane that are likely to be affected by a combination of significant amenity effects include: Little Beanit Farm, Maple Field House, High Close, Longacre, Troutbeck, Netherfield, Wayside, Dragonflies and The Cottage.</p>	<p>Overall there will be a reduction in the number of properties likely to be affected.</p> <p>No further mitigation has been identified.</p>
<p>Community Volume 2, CFA18 report, paragraph 5.5.5</p>	<p>Correction to the reporting of operational amenity effects on properties at Hodgett's Lane. The reference to Hodgett's Lane should be deleted from paragraph 5.5.5, as there would be no combined significant amenity effects on these properties during operation of the original scheme.</p>	<p>Paragraph 5.5.5 reads as:  The amenity for the residents of nine residential properties at Red Lane and 10 dwellings at Hodgett's Lane will be affected permanently by the location, views and expected noise arising from the operation of the Proposed Scheme.</p>	<p>Paragraph 5.5.5 to read as;  The amenity for the residents of nine properties at Red Lane will be affected permanently by the location, views and expected noise arising from the operation of the Proposed Scheme.</p>	<p>The residual effect summary section in the main ES incorrectly identified a significant residual effect on Hodgett's Lane.</p>

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
<p>Sound, noise and vibration</p> <p>Volume 2 CFA 18 Report, paragraph 11.3.14.</p>	<p>The assessment of indirect (construction traffic) noise effects on properties on Waste Lane in the main ES incorrectly reported the HGV construction traffic route (it was reported assuming construction traffic along the length of Waste Lane as opposed to construction traffic only running between Windmill Lane/Kelsey Lane junction and the B4101 Waste Lane overbridge satellite compound).</p> <p>As a result, the number of properties subject to an adverse noise effect was overstated.</p>	<p>Construction traffic is likely to cause adverse noise effects on residential receptors on Waste Lane located immediately adjacent to the road (CSV18-Co4). Properties are forecast to experience an increase in outdoor noise levels of around 3dB during the peak months (further information on traffic flows is provided in Section 12 of Volume 2: Traffic and Transport).</p>	<p>Construction traffic is likely to cause adverse noise effects on residential receptors between Windmill Lane/Kelsey Lane junction and the B4101 Waste Lane overbridge satellite compound on Waste Lane located immediately adjacent to the road (CSV18-Co4). Properties are forecast to experience an increase in outdoor noise levels of around 3dB during the peak months (further information on traffic flows is provided in Section 12 of Volume 2: Traffic and Transport).</p>	<p>Yes.</p> <p>This correction results in a reduction in the number of dwellings included in the significant effect (number CSV18-Co4) from approximately 20 to approximately 10.</p> <p>Mitigation is as described in the main ES.</p>

## **2.4 Topics included in the SES assessment**

- 2.4.1 The changes described above in Sections 2.1 to 2.3 result in new and different significant effects in respect of: agriculture, forestry and soils; community; and sound, noise and vibration. These are described in Section 3.
- 2.4.2 Supplementary cultural heritage and ecological information relevant to this assessment is also described in Section 3.

## 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 as a result of the changes described in Section 2 compared to the original 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 revised location of the replacement Burton Green village hall (SES-018-001) is of relevance to the scope of the agriculture, forestry and soils topic assessment.

#### Environmental baseline

##### *Existing baseline*

- 3.1.4 The site of this proposed amendment (SES-18-001) is underlain by bedrock of the Tile Hill Mudstone Formation (mudstones with subordinate sandstones and rare lenses of conglomerate). There are no superficial deposits covering the bedrock at this location.
- 3.1.5 The characteristics of the soils are described by the Soil Survey of England and Wales<sup>1</sup> and shown on the National Soil Map<sup>2</sup>. The soils are grouped into associations of a range of soil types.
- 3.1.6 Immediately to the east, the soils developed over mudstone belong to the Whimple 2 association. This association consists of reddish clay loam over clay with slowly permeable subsoils and slight seasonal waterlogging (WC II), becoming wetter on higher ground in the west (WC III); locally, reddish sandy loam soils over sand or soft sandstone are well drained (WC I). The quality of agricultural land at the site of the proposed amendment is Subgrade 3a.
- 3.1.7 It is proposed to revise the location of the replacement Burton Green village hall to a 2.5ha parcel of agricultural land, referred to as 'Land to the North of Red Lane' (CFA18/23). The land is used for arable production and it is assessed as being of medium sensitivity.

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

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

### *Future baseline*

#### **Construction (2017)**

- 3.1.8 No committed developments have been identified in this area that will materially alter the baseline conditions for construction.
- 3.1.9 Most existing environmental stewardship agreements will expire in 2015 and be replaced by a new environmental land management scheme (countryside stewardship) which is voluntary but competitive. It is more targeted than previous schemes, with its priorities being to protect and enhance biodiversity and water quality.
- 3.1.10 The widespread basic environmental management associated with entry level stewardship will be replaced effectively 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 fundamentally change the baseline circumstances described.

#### **Operation (2026)**

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

### **Effects arising during construction**

#### *Avoidance and mitigation measures*

- 3.1.12 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 (Volume 5: Appendix CT-003-000).

#### *Assessment of impacts and effects*

#### **Temporary effects**

- 3.1.13 As no additional land is required temporarily, the SES scheme will not change the level of significance of the effects on the best and most versatile (BMV) agricultural land reported in the main ES or the AP1 ES.
- 3.1.14 The main ES determined a significant, major/moderate adverse effect on CFA18/23 as 1.6ha (or 65% of the holding) is required temporarily during construction. The revised location of the replacement Burton Green village hall will not require additional land temporarily. Therefore, this will not cause any new or different significant effects or change the level of significance of the temporary effects on holding CFA18/23 reported in the main ES or the AP1 ES.

#### **Permanent effects**

- 3.1.15 In the AP1 ES, an additional 0.9ha of land required as part of the AP1 amendment to facilitate the pipeline diversion (AP1-018-030) was assumed to be restored and returned to its former agricultural use following the works. The SES scheme will

require this land on a permanent basis as the land is to be used as the revised location for the replacement Burton Green village Hall. As a result the land, which is in Subgrade 3a, will no longer be restored and returned to agricultural use. However, this will not change the level of significance of the effects on the best and most versatile (BMV) agricultural land reported in the main ES or the AP1 ES.

- 3.1.16 The main ES determined a significant, major/moderate adverse effect on CFA18/23 as 1.6ha (or 64% of the holding) is required permanently. As stated the land belonging to this holding is also part of an AP1 amendment (AP1-018-030) where 0.9ha of land (or 36% of the holding) is required to facilitate pipeline diversion works. As the land will no longer be restored to its former use, due to the use of the site for the revised location for the replacement village hall, this holding will now be required permanently in its entirety (100%). This will result in a different likely significant effect due to the additional land required on a permanent basis. However, this does not change the level of significance of the effects reported in the main ES or the AP1 ES.

#### *Other mitigation measures*

- 3.1.17 No further mitigation measures are required other than those set out as part of the draft CoCP (Volume 5: Appendix CT-003-000).

#### *Cumulative effects*

- 3.1.18 There are no new or different likely significant cumulative effects for revised location of the replacement Burton Green village hall as a result of the SES changes acting in combination with other SES changes or AP1 amendments, or as a result of any relevant committed development interacting with the AP2 revised scheme.

#### *Summary of likely residual significant effects*

- 3.1.19 The proposed revised location of the replacement Burton Green village hall on 'Land to the North of Red Lane' (CFA18/23) will result in a different likely significant residual effect due to land now being required on a permanent basis and not restored and returned to agricultural use. The magnitude of impact for this change remains high and the effect assessed in the main ES for this holding does not change from major/moderate adverse, which is significant.

### **Effects arising from operation**

- 3.1.20 There are no new or different significant operational effects for agriculture, forestry and soils as a result of the SES design change in comparison with the main ES and the AP1 ES.

## **3.2 Community**

### **Introduction**

- 3.2.1 This section of the report describes the environmental baseline of relevance to the community assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 2, compared with the original scheme, and any relevant AP1 amendments.
- 3.2.2 Further details of the revised community assessments in this area are contained in the SES and AP2 ES, Volume 5: Appendix CM-001-018. Community assessment maps are

also provided in the SES and AP2 ES, Volume 5 Community Map Book, see map sheets CM-01-110 to CM-01-111.

### **Scope, assumptions and limitations**

- 3.2.3 The assessment scope, key assumptions and limitations for the community 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.
- 3.2.4 It is assumed that the replacement village hall will be available for use prior to the requirement for demolition of the existing village hall. This is on the basis that the construction programme now allows for the replacement hall to be built and brought into use before the existing hall is demolished.

### **Changes of relevance to this assessment**

- 3.2.5 The following changes are relevant to this assessment:
- the revised location of the replacement Burton Green village hall (SES-018-001) is of relevance to the scope of the community topic assessment; and
  - a change to baseline conditions, introducing new residential receptors at Le Van.

### **Environmental baseline**

#### *Existing baseline*

- 3.2.6 The existing baseline for the area is described in of the main ES, Volume 2, CFA18, Section 5.3. Since the original assessment was completed, two changes in the baseline have been identified as being of relevance. Firstly, land off Red Lane, at Le Van, which is located between Red Lane and the Kenilworth Greenway, is currently being developed as a caravan/ mobile home park called Broadwell Woods Park. Two new homes have been stationed on the site, effectively introducing two new residential receptors into the existing baseline for the ES at this location.
- 3.2.7 Secondly, since the assessment for the original scheme was undertaken, the boundary of the Burton Green Church of England Primary School has been extended to include an area of adjoining land. This land was identified in the original scheme as a site for a replacement village hall to compensate for the demolition of the existing hall at Hodgett's Lane. The amendment, which forms part of the SES scheme, has been brought forward specifically to avoid any loss of land from the area now being used by the school.

#### *Future baseline*

##### **Construction (2017)**

- 3.2.8 The future baseline for the construction phase assessment is set out in the main ES, Volume 2, CFA18 Report, Section 5.3. Since the original scheme assessment was undertaken, Warwick District Council has confirmed that land at Le Van, Red Lane, Burton Green can be used lawfully for the stationing of up to 20 caravans/mobile homes. As noted above, two of these plots have already been completed and hardstandings for the remaining pitches have been installed and the development is being marketed as the Broadwell Woods Park. The assessment of the construction

SES scheme, therefore, takes account of this development, which will effectively introduce a further 18 additional residential receptors (21 in total, inclusive of the original building) into the scope of the community amenity assessment.

### **Operation (2026)**

- 3.2.9 The future baseline for the operational phase of the assessment is set out in the main ES, Volume 2, CFA18 Report, Section 5.3. The future baseline for the assessment of the SES amendment SES-018-001 also takes account of the changes at Le Van, Red Lane (the Broadwell Woods Park), that are described above.

### **Effects arising during construction**

#### *Avoidance and mitigation measures*

- 3.2.10 Measures to avoid or reduce the environmental effects that could arise during construction of the scheme are set out in the main ES, Volume 2, CFA18 report, Section 5.4.

#### *Assessment of impacts and effects*

### **Temporary effects**

- 3.2.11 Works to construct the replacement village hall at Red Lane are not expected to give rise to any significant additional temporary effects on community receptors and resources. There will be no temporary loss of land from community resources to facilitate its construction and there will be no new or different significant temporary amenity effects on neighbouring residential properties as a result of this amendment.
- 3.2.12 As explained in paragraph 3.2.7 above, the baseline conditions in the vicinity of the replacement village hall site have changed since the assessment for the original scheme was undertaken. Land at Le Van which is situated immediately to the south of the proposed village hall site, now benefits from a permission to station up to 20 additional mobile homes on the site. The site is now being developed and is known as the Broadwell Woods Park and the increase in the number of residential properties in the future baseline at Le Van, which must now be taken into account, effectively changes the assessment conclusions for the original scheme in this area.
- 3.2.13 The main ES did not identify any significant combined temporary amenity effects on residential properties at Red Lane because only one property, namely Le Van, was identified as being likely to be affected by a combination of significant amenity effects. Effects on a single property are not considered to be significant. However, the increase in the number of residential receptors at this site means that the combination of construction noise and visual effects likely to arise at this location, already reported in the main ES, becomes significant. The change in the baseline conditions, therefore, means that the construction of the original scheme would give rise to a moderate adverse and significant temporary amenity effect on the occupiers of this development. This constitutes a new significant effect not previously reported in the main ES and is attributable only to the change in baseline conditions. There is a proposed amendment (AP2-018-004) reported in the AP2 (Part 2 of this document) which if accepted would remove this effect (refer to Section 5.6).

- 3.2.14 The construction of a replacement village hall on land at Red Lane will not give rise to any further significant effects on these new receptors at the Broadwell Woods Park at Le Van.
- 3.2.15 The temporary amenity effects on the nearby Two Oaks Day Nursery at Red Lane, would be as reported in the main ES and AP1 ES and will not be significantly affected by works to build the replacement hall.

### **Permanent effects**

- 3.2.16 The construction of a replacement village hall on land identified at Red Lane as proposed in the SES scheme is not expected to give rise to any new significant permanent effects on residents and community facilities at Red Lane. No land will be required from residential properties or community resources to enable the replacement hall to be built at Red Lane.
- 3.2.17 The SES scheme will still require the existing village hall at Hodgett's Lane to be demolished during construction, which has been assessed in the main ES as giving rise to a major adverse permanent community effect on the users of this facility. HS2 Ltd has been working closely with the Burton Green Village Hall trustees to agree how best to limit disruption to users of its valued community facility. The site that is now proposed at Red Lane has been agreed with the trustees as being a suitable location for the replacement hall and the Bill will provide specifically for its construction as part of the SES scheme. On the basis that the construction programme now also allows for the hall to be built and brought into use before the existing hall is demolished, the SES scheme will therefore avoid the major adverse and significant permanent effect on the community that was identified in the main ES due to the permanent loss of the hall.
- 3.2.18 On the assumption that AP1 is accepted, the original replacement village hall site at Hob Lane would no longer be required and will not be acquired by the scheme. On this basis, the SES scheme will also avoid any potential conflict with the use of the land by the Burton Green Church of England Primary School that might otherwise have arisen during construction of the original scheme, as explained in 3.2.7.

### *Other mitigation measures*

- 3.2.19 No further mitigation measures are required other than those set out as part of the draft CoCP (Volume 5: Appendix CT-003-000).

### *Summary of likely residual significant effects*

- 3.2.20 Works to construct a replacement village hall as now proposed in the SES scheme will not give rise to any new significant residual community effects when compared with the original scheme and the AP1 revised scheme. As the Village Hall trustees have agreed that the Red Lane site would be a suitable location for a replacement hall and given that the Bill will expressly provide for its construction, the SES scheme will avoid the major adverse and significant permanent effect that was identified in the main ES due to the loss of the existing hall at Hodgett's Lane. In addition, by moving the site for the replacement village hall to Red Lane, the SES scheme avoids the potential for any conflict with the Burton Green Primary School now that the school boundary has expanded to include the land previously identified in the Bill at Hob Lane.

- 3.2.21 As explained above, the change in the baseline for the assessment of the SES scheme will, however, given rise to a new moderate adverse significant residual amenity effect on the 21 residential properties at Le Van (Broadwell Woods Park).

### **Effects arising from operation**

#### *Avoidance and mitigation measures*

- 3.2.22 Boundary landscaping will be provided in association with the development of the replacement village hall at Red Lane to reduce potential visual effects on neighbouring residential properties.

#### *Assessment of impacts and effects*

- 3.2.23 The operation of a village hall facility on land at Red Lane as proposed in the SES Scheme will not give rise to any new or changed significant combined amenity effects on nearby residential properties at Red Lane or on the nearby Two Oaks Day Nursery. The effects on nearby community resources during the operation of the SES scheme will therefore be as reported in the main ES for the original scheme, namely a major adverse and significant amenity effect on nine residential properties at the northern end of Red Lane caused by a combination of operational noise and adverse visual effects. Residents of the new Broadwell Woods mobile home park would not be affected by a combination of significant amenity effects arising from the operation of the SES scheme.

#### *Other mitigation measures*

- 3.2.24 No further mitigation measures are proposed.

#### *Summary of likely residual significant effects*

- 3.2.25 The construction of a replacement village hall at Red Lane will not give rise to any new or different significant residual operational community amenity effects. The effects on nearby receptors at Red Lane will remain unchanged from those identified for the original scheme and the AP1 revised scheme.

## **3.3 Cultural heritage**

### **Introduction**

- 3.3.1 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**

- 3.3.2 The assessment scope, assumptions and limitations for cultural heritage 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

- 3.3.3 The review of historic mapping relating to ancient woodland is relevant to this assessment.

### Environmental baseline

#### *Existing baseline*

- 3.3.4 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 from national and local registers. A full list of heritage assets is provided in Volume 2, Section 6.3 of the main ES. In addition, the baseline has been updated with the results of geophysical survey and a further review of historic mapping and other available historic data sources to verify the status of a number of sites, which the Woodland Trust believe to be ancient woodland.
- 3.3.5 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-002-018 and SES and AP2 ES Volume 5: Appendix CH-004-018 of this document. 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 (Heritage Assets within Study Area), CH-02 (Designated Heritage Assets) and CH-03 (Archaeological Character Sub-zones).

#### *Designated assets*

- 3.3.6 In addition to the designated assets reported in the main ES, four areas of woodland have been identified as potentially meeting the criteria for designation as ancient woodland and are likely to be added to the ancient woodland inventory.
- 3.3.7 These areas of woodland are:
- Little Pools Wood, which is located to the south of Hodgett's Lane in Burton Green. This is an existing heritage asset (asset reference STN077<sup>3</sup>) which was originally of moderate value with the asset relating specifically to ridge and furrow earthworks within the woodland;
  - Birches Wood (asset reference STN116<sup>4</sup>), which is located to the north of Crackley Wood on the eastern side of Crackley Lane. With the potential for this asset to be added to the ancient woodland inventory, this new asset has been assessed as being of high value;
  - Big Pools Wood (asset reference STN117), which is located to the west of Hob Lane in Burton Green. With the potential for this asset to be added to the ancient woodland inventory, this new asset has been assessed as being of high value; and

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<sup>3</sup> Cultural heritage assets are identified with a unique reference code, STN; further detail on these assets can be found in the gazetteer in Volume 5 of the main ES: Appendix CH-002-018.

<sup>4</sup> Where cultural heritage assets have been newly identified, these are identified with the same unique reference code as in the main ES, with further detail on these assets found in the gazetteer of AP2 ES: Appendix CH-002-018.

- unnamed woodland near Stoneleigh Wood (asset reference STN115), which is located to the north of Stoneleigh Park and the B4115, approximately 135m to the west of Stonehouse Farm. With the potential for this asset to be added to the ancient woodland inventory, this new asset has been assessed as being of high value.

3.3.8 In addition, an existing area of ancient woodland, Black Waste Wood (asset reference STN074) may extend further to the south than is presently identified on the ancient woodland inventory. This is an existing asset which will remain of high value but will increase in area.

3.3.9 There are no existing or newly identified designated assets which have the potential to be affected by the proposed SES design changes.

#### *Non-designated assets*

3.3.10 There are no existing or newly identified non-designated assets which have the potential to be affected by the proposed SES design changes.

#### *Future baseline*

##### **Construction (2017)**

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

##### **Operation (2026)**

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

#### **Effects arising during construction**

##### *Avoidance and mitigation measures*

3.3.13 No further mitigation measures are required other than those set out as part of the draft CoCP (Volume 5: Appendix CT-003-000).

##### *Assessment of impacts and effects*

##### **Temporary effects**

3.3.14 The identification of the new areas of ancient woodland will not give rise to a new or different significant temporary effect and will not change the level of significance of the effects reported in the main ES.

##### **Permanent effects**

3.3.15 It is considered that there are likely to be new significant permanent effects to designated assets as a result of new baseline data.

3.3.16 There will be a new significant effect as a result of the extended area of woodland considered to be ancient woodland at Black Waste Wood (asset reference STN074). Previously, the edge of the designated area was approximately 50m to the north of the original scheme. The extended area of woodland to the south, which is likely to be added to the ancient woodland inventory, is now within the area of the scheme. The

landscaping and earthworks along with the creation of the south portal will result in the removal of a small portion (approximately 1.4ha of the approximately 13ha woodland) of this high-value asset at its south-eastern edge. In addition, the works on the edge of the woodland comprising landscaping and earthworks will change the rural setting of the woodland. This will result in a new permanent medium adverse impact on this asset of high value resulting in a major adverse effect, which is a new significant effect.

- 3.3.17 Identification of Birches Wood (asset reference STN116) as an area of potential ancient woodland and a high value asset will give rise to a new significant effect. The original scheme would totally remove this area of potential ancient woodland, an area of 0.57ha. The SES scheme will not change the impact where the scheme will result in removal of almost the entire area of woodland. However, this is now considered ancient woodland (an asset of high value) and this gives rise to a new high adverse impact, resulting in a permanent major adverse effect, which is a new significant effect.
- 3.3.18 The proposed change due to the identification of Little Pours Wood (asset reference STN077) as an area of potential ancient woodland has resulted in this asset being assessed of high value, where it was previously of low value. Due to the change in status, this will give rise to a new permanent low adverse impact, resulting in a new moderate adverse significant effect.
- 3.3.19 The identification of unnamed woodland near Stoneleigh Wood (asset reference STN115) as an area of potential ancient woodland and a high-value asset will give rise to a new significant effect. The original scheme would sever this area of potential ancient woodland and remove an area of 0.6ha (of a total 1.6ha). The SES scheme will not change the impact where the scheme will still result in a substantial removal of this woodland. However, this is now considered ancient woodland (an asset of high value) and this gives rise to a new medium adverse impact, resulting in a permanent major adverse effect, which is a new significant effect.
- 3.3.20 There will be no loss of woodland at Big Pours Wood and it is over 300m from the areas of main construction and therefore there will be no physical impact or change to its setting.

#### *Other mitigation measures*

- 3.3.21 No further mitigation measures are required other than those set out as part of the draft CoCP (Volume 5: Appendix CT-003-000).

#### *Cumulative effects*

- 3.3.22 There are no new or different likely significant cumulative effects on cultural heritage as a result of the SES changes acting in combination with other SES changes or AP1 amendments or as a result of any relevant committed development.

#### *Summary of likely residual significant effects*

- 3.3.23 As a result of the updated baseline information, there will be three new major adverse residual effects, arising from impacts on Black Waste Wood (asset reference STN074), Birches Wood (asset reference STN116) and the unnamed woodland near Stoneleigh

Wood (asset reference STN115). There will be one new moderate adverse residual effect as a result of impacts on Little Poores Wood (asset reference STN077).

### **Effects arising from operation**

- 3.3.24 The proposed change due to the identification of unnamed woodland near Stoneleigh Wood (asset reference STN115) as an area of potential ancient woodland and a high value asset will give rise to a new significant effect. The operation of the original scheme would change the rural setting of the woodland. The SES scheme will not change the impact which will still affect the rural setting of the woodland. However, this is now considered ancient woodland (an asset of high value) and this will result in a new medium adverse impact on this asset resulting in a major adverse effect, which is a new significant effect.
- 3.3.25 The other changes will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Cumulative effects*

- 3.3.26 There are no new or different likely significant cumulative effects on cultural heritage as a result of the SES changes acting in combination with the SES or as a result of any relevant committed development interacting with the AP2 revised scheme.

### *Summary of likely residual significant effects*

- 3.3.27 There will be one new major adverse residual effect from operation as a result of impacts on unnamed woodland near Stoneleigh Wood (asset reference STN115).

## **3.4 Ecology**

### **Introduction**

- 3.4.1 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 described in Section 2, compared to the original scheme and also compared to any relevant AP1 amendments. 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**

- 3.4.2 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.
- 3.4.3 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 scheme.

## Changes of relevance to this assessment

3.4.4 The following changes are relevant to this assessment:

- new baseline surveys relating to great crested newt; and
- additional cultural heritage and ecological baseline relating to ancient woodland, namely Black Waste Wood, Little Pools Wood, Big Pools Wood, Birches Wood, and an unnamed area of woodland south of the B4115 road in Stoneleigh.

## Environmental baseline

### *Existing baseline*

3.4.5 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 is provided in the main ES, Volume 2: CFA18, Section 7.

3.4.6 The assessment also takes into account additional desk-study and survey information collected since September 2013. Supplementary information relevant to the assessment in this CFA includes additional survey work on great crested newt and potential ancient woodland.

3.4.7 A summary of baseline information relevant to the assessment is provided below. Further detail of all baseline information obtained since September 2013 is 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 the main ES, Volume 2: CFA18, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

3.4.8 A review of historic documents undertaken since September 2013 has concluded that Little Pools Wood, Big Pools Wood, Birches Wood, and the unnamed area of woodland south of the B4115 road in Stoneleigh are likely to be ancient and are currently being considered for inclusion on the ancient woodland inventory.

3.4.9 In addition, a review of historic documents and habitat surveys undertaken since September 2013 have concluded that an existing area of ancient woodland, Black Waste Wood, may extend further to the south than is presently identified on the ancient woodland inventory.

3.4.10 Big Pools Wood and Little Pools Wood are within Big Pools and Little Pools Wood Local Wildlife Site (LWS). This LWS was reported in the main ES as being of county/metropolitan value. This valuation does not change.

3.4.11 Black Waste Wood LWS contains ancient woodland, included in the ancient woodland inventory. While the review indicates a larger area of the wood is ancient woodland, this is outside the boundary of the LWS. This LWS was reported in the main ES as being of county/metropolitan value. This valuation does not change.

- 3.4.12 Birches Wood and the unnamed area of woodland south of the B4115 road in Stoneleigh are not included in any designated sites.
- 3.4.13 For the purposes of assessment Little Pools Wood, Big Pools Wood, Birches Wood, the unnamed area of woodland south of the B4115 road in Stoneleigh, and Black Waste Wood are considered as ancient woodland.
- 3.4.14 There are no other changes in relation to designated sites for this area.

### **Habitats**

- 3.4.15 The whole of the Black Waste Wood (i.e. the woodland complex containing those areas identified on the ancient woodland inventory, and those not on the inventory) was collectively valued in the main ES as of county/metropolitan value. Therefore, even though additional areas of woodland are likely to be added to the ancient woodland inventory, the valuation does not change.
- 3.4.16 In the main ES, Little Pools Wood was described as being part of a complex of woodlands around Burton Green linking to the Kenilworth Greenway, but individually Little Pools Wood was considered to be of up to district/borough value. However, it is a small area of woodland replanted with larch. Even though it is likely to be added to the ancient woodland inventory, the valuation of this woodland does not change and is still considered to be of district/borough value.
- 3.4.17 Big Pools Wood was, and remains, adjacent to the land required for the construction of the scheme and so was not assigned a specific value, from a habitat perspective, in the main ES. Based on the historic review Big Pools Wood is now considered to be ancient woodland, and in the absence of ecological survey data, it is considered to be of up to county/metropolitan value.
- 3.4.18 The main ES states that Birches Wood (i.e. a broadleaved woodland to the north of Crackley Wood North not named on Ordnance Survey (OS) maps but called Birches Wood for the purposes of assessment) is not listed as ancient woodland on the ancient woodland inventory but is shown on historic maps as part of a larger ancient woodland block; this is also indicated by the woodland flora present. This woodland was valued in the main ES as of district/borough value. Therefore, even though it is likely to be added to the ancient woodland inventory, the valuation does not change.
- 3.4.19 The unnamed area of woodland south of the B4115 road in Stoneleigh was not specifically mentioned in the main ES. Based on the historic review this area of woodland is now considered to be ancient woodland, and of up to district/borough value.

### **Protected and/or notable species**

- 3.4.20 A new medium-size great crested newt population was identified north-west of the A46 in 2014. Assumed Metapopulation (AMP) 9 (east of Kenilworth north-west of A46 Kenilworth Bypass), which was identified in the main ES as having three water bodies supporting great crested newt, has been expanded to include this water body. AMP9 now has four water bodies supporting great crested newt. Cumulatively, the main ES reported that AMP9 supported a large population size class of great crested newt. Based on the new survey data, cumulatively AMP9 still supports a large population

size class of great crested newt. This is still considered to be of regional value and therefore the evaluation of AMP9 has not changed from the main ES.

### **Future baseline**

#### **Construction (2017)**

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

#### **Operation (2026)**

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

### **Effects arising during construction**

#### *Avoidance and mitigation measures*

- 3.4.23 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**

- 3.4.24 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.

#### **Habitats**

- 3.4.25 No ancient woodland was reported as lost from Black Waste Wood, Little Poores Wood, Birches Wood or the unnamed area of woodland south of the B4115 road in Stoneleigh in the main ES.
- 3.4.26 Based on the revised baseline information, 2.7ha of the woodland removed under the original scheme is now likely to be reclassified as ancient woodland; 1.4ha at Black Waste Wood; 0.15ha at Little Poores Wood; 0.57ha at Birches Wood; and 0.6ha at the unnamed area of woodland south of the B4115 road in Stoneleigh. This increases the loss of ancient woodland in this CFA from approximately 3.8ha, as reported in the main ES, to 6.5ha.
- 3.4.27 The SES scheme will result in an adverse effect on the conservation status of the ancient woodland at Black Waste Wood that is significant at a county/metropolitan level. This is a new significant effect that was not reported in the ES.
- 3.4.28 The SES scheme will result in an adverse effect on the conservation status of the ancient woodland at Little Poores Wood that is significant at a district/borough level. This is a new significant effect which is not reported in the main ES.
- 3.4.29 The main ES reported the bisection of Birches Wood as an adverse effect on the conservation status of the habitat, which will be significant at a district/borough level. The SES scheme will result in an adverse effect on the conservation status of the woodland at Birches Wood that is significant at a district/borough level. This is a

different significant effect on the conservation status of broadleaved woodland and a new significant effect on ancient woodland.

- 3.4.30 The SES scheme will result in an adverse effect on the conservation status of the ancient woodland at the unnamed area of woodland south of the B4115 road in Stoneleigh that is significant at a district/borough level. This is a new significant effect which is not reported in the main ES.
- 3.4.31 Big Pours Wood was adjacent to the land required for the construction of the original scheme, and remains adjacent to the land required for the construction of the SES scheme. Hence there will be no significant effect on this woodland as a result of the SES scheme.
- 3.4.32 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 AP2ES, Volume 5: Appendix EC-003-003.

#### **Protected and/or notable species**

- 3.4.33 The main ES did not report any significant effects on AMP9 (east of Kenilworth north-west of the A46 Kenilworth Bypass). Due to the inclusion of the water body (030-AA-140003) north-west of the A46 the extent of AMP9 has increased. No water bodies will be lost from AMP9. However, the SES changes will result in the loss of approximately 8.9ha of terrestrial habitat from within AMP9, comprising mostly arable and pasture, with 1.5km of hedgerows. In the main ES approximately 4.5ha of terrestrial habitat was lost from AMP9. The SES scheme 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 new significant effect which is not reported in the main ES.
- 3.4.34 It is unlikely that the SES changes will result in any other new or different effects on species 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 Volume 5: Appendix EC-003-003.

#### *Cumulative effects*

- 3.4.35 There are no new or different likely cumulative effects for ecology as a result of the SES changes acting in combination with other SES changes or AP1 amendments, or as a result of any relevant committed development.

#### *Other mitigation measures*

- 3.4.36 No additional land for mitigation to that proposed in the main ES is required for the impacts on AMP9. There is an area of ecological mitigation (i.e. woodland habitat creation) south of Dalehouse Lane, which is located on the edge of the AMP boundary and this will replace terrestrial habitats lost. The provision in the main ES was precautionary and therefore can accommodate this change.
- 3.4.37 There is a requirement for further compensation to address the additional loss of ancient woodland at Black Waste Wood, Little Pours Wood and the area of woodland

near Stoneleigh Wood. Appropriate measures are expected to be brought forward either in a subsequent AP or by direct agreement with landowners.

- 3.4.38 No additional land for mitigation to that proposed in the main ES is required for the impact on Birches Wood. This is because the change in status has not altered the valuation in the main ES, and sufficient compensation was provided for the loss of habitat within it.

#### *Summary of likely residual significant effects*

- 3.4.39 The loss of woodland now considered ancient at Black Waste Wood (1.4ha), Little Pours Wood (0.15ha), Birches Wood (0.57ha) and the unnamed area of woodland south of the B4115 road in Stoneleigh (0.6ha) will result in new permanent adverse significant residual effects which were not reported in the main ES at a county metropolitan level for Black Waste Wood and at a district/borough level for Little Pours Wood and the unnamed woodland south of the B4115. Ancient woodland is an irreplaceable resource.

#### **Effects arising from operation**

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

### **3.5 Sound, noise and vibration**

#### **Introduction**

- 3.5.1 This section of the report describes the environmental baseline in relation to sound, noise and vibration 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 change in construction and operational noise and vibration and to the identification of new receptors not previously included in the main ES or AP1 ES.

#### **Scope, assumptions and limitations**

- 3.5.2 The assessment scope, key assumptions and limitations for the sound, noise and vibration 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.
- 3.5.3 Local assumptions and limitations for sound, noise and vibration are set out in main ES (Volume 2: CFA18, Section 11).

#### **Changes of relevance to this assessment**

- 3.5.4 The revised location of the replacement Burton Green village hall (SES-018-001) is of relevance to the scope of the sound, noise and vibration topic assessment.

#### **Environmental baseline**

##### *Existing baseline*

- 3.5.5 The baseline sound, noise and vibration information for the area is described in the main ES (Volume 5: Appendix SV-002-018). Baseline noise levels representative of the

assessment locations affected by the SES changes have been used in the construction and operational assessments.

### *Future baseline*

- 3.5.6 Without the original scheme, existing sound levels in this area are likely to increase gradually over time. This is primarily due to road traffic growth on the existing road network. Changes in car technology may offset some of the expected sound level increases due to traffic growth on low speed roads. On higher speed roads, tyre sound dominates the overall levels and hence the expected growth in traffic is likely to continue to increase ambient sound levels.

### **Construction (2017)**

- 3.5.7 The 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 the main ES (Volume 5: Appendix CT-004-000). This includes one additional development for land at Le Van, Red Lane, Burton Green adjacent to the proposed location of the replacement village hall, to be used lawfully for the stationing of up to 20 caravans/mobile homes.
- 3.5.8 This development introduces a further 20 additional residential receptors onto the assessment location ID 206392 which was already considered in the construction noise and vibration assessment of the main ES.

### **Operation (2026)**

- 3.5.9 The future baseline for operation in 2026 remains unchanged from that reported in the main ES (Volume 2, CFA18, Section 11.3).

### **Effects arising during construction**

#### *Avoidance and mitigation measures*

- 3.5.10 The measures that have been incorporated into the draft CoCP to avoid or reduce noise and vibration effects during construction remain as stated in the main ES (Volume 2, CFA18, Section 11).

#### *Assessment of impacts and effects*

- 3.5.11 In the vicinity of the revised location for the Burton Green village hall, the main ES reported a likely significant effect during construction at a group of properties on Red Lane (ID 206392) and a group of properties on Cromwell Lane (ID 204255), approximately 80m east and 180m north from the revised village hall location, respectively.
- 3.5.12 An assessment has been undertaken to determine whether construction noise levels from the SES scheme will result in a likely significant effect, using the methodology and significance criteria detailed in the main ES (Volume 5: Appendix SV-001-000).
- 3.5.13 The receptor ID 206392 has now been used as an appropriate representative location to assess the additional properties at the Le Van development. No new or different significant effects have been identified for these properties.

- 3.5.14 The construction activities associated with the replacement village hall will be limited. Such works do not generally require large quantities of construction equipment and are limited to the daytime periods. It has been assumed that the village hall will be completed in approximately four months, with any potential adverse noise effects being controlled and reduced by the management processes set out in the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES). As a consequence, the proposed change will not give rise to any new or different significant effects in comparison with those reported in the main ES.

#### *Other mitigation measures*

- 3.5.15 No further mitigation measures are required, other than those set out as part of the draft CoCP (Volume 5: Appendix CT-003-000).

#### *Cumulative effects*

- 3.5.16 This assessment has considered the potential cumulative construction noise effects of the scheme and other committed developments. In the vicinity of the SES scheme, there is no committed development that would be built at the same time and accordingly, construction noise or vibration from the SES scheme is unlikely to result in any significant cumulative noise effects.

#### *Summary of likely residual significant effects*

- 3.5.17 The proposed change to the location of the replacement village hall and its construction will not give rise to any new or different residual significant effects compared to those reported in the main ES and AP1 ES.

### **Effects arising from operation**

#### *Avoidance and mitigation measures*

- 3.5.18 The village hall building will be designed to control sound from events to a suitable level at neighbouring residential premises, through the specification and planning of a suitable façade construction, internal layout and detailing of façade fenestration.
- 3.5.19 Significant noise effects from operational static sources such as mechanical ventilation at the building will be avoided through their design and the specification of noise emission requirements (for further information please see main ES Volume 5: Appendix SV-001-000).
- 3.5.20 An assessment has been undertaken to determine whether operational noise levels from train services operating on the route would result in a likely significant effect at the village hall in the new location, using the significance criteria detailed in the main ES (Volume 5: Appendix SV-001-000). Table 1 in SES and AP2 ES, Appendix SV-004-018 identifies that the village hall is likely to experience a negligible effect, which is not significant.

#### *Assessment of impacts and effects*

- 3.5.21 The proposed change, relocation of the replacement Burton Green village hall, will not give rise to any new or different significant effects compared to those reported in the main ES and the AP1 ES.

*Other mitigation measures*

- 3.5.22 No mitigation measures are required other than those set out as part of the draft CoCP (main ES Volume 5: Appendix CT-003-000).

*Cumulative effects*

- 3.5.23 There are no new or different likely significant cumulative effects for operational sound, noise and vibration as a result of the SES changes acting in combination with other SES changes or AP1 amendments, or as a result of any relevant committed developments.

*Summary of likely residual significant effects*

- 3.5.24 The proposed change to the location of the replacement village hall and its construction will not give rise to any new or different residual significant effects compared to those reported in the main ES and AP1 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 Stoneleigh, Kenilworth and Burton Green CFA (CFA18) and Figure 2 shows the locations.
- 4.1.2 Amendments in this CFA result in significant changes to waste arisings, which are reported in Volume 5, Appendix WM-001-000 of the SES and AP2 ES.
- 4.1.3 An assessment of the likely significant environmental effects associated with the disposal of construction, demolition, excavation, worker accommodation site and operational waste has been undertaken for the SES scheme and AP2 revised scheme as a whole. See Volume 3, Section 19 of the SES and AP2 ES for further information.

Table 3: Summary of amendments in CFA18

Name of amendment	Description of the original scheme or AP1 revised scheme	Description of the AP2 revised scheme
<p>Relocation of the Footpath K29 overbridge in the vicinity of New Kingswood Farm House.</p> <p>(AP2-018-001)</p>	<p>The scheme crosses the route of Footpath K29 to the east of Kenilworth golf course. The original scheme makes provision for a new overbridge to carry the footpath over the railway adjacent to New Kingswood Farm.</p> <p>The earthworks require the demolition of the farmhouse at this location.</p>	<p>The AP2 revised scheme relocates the Footpath K29 overbridge to the south of that proposed originally to allow extended habitation of the dwelling prior to demolition. As a result Footpath K29 is realigned and crosses the route via the overbridge before reconnecting with its existing alignment to the east of the access track serving the residence at New Kingswood Farm.</p> <p>The AP2 revised scheme will continue to require the demolition of the residential property at New Kingswood Farm, due to earthworks in this location.</p> <p>Additional land will be required on a temporary basis to accommodate the revised alignment.</p>
<p>Relocation of the woodland habitat creation area in the vicinity of Kingswood Farm House.</p> <p>(AP2-018-002)</p>	<p>Provision of a woodland habitat creation area to the north-east of the route in the vicinity of Kingswood Farm House between the edge of Glasshouse Wood cutting and Four Winds property boundary.</p> <p>The woodland planting will tie-in with landscape mitigation planting located to the west between the railway cutting and Dalehouse Lane. To the east, it will tie-in with the Footpath K29 overbridge and new hedgerow planting along the edge of the railway cutting.</p>	<p>The AP2 revised scheme relocates the woodland habitat creation area from the north-east side of the route to the south-west side, to the north of Kenilworth Golf Club.</p> <p>Despite the relocation of the woodland habitat creation area, new hedgerow planting alongside the railway cutting, proposed as part of the original scheme, will be retained on the east of the route, to extend the screening from the remaining landscape planting area to the Footpath K29 overbridge.</p> <p>Additional permanent land to the south west of the HS2 route will be required.</p>
<p>Revision to gradient and construction phasing of eastern approach to Bridleway W164 overbridge.</p> <p>(AP2-018-003)</p>	<p>The original scheme proposed the construction of the Bridleway W164 overbridge where the bridleway crosses the HS2 route, as it is in cutting to the north-west of Canley Brook Viaduct.</p> <p>Its construction avoids permanent severance of Bridleway W164 (also known as the Connect2 Kenilworth cycleway).</p> <p>However, the construction programme for the original scheme</p>	<p>The AP2 revised scheme reduces the gradient of the eastern approach to the overbridge to meet design requirements. This will require additional earthworks to form the gradient.</p> <p>An area of approximately 0.35ha will be required permanently to accommodate this amendment.</p> <p>The construction programme has been revised to allow for the permanent realignment of Bridleway W164 earlier than</p>

Name of amendment	Description of the original scheme or AP <sub>1</sub> revised scheme	Description of the AP <sub>2</sub> revised scheme
	was phased in such a way that temporary closure or realignment of the Bridleway W164 was likely during construction works. This is assessed as giving rise to a significant adverse temporary environmental effect on users.	originally envisaged. This will circumvent the need for any temporary diversion or closure of the bridleway/cycleway route and ensure that the route remains available for continued use throughout the construction period.

Burton Green area amendment

(AP<sub>2</sub>-018-004)

Since submission of the Bill a number of opportunities have been identified to improve the engineering design and reduce the environmental effects of the HS2 route as it passes through Burton Green.

Burton Green tunnel revised length and vertical alignment	<p>A 620m long green tunnel through Burton Green, including 100m long porous portals<sup>5</sup> at each end.</p> <p>Realignment of approximately 700m of the Kenilworth Greenway, to run alongside/ parallel to the new railway when in cutting and along the top of the green tunnel structure through the centre of the village:</p> <ul style="list-style-type: none"> <li>• tunnel portal buildings adjacent to the South Portal on the west side of the original scheme, with a permanent maintenance access from Red Lane;</li> <li>• Footpath W168 is permanently realigned beneath the original scheme;</li> <li>• extensive areas of raised earthworks and landscape and ecological planting areas to screen the Proposed Scheme and reduce adverse ecological effects; and</li> <li>• provision for a balancing pond to the east of the original scheme, with a maintenance access taken from Crackley Lane.</li> </ul>	<p>A modification has been made to the vertical alignment of the HS2 route as it passes through the Burton Green green tunnel, with a lowering at the south portal and an increase in height as the track emerges from the north portal.</p> <p>The tunnel will also be extended by 50m at each end.</p> <p>Additional components of this element of the amendment include:</p> <ul style="list-style-type: none"> <li>• tunnel portal buildings relocated to the north-east of the HS2 route with access from Bockendon Road;</li> <li>• additional landscaping works at the portals to improve visual screening;</li> <li>• relocation of a balancing pond from the east to the west of the HS2 route;</li> <li>• Footpath W168 underpass is located 100m north out of Broadwells Wood and there is an extended mitigation earthwork adjacent to the footpath;</li> <li>• the Kenilworth Greenway is realigned beneath Cromwell Lane</li> </ul>
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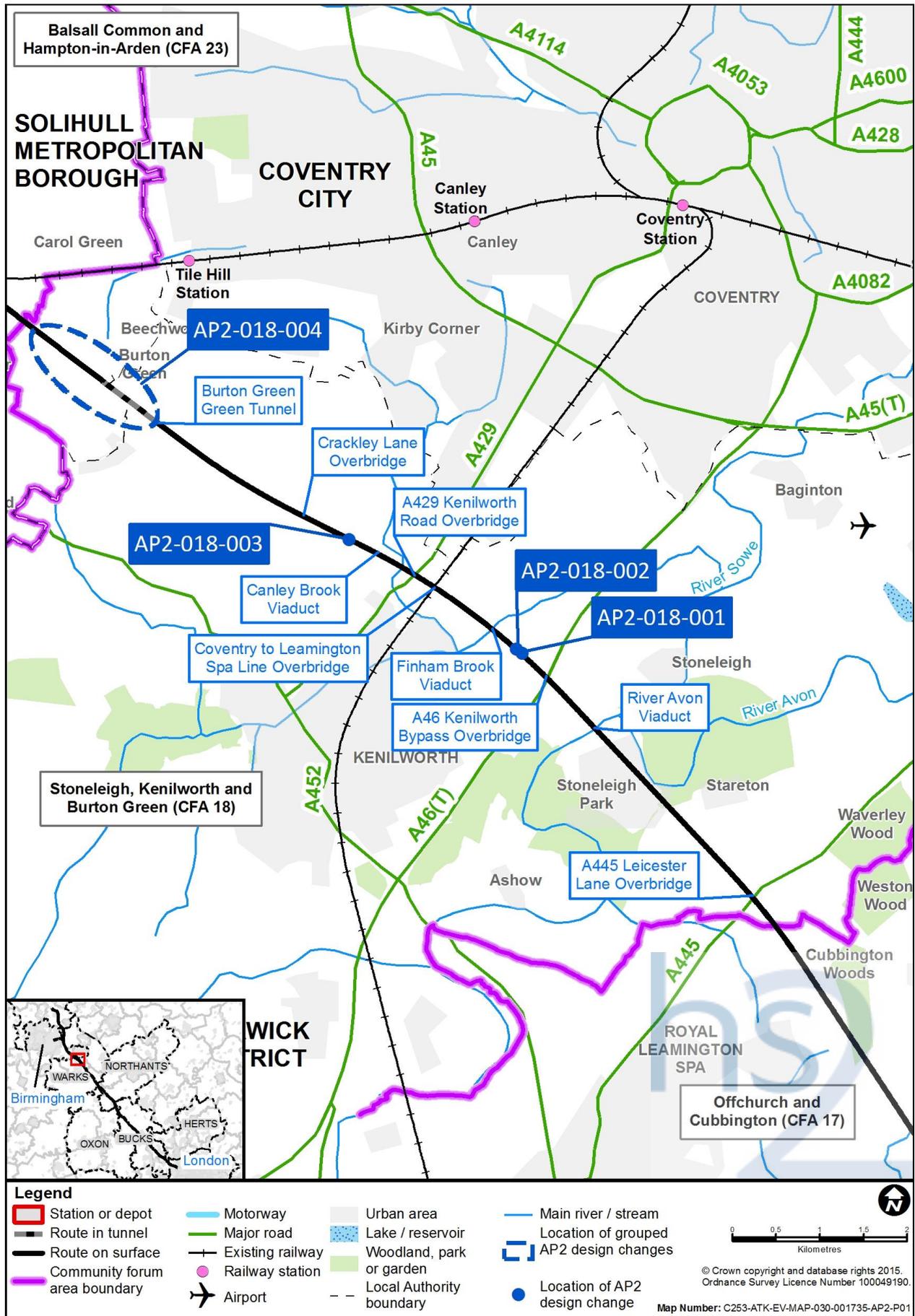
<sup>5</sup> Porous portals ensure that the micro pressure waves produced by the 'piston effect' of a train moving through a tunnel, which can result in noise as the train exits the tunnel, are controlled and kept at a level which does not affect the surrounding area.

Name of amendment	Description of the original scheme or AP1 revised scheme	Description of the AP2 revised scheme
		<p>instead of the at-grade crossing; and</p> <ul style="list-style-type: none"> <li>• incorporation of landscape mitigation earthworks to improve screening of the railway for users of the Kenilworth Greenway.</li> </ul> <p>Temporary and permanent land requirements will be similar to the original scheme, although different land parcels will be affected.</p>
<p>Revision to the design and access to compounds in the Waste Lane/ Burton Green area.</p>	<p>The original scheme identified land for the Burton Green green tunnel south portal satellite construction compound on the west side of the HS2 route, with construction traffic access from Balsall Common direction via Hob Lane/Red Lane.</p> <p>The Cromwell Lane satellite construction compound was located to the north-west of Cromwell Lane, with access from the Balsall Common direction and via Cromwell Lane.</p>	<p>This element of the amendment relocates the Burton Green green tunnel south portal satellite construction compound to the east side of the route with access via Bockendon Road. It will be increased in size and will be in operation for longer, as it will be now used for both civil works and rail systems works.</p> <p>The Cromwell Lane satellite construction compound is relocated northwards with access from the B4101 Waste Lane along the Kenilworth Greenway. The compound is increased in size to cover the proposed construction activity.</p> <p>These modifications will remove the need for construction traffic to be routed through Burton Green via Hob Lane, Cromwell Lane and Red Lane. Use of the B4101 Waste Lane by construction traffic will continue to be necessary. Additional land will also be required for the Burton Green green tunnel south portal satellite construction compound on the east side of the HS2 route.</p>
<p>Relocation and reduction in size of the material transfer stockpile area (MTSA) adjacent to Broadwells Wood.</p>	<p>The original scheme identifies land to the north-west of Broadwells Wood, between the route and the Kenilworth Greenway to be used temporarily during construction as a MTSA. Access to the area is from Crackley Road.</p>	<p>The revised scheme relocates the MTSA to land immediately east of the HS2 route, and north of Broadwells Wood. The site area will be reduced.</p> <p>Access to the area will be via Bockendon Road. The haul road that follows the alignment of the route will be used by heavy goods vehicles.</p> <p>The construction and maintenance access from Bockendon Road will be aligned with Footpath W168a which will be widened to accommodate the proposed track.</p>

Name of amendment	Description of the original scheme or AP1 revised scheme	Description of the AP2 revised scheme
Replacement of propped retaining walls with an earthwork cutting adjacent to Berkswell Substation.	<p>The original scheme included a retaining structure to the west of the Berkswell Substation.</p> <p>The construction would necessitate a permanent underground diversion of the power lines, including along a section of Footpath M186 and consequential tensioning works to connecting power lines elsewhere in the Burton Green area.</p>	<p>Local replacement of the propped retaining walls at Berkswell Substation with an earthwork cutting beneath the overhead power lines adjacent to Berkswell Substation.</p> <p>The works will result in an increase in the amount of agricultural land required permanently, due to the additional width of the cutting slope along the western side of the HS2 route.</p>
Relocation of the Waste Lane east and westbound roadhead to the north of Waste Lane.	<p>Land either side of the route to the south of Waste Lane in the vicinity of Little Beanit Farm is identified as a roadhead for construction operations.</p> <p>Access to the roadhead will be directly from the B4101 Waste Lane, with construction traffic routed from the M42 via the A45, the A452 Kenilworth Road, Kelsey Lane and Waste Lane.</p>	<p>The Waste Lane east and westbound roadhead is located to the west of the HS2 route with the MTSA identified to the north of Waste Lane which falls within the boundary of CFA23. The land required straddles the border between CFA18 and CFA23.</p> <p>Additional land will be required to accommodate this element of the amendment. Access will continue from the B4101 Waste Lane.</p> <p>Assessment of the roadhead relocation is reported within both CFA18 and CFA23 Volume 2.</p>
Revised mitigation earthworks and planting south of the Burton Green tunnel	<p>The original scheme makes provision for raised earthworks and landscape mitigation planting along the east side of the Bockendon Cutting. These features were designed to provide visual screening to the south of Burton Green, but will result in the permanent loss of agricultural land.</p>	<p>The AP2 revised scheme proposes a shallower slope on the outer side of the raised earthworks and a reduction in the extent of landscape mitigation planting. This will enable more land on the east side of the route to be returned to agricultural use.</p> <p>This element of the amendment will result in the need for additional land during construction</p>
Additional visual screening of auto-transformer feeder station (ATFS) for residents on Hodgett's Lane.	<p>Planting is proposed to the south-east of the ATFS between Hodgett's Lane and the HS2 route to supplement existing vegetation. It is proposed along the eastern boundary of the ATFS, parallel with Hodgett's Lane.</p>	<p>Additional landscape planting is proposed to provide further permanent visual screening of the ATFS to limit views from the closest residential properties on Hodgett's Lane.</p> <p>Additional planting is also proposed beside the access track that runs adjacent to the ATFS's eastern boundary and along its southern boundary to reinforce the effectiveness of the screening.</p>

Name of amendment	Description of the original scheme or AP1 revised scheme	Description of the AP2 revised scheme
<p>Reclassification of the realigned Footpath M187 to a permissive bridleway</p>	<p>Permanent realignment of Footpath M187 to the south to connect with the realigned Kenilworth Greenway.</p> <p>No provision is made to reinstate a permissive bridleway that currently runs from Hodgett's Lane to the Kenilworth Greenway through the site proposed for the construction of the ATFS at this location.</p>	<p>The permanently realigned Footpath M187 will be upgraded to permissive bridleway status to compensate for the loss of the permissive bridleway through the proposed ATFS site to the north. This will enable access to the realigned Kenilworth Greenway for equestrians as well as pedestrians and cyclists. The revised alignment is amended slightly to allow for an increase in width from 1.5m to 3.0m.</p>
<p>Relocation of Footpath M186 accommodation overbridge, in the vicinity of the Berkswell Sub-station and Little Beanit Farm.</p>	<p>Permanent realignment of Footpath M186 to a new shared footpath/ accommodation overbridge to prevent footpath severance and maintain agricultural land holding connectivity between the Berkswell Sub-station and Little Beanit Farm.</p> <p>The design of the overbridge would, however, require farm traffic to cross the path of the realigned Kenilworth Greenway.</p>	<p>Relocation of the Footpath M186 accommodation overbridge northwards. Provision of a two span structure to cross over both the Kenilworth Greenway and the railway, similar in form to the B4101 Waste Lane overbridge. This element of the amendment will remove potential conflict between users of the Kenilworth Greenway and farm traffic/operations.</p>
<p>Provision of a stepped ramp to connect Footpath M184 to the Kenilworth Greenway in the vicinity of Little Beanit Farm.</p>	<p>The original scheme will result in the loss of the connection between Footpath M184 and Waste Lane due to the realignment of the B4101 Waste Lane. No provision has been made for its reinstatement or permanent diversion.</p>	<p>Reconnection of Footpath M184 and the B4101 Waste Lane via a stepped ramp down to the Kenilworth Greenway and then via the ramp included in the original scheme which connects the Kenilworth Greenway to the B4101 Waste Lane.</p>
<p>Relocation of the temporary realignment of the Kenilworth Greenway at the crossing of B4101 Waste Lane.</p>	<p>The temporary diversion route for the Kenilworth Greenway encroaches into the front garden of a residential property, Dragonflies, precluding access to the property's garage and affecting mature boundary vegetation.</p>	<p>The temporary diversion for the Kenilworth Greenway is realigned to cross the B4101 Waste Lane approximately 40m to the east. This design change will avoid encroachment into the boundary of the residential property named Dragonflies.</p>

Figure 2: Locations of amendments in CFA18



## 5 Assessment of amendments

### 5.1 Relocation of the Footpath K29 overbridge in the vicinity of Kingswood Farm House, (AP2-018-001)

- 5.1.1 The Bill provides for the scheme to cross the route of a public footpath (Footpath K29) in the vicinity of Kingswood Farm House, to the south of Dalehouse Lane at Kenilworth (refer to main ES map CT-05-095, C6, in the main ES, Volume 2, CFA18 map book). The footpath runs in a broadly east to west direction, linking Stoneleigh with Kenilworth and the section which is affected also forms part of the Coventry Way and Centenary Way long-distance footpaths. The Bill makes provision for the construction of a new overbridge to carry the K29 public footpath over the HS2 route.
- 5.1.2 The original scheme requires the alignment of Footpath K29 to be diverted slightly to the north of its existing position to cross perpendicular to the route of the railway, passing to the north of the residential property at New Kingswood Farm. The diverted footpath returns to its existing alignment approximately 35m to the east of the access track serving New Kingswood Farm.
- 5.1.3 Since submission of the Bill, further consideration has been given to the siting of the Footpath K29 overbridge to allow affected residents more time before their property needs to be demolished. The earthworks require the demolition of the residential property at New Kingswood Farm and the works for the Footpath K29 overbridge will also encroach into the curtilage of this property (refer to map CT-05-095, C6, in the SES and AP2 ES, Volume 2, CFA18 map book). The AP2 revised scheme will construct the overbridge ahead of excavating the cutting for the railway at this location. The AP2 revised scheme will relocate the Footpath K29 overbridge structure to the south of the location detailed in the main ES, crossing the railway to the south of New Kingswood Farm instead of to the north. The AP2 revised scheme will require the route of Footpath K29 to be diverted southwards following the western edge of the HS2 route, to cross the railway and connect back with its existing alignment to the east of the access track serving New Kingswood Farm. The length of the diversion will not change significantly.
- 5.1.4 The AP2 revised scheme will require a small area of additional land (approximately 0.25ha) to be acquired on a temporary basis, beyond the original limits of the Bill, to facilitate construction of the overbridge abutments and to allow for the diversion of Footpath K29. In all other respects, the general design and construction of the Footpath K29 overbridge will remain unchanged from the original scheme.
- 5.1.5 The temporary use of this additional land 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 any topics.

### 5.2 Relocation of the woodland habitat creation area in the vicinity of Kingswood Farm House (AP2-018-002)

- 5.2.1 The Bill provides for the permanent provision of an area (approximately 1ha) of woodland habitat creation located to the north-east of the HS2 route in the vicinity of Kingswood Farm House, between Glasshouse Wood cutting and Four Winds property

boundary (refer to main ES map CT-05-095, B5, in the main ES, Volume 2, CFA18 map book). The area is located within New Kingswood Farm (CFA18/9) farm holding and provides compensation for woodland habitat lost due to the scheme.

- 5.2.2 Since submission of the Bill, further discussions with the landowner have resulted in consideration of an alternative location for the woodland habitat creation to reduce the effect of severance of the landholding and to maintain the maximum area of arable land. The alternative location identified is still within the same farm holding (New Kingswood Farm - CFA18/9) but will be located to the south-west of the HS2 route (refer to map CT-05-095, B6, in the SES and AP2 ES, Volume 2, CFA18 map book). This location is outside the original limits of the Bill. The alternative area measuring approximately 1.2ha will be contiguous with areas of existing woodland within Kenilworth golf course to the south. This will provide appropriate connectivity with existing woodland and grassland habitats and will also be effective as landscape integration planting.
- 5.2.3 An area of new hedgerow planting, included under the original scheme as part of the woodland habitat creation area, will remain on the eastern side of the AP2 revised scheme as part of this amendment. This will be retained in its initial position alongside the railway cutting as far as Footpath K29 overbridge, to provide additional screening for properties on the east of the route.
- 5.2.4 The permanent change in location of this area of woodland habitat creation will not result in changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: air quality; community; land quality; socio-economics; sound, noise and vibration; traffic and transport; and water resources and flood risk assessment. However, reassessment is considered to be required in respect of: agriculture, forestry and soils; cultural heritage, ecology; and landscape and visual assessment.

## **Agriculture, forestry and soils**

### *Scope, assumptions and limitations*

- 5.2.5 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.

### *Existing baseline*

- 5.2.6 Sandstones and occasional mudstones of the Kenilworth Sandstone Formation underlie this amendment area (AP2-018-002). River terrace deposits (sand and gravel) and alluvium (silt and clay) which cover the bedrock are present in the area.
- 5.2.7 The characteristics of the soils are described by the Soil Survey of England and Wales<sup>6</sup> and are shown on the National Soil Map<sup>7</sup>. More detailed published information is also available for part of the study area<sup>8</sup>.

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<sup>6</sup> Soil Survey of England and Wales (1984), Soils and their Use in Midland and Western England, Bulletin 12.

<sup>7</sup> Cranfield University (2001), The National Soil Map of England and Wales 1:250,000 scale, National Soil Resources Institute, Cranfield University, UK.

<sup>8</sup> Beard, G.R. (1984), Soils in Warwickshire V – Sheet SP27/37 (Coventry South). Soil Survey Record No. 81, Harpenden.

- 5.2.8 The soils in this amendment area belong to the Bromsgrove association, over reddish Carboniferous sandstones. The association contains well-drained reddish sandy loam soils over soft and hard sandstone, with deeper soils in places that are in Wetness Class<sup>9</sup> (WC) I; there are also some clay loam soils with slowly permeable subsoils in mudstone that experience slight seasonal waterlogging (WC II). In alluvium of the Finham Brook and its tributaries there is the clay loam textured Trent series (WC III). Most of the agricultural land in this amendment area is Grade 2, with some Subgrade 3a.
- 5.2.9 This amendment affects New Kingswood Farm (CFA18/9). This is a 36.5ha holding involved mainly in arable production with some livestock. It is assessed as being of medium sensitivity.

### *Future baseline*

#### **Construction (2017)**

- 5.2.10 No committed developments have been identified in this local area that will materially alter the baseline conditions in 2017.
- 5.2.11 Most existing environmental stewardship agreements will expire in 2015 and be replaced by a new environmental land management scheme (countryside stewardship) which is voluntary but competitive. It is more targeted than previous schemes, with its priorities being to protect and enhance biodiversity and water quality.
- 5.2.12 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)**

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

### *Effects arising during construction*

- 5.2.14 The main ES reported that 169ha of best and most versatile (BMV) agricultural land (in this case, Grade 2 and Subgrade 3a) will be required permanently. This is a moderate adverse effect, which is significant. The amendment requires a further 0.2ha of Grade 2 agricultural land permanently. However, this change will not cause any new or materially different significant effect or change the level of significance of the effects on BMV agricultural land reported in the main ES or the AP1 ES, which remains as moderate adverse, which is significant.

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<sup>9</sup>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).

- 5.2.15 The main ES identified a high magnitude of land required temporarily and permanently from New Kingswood Farm during and following construction and some medium severance and disruptive impacts (i.e. noise and dust) during construction. There will also be some demolition of agricultural buildings. The original scheme gives rise to a residual major/moderate adverse effect overall, due mainly to the high magnitude of land requirement and the demolition of farm buildings. The amendment involves relocating a parcel of woodland planting (0.8ha) from land to the east of HS2 to a new location (1.04ha) to the west of the railway. This results in an overall increase of 0.2ha of land (or 0.5% of the holding) required permanently from New Kingswood Farm. However, this small increase will not cause any new or materially different significant effect or change the level of significance of the effects (i.e. major/moderate adverse, which is significant) reported in the main ES or the AP1 ES.

#### *Effects arising from operation*

- 5.2.16 There are no new or different significant operational effects for agriculture, forestry and soils as a result of the proposed amendment in comparison with the main ES and the AP1 ES.

#### *Mitigation and residual effects*

- 5.2.17 The amendment will result in no new or different significant effects or change the level of significance of the likely residual significant effects reported in the main ES.
- 5.2.18 No further mitigation measures are required.

#### *Cumulative effects*

- 5.2.19 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the proposed amendment acting in combination with another amendment in AP2, the SES or in AP1, or as a result of any relevant committed development.

### **Cultural heritage**

#### *Scope, assumptions and limitations*

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

#### *Existing baseline*

- 5.2.21 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 is provided in Volume 2, Section 6.3 of the main ES. In addition, the baseline has been updated with the results of additional survey work comprising geophysical surveys for archaeology. A further review of historic mapping and other available historic data sources has also been carried out to verify the status of a number of sites in the vicinity of the route, which the Woodland Trust believe to be ancient woodland, that are not currently listed on the ancient woodland inventory.
- 5.2.22 The amendment is located in the vicinity of the following heritage assets:

- Kingswood Boundaries (asset reference STN104), which is of low value; and
- Kingswood Farmhouse (asset reference STN036), which is of low value.

5.2.23 The baseline resources are described in the main ES (see CFA18 Report, Section 6 and Volume 5: Appendix CH-001-018 and Volume 5: Appendix CH-002-018).

#### *Future baseline*

##### **Construction (2017)**

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

##### **Operation (2026)**

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

#### *Effects arising during construction*

5.2.26 The original scheme resulted in permanent moderate adverse effects on Kingswood Boundaries (asset reference STN104) and on Kingswood Farmhouse (asset reference STN036). The proposals will not change the high adverse impact on Kingswood Farmhouse as a result of the changes to its setting and relationship with immediate farmed landscape.

5.2.27 The Kingswood Boundaries (asset reference STN036) are located further to the south east of the proposed amendment and therefore the impacts to this asset will not be altered.

5.2.28 The proposed amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

5.2.29 There are no new or different significant operational effects for cultural heritage as a result of the proposed amendment in comparison with the main ES and the AP1 ES.

#### *Mitigation and residual effects*

5.2.30 The amendment will result in no change in the likely residual significant effects reported in the main ES.

5.2.31 No additional mitigation measures are proposed.

#### *Cumulative effects*

5.2.32 There are no new or different likely significant cumulative effects for cultural heritage as a result of the proposed amendment acting in combination with another amendment in AP2, the SES or in AP1, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## Ecology

### *Scope, assumptions and limitations*

- 5.2.33 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.
- 5.2.34 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*

- 5.2.35 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, aerial photography and relevant existing information gathered for the main ES from national organisations and from regional and local sources including: Warwickshire County Council (Warwickshire Biological Records Centre) and Warwickshire Wildlife Trust.
- 5.2.36 A summary of the baseline information relevant to the assessment of the amendment is provided below. This takes account of any relevant new or updated baseline information provided in SES and AP2 ES, Volume 5: Appendix-001-003. For those receptors described in the main ES, further details are provided in Volume 2, CFA18, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.2.37 There are no statutory or non-statutory designated nature conservation sites or ancient woodland relevant to the assessment.
- 5.2.38 Statutory and non-statutory designated sites in the wider local area are described in the main ES (Volume 5, CFA18, Section 2) and are shown on Map EC-01-048, Volume 5, Map Book Ecology.

### **Habitats**

- 5.2.39 The additional land required for the amendment consists of arable land with an important hedgerow along the western boundary and a short section of species-poor hedgerow and broadleaved scattered trees along the southern boundary. The land which is no longer required for woodland habitat creation to the north-east of the HS2 route is also arable land, without hedgerows.
- 5.2.40 The arable land within this CFA was reported as having negligible value in the main ES. The hedgerow network was reported in the main ES as being of district/borough value.
- 5.2.41 Other habitats in this area are described in the main ES (Volume 5, CFA18, Section 4) and shown on Map EC-02-049, Volume 5, Map Book Ecology.

### **Protected and/or notable species**

- 5.2.42 A small population size class of great crested newt was recorded in a pond in the south-west corner of the additional land required for the amendment (030-AA-141003, as illustrated in the main ES Volume 5, Map Book Ecology). Great crested newts from this pond will use the adjoining hedgerows along the western and southern boundaries of the land required for the amendment as terrestrial habitat, and are also likely to use the areas of scattered trees and patches of broadleaved woodland to the west. This pond is not part of an AMP and was not valued in the main ES as it fell outside the land required at that time. As a single pond outside of an AMP with a small population class of great crested newt, this receptor is of district/borough value.
- 5.2.43 Locations of species records from surveys conducted in support of the main ES are illustrated on Maps EC-01 to EC-12, Volume 5, Map Book Ecology.

#### *Future baseline*

##### **Construction (2017)**

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

##### **Operation (2026)**

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

#### *Effects arising during construction*

##### **Avoidance and mitigation measures**

- 5.2.46 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**

- 5.2.47 There are no new or different likely significant effects on designated sites to those reported in the main ES.

##### **Habitats**

- 5.2.48 The main ES reported no significant effect due to the loss of arable land, which has negligible value. The amendment will result in the loss of an area of arable land to the west of the route and the retention of an area of arable land to the east. There will be no new or different likely significant effect as a result of the amendment.
- 5.2.49 The main ES reported that the combined loss and severance of hedgerows within the original scheme will cause an adverse effect on the conservation status of the hedgerow network which will be significant at a district/borough level. In the case of this amendment the hedgerows, particularly the important/species-rich sections, will be incorporated into the woodland habitat creation area. Therefore there will be no additional loss of hedgerow as a result of the amendment. There will be no new or different likely significant effect as a result of the amendment.

- 5.2.50 It is unlikely that any other effects on habitats of relevance at more than the local/parish level will occur. Additional local/parish effects from survey data collected since preparation of the main ES are listed in SES and AP2 Volume 5: Appendix EC-003-003.

### **Protected and/or notable species**

- 5.2.51 There were no likely significant effects on great crested newt breeding in pond 030-AA-141003 reported in the main ES.
- 5.2.52 The arable land that will be lost (i.e. used for woodland habitat creation) as a result of the amendment covers an area of approximately 1.2ha and this could be used by great crested newt. Although this habitat is sub-optimal for great crested newt it is immediately adjacent to a confirmed breeding pond (the land which is no longer required for woodland habitat creation to the north-east of the route was approximately 220m from the pond at its closest point).
- 5.2.53 Implementation of measures within the CoCP will ensure there will be no killing or injury of great crested newts as a result of the amendment. Any trapping of terrestrial habitat which supports great crested newt required to avoid killing/injury will be undertaken in accordance with the principles of ecological mitigation identified within the SMR Addendum of the main ES (Volume 5: Appendix CT-001-000/2).
- 5.2.54 There will be a small-scale loss of sub-optimal terrestrial habitat adjacent to a great crested newt breeding pond. The physical extent of the loss is similar to that under the original scheme for which impacts were reported in the main ES. Under the original scheme, the habitat was 220m from the pond at its closest point while under the amendment it is adjacent to the pond. However, because the arable habitat is sub-optimal, and following the implementation of the measures set out above, there will be no likely significant effects on this great crested newt population.
- 5.2.55 It is unlikely that any other effects on species of relevance at more than the local/parish level will occur. Additional local/parish effects from survey data collected since preparation of the main ES are listed in SES and AP2 Volume 5: Appendix EC-003-003.

### *Cumulative effects*

- 5.2.56 There are no new or different likely cumulative effects for ecology as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1, or any SES changes.

### *Mitigation and residual effects*

#### **Other mitigation measures**

- 5.2.57 The only change under the amendment relates to the location of the mitigation provision; its composition i.e. woodland habitat creation and function remain unchanged. No additional mitigation measures (i.e. in addition to those identified in the main ES and SES) are therefore required.

### *Summary of likely residual effects*

- 5.2.58 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Effects arising from operation*

- 5.2.59 There are no new or different significant operational effects for ecology as a result of the proposed amendment in comparison with the main ES and the AP1 ES.

## **Landscape and visual assessment**

### *Scope, assumptions and limitations*

- 5.2.60 The assessment scope, key assumptions and limitations of the landscape and visual 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. An update to the methodology for the landscape and visual assessment is also described in Volume 1 of the AP1 ES.

### *Existing baseline*

- 5.2.61 The area of land required for the amendment is located within Stoneleigh Parklands Landscape Character Area (LCA), as described in the main ES (Volume 2, CFA18, Section 9.3).
- 5.2.62 Views from Kingswood Farmhouse, Four Winds property, Footpath K29 (Coventry Way), and Kenilworth Golf Course are also located in close proximity to the area and are described in the main ES (Volume 2, CFA18, Section 9.3). The visual receptors are as follows: 270.2.003 (Kingswood Farmhouse); 270.2.005 (Four Winds); 269.3.001 (PRoW K29 Coventry Way); and 269.3.005 (Kenilworth Golf Course (future baseline)).

### *Future baseline*

#### **Construction (2017)**

- 5.2.63 The future baseline for construction in 2017 remains unchanged from that reported in the main ES. No committed developments have been identified in this local area that will materially alter the baseline conditions in 2017.

#### **Operation (2026)**

- 5.2.64 The future baseline for operation in 2026 remains unchanged from that reported in the main ES. No committed developments have been identified in this local area that will materially alter the baseline conditions in 2026.

### *Effects arising during construction*

#### **Landscape assessment**

- 5.2.65 Stoneleigh Parklands LCA was assessed as being affected by the original scheme and will be further affected by this amendment. Tranquillity is medium, the landscape is of regional value and, therefore it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse effect during construction due to the removal of existing vegetation, excavation and the formation of embankments and

the construction of structures including viaducts. The relocation of the woodland habitat creation area and new hedgerow planting will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.2.66 The small scale of this amendment is such that changes to views will be barely perceptible in comparison to the original scheme. The proposed amendment will not give rise to a new or different significant construction visual effect and will not change the level of significance reported in the main ES.

### *Effects arising during operation*

### **Landscape assessment**

- 5.2.67 Stoneleigh Parklands LCA was assessed as being affected by the original scheme and will further be affected by this amendment. Tranquillity is medium, the landscape is of regional value and, therefore it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse effect in year 1 of operation, remaining moderate adverse in year 15 and year 60 due to the continued influence of the high speed trains, the presence of the viaducts with noise fence barriers, loss to ancient woodland, overhead line equipment and a reduced sense of separation between Kenilworth and Coventry at Gibbert Hill. The relocation of woodland habitat and new hedgerow planting 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. The proposed measures in this amendment assist in improving landscape integration and screening of the route through relocated woodland habitat creation planting and new hedgerow planting will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.2.68 The proposed relocation of the woodland habitat location from the vicinity of Kingswood House and the hedgerow proposed at the top of the slope providing additional visual screening to the west of the route to the north of Kenilworth golf course will not change the level of significance of the effects reported in the main ES and the AP1 ES. The only exception to this is small differences in foreground views from Four Winds, 270.2.005 and PRoW (footpath) K29 (Coventry Way), 269.3.001 . These however will not give rise to any new or materially different significant effects or change the level of significance for each of these viewpoints which for viewpoint 270.2.005 were moderate adverse in winter 2026 and minor adverse impacts in summer 2026. For 269.3.001 they will remain at major adverse for winter 2026 and major adverse in summer 2026.

### *Mitigation and residual effects*

- 5.2.69 The proposed amendment is relocated woodland habitat creation that forms part of the mitigation measures for the scheme. There are no new or different residual construction or operational effects for landscape and visual as a result of the proposed amendment, in comparison with the main ES, the SES and the AP1 ES.

### *Cumulative effects*

- 5.2.70 There are no new or different likely significant cumulative effects for landscape and visual as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1, or any SES changes as a result of any relevant committed development interacting with the AP2 revised scheme.

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

- 5.3.1 The relocation of the woodland habitat creation area in the vicinity of Kingswood Farm House (AP2-018-002) does not cause any new or different likely residual significant effects or change the significance of the environmental effects as set out in the main ES, or in the AP1 ES.

## **5.4 Revision to gradient and construction phasing of eastern approach to Bridleway W164 overbridge (AP-018-003)**

- 5.4.1 The Bill provides for the scheme to cross the route of Bridleway W164 in the vicinity of Canley Brook, to the north of Kenilworth. This route is also known as the Connect2 Kenilworth cycleway and forms part of the Sustrans National Cycle Network (Route No. 52) (refer to map CT-05-097, H5, in the main ES, Volume 2, CFA18 map book).
- 5.4.2 To avoid permanent severance of this bridleway, the Bill provides for Bridleway W164 to be permanently realigned around the edge of the earthworks and to cross over the HS2 route to the north of its current position by means of the permanent provision of the Bridleway W164 overbridge across the HS2 route. The overbridge is located to the south-west of Cryfield Grange, immediately to the north-west of the Canley Brook viaduct.
- 5.4.3 The main ES identified that the works in this area will be phased in such a way that some temporary closures and/or realignment of Bridleway W164 will be unavoidable at times with rerouting via Bridleway W165 the most likely option, increasing journey lengths and entailing use of a route less suitable for cyclists. As the duration of the works was estimated to be approximately one year and three months, the impact of such a temporary diversion was assessed as giving rise to a significant adverse effect on users.
- 5.4.4 Since submission of the Bill, both the gradient of the approach and the phasing of construction have been modified to provide a more convenient approach profile and to avoid the need for temporary closure or realignment of the bridleway (refer to map CT-05-097, H5, in the SES and AP2 ES, Volume 2, CFA18 map book).
- 5.4.5 The gradient of the eastern approach in the original scheme exceeded the 5% maximum design gradient. The AP2 revised scheme will reduce the gradient of the eastern approach to 5%, although additional earthworks will be required to accommodate the gentler slope. Approximately 0.35ha of permanent additional land will be required. This land falls outside the limits of the Bill.
- 5.4.6 A revised construction programme for the works now makes provision to bring forward the Bridleway W164 permanent realignment works, so that the realignment will be completed before the Canley Brook earthworks commence. Temporary closure

or realignment of the Bridleway will not be required. In all other respects, the alignment of the Bridleway remains the same as the original scheme.

- 5.4.7 The amendments are not considered likely to result in changes that will 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 assessment; and traffic and transport.

### **Agriculture, forestry and soils**

#### *Scope, assumptions and limitations*

- 5.4.8 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.

#### *Existing baseline*

- 5.4.9 Sandstone of the Bromsgrove Sandstone Formation underlies the majority of the proposed amendment (AP2-018-003). There are no superficial deposits over the bedrock in this area.
- 5.4.10 The characteristics of the soils are described by the Soil Survey of England and Wales and shown on the National Soil Map. More detailed published information is also available for part of the study area.
- 5.4.11 The soils affected by this proposed amendment are in the Bromsgrove association, developed on reddish Carboniferous sandstones. The association contains well-drained reddish sandy loam soils over soft and hard sandstone, with deeper soils in places that are in Wetness Class<sup>10</sup> (WC). The quality of agricultural land affected by this amendment is Grade 2.
- 5.4.12 The proposed diversion of Bridleway W164 affects one agricultural holding; Cryfield Grange (CFA18/12), which is a 105ha arable holding with some woodland. It is irrigated and is assessed as being of high sensitivity to change.

#### *Future baseline*

##### **Construction (2017)**

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

##### **Operation (2026)**

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

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<sup>10</sup>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).

### *Effects arising during construction*

- 5.4.15 The main ES reported that 169ha of best and most versatile (BMV) agricultural land (in this case, Grade 2 and Subgrade 3a) will be required permanently. This is a moderate adverse effect, which is significant. The amendment requires a further 0.35ha of Grade 2 agricultural land permanently. However, this small change will not cause any new or different significant effects or change the level of significance of the effects on BMV agricultural land reported in the main ES or the AP1 ES, which remains as moderate adverse, which is significant.
- 5.4.16 The main ES reported a major adverse effect on Cryfield Grange due to the high magnitude of land required temporarily during construction (33.4ha, or 32% of the holding) and permanently (29.1ha, or 28% of holding). Whilst the proposed diversion of Bridleway W164 will result in the permanent loss of a further 0.35ha of land (or 0.33% of the holding), the magnitude of impact resulting from the land requirement remains high, and the effect remains major adverse, which is significant. Therefore, the amendment, in the context of the size of the holding, does not cause any new or different significant effects or change the level of significance of the effects reported in the main ES or the AP1 ES.

### *Effects arising from operation*

- 5.4.17 There are no new or different significant operational effects for agriculture, forestry and soils as a result of the proposed amendment in comparison with the main ES and the AP1 ES.

### *Mitigation and residual effects*

- 5.4.18 The land required temporarily for construction will be restored to its former agricultural use once the works are 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.
- 5.4.19 The amendment will result in no change in the likely residual significant effects reported in the main ES.

### *Cumulative effects*

- 5.4.20 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1 or the SES changes, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Community**

### *Scope, assumptions and limitations*

- 5.4.21 The assessment scope, key assumptions and limitations for the community 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. This report follows the standard assessment methodology described in those documents.

### *Existing baseline*

- 5.4.22 The existing baseline for the area is as described in the main ES, Volume 2, CFA18 report, Section 5.3. There have been no changes to the baseline in this area of relevance to the assessment of this amendment, since the assessment of the original scheme was undertaken.

### *Future baseline*

#### **Construction (2017)**

- 5.4.23 The future baseline for construction in 2017 will be as reported in the main ES (Volume 2, CFA18 report, Section 5.3).

#### **Operation (2026)**

- 5.4.24 The future baseline for operation in 2026 will be as reported in the main ES (Volume 2: CFA18 report, Section 5.3).

### *Effects arising during construction*

- 5.4.25 In the original scheme, the main ES identified a moderate adverse and temporary effect on the users of Bridleway W164, which is also known as the 'Connect2 Kenilworth' route and the Sustrans National Cycle Route No. 52. This community effect was assessed on the basis that the original scheme would necessitate some temporary closures and rerouting of the bridleway during the construction works.
- 5.4.26 The change to the phasing of the construction works which is now incorporated into the AP2 revised scheme will enable the permanent diversion of the bridleway to be undertaken ahead of other construction works in this area and avoid the need for any temporary closures or diversions of the recreational route. The amendment will as a consequence remove the moderate adverse and significant temporary community effect identified in the main ES.
- 5.4.27 The AP2 revised scheme does not make changes to the permanent diversion route for Bridleway W164, the Connect 2 Kenilworth route. On this basis, the permanent effects on users will be as assessed for the original scheme.
- 5.4.28 Further details of the revised community assessment in this area are contained in the SES and AP2 ES, Volume 5: Appendix CM-001-018. Community assessment maps are also provided in the SES and AP2 ES Volume 5 Community Map Book, see map sheet CM-01-110.

### *Effects arising from operation*

- 5.4.29 There are no new or different significant operational effects for community as a result of the proposed amendment in comparison with the main ES and the AP1 ES.

### *Mitigation and residual effects*

- 5.4.30 The AP2 revised scheme will not give rise to any new or different significant effects and will remove the moderate adverse and temporary significant effect identified in the main ES.

### *Cumulative effects*

- 5.4.31 There are no new or different likely significant cumulative effects for community as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1, or the SES changes, or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Cultural heritage**

#### *Scope, assumptions and limitations*

- 5.4.32 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES. These are the same as the main ES and AP1 ES.

#### *Existing baseline*

- 5.4.33 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 data sources is provided in Volume 2, Section 6.3 of the main ES. In addition, the baseline has been updated with the results of additional survey work comprising geophysical surveys for archaeology. A further review of historic mapping and other available historic data sources has also been carried out to verify the status of a number of sites in the vicinity of the route, which the Woodland Trust believe to be ancient woodland, that are not currently listed on the ancient woodland inventory.
- 5.4.34 The amendment is located in the vicinity of the following heritage assets:
- Cryfield Grange Farm (asset reference STN054), which is Grade II Listed and is of moderate value;
  - Cryfield Grange deserted medieval settlement (asset reference STN055), which is of moderate value;
  - Oak Tree Cottage (asset reference STN056), which is of low value; and
  - Crackley Assarted Woodland (asset reference STN106), which is of low value.
- 5.4.35 The baseline resources are described in the main ES (see CFA18 Report, Section 6 and Volume 5: Appendices CH-001-018 and CH-002-018).

#### *Future baseline*

##### **Construction (2017)**

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

##### **Operation (2026)**

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

### *Effects arising during construction*

- 5.4.38 The original scheme resulted in a moderate adverse effect due to the impacts on Crackley Assarted Woodland (asset reference STN106) and on the setting of Cryfield Grange Farm (asset reference STN054). There are no assets within the additional area of permanent land take other than Crackley Assarted Woodland. The limited amount of additional land required will not affect the overall impact on this asset of low value, which will remain high adverse resulting in a moderate adverse effect as reported in the main ES, which is significant.
- 5.4.39 The minor reduction in gradient of the Bridleway W164 will not alter the impacts on settings of heritage assets in the vicinity, including Cryfield Grange Farm (asset reference STN054).
- 5.4.40 The proposed amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.4.41 The original scheme resulted in a moderate adverse effect on Crackley Assarted Woodland (asset reference STN106) as a result of an increase in noise and trains being visible from a number of locations, along with the change in the rural character of the landscape. The changes to the bridleway will not affect this high adverse impact as reported in the main ES.
- 5.4.42 The proposed amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.4.43 The amendment will result in no change in the likely residual significant effects reported in the main ES.
- 5.4.44 No additional mitigation measures are proposed.

### *Cumulative Effects*

- 5.4.45 There are no new or different likely significant cumulative effects for cultural heritage as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1, or SES changes, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Ecology**

### *Scope, assumptions and limitations*

- 5.4.46 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.
- 5.4.47 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*

- 5.4.48 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, aerial photography and relevant existing information gathered for the main ES from national organisations and from regional and local sources including: Warwickshire County Council (Warwickshire Biological Records Centre) and Warwickshire Wildlife Trust.
- 5.4.49 A summary of the baseline information relevant to the assessment of the amendment is provided below. This takes account of any relevant new or updated baseline information provided in SES and AP2 Volume 5: EC-001-003. For those receptors described in the main ES, further details are provided in Volume 2: CFA18, Section 7 and in Volume 5: including maps EC-01 to EC-12.

### **Designated sites**

- 5.4.50 There are no statutory or non-statutory designated nature conservation sites relevant to the assessment of the amendment.
- 5.4.51 There are two areas of woodland listed on the ancient woodland inventory within 500m of the amendment, namely Crackley Wood North (approximately 230m from the land required for the AP2 revised scheme) and Roughknowles Wood (approximately 470m from the land required for AP2 revised scheme).
- 5.4.52 Statutory and non-statutory designated sites in the wider local area are described in the main ES (Volume 5, CFA18, Section 2) and are shown on Map EC-01-049, Volume 5, Map Book Ecology.

### **Habitats**

- 5.4.53 The land required for the amendment consists of arable land and a species-poor hedgerow with trees.
- 5.4.54 The arable land within the area was reported as having negligible value in the main ES. The hedgerow network within CFA18 was assessed in the main ES as having district/ borough value.
- 5.4.55 Other habitats in this area are described in the main ES (Volume 5, CFA18, Section 4) and shown on Map EC-02-049, Volume 5, Map Book Ecology.

### **Protected and/or notable species**

- 5.4.56 A small population size class of great crested newt was recorded in two ponds approximately 300m and 410m from the amendment (030-AA-143002 and 030-AA-143003, as illustrated in Volume 5, Map Book Ecology of the main ES). A medium population size class was recorded in a pond approximately 435m from the amendment (030-AA-143004, as illustrated in Volume 5, Map Book Ecology of the main ES). Great crested newts from these ponds could potentially be using the hedgerow within the land required for the AP2 revised scheme as terrestrial habitat, although there is considerable suitable habitat available within 250m of the ponds (namely Crackley Wood and fields of semi-improved grassland with hedgerows).

These ponds are part of AMP 12, as reported in the main ES, which is of county/metropolitan value.

- 5.4.57 There are three trees with moderate potential to support roosting bats adjacent to the amendment and one tree with high potential to support roosting bats approximately 40m north of the amendment. These trees and the species-poor hedgerow could be used by the assemblage of bats defined in the main ES as ‘...using foraging and commuting woodland habitat including Crackley Wood, Roughknowles Wood, Broadwells Wood and Black Waste Wood together with adjacent habitats including the Kenilworth Greenway’, which has county/metropolitan value.
- 5.4.58 Locations of species records from surveys conducted in support of the main ES are illustrated on Maps EC-01 to EC-12, Volume 5, Map Book Ecology.

### *Future baseline*

#### **Construction (2017)**

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

#### **Operation (2026)**

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

### *Effects arising during construction*

#### **Avoidance and mitigation measures**

- 5.4.61 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**

- 5.4.62 There are no new or different significant effects on designated sites to those reported in the main ES.

#### **Habitats**

- 5.4.63 The amendment will result in the additional loss (approximately 0.15ha) of arable land which has negligible value. No significant effect was reported in the main ES on this habitat and there will be no new or different significant effects as a result of the amendment.
- 5.4.64 Loss of hedgerow was reported in the main ES as having an adverse effect on the conservation status of the hedgerow network which will be significant at a district/borough level. The amendment will result in the additional loss of one section of species-poor hedgerow measuring approximately 125m in length. This is a different significant effect. However, this will not change the level of significance of effect reported in the main ES.

- 5.4.65 It is unlikely that any other effects on habitats of relevance at more than the local/parish level will occur. Additional local/parish effects from survey data collected since preparation of the main ES are listed in Volume 5: Appendix EC-003-003.

#### **Protected and/or notable species**

- 5.4.66 There were no likely significant effects on AMP12, including great crested newt breeding in ponds 030-AA-143002, 030-AA-143003 and 030-AA-143004, reported in the main ES.
- 5.4.67 The arable land within the AMP that will be lost as a result of the amendment is considered unlikely to be used by great crested newt, as it is sub-optimal habitat and lies 300-435m from the confirmed breeding ponds. The species-poor hedgerow could potentially be used by great crested newts; however, it is 300 to 435m from the breeding ponds and there is considerable suitable terrestrial habitat within 250m of the ponds. Implementation of measures within the draft CoCP will ensure there will be no killing or injury of newts as a result of the amendment. Any trapping of terrestrial habitat which supports great crested newt required to avoid killing/injury will be undertaken in accordance with the ecological principles of mitigation identified within the SMR Addendum of the main ES (Volume 5: Appendix CT-001-000/2). The AP2 revised scheme will not change the assessment reported in the main ES.
- 5.4.68 A likely significant adverse effect at county/metropolitan level on the assemblage of bats using foraging and commuting woodland habitat including Crackley Wood, Roughknowles Wood, Broadwells Wood and Black Waste Wood together with adjacent habitats including the Kenilworth Greenway was reported in the main ES. The AP2 revised scheme will result in the loss of an additional (125m) section of species-poor hedgerow, but avoids the two trees with moderate habitat potential adjacent to the amendment. The AP2 revised scheme will result in a different significant effect on the assemblage but will not change the level of significance of the effects reported in the main ES.
- 5.4.69 It is unlikely that any other effects on species of relevance at more than the local/parish level will occur. Additional local/parish effects from survey data collected since preparation of the main ES are listed in SES and AP2 ES, Volume 5: Appendix EC-003-003.

#### *Cumulative effects*

- 5.4.70 There are no new or different likely cumulative effects for ecology as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1 or with SES changes.

#### *Mitigation and residual effects*

##### **Other mitigation measures**

- 5.4.71 New hedgerow creation will be undertaken and connected habitat is provided within the landscape scheme to compensate for losses of wildlife corridors that hedgerows provide. The main ES reported that there will be temporary adverse effects whilst the new hedgerows become established and mature (approximately 15 years). Following establishment and maturation of planting, it is expected that any adverse impacts on hedgerows and the wildlife corridors they create will be reduced to an adverse effect

on the conservation status of the habitat that will be significant at a local /parish level. No additional mitigation measures (i.e. in addition to those identified in the main ES and SES) are therefore required, to mitigate the different significant effect identified.

#### *Summary of likely residual effects*

- 5.4.72 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

#### *Effects arising from operation*

- 5.4.73 There are no new or different significant operational effects for ecology as a result of the proposed amendment in comparison with the main ES, the SES or the AP1 ES.

### **Landscape and visual assessment**

#### *Scope, assumptions and limitations*

- 5.4.74 The assessment scope, key assumptions and limitations of the landscape and visual 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. An update to the methodology for the landscape and visual assessment is also described in Volume 1 of the AP1 ES.

#### *Existing baseline*

- 5.4.75 The area of land required for the amendment is located within Stoneleigh Parklands LCA as described in the main ES (Volume 2, CFA18, Section 9.3).
- 5.4.76 Views south from Oak Tree Cottage and east from Bridleway W165x (viewpoints 274.2.001 and 276.3.001) are also located close to the area and are described in the main ES (Volume 2, CFA18, Section 9.3).

#### *Future baseline*

### **Construction (2017)**

- 5.4.77 The future baseline for construction in 2017 remains unchanged from that reported in the main ES (Volume 2, CFA18, Section 9.3).
- 5.4.78 No committed developments have been identified in this local area that will materially alter the baseline condition in 2017.

### **Operation (2026)**

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

#### *Effects arising during construction*

### **Landscape assessment**

- 5.4.80 Stoneleigh Parklands LCA was assessed as being affected by the original scheme. Tranquillity is medium, the landscape is of regional value and, therefore it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse effect during construction due to the removal of existing vegetation,

excavation and the formation of embankments and the construction of structures including viaducts. The revision to gradient and construction phasing of eastern approach to Bridleway W164 Overbridge will be barely perceptible in comparison to the original scheme and will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.4.81 The degree of change to construction activities as a result of the proposed amendment compared to the original scheme is sufficiently small to conclude that there are no new or different construction effects for visual receptors as a result of the proposed amendment, in comparison with the main ES.

### *Effects arising from operation*

### **Landscape assessment**

- 5.4.82 Stoneleigh Parklands LCA was assessed as being affected by the original scheme and will also be affected by this amendment. Tranquillity is medium, the landscape is of regional value and, therefore it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse effect in year 1 of operation, remaining moderate adverse in year 15 and year 60 due to the continued influence of the high speed trains, the presence of the viaducts with noise fence barriers, loss to ancient woodland, overhead line equipment and a reduced sense of separation between Kenilworth and Coventry at Gibbert Hill. The scale of this change, which involves the lengthening of an embankment and additional earthworks for Bridleway W164 to meet the adjoining overbridge, is small and will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.4.83 Viewpoint 274.2.001 Oak Tree Cottage was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a minor adverse effect during year 1 of operation due to views of a realigned PRow crossing fields resulting in a minor alteration to the existing view. The proposed change relating to Bridleway W164 and the lengthening of the approach embankment will be perceptible in views but will be balanced against the screening value provided by the extended embankment, of moving trains and associated infrastructure beyond to the west and therefore will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.4.84 Viewpoint 276.3.001 Views from PRow (bridleway) W165X was assessed as being affected by the original scheme. The main ES reported a moderate adverse effect during year 1 of operation mainly due to loss of woodland that will alter the key characteristics of the view. By year 15 and 60 with the establishment of mitigation planting the effects will be non-significant. The scale of change to Bridleway W164 is small and the lengthening of the approach embankment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.4.85 There are no new or different residual construction or operational effects for landscape and visual as a result of the proposed amendment, in comparison with the main ES, the SES and the AP1 ES and no further mitigation is required.

### *Cumulative effects*

- 5.4.86 There are no new or different likely significant cumulative effects for landscape and visual as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1, or with SES changes, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Traffic and transport**

### *Scope, assumptions and limitations*

- 5.4.87 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*

- 5.4.88 The existing baseline is as described in the main ES (Volume 2: CFA18, Section 12).
- 5.4.89 Non-motorised user surveys showed that Bridleway W164 was used by 116 pedestrians and 40 cyclists per day.

### *Future baseline*

## **Construction**

- 5.4.90 The future baseline for traffic and transport is as described in the main ES (Volume 2 CFA18, Section 12) to the main ES. There is no change to the future baseline for construction as reported in the main ES.

## **Operation (2026 and 2041)**

- 5.4.91 The future baseline for traffic and transport is set out in Volume 2, CFA18 (Section 12) of the main ES. There is no change to the future baseline for operation as reported in the main ES.

### *Effects arising during construction*

- 5.4.92 The original scheme resulted in temporary closure and realignment of Bridleway W164 during the construction period. Users of this route were expected to reroute further along the Kenilworth Greenway, connecting with the diverted Bridleway W165 and the proposed new bridleway overbridge near Crackley Wood. This adds significantly to the length of this section of the route throughout the 15-month construction period.
- 5.4.93 The revised AP2 construction programme means that the temporary closure will not be necessary and that the current bridleway alignment will transfer to the new permanent alignment with limited overnight or short closures.

- 5.4.94 There is no change from the temporary minor adverse significant effect on vulnerable road users, as identified in the main ES due to the bridleway operating alongside although segregated from construction vehicles.

#### *Effects arising from operation*

- 5.4.95 The permanent new alignment of the bridleway introduced by the AP2 revised scheme is largely unchanged from the original scheme except for the lower gradient on its eastern approach to crossing the proposed scheme which results in some improvement in accessibility. The effect though will remain as a minor adverse significant effect, as reported in the main ES, due to the increase in journey time due to the longer length compared with the existing alignment.

#### *Mitigation and residual effects*

- 5.4.96 No changes to the mitigation described in the main ES (Volume 2 CFA18, Section 12) are required.
- 5.4.97 The amendment does not give rise to a new or different significant effect and does not change the minor adverse significant effect associated with vulnerable road users during construction as identified in the main ES.

#### *Cumulative effects*

- 5.4.98 Cumulative effects are reported in Volume 2, CFA18, Section 12 of the main ES. The assessment has taken into account these cumulative effects, including planned development by taking account of background traffic growth, as well as traffic and transport impacts of works being undertaken in other areas.

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

- 5.5.1 The revision to the gradient and construction phasing of the eastern approach to Bridleway W164 overbridge does not change the significance of the environmental effects or proposed mitigation as set out in the main ES, or in the AP1 ES. It will, however, offer a benefit over the original scheme, by avoiding a significant adverse temporary community effect on users of this valued route.

## **5.6 Burton Green area amendment (AP2-018-004)**

- 5.6.1 A number of amendments are proposed in the Burton Green area. A summary of these amendments is provided in Table 3 and Figure 2 above shows the location of this amendment within CFA18.

### **Introduction to Burton Green area amendment**

- 5.6.2 In Burton Green, the vertical alignment of the route as it passes through the centre of Burton Green in a green tunnel has been amended. This has resulted in a number of elements being collectively assessed, with these all being linked to the modification to the vertical alignment, including an extension to the green tunnel, changes to the alignment of the Kenilworth Greenway and other associated/consequential changes.
- 5.6.3 The amendment comprises 11 individual elements as described in the following paragraphs.

- 5.6.4 Geographically, the area covered by this amendment stretches from Broadwells Wood in the south, through to north of Waste Lane and the border of this CFA with CFA23 in the north. Two communities fall within this geographic area: the village of Burton Green itself and the smaller community of Beechwood that lies just to the north-east of the scheme adjacent to Waste Lane.

### **Description of the amendment**

#### *Burton Green tunnel revised length and vertical alignment*

- 5.6.5 This element of the amendment is made up of a number of different components, which are all linked to the Burton Green green tunnel. These are:

- revision to the vertical alignment of the HS2 route as it passes through the green tunnel;
- extension of the tunnel by 50m at each end;
- relocation of the tunnel portal buildings;
- realignment of the Kenilworth Greenway;
- relocation of a balancing pond; and
- additional landscaping and enhanced mitigation earthworks at the tunnel portals.

- 5.6.6 These are described below.

#### **Tunnel extension and revised vertical alignment**

- 5.6.7 The Bill provides for a 620m long green tunnel, which follows the footprint of the dismantled Kenilworth to Balsall line (Kenilworth Greenway) (refer to main ES map CT-05-099, E6 to H6, in the main ES Volume 2, CFA18 Map Book). The tunnel, which incorporates a 100m long porous portal at each end, travels through the centre of Burton Green passing under Cromwell Lane.
- 5.6.8 Since submission of the Bill further consideration has been given to reducing the environmental impacts of the original scheme, particularly during the operational phase. A solution has been identified which extends the length of the tunnel by approximately 50m in each direction and this has been incorporated within the AP2 revised scheme (refer to map CT-05-099, E6 to H6, in the SES and AP2 ES Volume 2, CFA18 Map Book). The extension of the portals will not require any additional land.
- 5.6.9 In addition to the tunnel extension, the vertical alignment of the HS2 route has been adjusted, again with a view to reducing the environmental impacts and improving operational efficiency. This modification has included a lowering of the track height as it approaches the south portal from the south and a raising of the track height between the north portal and the B4101 Waste Lane overbridge. The temporary and permanent land requirements will be the same as the original scheme, for this element of the amendment.

### **Tunnel portal buildings and additional landscaping/ mitigation earthworks**

- 5.6.10 The Bill provides for the tunnel portal buildings to be sited on land to the west of the HS2 route with access from Red Lane (refer to main ES map CT-05-099, H6, in the main ES Volume 2, CFA18 Map Book).
- 5.6.11 Given the opportunity to undertake a reassessment of the Burton Green green tunnel and in light of proposed changes to construction traffic access routes, the siting of the tunnel portal buildings was also re-evaluated. As a consequence, the AP2 revised scheme relocates the portal buildings to a site on the east side of the route in the vicinity of Bockendon Grange, with a new permanent maintenance access from Bockendon Road (refer to map CT-05-099, I6, in the SES and AP2 ES, Volume 2, CFA18 Map Book). This relocation avoids the original access route to the buildings, which had to cross the Kenilworth Greenway, as well as allowing continuous mitigation earthworks around the south portal. The AP2 revised scheme also makes provision for additional landscape mitigation planting immediately to the south of Black Waste Wood to help provide screening for the relocated portal structure and buildings.
- 5.6.12 The new access track from Bockendon Road will be located alongside the existing Footpath W168a. Additional land (approximately 0.8ha) will be required on a permanent basis to accommodate the proposed access track alongside the existing footpath. The maintenance access route from Red Lane in the original scheme will no longer be required.

### **Kenilworth Greenway**

- 5.6.13 The Bill provides for the Kenilworth Greenway to be permanently diverted to run along the top of the Burton Green green tunnel structure and then alongside and parallel to the HS2 route to the north of the tunnel (refer to main ES map CT-05-099, G6, in the main ES Volume 2, CFA18 Map Book). The Kenilworth Greenway crosses Cromwell Lane at grade and provision is made in the Bill for a new signal controlled crossing at this location.
- 5.6.14 Since submission of the Bill, to reduce the potential for conflict between traffic using Cromwell Lane and users of the Kenilworth Greenway, the AP2 revised scheme makes provision for the Kenilworth Greenway to pass beneath Cromwell Lane in a separate underpass structure (refer to map CT-05-099, G6, in the SES and AP2 ES, Volume 2, CFA18 Map Book). This also allows for a more direct permanent realignment than was originally possible, particularly to the south of Cromwell Lane where previously a circuitous design was necessary to raise the Kenilworth Greenway up to Cromwell Lane and to divert the route around the portal building access. Under the AP2 revised scheme, a new access to the Kenilworth Greenway is proposed from the north side of Cromwell Lane.
- 5.6.15 To the north of the tunnel, the Kenilworth Greenway is permanently realigned to run alongside and parallel with the route. The AP2 revised scheme allows for the Kenilworth Greenway to be set back from the railway boundary where it passes to the west of the Berkswell substation. This is a greater separation distance than originally proposed, allowing improved mitigation earthworks between the HS2 route and the Kenilworth Greenway. This, together with another element of this amendment which substitutes a retaining structure with earthworks, adjacent to the Berkswell substation

(discussed below), will necessitate an increase in the area of land required permanently by approximately 1.6ha.

### **Balancing pond relocation**

- 5.6.16 The Bill provides for a balancing pond to be located on the east side of the route in the vicinity of Broadwells Wood (refer to main ES map CT-06-098, F6, in the main ES Volume 2, CFA18 Map Book).
- 5.6.17 Since submission of the Bill, consideration has been given to the design of the earthworks and mitigation in this area, primarily with a view to reducing the extent of land required permanently whilst still ensuring that an appropriate level of environmental mitigation is achieved. The AP2 revised scheme relocates the balancing pond to the west side of the route, on land situated to the east of the Kenilworth Greenway and north of Footpath W168 (refer to map CT-06-098, F8, in the SES and AP2 ES Volume 2, CFA18 Map Book). The new site, which is in the vicinity of a realigned watercourse and linked wetland ponds that have been integrated into the earthworks, is within the area of land already identified in the Bill as being required permanently. Access to the balancing pond will be from Bockendon Road, via the proposed access road for the portal buildings. The access route originally proposed from Crackley Lane, via South Hurst Farm, will no longer be required. The site, originally identified for the balancing pond, is partly proposed now as an area for woodland habitat creation (approximately 0.5ha) under the AP2 revised scheme.
- 5.6.18 The relocation of the balancing pond has also enabled the Footpath W168 realignment and underpass to be relocated closer to the path's existing alignment and outside the boundary of Broadwells Wood. As a consequence, the boundary of woodland habitat creation proposed in the vicinity of Broadwells Wood has been revised.
- 5.6.19 The AP2 revised scheme also makes provision for extended mitigation earthworks in the vicinity of the Footpath W168 realignment, to help provide improved visual screening. These earthworks are located within the area of land already identified in the Bill as being required permanently.
- 5.6.20 The temporary and permanent land requirements for this element of the amendment are the same as for the original scheme.

### *Revision to the design and access to compounds in the Waste Lane/ Burton Green area*

- 5.6.21 The Bill provides for a number of construction compounds being located within the Burton Green area. Provision is made for the Burton Green green tunnel south portal satellite construction compound to be located on the west of the scheme, with access from Red Lane (refer to main ES map CT-05-099, H7, in the main ES Volume 2, CFA18 Map Book). The Bill also makes provision for the Cromwell Lane satellite construction compound with access from Cromwell Lane at its junction with Hob Lane and Red Lane (refer to main ES map CT-05-099, E8, in the main ES Volume 2, CFA18 Map Book). Under the Bill, construction traffic accessing these two construction compounds will be routed from the strategic road network via the A452, Kelsey Lane, the B4101 Waste Lane and Hob Lane.

- 5.6.22 Under the Bill, the B4101 Waste Lane overbridge satellite construction compound (refer to main ES map CT-05-100, F7, in the main ES Volume 2, CFA18 Map Book) was proposed on land to the north of Waste Lane between the route and the residential property, Dragonflies.
- 5.6.23 Since submission of the Bill, further consideration has been given to alternative construction traffic routes, which would avoid the need to use Hob Lane and pass the Burton Green Church of England Primary School. The AP2 revised scheme, therefore, relocates both the green tunnel south portal and the Cromwell Lane satellite compounds, to facilitate the use of alternative traffic routes.
- 5.6.24 The Burton Green green tunnel south portal satellite construction compound is relocated from the west side of the route to land on the east, under the AP2 revised scheme (refer to map CT-05-98, C5, in the SES and AP2 ES Volume 2, CFA18 Map Book). This compound will also be in operation for longer, with civil works commencing from the end of 2018. Rail systems works will commence as per the original programme in 2022.
- 5.6.25 Access for heavy construction vehicles during the construction phase will be via the HS2 route and its link to the A429 Kenilworth Road. Access for lighter traffic will be from Bockendon Road (refer to map CT-05-098, E2-C5, and CT-05-098-R1 in the SES and AP2 ES Volume 2, CFA18 Map Book), routed from the strategic road network. The relocation of this compound will require an additional 0.16ha of land to be acquired for use temporarily during the construction period.
- 5.6.26 The AP2 revised scheme proposes to relocate the Cromwell Lane satellite construction compound closer to the route and with a revised access (refer to map CT-05-099, D7, in the SES and AP2 ES, Volume 2, CFA18 Map Book). The size of the compound will be increased (by approximately 0.18ha) to compensate for decreases in other compounds. Construction traffic will be required to access the compound via the B4101 Waste Lane, via a track along the Kenilworth Greenway. As a result, construction traffic will not use Hob Lane, Cromwell Lane or Red Lane to access construction works at Burton Green. This change can be accommodated within the limits of land already identified in the Bill.

*Relocation and reduction in the size of the material transfer stockpile area adjacent to Broadwells Wood*

- 5.6.27 The Bill provides for an area of land situated to the west of Broadwells Wood, between the route of the original scheme and the Kenilworth Greenway, to be used temporarily during construction as a material transfer stockpile area (MTSA) (refer to main ES map CT-05-098, D7-G8, in the main ES Volume 2, CFA18 Map Book).
- 5.6.28 Since submission of the Bill, a reassessment of its proposed size and location has been undertaken and the AP2 revised scheme relocates the MTSA further away from residential properties at Red Lane and from users of the Kenilworth Greenway, to an area immediately east of the route and north of Broadwells Wood (refer to map CT-05-098, D6-F6, in the SES and AP2, ES Volume 2, CFA18 Map Book). This relocation will reduce the effects of noise and dust relating to the MTSA from Red Lane residents and Kenilworth Greenway users.

- 5.6.29 Access to the revised location will be via an access track alongside Footpath W168a from Bockendon Road, with heavy construction vehicles using the haul route that follows the alignment of the route. The overall size of the material transfer stockpile is reduced.
- 5.6.30 Some additional land, an area of approximately 0.85ha, will however be required temporarily to accommodate the MTSA in this location.

*Replacement of propped retaining walls with an earthwork cutting adjacent to Berkswell Substation*

- 5.6.31 The Bill provides for the HS2 route to pass beneath overhead power lines immediately to the west of the Berkswell substation (refer to main ES map CT-05-099, C6, in the main ES Volume 2, CFA18 Map Book). The Bill provides for the Western Power 132kV overhead power lines to be permanently diverted below ground, including along a section of Footpath M186, to allow maintenance of the electrical transmission infrastructure through this area. The Bill also provides for works to re-tension sections of connecting power lines heading away from Burton Green in a south-westerly direction.
- 5.6.32 Since the submission of the Bill, further consideration has been given to identifying engineering solutions which minimise construction health and safety risks. The AP2 revised scheme makes provision for an earthwork cutting beneath the overhead power lines (refer to map CT-05-099, C6, in the SES and AP2 ES, Volume 2, CFA18 Map Book).
- 5.6.33 The substitution of a retaining structure with earthworks at this location, together with improved mitigation earthworks between the HS2 route and the Kenilworth Greenway will require an increase in the amount of agricultural land required permanently of approximately 1.6ha due to the additional width of the cutting slope along the western side of the route.

*Relocation of the Waste Lane east and westbound roadhead to the north of Waste Lane*

- 5.6.34 The Bill provides for a roadhead to be sited on land south of the B4101 Waste Lane on either side of the route in the vicinity of Little Beanit Farm (refer to main ES map CT-05-100, E6-H6, in the main ES, Volume 2, CFA18 Map Book). Access to the roadhead was directly from the B4101 Waste Lane, with construction traffic routed from the M42 via the A45, the A452 Kenilworth Road, Kelsey Lane and Waste Lane.
- 5.6.35 Since submission of the Bill, further work has been carried out in relation to the logistics of managing construction works in this area, particularly with a view to reducing disturbance and environmental impacts. The original scheme is amended to co-locate the Waste Lane east and westbound roadhead on to the site of the MTSA, which is proposed at Beechwood Farm to the north in CFA23. The new location for the roadhead will be between the MTSA and the B4101 Waste Lane overbridge satellite construction compound, straddling the border between CFA18 and CFA23 (refer to map CT-05-100, E7, in the SES and AP2 ES, Volume 2, CFA18 Map Book).
- 5.6.36 As in the original scheme, access to the roadhead will be from the B4101 Waste Lane. The relocation of the roadhead allows for an alternative access to be provided to the

Cromwell Lane satellite construction compound to the south, which will be from the B4101 Waste Lane, via the Kenilworth Greenway, avoiding the need for construction traffic to use Hob Lane and Cromwell Lane.

- 5.6.37 Assessment of the change is reported in both the CFA18 and CFA23 Volume 2, of the SES and AP2 ES.

*Revised mitigation earthworks and planting south of the Burton Green tunnel*

- 5.6.38 The Bill provides for extensive raised earthworks and landscape mitigation planting in the vicinity of Bockendon Grange and Black Waste Wood to the east of the route (refer to main ES map CT-05-098, C6-F8, in the main ES Volume 2, CFA18 Map Book). These features will reduce the landscape and visual impact of the scheme, but will result in the permanent requirement of agricultural land for scrub or woodland or consist of side slopes considered unsuitable for continued agricultural use.
- 5.6.39 Since submission of the Bill, consideration has been given to reducing the amount of agricultural land that will be required permanently. The AP2 revised scheme, therefore, proposes to regrade the earthworks in this area to create a shallower gradient on the outer side of the slope than that which was originally proposed, to enable more land to be returned to agricultural use upon completion of the works (refer to map CT-05-098, B6-F7, in the SES and AP2 ES Volume 2, CFA18 Map Book). The extent of landscape mitigation planting in the vicinity of Bockendon Grange and the amount of scrub and woodland planting to the south of Black Waste Wood will also be reduced.
- 5.6.40 Instead, the planting along the crest of the raised earthworks will be strengthened to provide sufficient visual screening, including the introduction of a new hedgerow. The design change, whilst requiring a greater area of land temporarily, will reduce the overall amount of land required permanently.

*Additional visual screening of auto-transformer feeder station for residents on Hodgett's Lane*

- 5.6.41 The Bill provides for a permanent auto-transformer feeder station (ATFS) as part of works to the north-east of Burton Green. Landscape mitigation planting will be provided to the south-east of the ATFS and along the ATFS access track that runs besides the eastern boundary of the ATFS, parallel with Hodgett's Lane (refer to main ES map CT-05-099, D5, in the main ES, Volume 2, CFA18 Map Book). This landscape planting will be of a similar character to existing vegetation to provide an integrated transition between the HS2 route and the retained vegetation. It will also aid integration of the changes within the existing landscape.
- 5.6.42 Since submission of the Bill, it has been identified that in order to limit views of the ATFS from the closest residential properties on Hodgett's Lane, additional landscape planting should be introduced around the ATFS (refer to map CT-05-099, D5-E6, in the SES and AP2 ES, Volume 2, CFA18 Map Book). Permanent additional landscape planting along the access track that runs besides the eastern boundary of the ATFS and permanent additional planting along its southern boundary will reinforce the effectiveness of the existing screening and mitigation measures introduced under the original scheme. The additional works will be within the existing limits of the Bill.

*Reclassification of the realigned Footpath M187 to a permissive bridleway*

- 5.6.43 The Bill provides for the HS2 route to cross Footpath M187 in the vicinity of the Berkswell Sub-station (refer to main ES map CT-05-099, D6, in the main ES Volume 2, CFA18 Map Book). This footpath links Hodgett's Lane with the Kenilworth Greenway and continues westwards to join with Footpath M186 to the north-east of Beanit Farm. To avoid severance of the route, the Bill makes provision for a permanent realignment for Footpath M187 some 150m further south along Hodgett's Lane, together with a connection to the realigned Kenilworth Greenway. However, no provision was made within the Bill to divert a permissive bridleway that will be lost due to the construction of the Burton Green ATFS to the north.
- 5.6.44 Since the submission of the Bill, consideration has been given to amending the original scheme to upgrade the status of the realigned Footpath M187 to permissive bridleway status to compensate for the loss of the permissive bridleway that was removed due to the inclusion of the ATFS (refer to map CT-05-099, D6, in the SES and AP2 ES, Volume 2, CFA18 Map Book). The diverted section of Footpath M187 between Hodgett's Lane and the reconstructed Kenilworth Greenway will be constructed to bridleway standards. Public footpath rights will be retained with permissive bridleway rights granted to reflect the permissive bridleway status of the Kenilworth Greenway. This will enable access to the realigned Kenilworth Greenway for equestrians as well as pedestrians and cyclists. The alignment of the footpath is amended slightly to allow for an increase in width from 1.5m to 3.0m.
- 5.6.45 No additional land is required to accommodate this change, since the extra width can be accommodated within the area originally identified for landscape planting.

*Relocation of Footpath M186 accommodation overbridge in the vicinity of the Berkswell substation and Little Beanit Farm*

- 5.6.46 The Bill provides for the realignment of Footpath M186 approximately 200m to the north of its current location so that it can cross the proposed Burton Green retained cutting via a new farm accommodation bridge before returning to its original alignment to the east of the HS2 route (refer to main ES map CT-05-100, H6, in the main ES Volume 2, CFA18 Map Book). The accommodation bridge lies between Little Beanit Farm in the west of the HS2 route and the northern boundary of the Berkswell substation at Hodgett's Lane in the east. The Bill makes provision for this new shared accommodation overbridge to avoid severance of the footpath and agricultural land on either side of the route. The overbridge design will, however, necessitate farm traffic having to cross the route of the realigned Kenilworth Greenway.
- 5.6.47 Since submission of the Bill, further consideration has been given to finding ways to reduce the potential for conflicts between users of the Kenilworth Greenway and farm traffic movements and operations. The AP2 revised scheme, therefore, relocates the overbridge marginally northwards of its originally proposed position to facilitate provision of a two-span structure (refer to map CT-05-100, H6, in the SES and AP2 ES Volume 2, CFA18 Map Book). This will enable the Kenilworth Greenway and the HS2 route to pass beneath the overbridge and remove any risk of potential user conflict.
- 5.6.48 This element of the amendment can be accommodated without the need for additional land to be acquired.

*Provision of a stepped ramp to connect Footpath M184 to the Kenilworth Greenway in the vicinity of Little Beanit Farm*

- 5.6.49 Footpath M184 provides a connection between Hob Lane in the vicinity of Beanit Farm and the B4101 Waste Lane at Little Beanit Farm (refer to main ES map CT-05-100, F6, in the main ES, Volume 2, CFA18 Map Book). It runs partly along the crest of the disused railway cutting that is currently utilised by the Kenilworth Greenway. There is a stile access to Footpath M184 from the south side of the B4101 Waste Lane adjacent to Little Beanit Farm. The Bill provides for the permanent realignment of the B4101 Waste Lane to facilitate reconstruction of the overbridge, but makes no provision to reinstate the connection between Waste Lane and Footpath M184.
- 5.6.50 Since submission of the Bill, the original scheme has been revised to include for the re-establishment of a connection to Footpath M184 from the realigned Waste Lane (refer to map CT-05-100, F6, in the SES and AP ES, Volume 2, CFA18 Map Book). This will take the form of a stepped ramp down the embankment earthworks to connect Footpath M184 to the Kenilworth Greenway. Further to the north-west of the B4101 Waste Lane, Footpath M198 has also had to be realigned, although a connection between this footpath and the B4101 Waste Lane has been included. This, therefore, enables Footpath M184 to re-establish connectivity with the B4101 Waste Lane.
- 5.6.51 No additional land will need to be acquired for this element of the amendment.

*Relocation of the temporary realignment of the Kenilworth Greenway at the crossing of B4101 Waste Lane*

- 5.6.52 The Bill makes provision for a section of the Kenilworth Greenway to be temporarily diverted during construction between Burton Green and Beechwood (refer to main ES map CT-05-100, F7, in the main ES Volume 2, CFA18 Map Book). The route currently identified for the temporary diversion in the vicinity of the B4101 Waste Lane encroaches into the garden belonging to the residential property Dragonflies, preventing access to the property's garage and affecting mature boundary vegetation.
- 5.6.53 Since submission of the Bill, the temporary realignment of the Kenilworth Greenway has been reviewed. To avoid obstructing access to the Dragonflies property and affecting the boundary vegetation the route has been realigned to cross the B4101 Waste Lane approximately 40m further east (refer to map CT-05-100, F7, in the SES and AP2 ES, Volume 2, CFA18 Map Book). The revised Kenilworth Greenway route follows the boundary of an agricultural field on the south side of Waste Lane. It then crosses the B4101 Waste Lane and skirts around the outside of an agricultural field, just beyond the boundary of dragonflies.
- 5.6.54 No additional land is required to accommodate this element of the amendment.

**Changes to local construction programme**

- 5.6.55 The main change to the construction programme in this area is based on the operational requirement to use the Burton Green green tunnel south portal satellite construction compound for longer in the construction programme than was originally proposed. In the original scheme this compound was to be used for rail systems works commencing in 2022. However, the compound will now also be used for civil works,

with works now due to commence from late 2018 for a period of approximately 36 months. Rail systems works will commence as scheduled in the original scheme.

### Scope of assessment

- 5.6.56 This amendment will require some additional land, both temporarily and permanently, primarily as a result of the changes to the alignment of the route and associated earthworks, the consequential realignment of the Kenilworth Greenway and changes to the location of temporary construction compounds and access routes. The AP2 revised scheme at Burton Green therefore requires amendments to be made to the Bill powers.
- 5.6.57 The amendment is not considered likely to result in changes that will require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to socio-economics. However, reassessment is considered to be required in respect of agriculture, forestry and soils; air quality; community; cultural heritage; ecology; land quality; landscape and visual assessment; sound, noise and vibration; traffic and transport and water resources and flood risk assessment.

### Agriculture, forestry and soils

#### *Scope, assumptions and limitations*

- 5.6.58 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.

#### *Existing baseline*

- 5.6.59 The area covered by the proposed amendment (AP2-018-004) is underlain by bedrock of the Tile Hill Mudstone Formation (mudstones with subordinate sandstones and rare lenses of conglomerate). There are no superficial deposits immediately to the east of Burton Green, but the bedrock is overlain by Oadby Till, a varied glacial deposit, westwards from Burton Green to Little Beanit Farm.
- 5.6.60 The characteristics of the soils are described by the Soil Survey of England and Wales and shown on the National Soil Map. More detailed published information is also available for part of the study area.
- 5.6.61 To the east of Burton Green, the soils are in the Whimple 2 association. To the west of the village, the soils developed in glacial till are placed in the Beccles 3 association.
- 5.6.62 The soils of the Whimple 2 association consist of reddish clay loam over clay with slowly permeable subsoils and slight seasonal waterlogging (WC II), becoming wetter on higher ground in the west (WC III); locally, reddish sandy loam soils over sand or soft sandstone are well drained (WC I). The agricultural land to the east of Burton Green within this amendment area is a mixture of Grade 2 and Subgrade 3a. To the west of the village, the agricultural land is in Subgrade 3a.
- 5.6.63 The Burton Green area amendment will result in an increase in permanent land loss from five holdings, which are: South Hurst and Bockendon Grange Farms (CFA18/15) a 1093ha arable holding; Burton Green Farm (CFA18/16) a 23.7ha arable farm; Little Beanit Farm (CFA18/18) a 59ha livestock enterprise, rearing pedigree beef cattle; Land adjacent to Waste Lane (CFA18/21) a 1.4ha parcel of grassland used for horses (not

commercially); and Land north-west of Waste Lane (CFA18/22) a 2.5ha parcel of grassland. All of these holdings are assessed as being of medium sensitivity, except the land used for horses (not commercially) at CFA18/21 which is low.

### *Future baseline*

#### **Construction (2017)**

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

#### **Operation (2026)**

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

### *Effects arising during construction*

- 5.6.66 The main ES reported that 169ha of best and most versatile (BMV) agricultural land (in this case, Grade 2 and Subgrade 3a) will be required permanently. This is a moderate adverse effect, which is significant. The amendment requires a further 4ha of Grade 2 and Subgrade 3a agricultural land permanently. However, this small increase will not cause any new or materially different significant effects or change the level of significance of the effects on BMV agricultural land reported in the main ES or the AP1 ES, which remains as moderate adverse, which is significant.
- 5.6.67 The amendment will require a further 3.7ha (or 0.3% of the holding) from CFA18/15 temporarily. The significance of temporary land loss reported in the main ES will not change from negligible, which is not significant. However, there is a medium temporary disruptive effect on a residential let at South Hurst Farm (i.e. agricultural diversification) which is located in proximity to the construction works. Therefore, the significance of temporary effects on this holding remains as moderate adverse overall, which is significant. The amendment will also require a further permanent land loss of 0.3ha (or 0.03% of the holding) from CFA18/15 but the level of significance of the permanent land loss reported in the main ES does not change from minor adverse, which is not significant.
- 5.6.68 The amendment will require an additional 0.5ha of land permanently (or 2.1% of the holding) from CFA18/16. The level of significance of the permanent land loss reported in the main ES will not change from minor adverse, which is not significant.
- 5.6.69 A further 0.5ha (or 0.8% of the holding) will be required permanently from CFA18/18 due to this amendment. This small increase will not cause any new or materially different significant effects or change level of significance reported in the main ES for permanent land loss, which will remain as moderate adverse (significant). However, there will continue to be a permanent loss of agricultural infrastructure (i.e. a manège and silage clamp) and the level of significance of permanent effects on this holding reported in the main ES will not change from major adverse, which is significant.
- 5.6.70 The amendment will require an additional 0.1ha of land permanently (or 7.1% of the holding) from CFA18/21. As the permanent land loss from this holdings is reported in the main ES as high (0.4ha or 30% of the holding), the level of significance reported in the main ES will not change from moderate adverse, which is significant.

- 5.6.71 The amendment will require an additional permanent land loss of 1.1ha (or 44% of the holding) at CFA18/22. The level of significance of the permanent effects reported in the main ES is negligible, but the amendment will change this to major/moderate adverse, which is significant. This is a new significant effect that was not reported in the main ES.

#### *Effects arising from operation*

- 5.6.72 There are no new or different significant operational effects for agriculture, forestry and soils as a result of the proposed amendment in comparison with the main ES.

#### *Mitigation and residual effects*

- 5.6.73 The land required temporarily for construction will be restored to its former agricultural use once the works are 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.
- 5.6.74 The amendment results in one new residual significant effect on an agricultural holding compared to the main ES. The level of significance of the permanent residual effects on CFA18/22 reported in the main ES is negligible, but the amendment will change this to major/moderate adverse, which is significant.

#### *Cumulative effects*

- 5.6.75 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1, or the SES changes or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Air quality**

#### *Scope, assumptions and limitations*

- 5.6.76 The assessment scope, key assumptions and limitations for air quality are 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 as amended by the SMR Addendum 2 (Volume 5: Appendix CT-001-000/3).
- 5.6.77 There are no combined effects due to traffic changes, as there are currently no changes to the mass haul for the Stoneleigh, Kenilworth and Burton Green area. Accordingly, the following sections consider the effects on air quality of construction dust and construction traffic emissions associated with the Burton Green area amendments.

#### *Existing baseline*

- 5.6.78 The baseline conditions with regard to air quality have not changed from those reported in the main ES.
- 5.6.79 Receptors relevant to the Burton Green area amendments that could potentially be affected by changes in air quality include residential properties in Burton Green; along Red Lane; Cromwell Lane and Hodgetts Lane; and along the B4101 Waste Lane, Balsall Common.

- 5.6.80 There are no statutory designated sites within the Stoneleigh, Kenilworth and Burton Green area. There are three non-statutory designated sites that could potentially be affected by changes in air quality as a result of the Burton Green area amendment. These sites are: Broadwells Wood LWS, south-east of Burton Green; Black Waste Wood LWS, south-east of Cromwell Lane; and Big Pools and Little Pools Wood LWS, north-west of Cromwell Lane.

#### *Future baseline*

##### **Construction (2017)**

- 5.6.81 The future baseline for construction in 2017 remains unchanged from that reported in the main ES.

##### **Operation (2026)**

- 5.6.82 The future baseline for operation in 2026 remains unchanged from that reported in the main ES.

#### *Effects arising during construction*

- 5.6.83 An assessment has been undertaken for receptors identified as relevant to the Burton Green area amendments to determine any changes to the impact of construction on air quality at these receptors.
- 5.6.84 The construction dust assessment has taken into consideration changes to the magnitude of dust emissions for the construction activities and the sensitivity of the area surrounding the Burton Green area amendments in terms of the receptors present and the distance of the receptors from the construction activities. The differences of relevance to air quality for the AP2 revised scheme are associated with a reduction in the number of buildings requiring demolition in Burton Green; the change to the footprint of the earthworks and construction activities and changes to the construction traffic access routes where there may be possible transfer of dust and mud on to public highways from vehicles travelling to and from construction areas. The Burton Green area amendments do not change the magnitude of the construction phase activities in terms of dust generating potential from that in the main ES. The distance of construction phase activities relative to the relevant receptors does not change materially from that in the main ES. The Burton Green area amendments do not result in any new or different significant effects on air quality as a result of construction dust.
- 5.6.85 With regard to construction traffic emissions, the main ES reported a negligible impact at residential properties adjacent to Cromwell Lane, Burton Green and B4101 Waste Lane, Balsall Common. The Burton Green area amendments will not change the magnitude of impact at these properties and do not result in any new or different significant effects on air quality.
- 5.6.86 The proposed amendments 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.

#### *Effects arising from operation*

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

### *Mitigation and residual effects*

- 5.6.88 Emissions to the atmosphere will be controlled and managed during construction through the route-wide implementation of the draft CoCP, where appropriate. The assessment of the Burton Green area amendment has assumed that the general measures detailed Section 7 of the draft CoCP (Volume 5: Appendix CT-003-000) in the main ES will be implemented.
- 5.6.89 No additional mitigation measures (i.e. in addition to those identified in the main ES and SES) are required.
- 5.6.90 The Burton Green area amendment will not give rise to a new or different residual significant effect and will not change the level of significance of the effects reported in the main ES.

### *Cumulative effects*

- 5.6.91 There are no new or different likely significant cumulative effects for air quality as a result of the amendments acting in combination with another amendment in AP2, AP1, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Community**

### *Scope, assumptions and limitations*

- 5.6.92 The scope, key assumptions and limitations for the community assessment are as set out in the main ES, Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-00/2). This report follows the standard assessment methodology described in those documents.
- 5.6.93 Of the changes described earlier in this section, the following elements are relevant to the scope of the community topic assessment on the basis of their potential to result in new or different significant effects on receptors and resources:
- realignment of the route through Burton Green, including extension of the green tunnel and the relocation of tunnel portal buildings and maintenance access;
  - realignment of the Kenilworth Greenway and modifications to connecting rights of way;
  - changes to the earthworks;
  - relocation of construction compounds and associated changes to construction traffic routes;
  - relocation of the MTSA near Broadwells Wood; and
  - colocation of the Waste Lane east and west roadhead with the MTSA at Beechwood Farm.
- 5.6.94 In addition, the corrections identified in Table 2, presented in Part 1 of this SES and AP2 ES are also of relevance to this assessment.

### *Existing baseline*

- 5.6.95 The existing baseline for the Burton Green area is as described in the main ES, Volume 2, CFA18 Report, Section 5.3. Since the assessment of the original scheme was undertaken, Warwick District Council has confirmed that land at Le Van, Red Lane, Burton Green can be used lawfully for the stationing of up to 20 caravans/mobile homes. As noted earlier in this report, work has commenced on the development of this land as the Broadwell Woods mobile home park. Two of the plots have now been completed introducing two new residential receptors into the existing baseline for this area.

### *Future baseline*

#### **Construction (2017)**

- 5.6.96 The future baseline for the assessment is set out in the main ES, Volume 2, CFA18 report, Section 5.3. As explained previously, land at Le Van at Red Lane is now being developed as the Broadwell Woods mobile home park. Bases and infrastructure for a further 18 plots have now been installed on the Le Van site. The assessment of the AP2 revised scheme, therefore, takes account of this development. It assumes that a total of 21 residential receptors will be present on this site in the future baseline for both the construction and operational phases of the assessment.
- 5.6.97 As explained earlier (refer to SES, Part 1, Section 3.2), the SES scheme provides for a replacement village hall to be built on land at Red Lane, to compensate for the loss of the existing hall at Hodgett's Lane. The construction programme makes provision for the replacement hall to be completed prior to the demolition of the existing hall, so that there is no temporary loss of a facility. On this basis, the replacement hall will become a receptor itself in the future baseline for both the construction and operational phases of the assessment of the AP2 revised scheme.

#### **Operation (2026)**

- 5.6.98 The future baseline for the assessment is set out in the main ES, Volume 2, CFA18 report, Section 5.3. The future baseline for the operational assessment of the AP2 revised scheme also takes into account the Broadwell Woods mobile home park which is being developed on land at Le Van, Red Lane and the new replacement village hall, which is proposed to be built on land at Red Lane as part of the SES scheme.

### *Effects arising during construction*

#### **Temporary effects**

##### *Temporary loss of land from residential properties and community facilities*

- 5.6.99 The proposed amendments in the AP2 revised scheme will not give rise to any new or different significant effects and will not change the level of significance of the effects reported in the main ES.

##### *Changes in amenity for residential properties and community facilities*

- 5.6.100 The amendments proposed in the AP2 revised scheme will not give rise to any new combined significant amenity effects on properties at Burton Green. They will remove the moderate adverse and significant temporary amenity effect on the Two Oaks Day

Nursery that was reported in the main ES, as this receptor will no longer be significantly affected by construction noise.

- 5.6.101 As explained in paragraph 5.6.95, land at Le Van, Red Lane, Burton Green, is currently being developed as the Broadwell Woods mobile home park, which will introduce 20 new receptors into the baseline for the Red Lane area. Under the original scheme, the occupiers of this development would be likely to be affected by a combination of significant noise and adverse visual effects for a period of approximately one month during construction. This gives rise to a moderate adverse and significant temporary amenity effect not previously reported for the original scheme. The AP2 revised scheme will remove this significant effect, as the Broadwell Woods Park mobile home site will not be significantly affected by construction noise.
- 5.6.102 Whilst the significant adverse, temporary effects on the amenities of residential properties at Hodgett's Lane, Burton Green will continue to be unavoidable, the AP2 revised scheme is likely to affect fewer properties at Cromwell Lane. The construction of the original scheme was assessed<sup>11</sup> as giving rise to a major adverse amenity effect on the residents of 22 properties at Cromwell Lane. The assessment of the AP2 revised scheme reduces the total number to 15, with Nos. 279-291 no longer expected to experience a significant construction noise effect. This reduction in the number of properties affected by significant construction noise is a different significant effect but will not change the overall level of significance of the major adverse effects already reported in the main ES.
- 5.6.103 The assessment of the AP2 revised scheme has also taken into account the proposal in the SES scheme to build a replacement village hall on land at Red Lane. This hall will be built and brought into use before construction work on the Burton Green tunnel is completed so that the new hall will become a receptor itself for the construction phase assessment. No significant combined amenity effects are anticipated on users of the replacement village hall during construction of the AP2 revised scheme.
- 5.6.104 In the main ES, a significant temporary community amenity effect on the residents of 16 properties situated mostly to the east of the route of the proposed scheme was identified. The main ES reported that these residents would be affected by a combination of significant HGV and visual effects. Table 2 corrects the assessment in the light of traffic data to explain that properties on the east side are not expected to experience a combination of significant amenity effects. However, properties on the west side would be affected by a combination of significant HGV and indirect traffic noise effects, giving rise to a major adverse effect. The AP2 revised scheme will not change these conclusions, although some of these properties would also be subject to adverse visual effects, in addition to the HGV and indirect traffic noise effects. The AP2 revised scheme will not give rise to any new or different significant combined effects on the amenities of residential properties at Waste Lane, Beechwood. The significance of effects will remain as summarised in Table 2, in Part 1 of this SES and AP2 ES.

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<sup>11</sup> Refer to Table 2 in part 1 of this SES and AP2 ES.

*Temporary effects on users of the Kenilworth Greenway*

- 5.6.105 As with the original scheme, the AP2 revised scheme will require a temporary diversion route to be provided for the Kenilworth Greenway throughout the duration of the construction works at Burton Green. However, the AP2 revised scheme will avoid the significant adverse temporary amenity effects on users that would have occurred with construction of both the original and the AP1 revised schemes.
- 5.6.106 With the original and AP1 revised scheme, users of the temporary Kenilworth Greenway diversion would have to negotiate HGV construction traffic at the Hob Lane/Red Lane/Cromwell Lane junction. They would also be subject to significant adverse visual effects due to the proximity of the construction works alongside the temporary diversion route. The combination of these effects arising during construction was assessed as giving rise to a major adverse and significant temporary amenity effect on users. As the AP2 revised scheme proposes to route construction traffic away from Hob Lane, Cromwell Lane and Red Lane, it will remove this combination of significant temporary amenity effects on Kenilworth Greenway users.
- 5.6.107 The original scheme was also assessed as giving rise to a moderate adverse and significant temporary effect on the functional value of the Kenilworth Greenway at Burton Green during construction. This was largely due to the temporary diversion route being less convenient for users, particularly residents of Burton Green, as well as users having to negotiate construction traffic. The AP1 revised scheme made some adjustment to the temporary diversion route, but these changes were considered unlikely to alter the overall conclusions of the assessment. Whilst the AP2 revised scheme would not require users of the temporary Kenilworth Greenway to have to negotiate construction traffic at Burton Green, the temporary route will still be less convenient than at present. Residents of Burton Green will have to access the route at the Hob Lane/Red Lane junction instead of in the centre of the village as is currently the case. The alignment of the temporary diversion is less direct and users will be affected for a period of approximately 4-5 years. Therefore, despite the amendments bringing some benefits for users of the Kenilworth Greenway, the overall conclusions about the temporary effects on the functional value of the Kenilworth Greenway are unchanged from the original assessment.

*Temporary isolation effects on residents and community facilities*

- 5.6.108 The construction of the original scheme was assessed as giving rise to a major adverse and significant temporary isolation effect on the community of Burton Green, in particular those attending Burton Green Church of England Primary School and Hedgerow Day Nursery. These effects were largely due to the works at Cromwell Lane Bridge and the pedestrian severance that would be caused by the routing of construction traffic along Hob Lane to the junction with Cromwell Lane and Red Lane.
- 5.6.109 The AP2 revised scheme in contrast, by rerouting construction traffic away from Hob Lane, Cromwell Lane and Red Lane will avoid causing any significant isolation effects on the community. The construction of the AP2 revised scheme will not cause significant pedestrian severance or congestion effects in the centre of the village. However, the visual barrier effects associated with the works through the centre of the village will remain under the AP2 revised scheme. The consequential isolation

effects that this will have on the Burton Green community are now assessed as minor and would not be significant.

### **Permanent effects**

#### *Residential properties*

- 5.6.110 The amendments in the AP2 revised scheme will not give rise to any new or different significant permanent effects on residential properties at Burton Green. The AP2 revised scheme will not therefore change the level of significance of the effects reported in the main ES.
- 5.6.111 The boundary of land required for the construction and operation of the AP2 revised scheme encroaches slightly into the edge of the Broadwell Woods Park development at Le Van, Red Lane. Whilst the number of residential receptors has increased at this location since the original assessment was undertaken, the slight permanent loss of land from the edge of this site would not give rise to any significant adverse community effects.

#### *Community facilities*

- 5.6.112 The demolition of the Burton Green village hall at Hodgett's Lane would continue to be unavoidable in the AP2 revised scheme. However, as explained in Section 3.2 above, the SES scheme provides for a replacement hall to be built on land at Red Lane ahead of the demolition of the existing hall. This will mitigate against any significant major adverse permanent effect on users due to the loss of the existing hall.
- 5.6.113 Section 3.2 above, also explains that land at Hob Lane, which was identified in the original scheme as a site for the replacement hall, will no longer be required and will not be acquired by the scheme. This will also avoid any potential conflict with the Burton Green Church of England Primary School, which has recently expanded to incorporate this land within its boundary.

#### *Kenilworth Greenway*

- 5.6.114 The original scheme was assessed as giving rise to a permanent, moderate adverse and significant effect on the users of the Kenilworth Greenway. This was largely due to the realigned Kenilworth Greenway having to cross Cromwell Lane at grade and concerns about the gradient and circuitous alignment that was necessary to raise it to the top of the green tunnel structure.
- 5.6.115 The AP2 revised scheme includes provision to route the Kenilworth Greenway permanently beneath Cromwell Lane, thus avoiding an at-grade crossing of the road. A new permanent access from Cromwell Lane is also proposed in the centre of the village and a more direct alignment is now possible both to the north and to the south of the village. Amendments to footpaths M186 and M187 also included within the AP2 revised scheme, will improve access to the Kenilworth Greenway for equestrian users and will reduce the potential conflict with farm vehicles. The permanent effects on the functional value of the Kenilworth Greenway are as a result now assessed as minor and not significant. The AP2 revised scheme will, therefore, avoid the significant adverse permanent effect on the Kenilworth Greenway that was assessed for the original scheme.

- 5.6.116 Further details of the revised community assessments in this area are contained in the SES and AP2 ES Volume 5: Appendix CM-001-018. Community assessment maps are also provided in the SES and AP2 ES Volume 5 Community Map Book, see map sheets CM-01-110 to CM-01-111.

#### *Effects arising from operation*

- 5.6.117 The AP2 revised scheme will not give rise to any significant adverse community amenity effects on residential properties or community facilities at Burton Green or Beechwood. This reflects the reduction in operational noise effects associated with the longer tunnel in the AP2 revised scheme compared with the original scheme. On this basis, the amendments in the AP2 revised scheme will avoid the major adverse and significant combined amenity effect on the residents of nine properties at Red Lane that would have arisen with the operation of the original and AP1 revised schemes.
- 5.6.118 The assessment of the AP2 revised scheme has also taken into account the proposal in the SES scheme to build a replacement village hall on land at Red Lane. No significant combined amenity effects on users of the replacement village hall are anticipated during operation of the AP2 revised scheme.
- 5.6.119 Further details of the revised community assessments in this area are contained in the SES and AP2 ES, Volume 5: Appendix CM-001-018. Community assessment maps are also provided in the SES and AP2 ES, Volume 5 Community Map Book, see map sheets CM-01-110 to CM-01-111.

#### *Mitigation and residual effects*

- 5.6.120 The construction and operation of the AP2 revised scheme will not give rise to any new significant effects on community resources and no further mitigation is therefore required. The AP2 revised scheme will avoid the following significant adverse effects reported for the original scheme:
- a moderate adverse and significant temporary amenity effect on the people residing at the Broadwell Woods mobile home park at Le Van, Red Lane, Burton Green, which would arise during construction of the original scheme;
  - a moderate adverse and significant temporary amenity effect on the Two Oaks Day Nursery at Red Lane, Burton Green, arising during construction of the original scheme;
  - a major adverse temporary isolation effect on the residents of Burton Green, arising during construction of the original scheme;
  - a major adverse effect on users of the Kenilworth Greenway due to a change in amenity during construction of the original scheme;
  - a moderate adverse permanent effect on the Kenilworth Greenway due to its permanent realignment by the original scheme; and
  - a major adverse amenity effect on the residents of nine properties at Red Lane, Burton Green due to the operation of the original scheme.

- 5.6.121 In addition, there will be a reduction in the number of properties on Cromwell Lane experiencing a major adverse amenity effect.

### *Cumulative effects*

- 5.6.122 There are no new or different likely significant cumulative effects for community as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Cultural heritage**

### *Scope, assumptions and limitations*

- 5.6.123 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES. These are the same as the main ES and AP1 ES.

### *Environmental baseline*

- 5.6.124 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 is provided in Volume 2, Section 6.3 of the main ES. In addition, the baseline has been updated with the results of additional survey work comprising geophysical surveys for archaeology. A further review of historic mapping and other available historic data sources has also been carried out to verify the status of a number of sites in the vicinity of the route, which the Woodland Trust believe to be ancient woodland, that are not currently listed on the ancient woodland inventory.
- 5.6.125 The amendment is located in the vicinity of the heritage assets (which run broadly from south to north) shown in Table 4.

Table 4: Assets in the vicinity of Burton Green area amendment AP2-018-004

Unique ID	Name	Designation	Significance/ Value
STNo64	Broadwells Wood	Ancient woodland	High
STN106	Crackley Assarted Woodland	N/A	Low
STNo73	Hedgerow south of Broadwells Wood	N/A	Moderate
STN107	Red Lane Field Boundaries	N/A	Low
STNo66	Moated Site at Bockenden Grange	N/A	Moderate
STNo67	Bockenden Grange	N/A	Low
STN105	Disused railway from Berkswell to Leamington	N/A	Low

Unique ID	Name	Designation	Significance/ Value
STNo74	Black Waste Wood	Ancient woodland	High
STNo77	Little Pours Wood and associated ridge and furrow earthworks	Proposed ancient woodland	High
STNo117	Big Pours Wood	Proposed ancient woodland	High
STNo76	The Hollies, Burton Green	N/A	Low
STNo85	Ponds south of Beanit Spinney	N/A	Low
STNo95	Crabmill Farm Cropmarks	N/A	Low
STNo87	Crabmill Farm	Listed Grade II	Moderate
STNo86	Cropmark Field Boundaries	N/A	Low

5.6.126 The baseline resources are described in the main ES (see CFA Report 18, Section 6 and Volume 5: Appendix CH-001-018 and Volume 5 appendix CH-002-018).

#### *Future baseline*

##### **Construction (2017)**

5.6.127 The future baseline for construction in 2017 remains unchanged from that reported in the main ES.

##### **Operation (2026)**

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

#### *Effects arising during construction*

5.6.129 The original scheme resulted in significant effects during construction in the vicinity of amendment AP2-018-004 as follows:

- South Hurst Farm and Cottage (asset reference STNo63) as a result of changes to its setting;
- Broadwells Wood (asset reference STNo64) due to removal of a portion of woodland and severing the woodland into two areas;
- hedgerow south of Broadwells Wood (asset reference STNo73) due to removal of a large part of this asset;
- Crackley Assarted Woodland (asset reference STN106) due to the presence of the route which will affect its fabric and character; and
- Crabmill Farm (asset reference STNo87) as a result of changes to its setting.

- 5.6.130 There are no heritage assets recorded within the new areas of land required, other than Crackley Assarted Woodland (asset reference STN106). Given that there are only small-scale changes to land required during construction, and the large geographical extent of Crackley Assarted Woodland (asset reference STN106), the small elements of new or altered land requirements will not alter the nature or scale of the impact. The proposals will still affect the fabric, integrity, grain and character of the asset which will result in a high adverse impact on a low value asset resulting in a moderate adverse effect. Therefore, these small changes will not result in a new or materially different significant effect or change the level of significant effect as reported in the main ES.
- 5.6.131 The minor changes to areas of land required during construction will not alter the impacts on Broadwells Wood (asset reference STNo64) or the Hedgerow (asset reference STNo73), since much of these assets will still be removed. Therefore, there will be no change to the significant effects reported in the main ES due to the impacts on these assets.
- 5.6.132 The proposals include changes to the south portal in the vicinity of South Hurst Farm and Cottage (asset reference STNo63). The amendment will result in changes near to this asset including the lower track height on approach to the south portal, relocation of the MTSA from the western side of the route to the eastern side, relocation of the balancing pond from the eastern side of the route to the western side and extended mitigation earthworks on shallower gradients and associated woodland habitat creation. There will also be increased planting and a new hedgerow to the eastern side of the route around Broadwells Wood and a change to maintenance access past South Hurst farm which is no longer required. There will be some more noticeable changes which could further affect the setting of South Hurst Farm and Cottage (asset reference STNo63) such as increasing the footprint to allow for a shallower gradient and movement of the MTSA to the eastern side of the route, closer to the asset. There will also be potential reductions in the scale of impact due to relocation of the balancing pond, increase in planting of woodland, hedgerow and the removal of the maintenance access past South Hurst Farm and Cottage (asset reference STNo63). The impacts reported in the main ES in terms of construction activity in the vicinity of the heritage asset, the partial removal of Broadwells Wood which forms part of its setting and earthworks near to the asset remain. As a result, there will be no change to the significant effects reported in the main ES and there will continue to be a temporary high adverse impact and permanent medium adverse impact on an asset of moderate value. The temporary major adverse effect and permanent moderate adverse effect, as reported in the main ES therefore remain unchanged.
- 5.6.133 In the vicinity of Crabmill Farm (asset reference STNo87) which is located on the eastern side of the route, the amendment proposes raising the track height by approximately 4m in this area. There will also be changes to locations of compounds and the roadhead on the western side of the route. This will increase construction traffic on Waste Lane. Crabmill Farm (asset reference STNo87) will continue to be affected by the construction of the scheme which will be visible and will temporarily change its setting. It will have views of the proposed scheme which will disrupt its relationship with the fields which form part of its setting on the north and west sides. This will result in a temporary medium adverse impact and permanent low adverse impact, resulting in temporary moderate adverse effects and permanent low adverse

effects on this asset of moderate value. This assessment remains accurate and there will be no changes to the significant effects on this heritage asset during construction phase as reported in the main ES.

- 5.6.134 Therefore, there will be no new or materially different significant effects or change to the level of significant effects during construction as reported in the main ES.

#### *Effects arising from operation*

- 5.6.135 The original scheme resulted in significant effects during operation in the vicinity of amendment AP2-018-004 as follows:

- South Hurst Farm and Cottage (asset reference STNo63) as a result of the change to its setting;
- Broadwells Wood (asset reference STNo64) as a result of the change to its setting;
- moated site at Bockenden Grange (asset reference STNo66) as a result of changes to the setting of this asset;
- Crackley Assarted Woodland (asset reference STN106) as a result of a change to its character; and
- Crabmill Farm (asset reference STNo87) as a result of a change to its setting.

- 5.6.136 The impact on South Hurst Farm and Cottage will not be altered by the amendment as there will still be views of trains and an increase in noise during operation which will continue to adversely alter its setting, resulting in high adverse impacts on a moderate value asset resulting in a major adverse effect. There will be no changes to this significant effect as reported in the main ES.

- 5.6.137 The impact on the setting of Broadwells Wood (asset reference STNo64) will not be altered by the amendment as the trains will still be visible from edges of the woodland and an increase in noise remains. Therefore, there will be no changes to this significant effect, a medium adverse effect, as reported in the main ES.

- 5.6.138 The impact on the setting of moated site at Bockenden Grange (asset reference STNo66) will not be altered by the amendment as trains will still be visible from the asset due to the embankments which will alter some of the characteristics of the setting of this asset. Therefore, there will be no change to the significant effect, a medium adverse effect, as reported in the main ES.

- 5.6.139 The impact on Crackley Assarted Woodland (asset reference STN106) will not be altered by the amendment as there will still be an increase in noise and trains will be visible which will change the rural character of this asset and detract from its significance. Therefore, there will be no changes to the significant effect, a moderate adverse effect, as reported in the main ES.

- 5.6.140 The impact on Crabmill Farm (asset reference STNo87) will not be altered by the amendment as there will still be an increase in noise along with views of the trains. This will result in a medium adverse impact on this moderate value asset, resulting in a moderate adverse effect, as reported in the main ES.

- 5.6.141 Therefore, there will be no new or materially different significant effects or changes to those existing significant effects during operation which are identified in the main ES and summarised above.

#### *Mitigation and residual effects*

- 5.6.142 The amendment will result in no new or materially different significant effects or change to the level of significant residual effects reported in the main ES.
- 5.6.143 No additional mitigation measures are proposed.

#### *Cumulative effects*

- 5.6.144 There are no new or different likely significant cumulative effects for cultural heritage as a result of the amendment acting in combination with another amendment in AP2, or in AP1 or the SES or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Ecology**

#### *Scope, assumptions and limitations*

- 5.6.145 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.
- 5.6.146 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*

- 5.6.147 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, aerial photography and relevant existing information gathered from national organisations and from regional and local sources including: Warwickshire Biological Records Centre (Warwickshire County Council), and Warwickshire Wildlife Trust.
- 5.6.148 A summary of the baseline information relevant to the assessment of the amendment is provided below. This takes account of any relevant new or updated baseline information provided in SES and AP2 Volume 5: EC-001-003. For those receptors described in the main ES, further details are provided in Volume 2, CFA18, Section 7 and in Volume 5, including maps EC-01 to EC-12.

#### **Designated sites**

- 5.6.149 There are no statutory designated sites of nature conservation importance relevant to the assessment of the amendment.
- 5.6.150 There are six non-statutory designated sites, all Local Wildlife Sites (LWS), within 500m of the land required for the AP2 revised scheme. These are: Broadwells Wood,

The Pools Wood, Black Waste Wood, Big Pools and Little Pools Wood, Beanit Farm Hedge and Little Beanit Farm Meadow. None are within the land required for the AP2 revised scheme. Black Waste Wood is immediately adjacent to the land required and Broadwells Wood is approximately 115m from the land required for the AP2 revised scheme.

- 5.6.151 Statutory and non-statutory designated sites in the wider local area are described in the main ES (Volume 5, CFA18, Section 2) and are shown on Map EC-01-048, Volume 5, Map Book Ecology.

### **Habitats**

- 5.6.152 The area covered by this amendment stretches from Broadwells Wood in the south, through to north of Waste Lane and the boundary of this CFA with CFA23 Balsall Common and Hampton-in-Arden. The habitats occurring within the land required for the AP2 revised scheme (which includes changes that can be accommodated within the limits of land already identified in the Bill, and changes that require additional land temporarily or permanently) include: broadleaved woodland, broadleaved parkland/scattered trees, semi-improved neutral grassland, poor semi-improved grassland, improved grassland, amenity grassland, arable, hedgerows and bare ground.
- 5.6.153 Additional land is required to accommodate four elements of the amendment, namely:
- the relocation of the south tunnel portal buildings (including the relocation of the temporary south portal satellite compound), with a new permanent maintenance access from Bockendon Road, and additional landscaping/mitigation earthworks;
  - relocation and reduction in size of the material transfer stockpile area adjacent to Broadwells Wood;
  - realignment of the Kenilworth Greenway north of the Burton Green tunnel; and
  - replacement of propped retaining walls with an earthwork cutting adjacent to Berkswell substation.
- 5.6.154 The relocated tunnel portal buildings and stockpile elements are located to the south of the tunnel and are adjacent to one another. The habitats here are dominated by arable land, with native species-rich hedgerow (approximately 4m of which is Important Hedgerow), species-poor hedgerow, a small watercourse, and a pond. There are also small patches of semi-improved neutral grassland (approximately 180m<sup>2</sup>). The Kenilworth Greenway realignment and earthwork cutting elements are located north of the tunnel and associated with one another. The additional habitat required is limited to a narrow strip of poor semi-improved grassland (approximately 0.18ha) located approximately 130m south east of Beanit Spinney.
- 5.6.155 The arable land and poor semi-improved grassland within the area was reported as having negligible value in the main ES. The hedgerow network within this area was reported in the main ES as having district/borough value. Based on habitat alone, the

pond was considered to be of local/parish value in the main ES. Minor watercourses were also considered to be of local/parish value in the main ES.

- 5.6.156 Phase 1 habitats in this area are described in the main ES (Volume 5, CFA18, Section 4) and shown on Map EC-02-049, Volume 5, Map Book Ecology.

### **Protected and/or notable species**

- 5.6.157 The protected and/or notable species occurring within the land required for the AP2 revised scheme include: great crested newt, and bats (roosting commuting and foraging). Additional land is required as noted above.
- 5.6.158 Bats and great crested newts are relevant to the additional land required for the relocated tunnel portal buildings and stockpile. Further details are provided below.
- 5.6.159 There are no trees or buildings supporting known bat roosts within the land required for the relocated tunnel portal buildings or material transfer stockpile. The hedgerow alongside footpath W168a and the two hedgerows around the relocated temporary satellite compound have not been identified as a key commuting route or foraging area for bats. The new permanent maintenance access does bisect a hedgerow which has been identified as a key commuting route (030-BA6-145003), and the land required for the relocated stockpile includes part of a key foraging area (030-BA5-145001). The commuting route and foraging area form part of the land used by the assemblage of bats defined in the main ES as '...using foraging and commuting woodland habitat including Crackley Wood, Roughknowles Wood, Broadwells Wood and Black Waste Wood together with adjacent habitats including the Kenilworth Greenway' which is of county/metropolitan value.
- 5.6.160 Three of the ponds within AMP15 are between 90 and 310m from the land required for the relocated tunnel portal buildings or material transfer stockpile. A small population size class of great crested newt was recorded in a pond approximately 90m from the new permanent maintenance access from Bockendon Road (030-AA-145008, as illustrated in Volume 5, Map Book Ecology). Great crested newts from this pond could potentially be using the hedgerow alongside Footpath W168a as terrestrial habitat, although there is considerable suitable habitat available within 250m of the pond (namely an area of semi-improved grassland surrounding the pond and nearby Broadwells Wood, which is linked to the pond via a species-poor hedgerow). This pond is part of AMP15, as reported in the main ES, which is of county/metropolitan value.
- 5.6.161 There is a pond with a medium population size class approximately 310m from the new permanent maintenance access from Bockendon Road (030-AA-145010, as illustrated in Volume 5, Map Book Ecology). This is connected to the hedgerow alongside Footpath W168a via other hedgerows, although again there is considerable suitable habitat available within 250m (namely Black Waste Wood). This pond is also part of AMP 15 as reported in the main ES, which is of county/metropolitan value.
- 5.6.162 A small population size class of great crested newts was also recorded in a pond approximately 90m from the additional landscaping/mitigation earthworks (030-AA-145005, as illustrated in Volume 5, Map Book Ecology). The pond is surrounded by arable land, which is sub-optimal habitat for great crested newts. This pond is also part of AMP 15 as reported in the main ES, which is of county/metropolitan value.

- 5.6.163 The pond which falls within the additional land required for the relocation of the material transfer stockpile (030-AA-145001) has been surveyed and great crested newts are assumed to be absent.
- 5.6.164 Great crested newts are considered relevant to the additional land required for the realigned Kenilworth Greenway, north of the tunnel or the earthwork cutting adjacent to Berkswell Sub-station. There is a pond immediately west of the realigned Kenilworth Greenway and earthwork cutting (040-AA-147001). This has been surveyed and great crested newts are assumed to be absent. There are three further ponds between 250m and 300m from the land required for the AP2 revised scheme; these have also been surveyed and great crested newts are assumed to be absent. There is a pond with a small population size class approximately 365m from the realigned Kenilworth Greenway and earthwork cutting (040-AA-147009, as illustrated in Volume 5, Map Book Ecology). Great crested newts from this pond could potentially be using the poor semi-improved grassland within the AP2 revised scheme as terrestrial habitat although there is considerable suitable habitat available within 250m of the pond (namely poor semi-improved grassland with scattered scrub immediately adjacent to the pond, and Beanit Spinney, which is linked to the pond via species-poor hedgerows). This pond is part of AMP19, as reported in the main ES, which is of up to county/metropolitan value.
- 5.6.165 Locations of species records from surveys conducted in support of the main ES are illustrated on Maps EC-01 to EC-12, Volume 5, Map Book Ecology.

#### *Future baseline*

##### **Construction (2017)**

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

##### **Operation (2026)**

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

#### *Effects arising during construction*

##### **Avoidance and mitigation measures**

- 5.6.168 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**

- 5.6.169 There are no new or different significant effects on designated sites compared to those reported in the main ES.

##### **Habitats**

- 5.6.170 There will be a net loss of approximately 3.9ha of arable land and approximately 0.18ha of semi-improved neutral grassland associated with the relocated tunnel portal buildings and stockpile elements. No significant effect was reported in the main ES on

these habitats, which have negligible or local/parish value, and there will be no new or different significant effects as a result of the amendment.

- 5.6.171 Taking a precautionary approach to the assessment, it is assumed that all of the hedgerows within the land required will be lost. Loss of hedgerow (including important hedgerows) was reported in the main ES as having an adverse effect on the conservation status of the hedgerow network which will be significant at a district/borough level. The amendment will result in the additional loss of approximately 130m of species-poor hedgerow, 220m of native species-rich hedgerow and 4m of important hedgerow. This is a different significant effect. However, this will not change the level of significance of effect reported in the main ES.
- 5.6.172 The small watercourse will be crossed by the new maintenance access road, but will be retained. The pond located east of the stockpile will also be retained. Therefore, there will be no additional loss of watercourse or pond as a result of the amendment.
- 5.6.173 There will be loss of approximately 0.18ha of poor semi-improved grassland within the additional land required for the realigned Kenilworth Greenway north of the Burton Green Tunnel and earthwork cutting adjacent to Berkswell substation. No significant effect was reported in the main ES on this habitat, which has negligible value, and there will be no new or different significant effects as a result of the amendment. The pond to the west will be retained.
- 5.6.174 It is considered unlikely that any other effects on habitats of relevance at more than the local/parish level will occur. Additional local/parish level effects arising from survey data collected since the main ES are listed in Volume 5: Appendix EC-003-003.

### **Species**

- 5.6.175 A likely significant adverse effect at county/metropolitan level on the assemblage of bats using foraging and commuting woodland habitat including Crackley Wood, Roughknowles Wood, Broadwells Wood and Black Waste Wood together with adjacent habitats including the Kenilworth Greenway was reported in the main ES. The relocation of the tunnel portal buildings and material transfer stockpile adjacent to Broadwells Wood will result in the additional loss of arable land and hedgerows. These changes will result in a different significant effect, but will not change the level of significance of effects reported in the main ES.
- 5.6.176 There were no likely significant effects on AMP15, including great crested newt breeding in ponds 030-AA-145008, 030-AA-145010 and 030-AA-145005 (as illustrated in Volume 5, Map Book Ecology), reported in the main ES. The arable land within the AMP15 that will be lost as a result of the amendment is considered unlikely to be used by great crested newt as it is sub-optimal habitat. The hedgerows within AMP15 that will be lost as a result of the AP2 revised scheme could potentially be used by great crested newts as terrestrial habitat. The closest part of these hedgerows is 90m from the nearest confirmed breeding pond. However, there is considerable suitable habitat available around the ponds themselves (including semi-improved grassland and broadleaved woodland). The hedgerow will also be retained during construction. Implementation of measures within the draft CoCP will ensure there will be no killing or injury of newts as a result of the amendment. Any trapping of terrestrial habitat which supports great crested newt required to avoid killing/ injury will be undertaken in accordance with the ecological principles of mitigation identified within the SMR

Addendum of the main ES (Volume 5: Appendix CT-001-000/2). These changes will not generate any new or different significant effects, or change the level of significance of effects reported in the main ES.

- 5.6.177 There were no likely significant effects on AMP19, including great crested newt breeding in pond 040-AA-147009 (as illustrated in Volume 5, Map Book Ecology), reported in the main ES. The 0.18ha of poor semi-improved grassland that will be lost as a result of the amendment could potentially be used by great crested newts as terrestrial habitat. However, it is 365m from the breeding pond and there is considerable suitable terrestrial habitat within 250m of the pond. Implementation of measures within the draft CoCP will ensure there will be no killing or injury of newts as a result of the amendment. Any trapping of terrestrial habitat which supports great crested newt required to avoid killing/injury will be undertaken in accordance with the principles of ecological mitigation identified within the SMR Addendum of the main ES (Volume 5: Appendix CT-001-000/2). These changes will not generate any new or different significant effects, or change the level of significance of effects reported in the main ES.
- 5.6.178 It is considered unlikely that any other effects on species of relevance at more than the local/parish level will occur. Additional local/parish level effects arising from survey data collected since the main ES are listed in Volume 5: Appendix EC-003-003.

#### *Cumulative effects*

- 5.6.179 There are no new or different likely significant cumulative effects for ecology as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1, or as a result of any relevant committed development interacting with the AP2 revised scheme.

#### *Other mitigation measures*

- 5.6.180 New hedgerow creation will be undertaken and connected habitat is provided within the landscape scheme to compensate for losses of wildlife corridors that hedgerows provide. The main ES reported that there will be temporary adverse effects whilst the new hedgerows become established and mature (approximately 15 years). Following establishment and maturation of planting it is expected that any adverse impacts on hedgerows and the wildlife corridors they create will be reduced to an adverse effect on the conservation status of the habitat that will be significant at a local/parish level. No additional mitigation measures (i.e. in addition to those identified in the main ES and SES) are therefore required, to mitigate the different significant effect identified.

#### *Summary of likely residual effects*

- 5.6.181 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

#### *Effects arising from operation*

- 5.6.182 There are no new or different significant operational effects for ecology as a result of the proposed amendment in comparison with the main ES and/or the AP1 ES.

## Land quality

### *Scope, assumptions and limitations*

- 5.6.183 The assessment scope, key assumptions and limitations for land quality 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.

### *Existing baseline*

- 5.6.184 The existing and future baseline land quality information for the area is as described in the main ES (Volume 2, CFA18 Section 8). There are no superficial deposits underlying the proposed amendment site. Bedrock geology comprises the Tile Hill Mudstone Formation, comprising argillaceous rocks and sandstone. The bedrock is classified by the Environment Agency as a Principal aquifer, due mainly to the sandstone layers within The Tile Hill Mudstone Formation.
- 5.6.185 Approximately 400m to the south-west of the Burton Green green tunnel south portal satellite construction compound is an infilled quarry which may have been manually infilled with a variety of waste materials and could also give rise to landfill gases such as methane, carbon dioxide and volatile organic compounds. It was assumed in the main ES that the quarry will be not be disturbed as part of the construction phase, but should contamination be encountered that had migrated from the source, it will be removed. This will have a negligible effect (not significant) with respect to land quality. This not anticipated to change with the Burton Green area amendment.

### *Future baseline*

#### **Construction (2017)**

- 5.6.186 The future baseline for construction in 2017 remains unchanged from that reported in the main ES.

#### **Operation (2026)**

- 5.6.187 No committed developments have been identified in this local area that will materially alter the baseline conditions in 2026 with respect to land quality.

### *Effects arising during construction*

- 5.6.188 The assessment of the effects arising during construction of the Burton Green green tunnel south portal amendment are described below.
- 5.6.189 The Burton Green area amendment includes the relocation of the satellite compound to a site on the east side of the AP2 revised scheme situated between Bockendon Grange and Black Waste Wood with access to the site for construction traffic from Bockendon Road. The new location requires additional land which was not assessed in the main ES; however the new location does not correspond with land which has a current or legacy use considered to be potentially contaminative. Red Lane Poultry Farm is located approximately 425m south of the proposed site area; however it is unlikely to be affected by any works relating to the amendment (LQ-01-049, B7).
- 5.6.190 As a result of the relocation discussed above, it is proposed that the satellite compound will commence in late 2018. This work will continue until early 2022, at which time it will revert to being a rail systems compound.

- 5.6.191 The amendment, including the extended duration of use at the Burton Green south portal satellite compound, will not give rise to new or different significant effects and will not change the level of significance of the effects reported in the main ES.

*Effects arising from operation*

- 5.6.192 There are no new or different significant operational effects for land quality as a result of the proposed amendment in comparison with the main ES and/or the AP1 ES.

*Mitigation and residual effects*

- 5.6.193 There are no new or different residual construction or operational effects for land quality as a result of the proposed amendment, in comparison with the main ES, the SES and the AP1 ES and no further mitigation is required.

*Cumulative effects*

- 5.6.194 There are no new or different likely significant cumulative effects for land quality as a result of the proposed amendment acting in combination with another amendment in AP2, or in AP1, or as a result of any relevant committed development interacting with the AP2 revised scheme.

**Landscape and visual assessment**

*Scope, assumptions and limitations*

- 5.6.195 The assessment scope, key assumptions and limitations of the landscape and visual 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. An update to the methodology for the landscape and visual assessment is also described in Volume 1 of the AP1 ES.

*Existing baseline*

- 5.6.196 The area of land required for the amendment is located within the Stoneleigh Parklands LCA and Coventry Rural Fringe LCA as described in the main ES (Volume 2, CFA18, Section 9.3).
- 5.6.197 The following viewpoints are also located close to all the proposals that form the Burton Green area amendment, and these include:
- 277.2.003 (residential properties adjacent to Red Lane);
  - 277.2.005 (residential properties adjacent to Red Lane);
  - 277.3.006 (Kenilworth Greenway (part of the Coventry Way));
  - 277.3.007 (PRoW Footpath W168);
  - 278.2.002 (View south from Hurst Farm);
  - 278.6.003 (Pools Cottages adjacent Crackley Lane);
  - 279.2.001 (residential properties along Red Lane);
  - 279.2.003 (Le Van House on Red Lane and Two Oaks Nursery);

- 279.2.004 (residential properties along Cromwell Lane and Red Lane);
- 279.3.006 (Kenilworth Greenway (part of the Coventry Way));
- 280.3.001 (PRoW Footpath) W168a);
- 280.2.002 (residential properties on Cromwell Lane);
- 280.3.004 (PRoW Footpath) W168);
- 280.2.009 (residential properties along Westwood Heath Road);
- 280.2.012 (Bockendon Grange);
- 281.3.003 (PRoW Footpath) M187);
- 282.2.001 (residential properties on Hodgett's Lane);
- 282.3.002 (PRoW Footpath) M188);
- 282.3.006 (PRoW Footpath) M186);
- 282.2.007 (residential properties along B4101 Waste Lane);
- 282.2.008 (residential properties along Hodgett's Lane);
- 282.2.009 (Little Beanit Farm);
- 282.6.012 (Little Beanit Holiday Homes (future baseline));
- 282.2.010 (residential properties along the B4101 Waste Lane); and
- 284.3.004 (PRoW Footpath M199).

### *Future baseline*

#### **Construction (2017)**

- 5.6.198 The future baseline for construction in 2017 remains unchanged from that reported in the main ES.

#### **Operation (2026)**

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

### *Effects arising during construction*

#### **Landscape assessment**

- 5.6.200 Stoneleigh Parklands LCA was assessed as being affected by the original scheme. Tranquillity is medium, the landscape is of regional value and therefore it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse effect during construction due to the removal of existing vegetation, excavation and the formation of embankments and the construction of structures including viaducts. The proposed nature and scale of the overall construction activities undertaken during the peak construction phase as a result of the Burton Green area amendment will not

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

### **Visual assessment**

- 5.6.201 The Burton Green green tunnel will be extended by 50m at both ends with the associated south portal satellite compound moved to the east of the rail alignment as part of this amendment. However the nature and scale of the overall construction activities undertaken during the peak construction phase in this area will be very similar to those required in the original scheme. The proposed Burton Green area amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

### **Landscape assessment**

- 5.6.202 Stoneleigh Parklands LCA was assessed as being affected by the original scheme and will further affected by this amendment. Tranquillity is medium, the landscape is of regional value and, therefore it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse effect in year 1 of operation, remaining moderate adverse in year 15 and year 60 due to the continued influence of the high speed trains, the presence of the viaducts with noise fence barriers, loss to ancient woodland, overhead line equipment and a reduced sense of separation between Kenilworth and Coventry at Gibbert Hill. The proposed extension of the green tunnel by 50m at each end, incorporation of landscape mitigation earthworks to improve screening of the railway from Kenilworth Greenway and extended mitigation earthworks adjoining Footpath W168 will not give rise to a new or materially different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.6.203 Coventry Rural Fringe LCA was assessed as being affected by the original scheme and will be further affected by this amendment. The landscape is in good condition and is of local value and therefore it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse effect in year 1 of operation, remaining moderate adverse in year 15 and year 60 of operation due to the partial loss of vegetation, variance to local landform and the introduction of additional built elements into the rural landscape. The proposed extension of the green tunnel by 50m at each end, incorporation of landscape mitigation earthworks to improve screening of the railway from Kenilworth Greenway and extended mitigation earthworks adjoining Footpath W168 will not give rise to a new or materially different significant effect and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.6.204 The proposed lengthening of the Burton Green tunnel, the relocation of the balancing pond from west of Footpath W168 on the eastern side of the alignment to west of the alignment, modifications to earthworks and extents of landscape mitigation planting, and woodland habitat creation will be of small scale in comparison the original scheme and therefore will not give rise to a new or materially different significant

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

#### *Mitigation and residual effects*

- 5.6.205 There are no new or different residual construction or operational effects for landscape and visual as a result of the proposed amendment, in comparison with the main ES, the SES and the AP1 ES and no further mitigation is required.

#### *Cumulative effects*

- 5.6.206 There are no new or different likely residual significant effects for landscape and visual as a result of the proposed amendment acting in combination with another amendment in the AP2, or in AP1 or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Sound, noise and vibration**

#### *Scope, assumptions and limitations*

- 5.6.207 The assessment scope, key assumptions and limitations for the sound, noise and vibration 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. The local assumptions are as described in the main ES (Volume 2: CFA18 Report for the Stoneleigh, Kenilworth and Burton Green CFA).

#### *Existing baseline*

- 5.6.208 The baseline sound, noise and vibration information for the area is described in the main ES (Volume 5: Appendix SV-002-018). Baseline noise levels representative of the assessment locations affected by the AP2 revised scheme have been used in the construction and operational assessments, including the new mobile home park at Le Van on Red Lane.

#### *Future baseline*

- 5.6.209 Without the original scheme, existing sound levels in this area are likely to increase gradually over time. This is primarily due to road traffic growth on the existing road network. Changes in car technology may offset some of the expected sound level increases due to traffic growth on low speed roads. On higher speed roads, tyre sound dominates overall levels and hence the expected growth in traffic is likely to continue to increase ambient sound levels.

### **Construction (2017)**

- 5.6.210 The future baseline for construction in 2017 remains unchanged from that reported in the main ES (Volume 5: Appendix SV-002-020).

### **Operation (2026)**

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

*Effects arising during construction*

- 5.6.212 The main ES reported that two dwellings along Hodgett’s Lane whose rear façades face onto the Kenilworth Greenway are forecast to experience noise levels higher than the noise insulation trigger levels as defined in the draft CoCP. In addition, likely significant effects during construction were reported on Hodgett’s Lane, Red Lane and Cromwell Lane, Burton Green, due to noise from demolition activities, ground engineering works associated with the Burton Green green tunnel and utility diversion works.
- 5.6.213 The proposed changes brought about by the AP2 revised scheme will alter the intervening distances between construction activities and receptors, which has the potential to alter the reported effects in the Burton Green area. An assessment has been undertaken to determine whether construction noise levels from the AP2 revised scheme will result in a new or different likely significant effect, using the methodology and significance criteria detailed in the main ES (Volume 5: Appendix SV-001-000). Table 5 sets out the changes/additions to the main ES, Volume 5: Appendix SV-003-020, construction assessment, sound, noise and vibration for both residential and non-residential receptors.
- 5.6.214 Explanation of the information within this table is provided in the main ES, Volume 5: Appendix SV-003-020

Table 5: Assessment of construction noise at residential receptors and non-residential receptors

Assessment location		Impact criteria				Significance criteria									Significant effect
ID	Area represented	Typical/highest monthly outdoor LpAeq [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [months]	Mitigation effect	
Day 0700-1900	Evening 1900-2300	Night 2300-0700													
204672	Cromwell Lane, Burton Green, Kenilworth	60/64 [A]	-	-	Demolition works	NA	10	R	T	-	-	-	-	-	
206392	Red Lane, Burton Green, Kenilworth	57/60 [A]	-	-	Earthworks	NA	33	R	T	-	-	-	-	-	
206515	Red Lane, Burton Green, Kenilworth	55/59 [A]	-	-	Earthworks	NA	5	R	T	-	-	-	-	-	
206392	Two Oaks Day Nursery,	57/60	-	-	Earthworks	B	1	G4	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria								Significant effect	
ID	Area represented	Typical/highest monthly outdoor LpAeq [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact		Impact duration [months]
Day 0700- 1900	Evening 1900- 2300	Night 2300- 0700												
	Red Lane, Burton Green													

- 5.6.215 The main ES reported that construction traffic is likely to cause adverse noise effects at approximately 10 dwellings on Waste Lane located immediately adjacent to the road (refer Table 2, Summary of corrections to the main ES in CFA18). Properties are forecast to experience an increase in outdoor noise levels which will constitute a change in the acoustic character of the area such that there is a perceived change in the quality of life and is considered significant when assessed on a community basis taking account of the local context.
- 5.6.216 An assessment has been undertaken to determine whether construction traffic due to the amendment would result in a likely significant effect. Based upon traffic information for the Burton Green area amendments, no new or different indirect construction noise effects have been identified. Therefore the Burton Green area amendment does not alter the likely significant long-term construction road traffic effects reported in the main ES.
- 5.6.217 The AP2 revised scheme has the effect of reducing construction noise levels for receptors on Cromwell Lane and Red Lane, such that the effects, when considered on a community basis taking into account local context are no longer significant. In addition, the likely significant effect on Cromwell Lane comprises 10 fewer properties than reported in the main ES.

*Effects arising from operation*

- 5.6.218 The main ES identified three individual dwellings in this area that it is estimated will receive an offer of noise insulation. It also reported adverse noise effects at the community of approximately 50 dwellings in the vicinity of Waste Lane, Old Waste Lane and Hodgett’s Lane closest to the scheme at Beechwood, identified as a significant effect in main ES, Appendix SV-004-018, Table 3 and denoted OSV18-Co3. At this community the likely adverse noise effects were predicted as a result of increases in sound from new train services.
- 5.6.219 The main ES scheme identified a likely community significant effect at Burton Green, at approximately 35 dwellings in the vicinity of Cromwell Lane and Red Lane closest to the scheme, identified in main ES, Appendix SV-004-018, Table 3 as OSV18-Co2. At this community, the likely adverse noise effects were predicted as a result of increases in sound from new train services.

- 5.6.220 An assessment has been undertaken to determine whether operational noise levels from the AP2 revised scheme will result in a likely significant effect, using the significance criteria detailed in the main ES (Volume 5: Appendix SV-001-000). Table 1 in AP2 ES, Appendix SV-004-018 sets out the changes to the main ES, Volume 5, Appendix, SV-004-018, Sound, Noise and Vibration Assessment. Explanation of the information within these tables is provided in the main ES Volume 5, CFA18.
- 5.6.221 The amendment has resulted in sound levels at one dwelling that was identified in the main ES as estimated to qualify for noise insulation, Little Beanit Farm, Waste Lane, Balsall Common, reducing to below the level at which noise will cause a significant effect on residents inside the dwelling. This property is consequently no longer estimated as likely to qualify for noise insulation. Other than this, the sound levels at Beechwood are not materially affected by the amendments, and thus the significant adverse noise effect identified in the main ES remains.
- 5.6.222 The mitigation provided by the amendment reduces the operational sound from the new train services such that at Burton Green, the properties on Cromwell Lane and Red Lane, including properties at Broadwell Woods Park are either subject to a negligible impact or generally no adverse noise effect, thus removing the significant operational noise effect (OSV18-Co2) identified in the main ES CFA18, Volume 2, Section 11. The levels are presented in Table 1, AP2 ES, Appendix SV-004-018.

#### *Mitigation and residual effects*

- 5.6.223 The assessment of construction noise and vibration assumes the implementation of the principles and management processes set out in the draft CoCP, as described in Main ES Volume 2 CFA18. No additional mitigation is considered necessary as a result of the proposed amendments.
- 5.6.224 The amendment removes the likely residual significant effect identified in the main ES at Red Lane (significant effect number CSV18-Co3 at assessment locations 206392 and 206515) and removes a group of ten properties on Cromwell Lane (ID 204672) from significant effect number CSV18-Co2. For all other receptors, the AP2 revised scheme does not materially affect the predicted construction noise levels, and the likely significant effects identified in the main ES remain.
- 5.6.225 In addition to the operational noise mitigation proposed within the main ES (CFA18, Volume 2, Section 11), the amendments change the retaining wall structures, earthworks and the portal structures at Burton Green and Berkswell, as shown on SES and AP2 ES map series SV05.
- 5.6.226 The amendment removes the likely residual significant operational noise effect (OSV18-Co2) identified in the main ES CFA18 at Burton Green, the properties on Cromwell Lane and Red Lane, including properties at Broadwell Woods Park. Other than this, the likely significant effects identified in the main ES remain.

#### *Cumulative effects*

- 5.6.227 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the amendment acting in combination with another amendment in AP2, AP1, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## Traffic and transport

### *Scope, assumptions and limitations*

- 5.6.228 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*

- 5.6.229 The existing baseline is as described in the main ES Volume 2: CFA18, Section 12.
- 5.6.230 Non-motorised user surveys showed that the Kenilworth Greenway was used by 552 people per day. Footpaths M186 and M187 were also surveyed and found to have a minimal number of users with 3 pedestrians each per day.
- 5.6.231 Since the publication of the main ES, a new layout has been introduced at the A429 Kenilworth Road/Gibbet Hill Road/Stoneleigh Road junction. This has removed observed congestion concerns.

### *Future baseline*

#### **Construction**

- 5.6.232 The future baseline for traffic and transport is as described in Volume 2 CFA18, Section 12 of the main ES. There is no change to the future baseline for construction as reported in the main ES.

#### **Operation (2026 and 2041)**

- 5.6.233 The future baselines for traffic and transport are set out in Volume 2, CFA18, Section 12 of the main ES. There is no change to the future baselines for operation as reported in the main ES.

### *Effects arising during construction*

- 5.6.234 The works to construct the original scheme use a number of construction compounds. The changes brought about by the AP2 revised scheme result in changes to the location of these compounds, but the total amount of associated traffic from all the compounds does not change from that reported in the main ES. However, there are additional traffic flows associated with the roadheads dealing with excavated material. The principal changes to the location of the compounds are described below.
- 5.6.235 Compared to the original scheme, the Burton Green green tunnel south portal satellite construction compound is relocated from the west side of the route and accessed from Red Lane to the east side of the route in the vicinity of Black Waste Wood and Bockendon Grange with access via Bockendon Road or along the trace of the scheme to the A429.
- 5.6.236 The Cromwell Lane satellite construction compound is also located further north with access onto Waste Lane.

- 5.6.237 The roadhead located on land south of Waste Lane in the Bill is to be co-located with the roadhead to the north of Waste Lane. Access is, as in the Bill, via the B4101 Waste Lane.
- 5.6.238 The levels of traffic associated with these compounds will be as follows showing the average daily combined two-way vehicle trips during busy periods and within the peak month of activity:
- Burton Green green tunnel south portal satellite compound 70-85 Cars/LGV, 30-40 HGVs;
  - Cromwell Lane satellite compound 70-85 Cars / LGV, 30-40 HGVs; and
  - Waste Lane east and westbound roadhead 180-220 HGVs per day.
- 5.6.239 These changes in location and routes will result in Cromwell Lane, Hob Lane and Red Lane no longer being used as construction traffic routes. As a result, the minor adverse significant effect as a result of traffic-related severance identified in the main ES, on both Cromwell Lane and Hob Lane will be removed by the AP2 revised scheme.
- 5.6.240 The impact of relocating Cromwell Lane compound is to spread the traffic between its new location and to the relocated Burton Green green tunnel south portal. In addition to construction traffic from compounds there is traffic associated with the roadhead on Waste Lane, as in the Bill, with increased levels of construction traffic.
- 5.6.241 The B4101 Waste Lane/Kelsey Lane will be used by approximately 300 HGV 2 way construction vehicles per day, an increase of 100 vehicles beyond that for the original scheme. The major adverse significant effect in relation to traffic severance for non-motorised users due to increases in HGVs on Waste Lane/Kelsey Lane remains with the AP2 revised scheme. In addition, this will lead to additional delays and journey times at the Kelsey Lane/Hob Lane and A452 Kenilworth Road/B4101 Waste Lane/Kelsey Lane junctions. However, this will not change the level of significance of the congestion and delay effects reported in the main ES and these will remain as minor adverse significant effects.
- 5.6.242 Bockendon Road will only be used by light vehicles and up to 2 HGVs per day during the main construction phase. No adverse effect is associated with this change. However, during the diversion of utilities up to 26 HGV's are expected to use Bockendon Road and this would lead to a moderate adverse significant effect for a few months due to traffic severance for non-motorised users as a result of increased HGV traffic.
- 5.6.243 Traffic flows on the A429 will increase from the original scheme by up to 40 HGVs per day. A major adverse significant effect in terms of an increase in delay, congestion and increased journey times was reported in the main ES at the A429 Kenilworth Road/Gibbet Hill Road/Stoneleigh Road junction. However, despite the small increase in HGV traffic, the revised junction layout now introduced at this location means that this effect reduces to a moderate adverse significant effect.
- 5.6.244 The construction of the scheme has temporary effects on PRoW which remain as reported in the main ES except at the locations indicated below.

- 5.6.245 With the AP2 revised scheme the length of the temporary Kenilworth Greenway diversion is slightly reduced to 1.5km. This change does not, however, change the moderate adverse significant effect attributed to vulnerable road-user delay reported in the main ES.
- 5.6.246 Footpath W168 will be adjacent to the temporary material transfer stockpile, impacting upon the ambience of the footpath, which was surveyed at 34 users per day. The minor adverse significant effect on the ambience of these users reported in the main ES will remain unchanged.
- 5.6.247 In the original scheme, Footpath M186 was temporarily diverted by approximately 200m via a temporary overbridge. The AP2 revised scheme retains the use of an existing Kenilworth Greenway overbridge during construction, which is located approximately 70m further north from the temporary/permanent overbridge in the original scheme and 10-20m north of the AP2 permanent overbridge location. The extension of the footpath does not result in any new or different significant effects and the reporting in the main ES is, therefore, unchanged.
- 5.6.248 Footpath M187 is diverted within the original scheme by 150m. The AP2 revised scheme makes only minor realignments to this to accommodate an increase in width which does not result in any new or different significant effect.
- 5.6.249 The original scheme severed the link between Footpath M184 and Waste Lane. This was not considered significant. The amendment reintroduces the link with Waste Lane. This represents an improvement in accessibility terms in comparison to the original scheme, but is not significant.

#### *Effects arising from operation*

- 5.6.250 The impacts of HS2 related traffic in operations do not change from the original scheme as reported in the main ES (Volume 2 CFA18: Section 12) except for the addition of limited maintenance traffic associated with the Burton Green green tunnel south portal satellite construction compound via Bockendon Road instead of Red Lane. The maintenance traffic flows will be very low and are not expected to result in any new or different effects from those reported in the main ES.
- 5.6.251 Kenilworth Greenway will be realigned to pass under Cromwell Lane, resulting in a less circuitous route than in the original scheme and reducing potential conflict with road traffic on Cromwell Lane. However, no significant effect was identified in the main ES, and this improvement will not give rise to any significant effects.
- 5.6.252 The length of the permanent diversion of Footpath M186 increases from 200m in the original scheme to 250m in the AP2 revised scheme and the amendment removes the potential for conflict between users of Footpath M186 and farm vehicles that there was under the original scheme. In the original scheme the diversion of this footpath had no significant effect and this remains the case with the amendment.
- 5.6.253 In the amendment Footpath M187 is upgraded to permissive bridleway status increasing connections for equestrians with Kenilworth Greenway, but this does not represent a significant beneficial effect. The minor adverse significant effect due to the increased length of the diversion of M187, as reported in the main ES, remains the same with the amendment.

- 5.6.254 Footpath M184 under the amendment is connected to the newly aligned B4101 Waste Lane. This was not provided for under the original scheme and is therefore of benefit to users of the footpath. The changes to this footpath under the original scheme had no significant effect as identified in the main ES and this remains the same with the amendment.

#### *Mitigation and residual effects*

- 5.6.255 No changes to the mitigation described in the main ES (Volume 2 CFA 18, Section 12) are required.
- 5.6.256 The minor adverse significant effect as a result of traffic-related severance identified in the main ES, on both Cromwell Lane and Hob Lane will be avoided by the AP2 revised scheme.
- 5.6.257 The revised junction layout at the A429 Kenilworth Road/Gibbet Hill Road/Stoneleigh Road junction, constructed after the publication for the main ES, reduces the major adverse significant effect resulting from an increase in delay, congestion and increased journey times reported in the main ES to a moderate adverse significant effect. This is a different residual effect to that reported in the main ES, although the change in significance of effects is not related to the AP2 revised scheme.
- 5.6.258 As a result of the amendment, a new moderate adverse significant effect at Bockendon Road will occur for a few months during the construction of utility diversions. This is due to traffic severance for non-motorised users as a result of increased HGV traffic.

#### *Cumulative effects*

- 5.6.259 Cumulative effects are reported in Volume 2, CFA18, Section 12 of the main ES. The assessment has taken into account these cumulative effects, including planned development by taking account of background traffic growth, as well as traffic and transport impacts of works being undertaken in other areas.

### **Water resources and flood risk**

#### *Scope, assumptions and limitations*

- 5.6.260 The assessment scope, key assumptions and limitations for water resources and flood risk 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.
- 5.6.261 The AP2 scheme amends the vertical alignment in the vicinity of Burton Green with the alignment being up to 3m lower to the south of Burton Green green tunnel and up to 4m higher to the north. These changes have the potential to change the impacts of the scheme on groundwater and groundwater-dependent receptors.

#### *Existing baseline*

- 5.6.262 The water resources and flood risk baseline is as described in the main ES (Volume 2, CFA18, Section 13) and its Appendices.
- 5.6.263 Updated surface water flooding data has been made available since publication of the main ES. This data set is the Environment Agency's Updated Flood Map for Surface Water (uFMfSW). Using the uFMfSW shows a reduced surface water flooding extent

in the vicinity of the proposed amendment. A small isolated area in the existing disused railway cutting that will be replaced by Burton Green green tunnel is shown to be at risk of surface water flooding in the, which is likely to be caused by rainwater falling into the cutting itself and ponding at the low point.

- 5.6.264 The Burton Green green tunnel is underlain by layers of sandstone and mudstone within the Tile Hill Mudstone Formation, which is classified as a Principal aquifer and is a receptor of high value<sup>12</sup>. In the Tile Hill Mudstone Formation it is likely that only the sandstone elements meet this definition; the mudstone layers are unlikely to yield material quantities of water.
- 5.6.265 An un-named watercourse (of moderate value) issues (likely to be a spring) 140m southwest of the south portal of the tunnel and flows north-east across the alignment. The original scheme allowed for the diversion of this ditch and this remains the case in the AP2 revised scheme.

### *Future baseline*

#### **Construction (2017)**

- 5.6.266 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 the main ES.
- 5.6.267 None of the identified developments affect the assessment of the amendment's likely construction impacts on water resources and flood risk.

#### **Operation (2026)**

- 5.6.268 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 the main ES.
- 5.6.269 None of the identified developments affects the assessment of the amendment's likely operational impacts on water resources and flood risk.

### *Effects arising during construction*

- 5.6.270 The assessment of the effects arising during construction of the Burton Green green tunnel amendment are described below.
- 5.6.271 The Burton Green green tunnel amendment includes the lowering of the line by up to 3m as it approaches the south portal of the green tunnel. This has increased the predicted extent of the zone of influence that will be created through dewatering of the aquifer from 35m reported in the main ES to 106m. However, this increase does not result in any additional receptors being affected. The mitigation measures set out in the draft CoCP and as detailed in Volume 2, CFA18, Section 13 and Volume 5: Appendix WR-002-018 Water Resources Assessment report of the main ES will be applied to manage the effects such that the magnitude of effect will remain not significant.

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<sup>12</sup> Principal aquifers may support water supply and/or river base flow on a strategic scale

- 5.6.272 The Burton Green green tunnel amendment also includes the raising of the track by up to 4m between the north portal and the B4101 Waste Lane overbridge, reducing the predicted extent of the zone of influence that will be created within the Tile Hill Mudstone Formation through dewatering of the aquifer from 141m as reported in the main ES to 53m. Whilst this does not result in a change in the significance of the effect, it is likely to be an improvement relative to the original scheme.
- 5.6.273 The Burton Green green tunnel will replace an area currently shown as being at risk of surface water flooding (in the base of the disused railway cutting) and displacement of this water could give rise to an increased flood risk elsewhere. However, the railway and land drainage included in the main ES will manage run-off from the scheme such that there will be no change in flood risk and therefore a neutral effect.
- 5.6.274 The proposed Burton Green area amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES or the AP1 ES.

#### *Effects arising from operation*

- 5.6.275 The proposed Burton Green area amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES and the AP1 ES

#### *Mitigation and residual effects*

- 5.6.276 The assessment of the amendment has assumed that the general measures detailed in the draft CoCP (Volume 5: Appendix CT-003-000) in the main ES will be implemented.
- 5.6.277 There are no new or different significant residual effects for water resources and flood risk as a result of the amendment, in comparison with the main ES.

#### *Cumulative effects*

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

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

- 5.7.1 The amendment results in one new residual significant effect on an agricultural holding compared to those reported in the main ES.
- 5.7.2 Land north-west of Waste Lane (CFA18/22) did not experience a significant effect as a result of the original scheme. The amendment will result in a new permanent residual major/moderate adverse effect on this holding.
- 5.7.3 The proposed amendment will offer substantial community benefits over the original scheme. There will be a reduction in the number of properties on Cromwell Lane experiencing a major adverse amenity effect, and the following significant adverse effects which were identified in the main ES or described in Table 2 will be avoided:
- a significant moderate adverse and permanent effect on the Kenilworth

Greenway due to its alignment crossing Cromwell Lane at grade;

- significant amenity effects on nine residential properties at Red Lane, Burton Green arising during the operation of the original scheme;
- significant major adverse temporary effects on the amenities of nine residential properties at Red Lane during construction;
- significant moderate adverse temporary isolation effects on the Burton Green community, during construction; and
- significant major adverse temporary effect on the amenity of the Kenilworth Greenway and its users during construction.

- 5.7.4 The AP2 revised scheme will also offer benefits based on the sound, noise and vibration assessment. The AP2 revised scheme reduces construction noise levels for receptors on Cromwell Lane and Red Lane removing the likely significant effect identified in the main ES. In addition, the residual significant operational noise effects identified in the main ES at properties on Cromwell Lane, and Red Lane including properties at Broadwells Woods Park, identified as OSV18-Co2 are removed as a result of this amendment. One dwelling, Little Beanit Farm, Waste Lane, Balsall Common, was also identified in the main ES as qualifying for noise insulation. However, as a result of the AP2 revised scheme this dwelling is no longer estimated to be likely to qualify for noise insulation, due to a lowering of noise levels at this property by amendments to the design.
- 5.7.5 In terms of traffic and transport, the minor adverse significant severance effect identified on Cromwell Lane and Hob Lane due to construction traffic under the original scheme is removed, as this route is no longer used for construction traffic, although there will be additional construction traffic on the B4101 Waste Lane and Kelsey Lane due to the AP2 revised scheme. However, a new moderate adverse significant effect at Bockendon Road will occur for a few months during the construction of utility diversions. This is due to traffic severance for non-motorised users as a result of increased HGV traffic.
- 5.7.6 The revised junction layout at the A429 Kenilworth Road/Gibbet Hill Road/Stoneleigh Road junction, constructed after the publication for the main ES, reduces the major adverse significant effect resulting from an increase in delay, congestion and increased journey times reported in the main ES to a moderate adverse significant effect. This is a different residual effect to that reported in the main ES, although the change in significance of effects is not related to the AP2 revised scheme.
- 5.7.7 There are a number of beneficial changes to the PRow in the area.

## **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](mailto:hs2enquiries@hs2.org.uk)

X24