

# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement 3 and  
Additional Provision 4 Environmental Statement

Volume 2 | Community forum area reports

CFA17 Offchurch and Cubbington

October 2015

SES3 and AP4 ES 3.2.1.17



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# Department for Transport

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# Structure of the HS<sub>2</sub> Supplementary Environmental Statement 3 and Additional Provision 4 Environmental Statement

The Supplementary Environmental Statement 3 (SES<sub>3</sub>) and Additional Provision 4 Environmental Statement (AP<sub>4</sub> ES) comprises:

- non-technical summary (NTS). This provides a summary in non-technical language of the SES<sub>3</sub> (Part 1) and AP<sub>4</sub> 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 (HS<sub>2</sub>) Phase One Environmental Statement (ES) submitted to Parliament in November 2013 in support of the hybrid Bill ('the Bill') for Phase One of HS<sub>2</sub> (hereafter referred to as 'the main ES') as updated by subsequent SES and AP ES documents;
- Volume 1: introduction to the SES<sub>3</sub> and AP<sub>4</sub> ES. This introduces the supplementary environmental information and design changes included within the SES<sub>3</sub> and amendments, which have resulted in the need to amend the Bill, within the AP<sub>4</sub> ES. It also explains any changes to the scope, methodology, assumptions and limitations required for the environmental assessment;
- Volume 2: community forum area (CFA) reports and map books. These describe the supplementary environmental information and design changes included within the SES<sub>3</sub> (Part 1) and amendments within the AP<sub>4</sub> ES (Part 2). Any new or different likely significant environmental effects arising from these changes and amendments in each CFA, compared to those reported in the main ES, as updated by SES and SES<sub>2</sub> documents (and SES<sub>3</sub> for the AP<sub>4</sub> amendments) are reported. The AP<sub>1</sub>, AP<sub>2</sub> and AP<sub>3</sub> amendments are also taken into account where relevant. In addition, 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<sub>3</sub> (Part 1) and amendments within the AP<sub>4</sub> ES (Part 2) compared to those reported in the main ES as updated by SES and SES<sub>2</sub> (and SES<sub>3</sub> for the AP<sub>4</sub> amendments). The AP<sub>1</sub>, AP<sub>2</sub> and AP<sub>3</sub> amendments are also taken into account where relevant;
- Volume 4: off-route effects. This reports new or different likely significant off-route effects arising from the supplementary environmental information and design changes included within the SES<sub>3</sub> (Part 1) and amendments within the AP<sub>4</sub> ES (Part 2) compared to those reported in the main ES as updated by SES and SES<sub>2</sub> (and SES<sub>3</sub> for the AP<sub>4</sub> amendments). The AP<sub>1</sub>, AP<sub>2</sub> and AP<sub>3</sub>

amendments are also taken into account where relevant;

- Volume 5: appendices and map books. This contains environmental information and associated maps in support of the other volumes of the SES<sub>3</sub> and AP<sub>4</sub> ES; and
- glossary of terms and list of abbreviations. This contains any new or different terms and abbreviations used throughout the SES and AP ES reports, additional to those included in the main ES.

# Structure of this report

This volume of the SES<sub>3</sub> and AP<sub>4</sub> ES is divided into CFA reports, which are in turn divided into two parts.

Part 1 of this CFA report provides supplementary environmental information relating to:

- new baseline information with respect to ecological surveys conducted during 2015; and
- changes to the design or construction assumptions which do not require changes to the Bill.

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<sub>3</sub> 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 of this CFA report 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 AP<sub>4</sub> 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) in CFAs 7 – 26. The SES and AP2 ES which was submitted in July 2015, updated the main ES and contained a number of further amendments to the design of the original scheme in CFAs 4 – 26. The SES2 and AP3 ES which was submitted in September 2015, contained further updates to the main ES and reported the assessment of a number of amendments to the design of the original scheme in CFAs 1 – 5.
- 1.1.2 Since the submission of the main ES and subsequent SES and AP documents, updates to environmental baseline information and changes to 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 SES3 (Part 1) or AP4 ES (Part 2) of this document, where they occur.
- 1.1.3 The Bill and associated Additional Provisions (APs) to the Bill described above, if enacted by Parliament, will provide the powers to construct, operate and maintain Phase One of HS2.
- 1.1.4 In order to differentiate between the original scheme and the subsequent changes, the terms set out in Table 1 are used.

Table 1: Scheme definitions

Scheme name	Definition	Relevant CFAs
the original scheme	the Bill scheme submitted to Parliament in November 2013, which was assessed in the main ES	1 – 26
the AP1 revised scheme	the original scheme as amended by the AP submitted in September 2014	7 – 26
the SES scheme	the original scheme with the design changes described in the SES submitted in July 2015	4 – 26
the AP2 revised scheme	the SES scheme as amended by the AP2 submitted in July 2015	4 – 26
the SES2 scheme	the original scheme as updated by the SES scheme, with the design changes described in the SES2 submitted in September 2015	1 – 5 (i.e. this applies in the London area only)
the AP3 revised scheme	the SES2 scheme as amended by the AP3 submitted in September 2015	1 – 5 (i.e. this applies in the London area only)
the SES3 scheme	the SES2 scheme with the design changes described in the SES3 submitted in October 2015	4 – 26

Scheme name	Definition	Relevant CFAs
the AP <sub>4</sub> revised scheme	the SES <sub>3</sub> scheme as amended by the AP <sub>4</sub> submitted in October 2015	4 – 26

- 1.1.5 SES<sub>3</sub> (Part 1 of this report) contains updated environmental baseline information and describes changes to the scheme that have occurred within the current limits and powers of the Bill, and therefore do not require an AP to the Bill. This includes:
- new baseline information with respect to ecological surveys conducted during 2015; and
  - changes to the design or to construction assumptions which do not require changes to the Bill.
- 1.1.6 Design changes assessed within the SES<sub>3</sub> for this CFA relate to revised assumptions for construction traffic movements associated with excavated materials.
- 1.1.7 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.
- 1.1.8 The purpose of SES<sub>3</sub> is to provide an assessment of any new or different likely significant environmental effects arising from the changes described.
- 1.1.9 There were no SES<sub>2</sub> changes in this CFA, so the SES<sub>3</sub> changes are compared to the SES scheme. There were AP<sub>1</sub> and AP<sub>2</sub> amendments, so these are taken into account as appropriate.
- 1.1.10 The AP<sub>4</sub> ES (Part 2 of this report) describes the likely significant effects of amendments to the design of the scheme, which require the use of land outside the original limits of the Bill, additional access rights, or other extensions to the powers conferred by the Bill, making it necessary to submit an AP to the Bill. The amendments assessed within the AP<sub>4</sub> ES for this CFA include:
- provision of a temporary roundabout at the junction of Fosse Way and Long Itchington Road;
  - revision of the junction between Long Itchington Road and Welsh Road, Offchurch;
  - provision of a temporary bridge across the River Leam;
  - revision of a woodland habitat creation area to the east of South Cubbington Wood; and
  - additional land required for a construction and maintenance access to an area of woodland habitat.
- 1.1.11 The AP<sub>4</sub> ES assesses each amendment separately for all relevant topics. The purpose of the AP<sub>4</sub> ES is to provide an assessment of any new or different likely significant environmental effects arising from the amendments compared to the SES<sub>3</sub> scheme, taking into account AP<sub>1</sub> and AP<sub>2</sub> amendments where relevant.
- 1.1.12 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<sub>3</sub> and AP<sub>4</sub> ES.

# Part 1: Supplementary Environmental Statement 3

## 2 Summary of changes

### 2.1 New environmental baseline information

#### Ecology

- 2.1.1 Surveys for amphibians have been undertaken in this area during 2015 which are relevant to the assessment.
- 2.1.2 Details of all amphibian surveys undertaken in this area during 2015 are provided in SES3 and AP4 ES, Volume 5: Appendix EC-001-003 and Volume 5 map series EC-04.
- 2.1.3 A summary of supplementary ecological information that is relevant to the SES3 assessment is included within Section 3 under 'Ecology'.

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

- 2.2.1 Table 2 provides a summary of the changes to the design or to construction assumptions not requiring a change to the Bill which will result in new or different significant effects in the Offchurch and Cubbington CFA (CFA17). Figure 1 shows the locations of the changes.

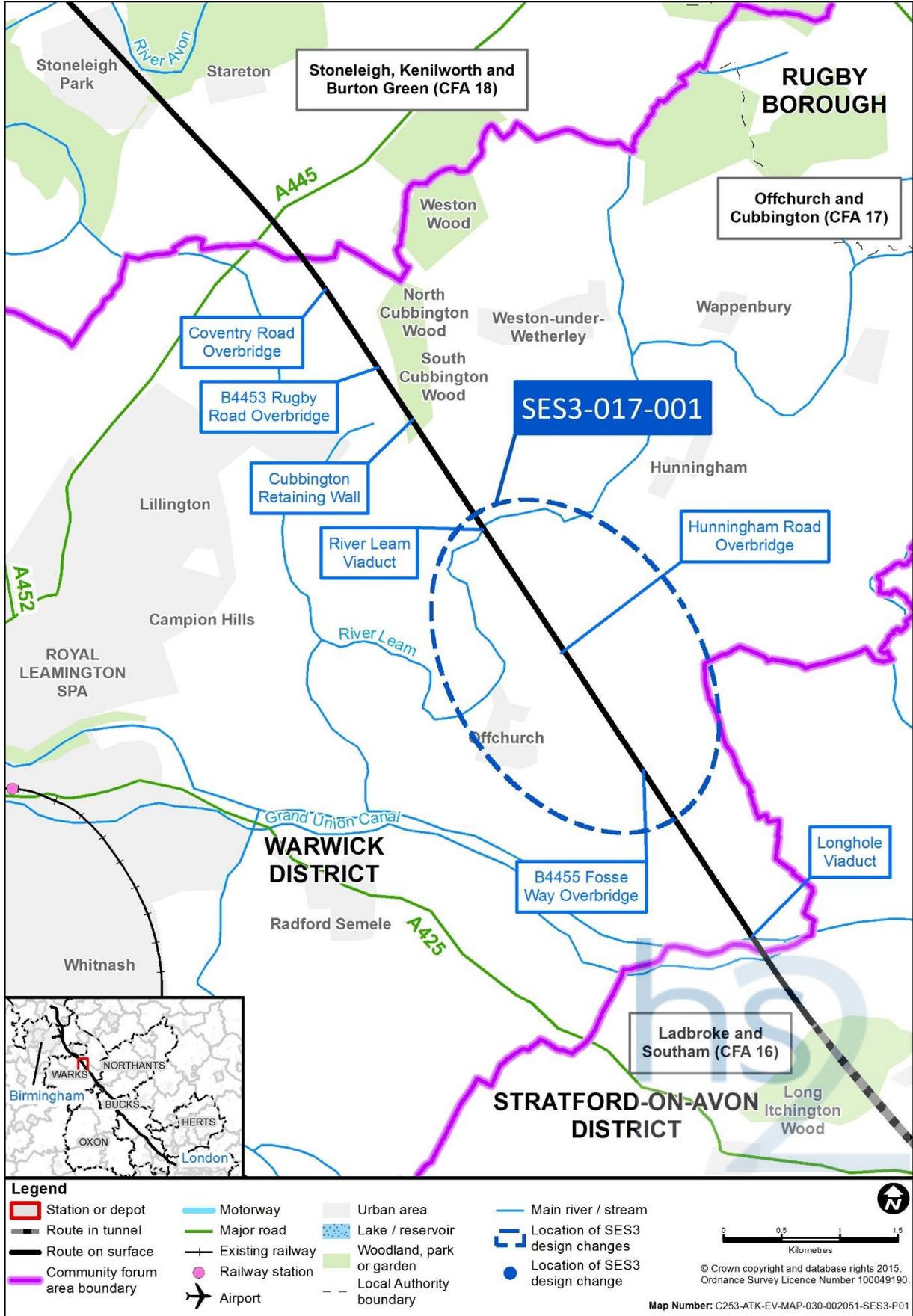
Table 2: Summary of changes to the design or to construction assumptions not requiring a change to the Bill in CFA17

Name of design change or construction assumption	Description of the SES scheme	Description of the SES3 scheme
Revised construction assumptions for construction traffic movements in CFA17  (SES3-017-001)	The B4455 Fosse Way main compound will be accessed directly off the B4455 Fosse Way. Connection from the B4455 Fosse Way to the M40 will be via the B4100 Banbury Road, the A452 and junction 13 and 14 of the M40. In addition, movement of excavated material from the neighbouring CFA16 will be routed through this area via the A425 Southam Road/Fosse Way junction.	Further assessment of the excavated material transported within CFAs 17 and 18 has been undertaken. The amount of material needing to be moved through some roadheads in CFAs 17 and 18 has been revised.  In addition the cumulative effect of route-wide changes reported in the SES and AP2 ES have altered the peak construction highway movements.  These changes to the construction assumptions would have substantially increased construction traffic to most roadheads in CFA17 and 18 without further mitigation.  To mitigate the impact of these changes to construction traffic flows the following changes to the construction assumptions have been implemented:

SES<sub>3</sub> and AP<sub>4</sub> ES Volume 2 – CFA17, Offchurch and Cubbington

Name of design change or construction assumption	Description of the SES scheme	Description of the SES <sub>3</sub> scheme
		<p>-extending the construction period of earthworks without extending the overall programme; and</p> <p>-increased use of haul routes for excavated material.</p> <p>Construction routes remain as described in the main ES.</p>

Figure 1: Locations of design changes not requiring a change to the Bill in CFA17



## Description of changes to the design or construction assumptions

### *Revised construction assumptions for construction traffic movements in CFA17 (SES3-017-001)*

- 2.2.2 Since submission of the Bill, further assessment of the excavated material transported within CFA17 and 18 has been undertaken. The amount of material needing to be moved through some roadheads in CFAs 17 and 18 has been revised.
- 2.2.3 In addition the cumulative effect of route-wide changes to the design reported in the SES and AP2 ES have altered the peak construction highway movements.
- 2.2.4 These changes to the construction assumptions increase the volume of excavated material to be moved.
- 2.2.5 To mitigate the impact of these changes on the highway network the following construction assumptions and design changes are proposed in this CFA:
- extending the construction period for earthworks without extending the overall programme; and
  - increased use of haul routes for excavated material.
- 2.2.6 Further SES design changes are proposed in CFA18 that affect the routing of construction traffic and levels of construction traffic in CFA17. These include the following changes which are assessed in volume 2, CFA 18:
- temporary signalisation of the A46/Stoneleigh Road junction in CFA18;
  - construction of a temporary dedicated on-slip for construction vehicles from the A46 Kenilworth Bypass roadhead to the southbound carriageway of the A46 in CFA18; and
  - an additional construction traffic route to create a one way construction traffic flow to and from the A46 Kenilworth Bypass overbridge main compound and Roadhead in CFA18.
- 2.2.7 In addition to the SES changes, to maximise the benefit of these mitigation measures an additional provision (AP4-017-003) is proposed that will provide a new temporary bridge over the River Leam that enables extended use of the on-site haul routes. This is described in Part 2 of this report. As the SES3 mitigation measures depend upon the introduction of AP4-017-003 to be fully effective, the assessment of impacts needs to be undertaken in combination with the AP4 amendment. The assessment is therefore reported in Part 2, Section 6, "Combined effects of amendments in this CFA due to changes in traffic flows".

## 2.3 Topics included in the SES3 assessment

- 2.3.1 The changes described above in Sections 2.1 and 2.2 result in new or different significant effects in respect of: ecology.
- 2.3.2 In addition, the SES3 changes have the potential to result in new or different significant effects in relation to traffic and transport. However, the SES3 changes interact with AP4 changes considered in Part 2 of this report and the combined assessment is reported in Part 2, Section 6.

## 3 Assessment of changes

### 3.1 Ecology

#### Introduction

- 3.1.1 This section of the report describes the environmental baseline in relation to ecology that is relevant to the SES<sub>3</sub> assessment. It then identifies any new or different likely residual significant environmental effects as a result of the changes introduced in Section 2, compared to the SES scheme. Consideration is given to the potential for impacts on species, habitats and sites designated on the basis of their importance for nature conservation.

#### Scope, assumptions and limitations

- 3.1.2 Updates to the scope of the assessment for ecology are set out in Volume 1 of the SES<sub>3</sub> and AP<sub>4</sub> ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR and the SMR Addendum (Volume 5: Appendix CT-001-000/01 and CT-001-000/02 of the main ES) and in Addendum 4 to the SMR (SES<sub>3</sub> and AP<sub>4</sub> ES Volume 5: CT-001-000/5).
- 3.1.3 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<sub>3</sub> scheme.

#### SES<sub>3</sub> changes of relevance to this assessment

- 3.1.4 The only SES<sub>3</sub> changes that are relevant to this assessment are in relation to new baseline surveys for great crested newt.

#### Environmental baseline

##### *Existing baseline*

- 3.1.5 The ecological baseline for the assessment takes into account baseline information collected in support of the main ES, which included field survey data, aerial photography and relevant existing information gathered from national organisations and from regional and local sources. A full list of data sources that informed the main ES is provided in CFA17, Volume 2, Section 7 of the main ES. The assessment also takes into account additional desk-study and survey information that is reported in Volume 5 of the SES and AP<sub>2</sub> ES.
- 3.1.6 Supplementary information relevant to the SES<sub>3</sub> assessment in this CFA consists of additional survey work for great crested newt. Details of all amphibian surveys undertaken in this area during 2015 are provided in SES<sub>3</sub> and AP<sub>4</sub> ES, Volume 5: Appendix EC-001-003 and Volume 5 map series EC-04.
- 3.1.7 A summary of the baseline information relevant to the SES<sub>3</sub> assessment is provided below.

### **Designated sites**

- 3.1.8 There is no new baseline information in relation to designated sites.

### **Habitats**

- 3.1.9 There is no new baseline information in relation to habitats.

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

- 3.1.10 In the main ES, unsurveyed water bodies outside of great crested newt assumed metapopulations (AMP) were assumed to support a medium population of great crested newt and were given a precautionary value at up to a county/metropolitan level.
- 3.1.11 Between April and June 2015 eDNA<sup>1</sup> surveys were undertaken at a number of water bodies that had previously been unsurveyed due to land access restrictions. These eDNA tests have confirmed the presence of great crested newts in a previously unsurveyed pond located 110m from the land required for construction of the scheme at Welsh Road Farm (Reference: 030-AA-130005).
- 3.1.12 As the population size class of great crested newt within this water body is unknown the water body is assumed to support a medium population of great crested newt and, as a precaution, is valued at up to a county/metropolitan level.

### *Future baseline*

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

- 3.1.13 Volume 5: Appendix CT-004-000 of the SES<sub>3</sub> and AP<sub>4</sub> ES provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES and the SES and AP<sub>2</sub> ES.
- 3.1.14 None of the identified developments affect the assessment of the SES<sub>3</sub> scheme's likely construction impacts on ecology assets.

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

- 3.1.15 Volume 5: Appendix CT-004-000 of the SES<sub>3</sub> and AP<sub>4</sub> ES provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES and the SES and AP<sub>2</sub> ES.
- 3.1.16 None of the identified developments affect the assessment of the SES<sub>3</sub> scheme's likely operational impacts on ecology assets.

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<sup>1</sup> Environmental DNA is that which is released into the water by plants and animals in a host of ways: from their skin, faeces, mucous, hair, eggs and sperm, or when they die. It provides a means to undertake a diagnostic test to determine the presence or likely absence of a specific target species.

## Effects arising during construction

### *Avoidance and mitigation measures*

- 3.1.17 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*

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

- 3.1.18 The pond located 110m from the land required at Welsh Road had not been surveyed prior to 2015. Great crested newt were not assumed to be present in the main ES, and therefore no significant effect was reported.
- 3.1.19 The pond supporting a confirmed population of great crested newt at Welsh Road Farm is 110m away from the land required for construction of the SES3 scheme. Implementation of measures within the draft CoCP will ensure there will be no killing of or injury to newts, however almost a quarter (24%) of terrestrial habitat within 250m of the pond will be lost. This habitat could be used by great crested newt as resting, sheltering and foraging habitat and its loss will result in an adverse effect on the conservation status of the great crested newt population which will be significant at up to a county/metropolitan level. This is a new significant effect which was not reported in the main ES.
- 3.1.20 It is unlikely that the SES3 changes will result in any other new or different effects on species receptors.

### *Cumulative effects*

- 3.1.21 There are no new or different likely cumulative effects for ecology as a result of the SES3 changes interacting with the AP1 amendments, AP2 amendments or any relevant committed development.

#### **Other mitigation measures**

- 3.1.22 A woodland habitat creation area, which will include suitable terrestrial habitat for great crested newt, was included within the original scheme in the vicinity of the pond at Welsh Road Farm. This includes at least 1.8ha of woodland and scrub planting within 250m of the pond. This will compensate for the loss of great crested newt resting, sheltering and foraging habitat associated with the pond at Welsh Road Farm and will maintain the conservation status of this population.

### *Summary of likely residual significant effects*

- 3.1.23 There are no changes to the likely residual significant effects reported in the main ES as a result of 2015 baseline information.

## Effects arising from operation

- 3.1.24 The SES3 changes do not change the operation of the scheme and so there are no new or different significant operational effects for ecology as a result of the proposed SES3 changes, in comparison with the main ES or SES.

# Part 2: Additional Provision 4 Environmental Statement

## 4 Summary of amendments

4.1.1 Table 3 provides a summary of the amendments in the Offchurch and Cubbington CFA (CFA17) and Figure 2 shows the locations.

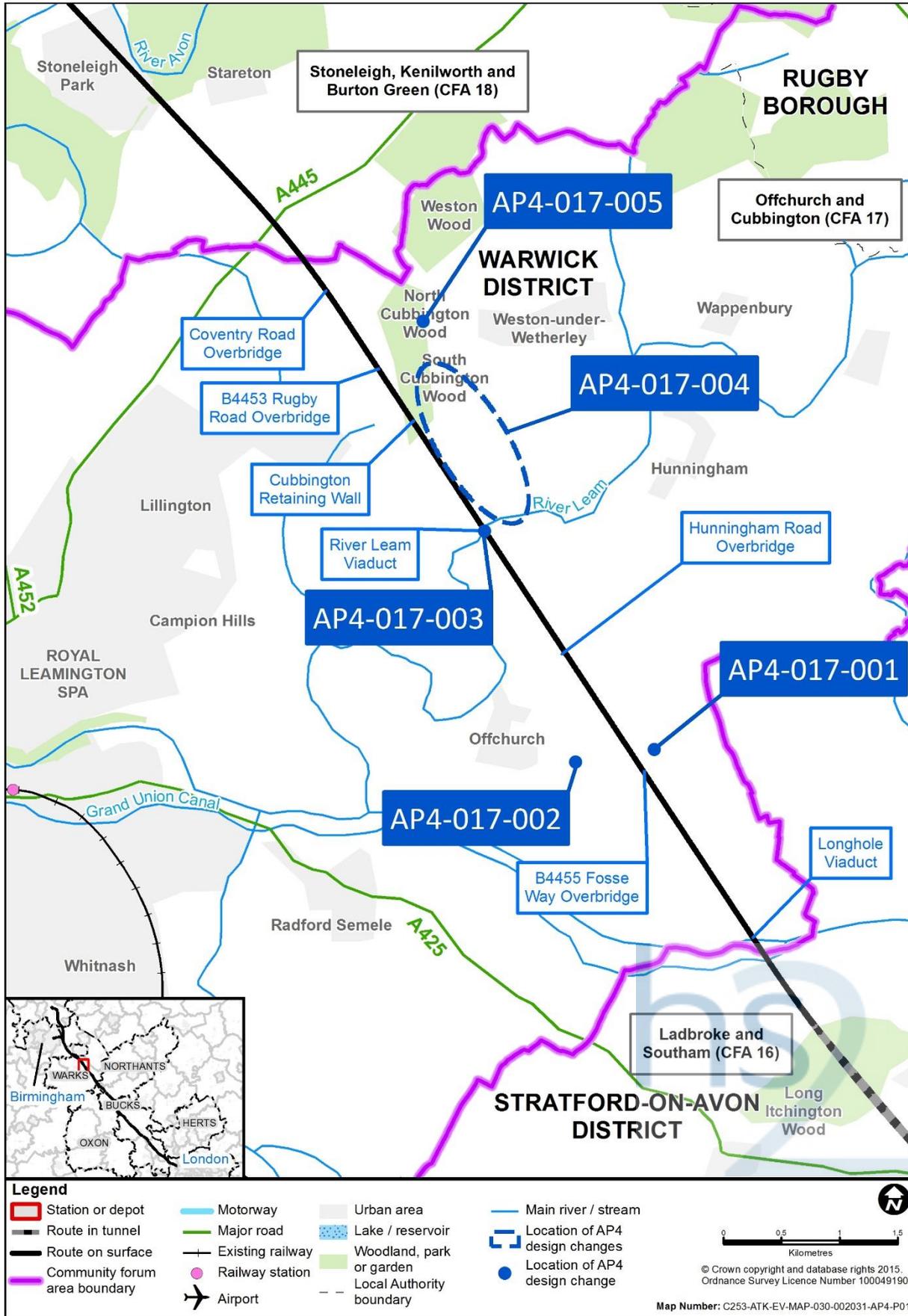
Table 3: Summary of amendments in CFA17

Name of amendment	Description of the SES3 scheme	Description of the AP4 revised scheme
Provision of a temporary roundabout at the junction of Fosse Way and Long Itchington Road  (AP4-017-001)	The B4455 Fosse Way main compound and Fosse Way northbound roadhead will be accessed directly off the B4455 Fosse Way via a T-junction during construction of the Scheme. Long Itchington Road will also connect to the Fosse Way at a separate T-junction.	During construction, a temporary roundabout, within land required for construction to the west of the existing highway will replace the T-junction between Fosse Way and Long Itchington Road and provide access to the B4455 Fosse Way main compound and Fosse Way northbound roadhead.
Revision of the junction between Long Itchington Road and Welsh Road, Offchurch  (AP4-017-002)	Welsh Road is realigned for approximately 850m to the south of its junction with Long Itchington Road, to provide priority to through traffic from Long Itchington Road to the B4455 Fosse Way. A copse of mature trees to the north-east of the existing junction is partially lost by the realigned Welsh Road. Additionally, the existing residential access road to the Lowfield, Field View and Cedar Colt properties is altered to suit the new road layout.	The proposed amendment to the highway arrangement will give priority to through movements along Welsh Road. Long Itchington Road will meet the realigned Welsh Road with a T-junction. The amendment removes the impact on the copse of trees and it minimises impact on the residential access road. Additional land is required for this amendment outside the original limits of the Bill.
Provision of a temporary bridge over the River Leam for construction  (AP4-017-003)	The SES3 scheme identified changes to the construction assumptions which altered construction traffic flows along the B4455 Fosse Way and A425 Leamington Road. No bridge over the River Leam was included in the original scheme for construction traffic.	To mitigate the impacts of the changes to construction assumptions, a temporary crossing of the River Leam will be provided to allow the movement of construction material along haul routes rather than the public highway. The temporary bridge is located to the north of the proposed permanent River Leam viaduct so that the movement of excavated material along the haul route within the land required for construction can continue in parallel with the installation of track work.
Revision of woodland habitat creation area to the east of South Cubbington Wood  (AP4-017-004)	To the east of Cubbington, planting areas will be provided on the east and west sides of the route, adjacent to the railway and associated earthworks, to mitigate for loss of ancient woodland and associated habitats, and to provide visual screening, landscape integration and habitat connectivity. These include a large area of woodland	The large area of woodland planting immediately to the east of South Cubbington Wood included in the Bill to compensate for the loss of ancient woodland at South Cubbington Wood has been reconfigured such that the majority of the field identified for woodland habitat creation in the original scheme is no longer used. Planting will instead be added along the eastern edge of South

SES<sub>3</sub> and AP<sub>4</sub> ES Volume 2 – CFA17, Offchurch and Cubbington

Name of amendment	Description of the SES <sub>3</sub> scheme	Description of the AP <sub>4</sub> revised scheme
	planting immediately to the east of South Cubbington Wood.	Cubbington Wood, and alongside HS <sub>2</sub> on the outer slope of the regraded false cutting earthworks between South Cubbington Wood and the River Leam, to enhance the habitat connectivity created between the South Cubbington Wood area and the valley woodlands along the River Leam. Additional land is required for this amendment outside the original limits of the Bill.
Additional land required for access to woodland habitat creation area adjacent to North Cubbington Wood  (AP <sub>4</sub> -017-005)	Access is provided from the B4453 Rugby Road along a field boundary to the area of compensatory habitat that would provide a woodland link between North Cubbington Wood and Weston Wood to mitigate for severance and loss of ancient woodland habitat in South Cubbington Wood and to provide for the translocation of ancient woodland soils and woodland habitat creation.	The access right provided within the original scheme to facilitate construction and maintenance access to the area of woodland habitat created between Western Wood and North Cubbington Wood was not of sufficient width. Additional land to widen the access has been included within the revised scheme to provide the required access width at this location.

Figure 2: Locations of amendments in CFA17



## 5 Assessment of amendments

### 5.1 Provision of a temporary roundabout at the junction of Fosse Way and Long Itchington Road (AP4-017-001)

- 5.1.1 The Bill provides for the B4455 Fosse Way main compound and roadhead at its junction with Long Itchington Road to be accessed directly off the B4455 Fosse Way via a T-junction to be provided during construction. The Long Itchington Road will continue to connect with the B4455 Fosse Way at its existing T-junction until the diversion of the Fosse Way is complete and a new T-junction is constructed.
- 5.1.2 Since submission of the Bill, a requirement has been identified for a temporary roundabout to replace the T-junctions in the Bill design during the construction period. Designed to accommodate construction traffic emerging from the roadhead, it will have five 'arms' accommodating the realigned B4455 Fosse Way at its junction with Long Itchington Road and also the access road into the Fosse Way Northbound roadhead and B4455 Fosse Way Main Compound (see map CT-05-089 in the SES3 and AP4 ES Volume 2, CFA17 Map Book). The five-arm roundabout enables Long Itchington Road to be open for traffic longer during the construction programme than in the original scheme. The roundabout will be lit.
- 5.1.3 At the end of the construction period and following removal of the roadhead and compound, this roundabout will also be removed. For the operational phase of HS2, it will be replaced by the current Bill design: a T-junction with a ghost island provided for right hand turns into Long Itchington Road to the east.
- 5.1.4 The land required for the roundabout is within the land identified within the Bill, but requires different powers over that land.
- 5.1.5 The temporary roundabout 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: agriculture, forestry and soils, air quality, community, cultural heritage, ecology, land quality, landscape and visual assessment, socio-economics, sound, noise and vibration, and water resources and flood risk assessment. However, there are changes where reassessment was considered to be required in respect of traffic and transport.

#### Traffic and transport

##### *Introduction*

- 5.1.6 This section of the report describes the environmental baseline in relation to traffic and transport that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the amendment, compared to those of the SES3 scheme taking into account any relevant AP2 amendments.

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

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

### *Existing baseline*

- 5.1.8 The existing baseline is as described in the main ES (Volume 2, CFA17, Chapter 12).
- 5.1.9 Traffic flows along the B4455 Fosse Way are approximately 6,600 vehicles per average weekday.

### *Future baseline*

#### **Construction**

- 5.1.10 The future baseline for construction remains unchanged from that reported in the main ES (Volume 2, CFA17, Section 12).

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

- 5.1.11 The future baselines for operation in 2026 and 2041 remain unchanged from those reported in the main ES (Volume 2, CFA17, Section 12).

### *Effects arising during construction*

- 5.1.12 The provision of a temporary roundabout at the realigned B4455 Fosse Way at its junction with Long Itchington Road replaces the priority junction provided in the original scheme. This will accommodate future traffic including construction traffic. The construction traffic includes heavy goods vehicles (HGVs) carrying excavated material, resulting in an average of 406 two-way HGV trips per day during the busy period and 640 two-way HGV trips per day in the peak month. Taking this and other construction traffic into account, the roundabout will operate without creating any significant congestion or delays. No traffic congestion effects were reported in the main ES at this junction and this will remain the same with this amendment.
- 5.1.13 The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.1.14 As the change relates to the construction phase only, the amendment will not give rise to a new or different operational effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.1.15 No additional mitigation measures, in addition to those identified in the main ES (Volume 2 CFA17, Chapter 12) are required.
- 5.1.16 The amendment will not give rise to a new or different residual significant effect and will not change the level of significance of the effects for traffic and transport reported in the main ES.

### *Cumulative effects*

- 5.1.17 The above assessment has considered cumulative effects, including planned developments by taking account of background traffic growth, as well as traffic and transport impacts of works being undertaken in neighbouring areas.

- 5.1.18 There are no new or different likely significant cumulative effects for traffic and transport as a result of AP4 amendments interacting with one another or AP2 amendments.

## **5.2 Revision of junction between Long Itchington Road and Welsh Road, Offchurch (AP4-017-002)**

- 5.2.1 The Bill provides for the realignment of Welsh Road for approximately 850m to the south of its junction with Long Itchington Road, to provide a suitable through route for traffic diverted to the existing roundabout at the Fosse Way junction with Welsh Road (Volume 2: CFA17 Map Book, Map CT-05-089, D8/9). Long Itchington Road would be closed north-east of the existing junction with Welsh Road, where it crosses the HS2 route, creating a cul-de-sac to retain access to existing properties adjacent to the Offchurch Greenway. A copse of mature trees to the north-east of the existing junction would be partially lost by the realigned Welsh Road. A residential property, Lowfield, Long Itchington Road, Offchurch would be affected by a slight permanent loss of land due to the works on Welsh Road and Long Itchington Road.
- 5.2.2 Since submission of the Bill, a requirement has been identified for an amendment to the highway arrangement to give priority to through movements along Welsh Road. The south-west open section of Long Itchington Road will meet the realigned Welsh Road with a T-junction. A similar arrangement will be required for the redundant north-east length of Long Itchington Road that is being maintained as an accommodation access road. The existing residential access road will be maintained and local works will be required at its junction with Long Itchington Road. The partial loss of the copse of mature trees will be avoided. The land required will affect the access track and car park for users of Offchurch Greenway, which will be reprovided. The new access track to the car park will affect a number of trees. This new configuration is shown in CT-05-089 in the SES3 and AP4 ES Volume 2, CFA17 Map Book.
- 5.2.3 This amendment will result in a net reduction in land required to the east of Welsh Road although additional agricultural land will be required to reprovide the access track and car park for Offchurch Greenway users. Overall, an area of 1.68ha less land will be required.
- 5.2.4 The change to the highway arrangement 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: cultural heritage, land quality, ecology, landscape and visual assessment, socio-economics, sound, noise and vibration, and water resources and flood risk assessment. However, there are changes where reassessment is considered to be required in respect of: agriculture, forestry and soils, air quality, and traffic and transport.

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

#### *Introduction*

- 5.2.5 This section of the report describes the environmental baseline in relation to agriculture, forestry and soils that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the amendment, compared to those of the SES3 scheme.

### *Scope, assumptions and limitations*

- 5.2.6 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.
- 5.2.7 The area of agricultural land affected by the amendment is relatively small (0.2ha) and therefore will not alter the significance of effect, or result in a different effect, on best and most versatile (BMV) agricultural land or forestry land within the CFA17 area. The route-wide effects on BMV land and forestry land are reported in Volume 3.

### *Existing baseline*

- 5.2.8 This amendment will directly affect one holding, Burnt Heath Farm (CFA17/1), which is a 526ha holding given over to general cropping (cereals and potatoes) with diversified interests comprising commercial units and outdoor pursuits. It is of high sensitivity to change because parts of the holding are irrigated.

### *Future baseline*

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

- 5.2.9 Volume 5: Appendix CT-004-000 of the SES3 and AP4 ES provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES, SES and AP2 ES.
- 5.2.10 None of the identified developments affect the assessment of the amendment's likely construction impacts on agriculture, forestry and soils.
- 5.2.11 Most existing environmental stewardship agreements will expire in 2015 and will be replaced by a new environmental land management scheme (countryside stewardship) which, together with the new greening measures introduced by Common Agricultural Policy reform, will affect the detailed management of individual farm holdings but are not expected to change fundamentally the baseline circumstances described.

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

- 5.2.12 Volume 5: Appendix CT-004-000 of the SES3 and AP4 ES provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES and the SES and AP2 ES.
- 5.2.13 None of the identified developments affect the assessment of the amendment's likely operational impacts on agriculture, forestry and soils.

### *Effects arising during construction*

- 5.2.14 The main ES reported a temporary major/moderate adverse significant effect on Burnt Heath Farm. The area of agricultural land required temporarily from this holding will reduce slightly from 80.6ha (15%) to 79.6 (15%). The amendment will not give rise to a new or different significant temporary effect and will not change the level of significance of the effects reported in the main ES.
- 5.2.15 The main ES also reported a permanent major adverse significant effect on Burnt Heath Farm due to loss of farm infrastructure (a water supply reservoir). This

amendment will slightly increase the amount of land required permanently from this holding from 56.6ha (11% of the holding) to 56.8 (11%). This will not change the level of significance of the effects reported in the main ES, which remain major adverse.

#### *Effects arising from operation*

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

#### *Mitigation and residual effects*

- 5.2.17 No additional mitigation measures in addition to those identified in the main ES and subsequent SES reports are required.
- 5.2.18 The amendment will not give rise to a new or different residual significant effect and will not change the level of significance of the effects on agriculture, forestry and soils as reported in the main ES.

#### *Cumulative effects*

- 5.2.19 As part of the AP1 revised scheme, a diversion of a 900mm high pressure gas main (AP1-017-028) required a further 0.2ha (or 0.3% of the holding) temporarily from Burnt Heath Farm in comparison to the main ES. There were no changes in the area of land required permanently. Therefore, in combination with AP1-017-028, this amendment (AP4-017-002) will require a total of 80.8ha (or 15%) of land temporarily, and 56.8ha (11%) permanently from Burnt Heath Farm. However, the cumulative effect of AP1-017-028 in combination with AP4-017-002 will not change the level of significance of the effects reported in the main ES or AP1 ES.
- 5.2.20 There are therefore no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the AP4 amendments interacting with one another, the AP1 amendments, AP2 amendments, or any relevant committed development.

### **Air quality**

#### *Introduction*

- 5.2.21 This section of the report describes the environmental baseline in relation to air quality that is relevant to the assessment. It then identifies any new or different likely significant effects as a result of the amendment, compared to those reported in the SES3 Scheme.

#### *Scope, assumptions and limitations*

- 5.2.22 The assessment scope, key assumptions and limitations and the methodology for determining significance of effects for air quality are as set out in the SMR Addendum 3 (Volume 5: Appendix CT-001 -000/4) of the SES2 and AP3 ES.
- 5.2.23 The assessment of the AP4 revised scheme has assumed that the general measures detailed in Section 7 of the draft CoCP (Volume 5: Appendix CT-003-000) in the main ES will be implemented.

### *Existing baseline*

- 5.2.24 The baseline conditions with regard to air quality have not changed from those reported in the main ES.
- 5.2.25 Receptors relevant to the amendment that could potentially be affected by changes in air quality include residential properties along Long Itchington Road, Offchurch.
- 5.2.26 There are no statutory or non-statutory designated sites that could potentially be affected by changes in air quality as a result of the amendment.

### *Future baseline*

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

- 5.2.27 Volume 5: Appendix CT-004-000 of the SES<sub>3</sub> and AP<sub>4</sub> ES provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES and the SES and AP<sub>2</sub> ES.
- 5.2.28 None of the identified developments affect the assessment of the amendment's likely construction impacts on air quality.

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

- 5.2.29 Volume 5: Appendix CT-004-000 of the SES<sub>3</sub> and AP<sub>4</sub> ES provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES and the SES and AP<sub>2</sub> ES.
- 5.2.30 None of the identified developments affect the assessment of the amendment's likely operational impacts on air quality.

### *Effects arising during construction*

- 5.2.31 An assessment has been undertaken for receptors sensitive to dust soiling and human health effects, located close to dust generating activities from construction of the amendment.
- 5.2.32 The construction dust assessment has taken into consideration changes to the magnitude of dust emissions for the dust generating activities associated with amendment and the sensitivity of the surrounding area, in terms of the receptors present and the distance of the receptors from the construction activities.
- 5.2.33 The amendment does not change the magnitude of the activities during the construction phase in terms of dust generating potential from that reported in the main ES (Volume 5: Appendix AQ-001-017).
- 5.2.34 The amendment comprises a change to the footprint of the earthworks and construction activities and the distance of these activities relative to the relevant receptors. The amendment will result in a low risk of construction dust impacts.
- 5.2.35 With the implementation of the measures contained within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES), no significant effects are anticipated from dust generating activities. The main ES (Volume 5: Appendix AQ-001-017) did not report any significant effects from construction dust and this remains unchanged for the amendment.

- 5.2.36 The amendment is not considered to make changes to traffic flows that require reassessment of air quality impacts from construction traffic.
- 5.2.37 The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.2.38 An assessment of emissions associated with traffic in the area of the amendment was undertaken due to the change to the alignments of Welsh Road and Long Itchington Road. For this amendment there will be a negligible impact for NO<sub>2</sub> and PM<sub>10</sub> concentrations and the amendment does not result in any new or different significant effects for air quality.

#### *Mitigation and residual effects*

- 5.2.39 Emissions to the atmosphere will be controlled and managed during construction through the route-wide implementation of the CoCP.
- 5.2.40 No additional mitigation measures during construction are required in relation to air quality.
- 5.2.41 As reported in the main ES no mitigation measures are required during operation in relation to air quality.
- 5.2.42 The amendment will not give rise to a new or different residual significant effect and will not change the level of significance of the effects on air quality as reported in the main ES.

#### *Cumulative effects*

- 5.2.43 There are no new or different likely significant cumulative effects for air quality as a result of the AP<sub>4</sub> amendments interacting with one another, the AP<sub>1</sub> amendments, AP<sub>2</sub> amendments or any relevant committed development.

### **Traffic and transport**

#### *Introduction*

- 5.2.44 This section of the report describes the environmental baseline in relation to traffic and transport that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the amendment, compared to those of the SES<sub>3</sub> scheme taking into account any relevant AP<sub>2</sub> amendments.

#### *Scope, assumptions and limitations*

- 5.2.45 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-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

#### *Existing baseline*

- 5.2.46 The existing baseline is as described in the main ES (Volume 2 CFA17, Chapter 12) of the main ES.

- 5.2.47 Existing traffic flows along Welsh Road are approximately 2550 vehicles per average weekday, with flows at the Welsh Road/Long Itchington Road junction approximately 600 vehicles per hour into the junction in the AM peak and 650 during the PM peak hour.

### *Future baseline*

#### **Construction**

- 5.2.48 The future baseline for construction remains unchanged from that reported in the main ES (Volume 2 CFA17, Section 12).

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

- 5.2.49 The future baselines for operation in 2026 and 2041 remain unchanged from those reported in the main ES (Volume 2, CFA17, Section 12).

### *Effects arising during construction*

- 5.2.50 The amendment relates to changes to the priority arrangement at the Welsh Road/Long Itchington Road junction. This is a permanent arrangement which is discussed under 'Effects arising from operation'.

### *Effects arising from operation*

- 5.2.51 The existing arrangement prioritises movements along Long Itchington Road. The Bill design includes the permanent closure of Long Itchington Road to the north and prioritised the movement between Long Itchington Road (south of the existing junction) onto a realigned Welsh Road to the south. The amendment will change this to give priority to through movements along Welsh Road. The south-west open section of Long Itchington Road will meet the realigned Welsh Road with a T-junction. A similar arrangement will be provided for the north-east length of Long Itchington Road which is retained as an access road to a number of properties. There will also be an access to a relocated car park from Welsh Road south east of the junction.
- 5.2.52 There were no traffic congestion effects reported in the main ES at the Welsh Road/Long Itchington Road junction and this remains the same with this amendment. The amendment will not give rise to a new or different effect compared to those reported in the main ES.

### *Mitigation and residual effects*

- 5.2.53 No additional mitigation measures in addition to those identified in the main ES are required.
- 5.2.54 The amendment will not give rise to a new or different residual significant effect and will not change the level of significance of the effects on traffic and transport as reported in the main ES.

### *Cumulative effects*

- 5.2.55 The above assessment considers cumulative effects, including planned developments by taking account of background traffic growth, as well as traffic and transport impacts of works being undertaken in neighbouring areas.

- 5.2.56 There are no new or different likely significant cumulative effects for traffic and transport as a result of AP4 amendments interacting with one another or AP2 amendments.

### **5.3 Provision of a temporary bridge over the River Leam for construction (AP4-017-003)**

- 5.3.1 The Bill provides for the movement of excavated material using a number of roads across CFA17.
- 5.3.2 Since submission of the bill, further assessment of the excavated material transported within CFA17 and 18 has been undertaken and the amount of material needing to be moved through some roadheads in CFAs 17 and 18 has been revised. In addition, the cumulative effect of design changes made route-wide in the SES and AP2 ES have altered the peak construction highway movements. These changes to the construction assumptions (SES3-017-001) increase the volume of excavated material to be moved.
- 5.3.3 To mitigate the impacts of these changes to construction assumptions, a temporary crossing of the River Leam will be provided to allow the movement of construction material along haul routes rather than the public highway.
- 5.3.4 The crossing will comprise a new temporary pre-fabricated bridge to the north of the River Leam Viaduct, with temporary earthwork approach ramps (see map CT-05-090, A6 in the SES3 and AP4 ES Volume 2, CFA17 Map Book). This will provide for the movement of excavated material along the haul route within the land required for construction to continue in parallel with the installation of track work.
- 5.3.5 It is anticipated that the bridge will be in place for approximately two years from late 2019.
- 5.3.6 The pre-fabricated bridge forms part of a secondary haul route along the eastern side of the HS2 route extending northwards to the B4455 Fosse Way Northbound roadhead. Beyond the bridge the associated haul road will continue so as to provide access to both sides of the Lower Grange embankment mitigation works.
- 5.3.7 No in-channel abutments are proposed and no changes to watercourse hydro-morphology are expected as a result of the pre-fabricated bridge. Any lighting associated with the temporary bridge will also be designed to avoid light spill. Therefore there will be no impacts on watercourse habitats.
- 5.3.8 This design change 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: agriculture, forestry and soils, air quality, community, land quality, ecology, landscape and visual assessment, socio-economics, sound, noise and vibration, and water resources and flood risk. However, there are changes where reassessment is considered to be required in respect of: cultural heritage and traffic and transport.
- 5.3.9 The traffic and transport impacts relate to changes to construction traffic across CFA17 and interact with the SES3 scheme changes to construction assumptions. It is therefore necessary to undertake a combined assessment of the amendment and the

SES<sub>3</sub> scheme changes. This is reported in Section 6, "Combined effects of amendments in this CFA due to changes in traffic flows".

## Cultural heritage

### *Introduction*

- 5.3.10 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 amendment, compared to those of the SES<sub>3</sub> scheme.

### *Scope, assumptions and limitations*

- 5.3.11 The assessment scope, key assumptions and limitations for cultural heritage are as set out 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.

### *Existing baseline*

- 5.3.12 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 was updated with the results of additional survey work in the SES and AP<sub>2</sub> ES (Volume 5: Appendix CH-004-017 and Volume 5 map series CH-01; CH-02 and CH-030).
- 5.3.13 One heritage asset, anomalies recorded during geophysical survey which are indicative of archaeological remains, situated between Fields Farm and the River Leam (asset reference OFC059), has been identified within the vicinity of the amendment. This is a non-designated asset of moderate value.

### *Future baseline*

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

- 5.3.14 Volume 5: Appendix CT-004-000 of the SES<sub>3</sub> and AP<sub>4</sub> ES provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES and the SES and AP<sub>2</sub> ES.
- 5.3.15 None of the identified developments affect the assessment of the AP<sub>4</sub> amendment's likely construction impacts on cultural heritage.

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

- 5.3.16 Volume 5: Appendix CT-004-000 of the SES<sub>3</sub> and AP<sub>4</sub> ES provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES and the SES and AP<sub>2</sub> ES.
- 5.3.17 None of the identified developments affect the assessment of the AP<sub>4</sub> amendment's likely operational impacts on cultural heritage.

### *Effects arising during construction*

- 5.3.18 The results of the geophysical survey, which identified the asset (asset reference OFC059) were reported in SES and AP<sub>2</sub> ES, which identified a high adverse impact on

the asset, which is of moderate value, resulting in a major adverse effect, which is significant.

- 5.3.19 The amendment will still result in the removal of the asset due to the construction of the temporary bridge (for example, from activities such as levelling the ground), resulting in a high adverse impact on asset reference OFCo59, and a major adverse effect, which is significant.
- 5.3.20 The amendment for an additional temporary construction crossing of the River Leam will give rise to a different significant effect as it will involve a different area of the asset. However, this will not change the level of significance of the effect reported in the main ES.

#### *Effects arising from operation*

- 5.3.21 The amendment for an additional temporary construction crossing of the River Leam will not give rise to a new or different significant operational effect and will not change the level of significance of the effects reported in the main ES.

#### **Mitigation and residual effects**

- 5.3.22 No additional mitigation measures in addition to those identified in the main ES are required.
- 5.3.23 The amendment for an additional temporary construction crossing of the River Leam will give rise to different residual significant effect during construction. However this will not change the level of significance of the residual effects for cultural heritage reported in the main ES.

#### *Cumulative effects*

- 5.3.24 There are no new or different likely significant cumulative effects for cultural heritage as a result of the AP4 amendments interacting with one another, the AP1 amendments, AP2 amendments or any relevant committed development.

### **5.4 Revision of woodland habitat creation area to the east of South Cubbington Wood (AP4-017-004)**

- 5.4.1 The Bill provides for planting areas to the east of Cubbington on the east and west sides of the route, adjacent to the railway and associated earthworks, to mitigate for loss of ancient woodland and associated habitats, and to provide visual screening, landscape integration and habitat connectivity. These include a large area of woodland planting immediately to the east of South Cubbington Wood (Volume 2: CFA17 Map Book, Map CT-06-091, D2).
- 5.4.2 Since submission of the Bill, a requirement has been identified to reconfigure this large area of woodland planting to reduce the impact on agricultural land at Weston Hall Farm (CFA17/7). With the new configuration, the majority of the field identified for woodland habitat creation in the original scheme is no longer used.
- 5.4.3 Planting has instead been added along the eastern edge of South Cubbington Wood and alongside HS2 on the outer slope of the regraded false cutting earthworks between South Cubbington Wood and the River Leam to enhance the habitat connectivity created between the South Cubbington Wood area and the valley

woodlands along the River Leam. The extent of woodland habitat planting alongside the River Leam to the east of the route has also been increased to improve connectivity.

- 5.4.4 Whilst some of the reconfigured area for planting remains within the limits of the Bill, an additional area of 5.47ha will be required outside the current Bill limits. This land will be required on a permanent basis.
- 5.4.5 The reconfigured area will affect land within both Lower Grange Farm (CFA17/6) (an increase in permanent land required for the woodland planting of 2.07ha) and Weston Hall Farm (CFA17/7) (a change in the area of land required for the woodland planting from 6.97ha in the original scheme compared with 3.4ha as a result of the amendment).
- 5.4.6 In terms of the overall change in the area of woodland habitat creation in this area, the original scheme included 9.3ha of woodland habitat creation adjacent to South Cubbington Wood. The reconfigured woodland habitat creation adjacent to South Cubbington Wood in the AP4 revised scheme is 8.0ha. There is also an additional 0.85ha of woodland habitat creation adjacent to the River Leam.
- 5.4.7 Footpaths W129d and Footpath W130 will remain unchanged from the original scheme, and the new field boundaries have been designed to follow them.
- 5.4.8 The reconfiguration of planting is not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: air quality, community, land quality, landscape and visual assessment, socio-economics, sound, noise and vibration, traffic and transport, and water resources and flood risk assessment. However, there are changes where reassessment is considered to be required in respect of: agriculture, forestry and soils, cultural heritage, and ecology.

## **Agriculture, forestry and soils**

### *Introduction*

- 5.4.9 This section of the report describes the environmental baseline in relation to agriculture, forestry and soils that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the amendment, compared to those of the SES3 scheme.

### *Scope, assumptions and limitations*

- 5.4.10 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.
- 5.4.11 The area of agricultural land affected by the amendment is relatively small (2ha in Subgrade 3a) and therefore will not alter the significance of effect, or result in a different effect, on BMV agricultural land or forestry land within the CFA17 area. The route-wide effects on BMV land and forestry land are reported in Volume 3.

### *Existing baseline*

- 5.4.12 This amendment will directly affect two holdings. Lower Grange Farm (CFA17/6) is a mainly arable and livestock enterprise of medium sensitivity to change covering 384.5ha. Weston Hall Farm (CFA17/7) is a mainly arable enterprise covering 311ha. It is of medium sensitivity to change.

### *Future baseline*

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

- 5.4.13 Volume 5: Appendix CT-004-000 of the SES3 and AP4 ES provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES and the SES and AP2 ES.
- 5.4.14 None of the identified developments affect the assessment of the amendment's likely construction impacts on agriculture, forestry and soils.
- 5.4.15 Most existing environmental stewardship agreements will expire in 2015 and will be replaced by a new environmental land management scheme (countryside stewardship) which, together with the new greening measures introduced by Common Agricultural Policy reform, will affect the detailed management of individual farm holdings but are not expected to change fundamentally the baseline circumstances described.

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

- 5.4.16 Volume 5: Appendix CT-004-000 of the SES3 and AP4 ES provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES and the SES and AP2 ES.
- 5.4.17 None of the identified developments affect the assessment of the AP4 amendment's likely operational impacts on agriculture, forestry and soils.

### *Effects arising during construction*

- 5.4.18 The main ES reported a temporary moderate adverse significant effect on Lower Grange Farm, associated with the requirement for 50.6ha (13% of the holding) of land temporarily. This amendment will not change the area of land required temporarily. This amendment will therefore not give rise to any new or different temporary significant effects and will not change the level of significance of the effects reported in the main ES.
- 5.4.19 However, this amendment will increase the area of land required permanently from Lower Grange Farm by the original scheme from 41.0ha (11%) to 43.0ha (11%) but this will not change the level of significance of effect reported in the main ES.
- 5.4.20 The main ES reported a temporary moderate adverse significant effect on Weston Hall Farm, associated with a medium impact from severance. The original scheme required 14.9ha (<5% of the holding) of land temporarily. This amendment will not change the amount of land required temporarily. This amendment will therefore not give rise to any new or different temporary significant effects and will not change the level of significance of the effects reported in the main ES.

- 5.4.21 However, this amendment will reduce the amount of land required permanently from Weston Hall Farm when compared with the original scheme from 14.8ha (5%) to 11.2ha (4%) but this will not change the level of significance of effect reported in the main ES, which is moderate adverse significant (due mainly to the impact of severance).

#### *Effects arising from operation*

- 5.4.22 The amendment will not give rise to a new or different residual significant effect and will not change the level of significance of the effects on agriculture, forestry and soils reported in the main ES.

#### *Mitigation and residual effects*

- 5.4.23 No additional mitigation measures in addition to those identified in the main ES are required.

- 5.4.24 The amendment will not give rise to a new or different residual significant effect and will not change the level of significance of the effects on agriculture, forestry and soils reported in the main ES.

#### *Cumulative effects*

- 5.4.25 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the AP4 amendments interacting with one another, the AP1 amendments, AP2 amendments or any relevant committed development.

### **Cultural heritage**

#### *Introduction*

- 5.4.26 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 amendment, compared to those of the SES3 scheme.

#### *Scope, assumptions and limitations*

- 5.4.27 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/01) and the SMR Addendum (Volume 5: Appendix CT-001-000/02) of the main ES.

#### *Existing baseline*

- 5.4.28 The cultural heritage baseline for the assessment takes into account information collected in support of the main ES, which includes walk-over survey, geophysical survey, remote-sensing data, and data from national and local registers. A full list of heritage assets is provided in Volume 2, Section 6.3 of the main ES. In addition, the baseline was updated with the results of additional survey work in the SES and AP2 ES (Volume 5: Appendix CH-004-017 and Volume 5 map series CH-01; CH-02 and CH-030).

- 5.4.29 The only heritage asset relevant to this assessment is the site of Weston Mill and Bridge (asset reference OFCo38), an undesignated asset of low value. The Mill was first recorded in the 13th-century, but has since been demolished and is no longer

extant. The bridge is similarly referenced in medieval sources, but is also no longer extant. Evidence of these now-removed features may survive below ground.

#### *Future baseline*

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

- 5.4.30 Volume 5: Appendix CT-004-000 of the SES3 and AP4 ES provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES and the SES and AP2 ES.
- 5.4.31 None of the identified developments affect the assessment of the amendment's likely construction impacts on cultural heritage.

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

- 5.4.32 Volume 5: Appendix CT-004-000 of the SES3 and AP4 ES provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES and the SES and AP2 ES.
- 5.4.33 None of the identified developments affect the assessment of the amendment's likely operational impacts on cultural heritage.

#### *Effects arising during construction*

- 5.4.34 The main ES did not report any impacts to Weston Mill and Bridge (asset reference OFCo38).
- 5.4.35 The additional woodland planting will require 0.67ha of land within the former site of Weston Mill and Bridge and therefore may disturb archaeological remains associated with this asset. This would result in a permanent medium adverse impact on this asset of low value, resulting in a minor adverse effect, which is not significant.

#### *Effects arising from operation*

- 5.4.36 The amendment relating to the revision of woodland habitat creation east of South Cubbington Wood will not give rise to a new or different significant operational effect and will not change the level of significance of the effects reported in the main ES.

#### *Mitigation and residual effects*

- 5.4.37 No additional mitigation measures in addition to those identified in the main ES are required.
- 5.4.38 The amendment will not give rise to a new or different significant residual effect and will not change the level of significance of the effects reported in the main ES.

#### *Cumulative effects*

- 5.4.39 There are no new or different likely significant cumulative effects for cultural heritage as a result of the AP4 amendments interacting with one another, the AP1 amendments, AP2 amendments, or any relevant committed development.

## Ecology

### *Introduction*

- 5.4.40 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 amendment, compared to those of the SES3 scheme.

### *Scope, assumptions and limitations*

- 5.4.41 Updates to the scope of the assessment for ecology are set out in Volume 1 of the SES3 and AP4 ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR and the SMR Addendum (Volume 5: Appendix CT-001-000/01 and CT-001-000/02 of the main ES) and in Addendum 4 to the SMR (SES3 and AP4 ES Volume 5: CT-001-000/5).
- 5.4.42 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 AP4 revised scheme.

### *Existing baseline*

- 5.4.43 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, SES and AP2 ES, additional survey work undertaken from April 2015 to June 2015, aerial photography and relevant existing information gathered from national organisations and from regional and local sources including: Warwickshire County Council (Warwickshire Biological Records Centre) and Warwickshire Wildlife Trust.
- 5.4.44 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 Volume 5: Appendix EC-001-003 of the SES3 and AP4 ES. For those receptors described in the main ES, further details are provided in Volume 2, CFA17, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.4.45 There are no statutory designated sites relevant to the assessment of the amendment.
- 5.4.46 There is one non-statutory Local Wildlife Site (LWS) relevant to this assessment which is of county/metropolitan value. The amendment includes land within and adjacent to South Cubbington Wood LWS which is also an ancient woodland. Ancient woodland represents an irreplaceable resource.

### **Habitats**

- 5.4.47 The land required for the amendment consists mainly of arable farmland. The amendment largely involves the reconfiguration of woodland planting within different areas of arable land. These areas of arable land are considered to have negligible ecological value in the main ES.

- 5.4.48 The northern portions of the land required for the amendment is adjacent to South Cubbington Wood LWS, which contains lowland mixed deciduous woodland, a habitat of principal importance identified in Section 41 of the Natural Environment and Rural Communities Act (2006). This habitat is of county/metropolitan value. The woodland is also ancient (replanted).
- 5.4.49 The southernmost parcel of land required for the amendment is adjacent to an area of secondary semi-natural broadleaved woodland next to the River Leam. This woodland is also a habitat of principal importance and is of local/parish value.
- 5.4.50 A number of fields required for the amendment are bounded by hedgerows, some of which are species-rich. Species-rich hedgerows qualify as a habitat of principal importance and are recorded in the main ES as having district/borough value. Species-poor hedgerows are of local/parish value. The overall hedgerow network within the area is considered to be of district/borough value.
- 5.4.51 There is one pond situated within land required for the amendment, within an area of proposed woodland planting on the east side of South Cubbington Wood. There is also one pond immediately adjacent to land required for the amendment and one pond which would no longer be within the land required for the scheme as a result of the amendment. Ponds are habitats of principal importance in England. These water bodies have not been surveyed, so the main ES assigned a precautionary district/borough value to each.
- 5.4.52 The River Leam is located 10m south of the land required for the amendment at its nearest point. The River has relatively natural form and supports an abundant assemblage of common aquatic macrophytes. It is a habitat of principal importance and has been assigned a district/borough value in the main ES.

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

- 5.4.53 The main ES identifies a potential assemblage of bats associated with tree roosts at the southern section of South Cubbington Wood. This includes populations of *Myotis* species, noctule and Leisler's bats. The main ES takes precautionary approach in assuming the potential for maternity roosts of rarer bat species in this southern section of the wood, and assumes that the bat assemblage is of up to regional value.
- 5.4.54 The main ES also identified an assemblage of bat species using foraging and commuting habitats associated with South Cubbington Wood (land to the south east of Rugby Road), reported in the main ES to be of district/borough value.
- 5.4.55 The assemblage of bats reported in the main ES as using habitat associated with Field's Farm including Ash Beds and the River Leam north of Offchurch is considered to have county/metropolitan value. Of this assemblage, those bats using the River Leam as a commuting and foraging corridor are assumed to be using habitat close to the southern limit of land required for the amendment.
- 5.4.56 Amphibian surveys undertaken for the main ES identified an great crested newt AMP consisting of five water bodies to the north of South Cubbington Wood: AMP7. It is assumed to support a medium population size class of breeding great crested newts as well as supporting smooth newts and common frogs. A large proportion of the land required for the amendment, at its northern end, falls within the boundary of AMP7 which is reported in the main ES to be of up to county/metropolitan value.

- 5.4.57 Surveys undertaken for the main ES indicated that all other ponds situated within 250m of the land required for the amendment did not contain great crested newts.
- 5.4.58 Evidence of otter presence was found along the River Leam during surveys undertaken for the main ES. The River Leam is within 10m of the land required for the amendment at its nearest point. Otter is a species of principal importance and the population of otter is assumed to be of district/borough value.
- 5.4.59 A veteran wild pear tree in a hedge south of South Cubbington Wood was recorded in the main ES as being reputedly the oldest and largest recorded wild pear in England. The main ES assigns a district/borough value to this tree.
- 5.4.60 South Cubbington Wood is known to support populations of the white admiral butterfly, a species of principal importance that is mentioned in the LWS citation. The nationally scarce brown ant was found during surveys. The terrestrial invertebrate assemblage here has therefore been assigned a district/borough value in the main ES.
- 5.4.61 The land required for the amendment is likely to contain suitable habitat for common reptile species such as grass snake, common lizard and slow worm within woodland and hedgerows with their associated field-margins. The main ES reports that assumed populations of common reptile species within the scheme are of up to local/parish value.
- 5.4.62 Bird surveys undertaken for the main ES identified an assemblage of breeding birds using two small pockets of woodland near South Cubbington Wood, from which 12 notable bird species were recorded. Species recorded are considered to be common and widespread in the habitat types surveyed, and/or no large or important populations were recorded. These birds are recorded in the main ES as having local/parish value.
- 5.4.63 An assemblage of wintering birds of local/parish value was identified in the main ES to also be using the two small pockets of woodland near South Cubbington Wood.

#### *Future baseline*

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

- 5.4.64 Volume 5: Appendix CT-004-000 of the SES3 and AP4 ES provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES and the SES and AP2 ES.
- 5.4.65 None of the identified developments affect the assessment of the amendment's likely construction impacts on ecology.

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

- 5.4.66 Volume 5: Appendix CT-004-000 of the SES3 and AP4 ES provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES and the SES and AP2 ES.
- 5.4.67 None of the identified developments affect the assessment of the AP4 amendment's likely operational impacts on ecology.

### *Effects arising during construction*

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

- 5.4.68 Mitigation measures were included as part of the design of the original scheme as described in the main ES to avoid or reduce impacts to features of ecological value. Of relevance to the amendment is the Cubbington retaining wall within South Cubbington Wood LWS. This will reduce the land required for the construction within South Cubbington Wood.
- 5.4.69 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**

- 5.4.70 The amendment will not give rise to new or different significant effects on designated sites.

#### **Habitats**

- 5.4.71 The amendment involves the reconfiguration of woodland planting within different areas of arable habitat, which is reported in the main ES as having negligible value. Therefore the amendment will not give rise to new or different significant effects on habitats.

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

- 5.4.72 The amendments all relate to planting and ecological mitigation areas that will contain suitable terrestrial habitat for great crested newts. The main ES reported no significant effect on great crested newts within AMP7. The reconfiguration of woodland planting will significantly increase the amount of woodland planting within the boundary of AMP7. This will be of benefit to great crested newt by replacing low-value arable habitat surrounding one of their ponds with high-value woodland habitat. Implementation of measures within the draft CoCP will also ensure there will be no killing or injury of newts as a result of the amendment. Any mitigation 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 amendments will not generate any new or different significant effects on great crested newt populations, or change the level of significance of effects reported in the main ES.
- 5.4.73 The main ES reported an adverse effect of county/metropolitan significance on bats, arising from severance and loss of key commuting routes along woodland edge and hedgerows in this area. The reconfiguration of woodland planting is likely to create slightly greater habitat connectivity between the assemblages of bat species using habitats associated with South Cubbington Wood and the River Leam. However, the significance of the effect on bats remains unchanged from that reported in the main ES. The amendment will not result in any new or different significant effects on species receptors.

### **Cumulative effects**

- 5.4.74 There are no new or different likely cumulative effects for ecology as a result of the AP4 amendments interacting with one another, the AP1 amendments, AP2 amendments or in combination with any committed development.

### **Mitigation and residual effects**

#### *Other mitigation measures*

- 5.4.75 In order to compensate for the effects of the original scheme on South Cubbington LWS, a woodland creation area of 9.3ha was provided as part of the original scheme east of South Cubbington Wood. The AP4 revised scheme will reconfigure the woodland creation adjacent to South Cubbington Wood, the HS2 route and the River Leam. The woodland creation area provided in the AP4 revised scheme is 8.0ha. There is also an additional 0.85ha of woodland habitat creation adjacent to the River Leam. Overall, this will result in a decrease in the total area of land required for compensatory habitat of 0.45ha. However, the woodland habitat creation will be more than twice the area lost to the scheme and there will also be landscape woodland planting, including approximately 6.6ha of planting either side of the HS2 route just south of South Cubbington Wood and approximately 2ha of planting either side of the HS2 route continuous with the northern edge of South Cubbington Wood.
- 5.4.76 The reconfiguration of woodland planting will create greater north-south woodland habitat connectivity between South Cubbington Wood and the River Leam in a relatively open agricultural landscape. This enhanced woodland connectivity will offset any overall reduction in woodland planting for mitigation in this area. The overall function of the compensation provided within the AP4 revised scheme is considered sufficient to mitigate the effects of the AP4 revised scheme.

#### *Summary of likely residual effects*

- 5.4.77 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP4 revised scheme in this area are therefore unchanged from those reported in the main ES and the SES and AP2 ES.

#### *Effects arising from operation*

- 5.4.78 There are no new or different operational effects for ecology as a result of the AP4 revised scheme.

## **5.5 Additional land required for access to woodland habitat creation area adjacent to North Cubbington Wood (AP4-017-005)**

- 5.5.1 The Bill provides for access along a field boundary off the B4453 Rugby Road, to provide access to an area of compensatory habitat that would provide a woodland link between North Cubbington Wood and Weston Wood to mitigate for severance and loss of ancient woodland habitat in South Cubbington Wood and to provide for the translocation of ancient woodland soils and woodland habitat creation (refer to map CT-05-092a and CT-06-092a in the main ES Volume 2, CFA17 Map Book).

- 5.5.2 Since submission of the Bill, a requirement to increase the width of the access to a total of 5m has been identified to provide the required standard of access at this location. A right of permanent access is required on land within Burnt Heath Farm (CFA<sub>17/1</sub>) (see map CT-05-092a and CT-06-092a in the SES<sub>3</sub> and AP<sub>4</sub> ES Volume 2, CFA<sub>17</sub> Map Book). The access will require some local regrading of the ground in places.
- 5.5.3 There are hedgerows at both ends of this access track that will require removal, however this was reported in the main ES and the amendment to the width of the access will not give rise to any new or different significant effects.
- 5.5.4 The additional land required to increase the width of the access to the area of woodland habitat is not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES for any of the topics.

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

### 6.1 Introduction

- 6.1.1 Where transport effects can be directly attributed to an amendment, the effects related to such changes are reported within the traffic and transport section under each of the relevant amendments. There are, however, amendments and SES changes in this CFA and others which in combination result in changed traffic flows that cannot be directly attributed to one specific amendment. This section of the AP4 ES reports any new or different significant effects as a result of this combined assessment.
- 6.1.2 These changes have the potential to result in new or different significant effects in relation to traffic and transport. No other topics are affected by the traffic and transport changes.

### 6.2 SES3 changes of relevance to this assessment

- 6.2.1 The following changes are relevant to this assessment:
- revised construction assumptions for construction traffic movements in CFA17 (SES3-017-001), which are also affected by changes to construction assumptions in neighbouring CFAs, in particular CFA18; and
  - provision of a temporary bridge over the River Leam for construction (AP4-017-003).

### 6.3 Traffic and transport

#### Introduction

- 6.3.1 This section of the report describes the environmental baseline in relation to traffic and transport 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 6.2, compared to the SES scheme taking into account any relevant AP2 amendments.

#### Scope, assumptions and limitations

- 6.3.2 The assessment scope, key assumptions and limitations for traffic and transport 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.

#### Environmental baseline

##### *Existing baseline*

- 6.3.3 The existing baseline for traffic and transport remains unchanged from that reported in the main ES (Volume 2, CFA17, Section 12).

- 6.3.4 The baseline surveys recorded traffic flows of 9600 per average weekday in 2012 on the A425 west of Southam with traffic flows along the B4455 Fosse Way of approximately 6600 vehicles per average weekday.

### *Future baseline*

#### **Construction**

- 6.3.5 The future baseline for construction remains unchanged from that reported in the main ES (Volume 2, Section 12, CFA17, Section 12).

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

- 6.3.6 The future baselines for operation in 2026 and 2041 remain unchanged from those reported in the main ES (Volume 2, CFA17, Section 12).

### **Effects arising during construction**

#### *Avoidance and mitigation measures*

- 6.3.7 The changes assessed seek to mitigate the effects of construction traffic. No further avoidance and mitigation measures, additional to those reported in the main ES, are proposed.

#### *Assessment of impacts and effects*

#### **Temporary effects**

- 6.3.8 The assessment of the combined SES3 and AP4 changes relates to the levels of traffic from the B4455 Fosse Way roadhead, located near to its junction with Long Itchington Road, and to the wider changes to transport of excavated materials in this CFA. The traffic from the B4455 Fosse Way roadhead will route along B4455 Fosse Way to the M40 or along A425 Leamington Road to the roadhead in CFA16 as with the original scheme.
- 6.3.9 In the original scheme HGV movements associated with the B4455 Fosse Way roadhead ranged between 200 two-way trips per day, during the 20 month busy period, to 220 two-way trips per day in the peak month. This increases with the SES3 scheme and, with the temporary bridge over the River Leam, HGV movements range between 406 two-way trips per day (during the 4 year busy period) to 640 two-way trips per day in the peak month.
- 6.3.10 The changes in HGV traffic flows with the combined SES3 scheme and AP4 amendment compared with the original scheme lead to increases in construction traffic that will result in traffic related severance for non-motorised users as described below:
- B4455 Fosse Way, between A425 Southam Road and Long Itchington Road: a major adverse significant effect due to the increase in HGV traffic. The main ES reported a moderate adverse significant effect; and
  - B4455 Fosse Way, between A425 Southam Road and B4100 Banbury Road: a major adverse significant effect due to the increase in HGV traffic compared to the main ES. This is a different effect due to the higher levels of construction traffic, but does not change the level of significance reported in the main ES

(major adverse).

- 6.3.11 There were no locations reported in the main ES in this area where increased delays and congestion as a result of the original scheme were expected to be significant. The changes in traffic flows as a result of the combined SES3 scheme and AP4 amendment do not change this.

### **Permanent effects**

- 6.3.12 Permanent effects of construction on traffic and transport are considered under 'effects arising from operation'.

### *Other mitigation measures*

- 6.3.13 No other mitigation measures, additional to those reported in the main ES, are proposed.

### *Cumulative effects*

- 6.3.14 The above assessment has considered cumulative effects, including planned developments by taking account of background traffic growth, as well as traffic and transport impacts of works being undertaken in neighbouring areas.
- 6.3.15 There are no new or different likely significant cumulative effects for traffic and transport as a result of the combined SES3 scheme and AP4 amendment interacting with other AP4 amendments or AP2 amendments.

### *Summary of likely residual effects*

- 6.3.16 There is an increase in traffic related severance for non-motorised users on B4455 Fosse Way, between A425 Southam Road and Long Itchington Road. This will change the level of significance of the effect reported in the main ES from a moderate to a major adverse significant residual effect. There is also a different effect as a result of increased traffic flows on the B4455 Fosse Way between the A425 Southam Road and B4100 Banbury Road, although it remains a major adverse residual significant effect, as reported in the main ES.
- 6.3.17 The significant effects that result from construction of the SES3 scheme and AP4 amendment are shown on Map TR-03-106 (SES3 and AP4 ES Volume 5, Traffic and Transport, Map Book).

### **Effects arising from operation**

- 6.3.18 The combined SES3 changes and AP4 amendment do not change the operation of the scheme and so there are no new or different significant operation effects arising for traffic and transport in comparison with those reported in the SES and AP2 ES.







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