

# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement 3 and  
Additional Provision 4 Environmental Statement

Volume 2 | Community forum area reports  
CFA16 Ladbroke and Southam

October 2015

SES3 and AP4 ES 3.2.1.16



# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement 3 and  
Additional Provision 4 Environmental Statement

Volume 2 | Community forum area reports

CFA16 Ladbroke and Southam

October 2015

SES3 and AP4 ES 3.2.1.16



## Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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

**AECOM**

**ARUP**

**ATKINS**

**CAPITA**



**ineco**



**PARSONS  
BRINCKERHOFF**



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

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

Telephone: 020 7944 4908

General email enquiries: [HS2enquiries@hs2.org.uk](mailto:HS2enquiries@hs2.org.uk)

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

Copyright © High Speed Two (HS2) Limited, 2015, except where otherwise stated.

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full via the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact High Speed Two (HS2) Limited.



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

# Contents

<b>Structure of the HS2 Supplementary Environmental Statement 3 and Additional Provision 4 Environmental Statement</b>	<b>1</b>
<b>Structure of this report</b>	<b>3</b>
1 Introduction	5
<b>Part 1: Supplementary Environmental Statement 3</b>	<b>8</b>
2 Summary of changes	8
2.1 New environmental baseline information	8
2.2 Changes to the design or to construction assumptions not requiring a change to the Bill	8
2.3 Topics included in the SES <sub>3</sub> assessment	11
3 Assessment of changes	12
3.1 Ecology	12
<b>Part 2: Additional Provision 4 Environmental Statement</b>	<b>16</b>
4 Summary of amendments	16
5 Assessment of amendments	19
5.1 Relocation of the Oxford Canal balancing pond to the east of HS2 access (AP <sub>4</sub> -016-001)	19
5.2 Relocation of the Oxford Canal viaduct to the north (AP <sub>4</sub> -016-002)	24
5.3 Provision of temporary passing places along Windmill Lane (also known as Ladbroke Hill Lane) near Ladbroke for construction access (AP <sub>4</sub> -016-003)	38
5.4 Revision of the temporary A425 Leamington Road diversion at the Dallas Burston Polo Club (AP <sub>4</sub> -016-004)	45
5.5 Revision of grassland habitat creation area adjacent to Dallas Burston Polo Club (AP <sub>4</sub> -016-005)	64
5.6 Relocation of the secondary construction access route to follow Ridgeway Lane near Ufton (AP <sub>4</sub> -016-006)	75
6 Combined effects of amendments in this CFA due to changes in traffic flows	91
<b>List of figures</b>	
Figure 1: Locations of design changes in CFA16	9
Figure 2: Locations of amendments in CFA16	18

**List of tables**

Table 1: Scheme definitions	5
Table 2: Summary of changes to the design or construction assumptions not requiring a change to the Bill in CFA16	8
Table 3: Summary of amendments in CFA16	16

# 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
the AP4 revised scheme	the SES3 scheme as amended by the AP4 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 include:
- relocation of a satellite compound and provision of an ecological mitigation area; and
  - a new temporary pedestrian signalised crossing.
- 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:
- changes to the location of a balancing pond near to the Oxford Canal and a viaduct over the Oxford Canal;
  - provision of temporary passing places along Windmill Lane (also known as Ladbroke Hill Lane);
  - changes to the alignment of the temporary diversion of the A425 near the Dallas Burston Polo Club;
  - changes in land required for an ecological mitigation area near the Dallas Burston Polo Club; and
  - changes to the location of a secondary construction access route for exceptional loads along Ridgeway Lane.
- 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>, AP<sub>2</sub> and AP<sub>3</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 and bats have been undertaken in this area during 2015 which are relevant to the assessment. There is also new information received from a third party relating to the presence of great crested newt in the vicinity of Southam Industrial Estate.
- 2.1.2 Details of all amphibian data collected in this area during 2015 is 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'.

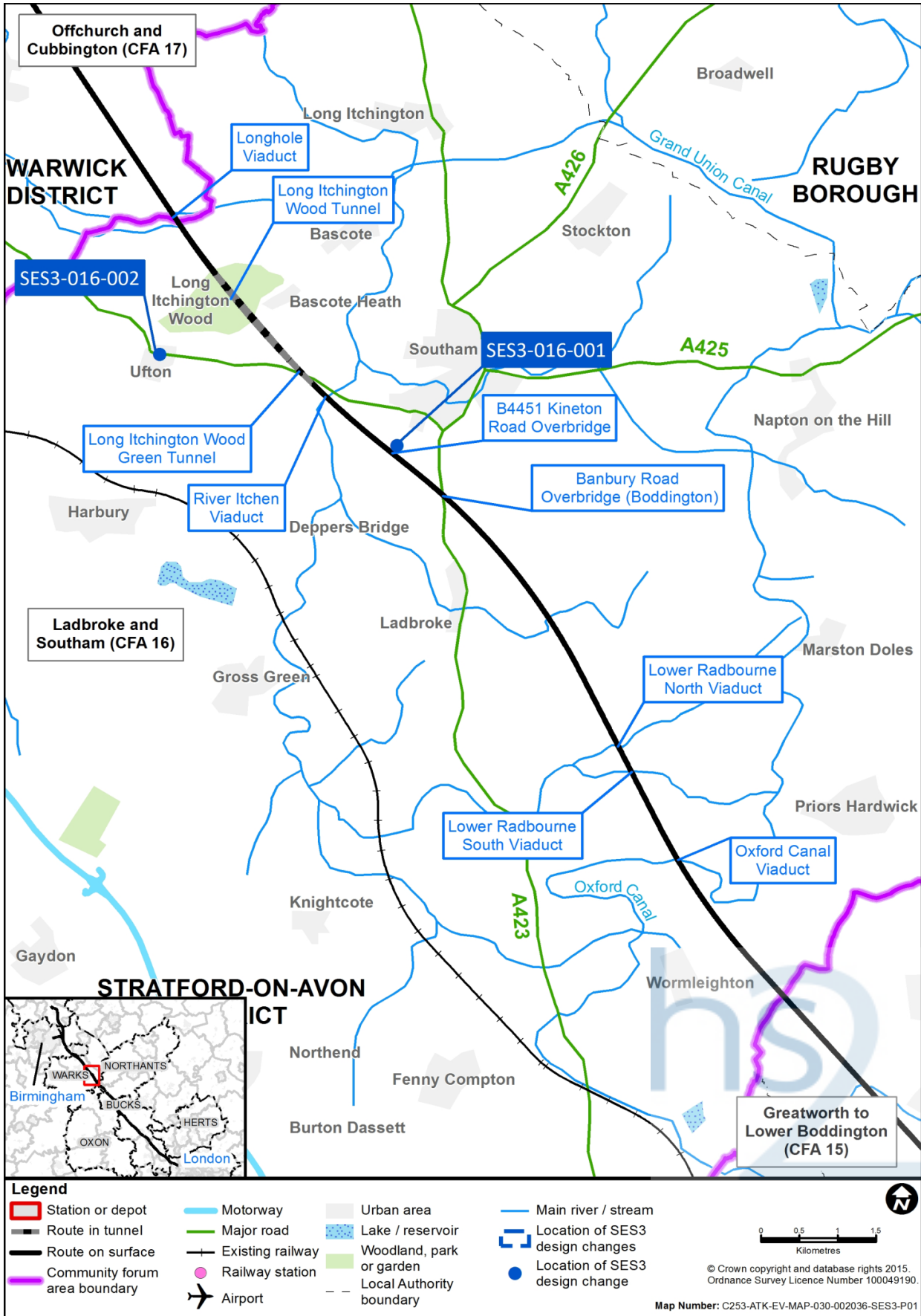
### 2.2 Changes to the design or to construction assumptions not requiring a change to the Bill

- 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 Ladbroke and Southam CFA (CFA16). 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 CFA16

Name of design change or construction assumption	Description of the SES scheme	Description of the SES3 scheme
Additional grassland habitat creation area to the north of Kineton Road.  (SES3-016-001)	The construction compound is located to the north of the B4451 Kineton Road and west of the Southam Industrial Estate. During operation, this land, together with adjacent land to the west, is identified for landscape mitigation planting.	Relocation of the B4451 Kineton Road overbridge construction compound to the south of Kineton Road and west of the route to enable the provision of an ecological mitigation area primarily for great crested newt.
Provision of a temporary pedestrian crossing on the A425 Southam Road in the village of Ufton.  (SES3-016-002)	The temporary use of the A425 as a route for construction traffic. The A425 runs through the centre of Ufton village.	Provision of a temporary pedestrian crossing during construction along the A425 Southam Road in Ufton, adjacent to the end of St Michael's Close. The purpose of this proposed amendment is to address local safety concerns.

Figure 1: Locations of design changes in CFA16



## Description of changes to the design or to construction assumptions

### *Additional grassland habitat creation area to the north of Kineton Road (SES3-016-001)*

- 2.2.2 The Bill provides for an area of landscape mitigation planting north of the realigned B4451 Kineton Road, adjacent to Southam Industrial Estate (refer to main ES map CT-06-085, G5 in the Volume 2 CFA16 Map Book). This area of planting was reduced for the SES scheme to accommodate a potential future development (refer to map CT-06-085, G5 in the SES and AP2 ES Volume 2, CFA16 Map Book).
- 2.2.3 Since submission of the Bill, HS2 Ltd has been provided with ecological survey information associated with a proposed development from a third party that identifies the presence of great crested newt in a highways drainage pond adjacent to the B4451 Kineton Road overbridge construction compound (refer to main ES map CT-05-085, G5 in the Volume 2 CFA16 Map Book). HS2 Ltd had previously surveyed this pond for the main ES and no great crested newts were found (further details are provided in the main ES Volume 2, CFA16, Section 7 and in Volume 5, including maps EC-04).
- 2.2.4 To mitigate potential impacts on the newly identified population of great crested newt and its habitat, the B4451 Kineton Road overbridge construction compound will be relocated to the south of B4451 Kineton Road, west of the route (refer to map CT-05-085 in the SES3 and AP4 ES Volume 2 CFA16 Map Book).
- 2.2.5 Also, the area around the highways drainage pond (classified as landscape mitigation planting in the original scheme and SES scheme) and the land adjacent to Southam Industrial Estate, from which the B4451 Kineton Road overbridge construction compound will be relocated, will be used as an ecological mitigation area, primarily to support great crested newts (refer to map CT-06-085 in the SES3 and AP4 ES Volume 2 CFA16 Map Book).
- 2.2.6 Further detail about the extent of the potential future development has also been received. Therefore, this ecological mitigation area can be incorporated into the SES3 scheme without precluding the potential future development.
- 2.2.7 The extent of the ecological mitigation area (including the area around the drainage pond) will be approximately 1.06ha.
- 2.2.8 This ecological mitigation area will be available before construction starts in order to translocate any newts that might be affected by the scheme in this area.
- 2.2.9 As all of the land required is wholly within Bill limits, this change can be implemented without a change to the Bill.

### *Provision of a temporary pedestrian crossing on the A425 Southam Road in the village of Ufton (SES3-016-002)*

- 2.2.10 The Bill provides for a construction lorry route through the village of Ufton, along the A425. The main ES identifies a major adverse effect on traffic related severance for non-motorised users due to the increase in HGVs on the A425 between the B4455 Fosse Way and the River Itchen road bridge, west of Southam.
- 2.2.11 Since submission of the Bill, and in response to concerns associated with pedestrians crossing the A425 in Ufton, a temporary pedestrian signalised crossing will be

provided in Ufton during construction. This will be constructed to the same standard as a permanent pedestrian signalised crossing.

- 2.2.12 The location of the proposed crossing is adjacent to the end of St Michaels Close to the south of the A425 and a grassed island on the north side (refer to map CT-05-087-L1 (17) in the SES3 and AP4 ES Volume 2 CFA16 Map Book). The crossing will be provided temporarily during construction only.
- 2.2.13 The works will be within the existing highway boundaries and will involve the temporary closure of a lay-by during the operation of the crossing. The works will take approximately three months to complete and the pedestrian crossing will be operational for the duration of construction activity in the area, which will be approximately five years.
- 2.2.14 There is a grassed island, with trees, beyond the footway on the north side of the A425. This grassed area is private land and is not required for the works.
- 2.2.15 As all of the land required is wholly within the highway boundary, this change can be implemented without a change to the Bill.
- 2.2.16 The proposed change (SES3-016-002) will not give rise to a new or different significant effect and will not change the level of the effects reported for any of the environmental topics reported in the main ES.

## **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.



## 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 SES3 assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 2, compared to those of the SES scheme.

#### Scope, assumptions and limitations

3.1.2 Updates to the scope of the assessment for ecology are set out in Volume 1 of 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 Scope and Methodology report (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 3 and AP4 ES Volume 5: Appendix 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 SES3 scheme.

#### SES3 changes of relevance to this assessment

3.1.4 The following changes are relevant to this assessment:

- new baseline information relating to bats and great crested newt; and
- additional grassland habitat creation area to the north of Kineton Road SES3-016-001.

#### *Existing baseline*

3.1.5 The ecological baseline for the assessment takes into account baseline information collected in support of the main ES and SES and AP2 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 assessment is provided in CFA16, Volume 2, Section 7 of the main ES.

3.1.6 Supplementary information relevant to the SES3 assessment in this CFA relates to additional survey work for great crested newt and bats. Details of all additional amphibian data collected 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.

3.1.7 For those receptors described in the main ES, SES and AP2 ES, further details are provided in Volume 2, CFA16, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 3.1.8 There are no changes in relation to designated sites for those receptors described in the main ES and the SES and AP<sub>2</sub> ES.

### **Habitats**

- 3.1.9 There are no changes in relation to habitats for those receptors described in the main ES and the SES and AP<sub>2</sub> ES.

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

- 3.1.10 In the main ES, unsurveyed water bodies 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, an eDNA<sup>1</sup> survey was undertaken at a previously unsurveyed pond near Starbold Farm, located within amphibian assumed metapopulation (AMP)<sub>2</sub> (east of A425 Southam Road to the north of Ladbroke), and has returned a negative result for great crested newt eDNA. AMP<sub>2</sub> was reported in the main ES to contain five ponds and two ditches supporting great crested newt, and two unsurveyed ponds. AMP<sub>2</sub> has a breeding population of great crested newts of medium population size class and also supports other amphibians (smooth newt and common toad). AMP<sub>2</sub> was described in the main ES as having county/metropolitan value. The new baseline results do not change the value of AMP<sub>2</sub>.
- 3.1.12 Ecological survey information associated with a proposed development was received from a third party regarding great crested newt presence in a highways drainage pond adjacent to Southam Industrial Estate, although no information on population size is available. This highways drainage pond was surveyed for great crested newt in 2012-13 by HS2 in support of the scheme but no great crested newts were found. Therefore in the main ES: Volume 5 Appendix EC-001-003, it was assumed that great crested newt were absent from the highways drainage pond (030-AA-125001). Based on the new baseline information this water body is now assumed to support a medium sized population of great crested newt with a precautionary value of up to county/metropolitan.

### *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 scheme's likely construction impacts on ecology.

---

<sup>1</sup> eDNA is that which is released in to the water by plants and animals in a host of ways: from their skin, faeces, mucus, 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.

## 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 scheme's likely operational impacts on ecology.

## 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 main ES recorded an adverse effect on the conservation status of great crested newt in AMP<sub>2</sub> which will be significant at a county/metropolitan level as a result of the loss of five of the ten water bodies within AMP<sub>2</sub>, loss of over half of the available terrestrial habitat affecting grassland and hedgerows, and fragmentation of the population. The 2015 baseline data, indicating the absence of great crested newt in one of the ponds that would be lost near Starbold Farm represents a different significant effect on AMP<sub>2</sub>, but the significance of the effect on AMP<sub>2</sub> remains unchanged from that stated in the main ES.
- 3.1.19 The SES<sub>3</sub> scheme does not result in loss of the highways drainage pond adjacent to Southam Industrial Estate (near the B4451 Kineton Road overbridge) which supports an assumed population of great crested newt. However, as a result of the new baseline information, the SES<sub>3</sub> scheme will result in the permanent loss of approximately 8.1ha of land within 250m of the pond which great crested newt could use for foraging and refuge. The majority (approximately 7.4ha) of this land is either arable or built-up and hardstanding areas, including roads, all of which are suboptimal for great crested newt. Approximately 0.7ha of land within 250m of the highways drainage pond supporting great crested newt is semi-natural habitat that provides suitable terrestrial habitat for great crested newt, comprising approximately 1,250m of hedgerow and 0.6ha of plantation woodland which great crested newt could use for refuge. These habitats will be lost as a result of construction of the scheme and will result in an adverse effect on the conservation status of great crested newt which will be significant at up to a county/metropolitan level. This represents a new significant effect on great crested newt which was not previously reported.
- 3.1.20 It is unlikely that the SES<sub>3</sub> changes will result in any other new or different effects on species receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES, AP<sub>1</sub> ES or SES and AP<sub>2</sub> ES) arising from SES<sub>3</sub> changes are listed in Volume 5: Appendix EC-003-003.

### *Other mitigation measures*

- 3.1.21 There is a requirement for additional mitigation to address the loss of terrestrial habitat for great crested newt near the B4451 Kineton Road overbridge. Appropriate measures have been brought forward within the SES<sub>3</sub> design. The overbridge construction compound has been relocated so that an additional mitigation area can be provided adjacent to Southam Industrial Estate and the highways drainage pond that is now assumed to support great crested newt. The triangular arable field directly adjacent to the highways drainage pond has been included to provide mitigation for great crested newt, and will act as a receptor area for any newts within the permanent construction area. The triangular arable field is approximately 0.6ha in area and adjoins the highways drainage pond, and immediate terrestrial habitat, including hedgerows extending along the scheme corridor, which are already included within the land required for construction of the scheme to provide mitigation and enhancement for wildlife. This increases the total mitigation area to 1.1ha. The mitigation area will be designed to provide a high carrying capacity for the population of great crested newt by the provision of an additional pond and terrestrial refuges.
- 3.1.22 No other additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.

### *Cumulative effects*

- 3.1.23 There are no new or different likely significant cumulative effects for ecology as a result of the SES<sub>3</sub> changes interacting with one another, the AP<sub>1</sub> amendments, AP<sub>2</sub> amendments, or any relevant committed development.

### *Summary of likely residual significant effects*

- 3.1.24 With the implementation of the mitigation measures proposed, the new ecological effects arising from the updated survey data and design changes are reduced to a level where they are not significant. The significant effects of the SES<sub>3</sub> scheme in this area are therefore unchanged from those reported in the main ES and SES and AP<sub>2</sub> ES.

### **Effects arising during operation**

- 3.1.25 The SES<sub>3</sub> 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 SES<sub>3</sub> changes, in comparison with the main ES, or the SES and AP<sub>2</sub> ES.

# Part 2: Additional Provision 4 Environmental Statement

## 4 Summary of amendments

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

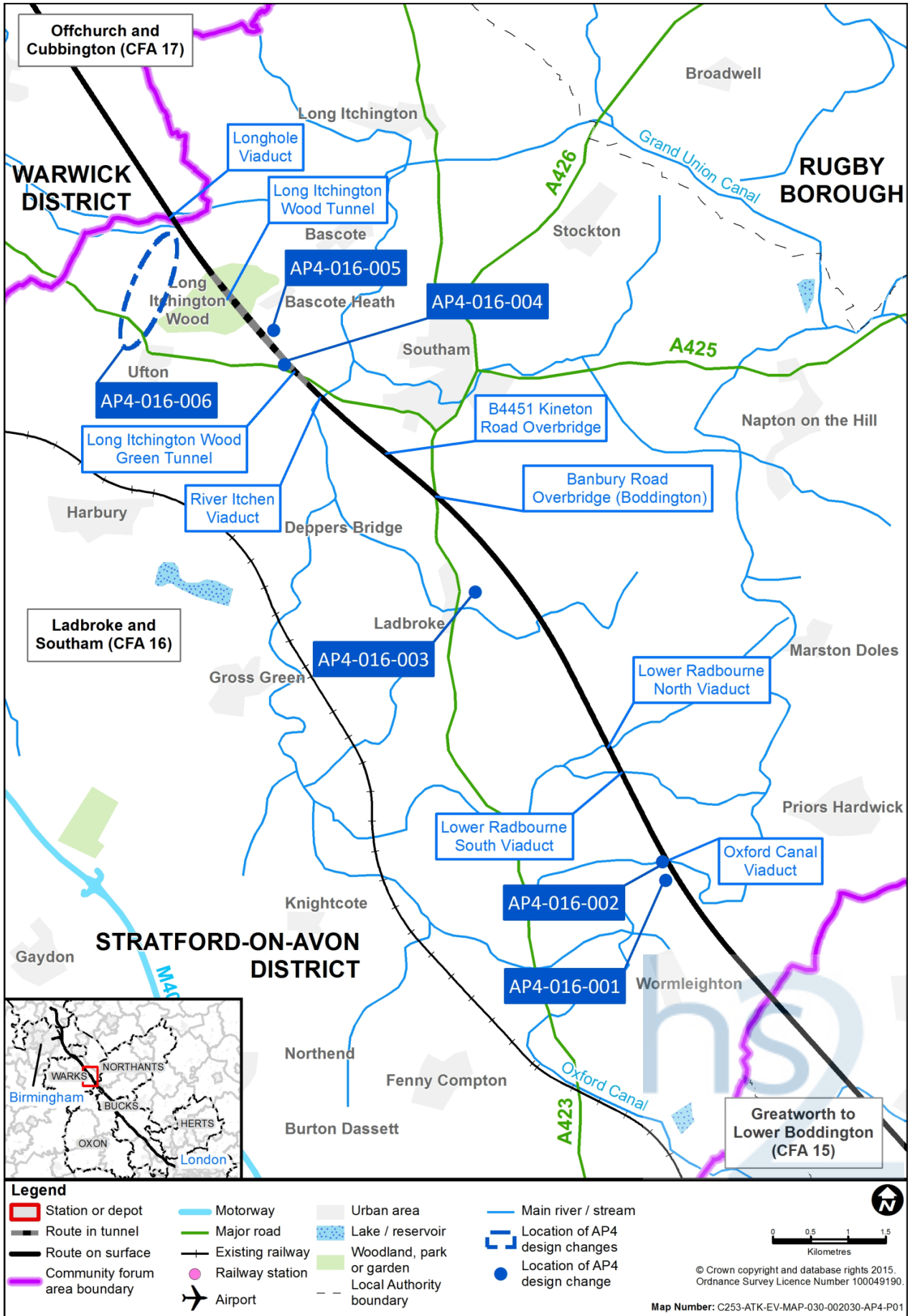
Table 3: Summary of amendments in CFA16

Name of amendment	Description of the SES3 scheme	Description of the AP4 revised scheme
Relocation of the Oxford Canal balancing pond to the east of HS2 access.  (AP4-016-001)	A permanent balancing pond located adjacent to the Oxford Canal on the west side of the railway and to the west of bridleway (SM116) and the HS2 maintenance access.	The permanent relocation of the balancing pond and the access track turning heads from the western side of the bridleway (SM116) to the eastern side. Two separate balancing ponds with associated turning heads will be provided instead of one. The overall reduction in land required for the scheme is approximately 1.82ha. The purpose of this amendment is to reduce the loss of agricultural land.
Relocation of the Oxford Canal viaduct to the north.  (AP4-016-002)	A permanent viaduct over the Oxford Canal with associated embankments. The canal and towpath will remain open for users during construction and will not be subject to permanent realignment.	The permanent relocation of the proposed Oxford Canal viaduct northwards to enable the Oxford Canal to pass through the southernmost span to allow increased views of the landscape from the Oxford Canal. The Oxford Canal will be narrowed temporarily during construction, however, the canal and towpath will remain open for users. No additional land is required.
Provision of temporary passing places along Windmill Lane (also known as Ladbroke Hill Lane) near Ladbroke for construction access.  (AP4-016-003)	Windmill Lane (also known as Ladbroke Hill Lane) provides a construction traffic route from the A423 to the Windmill Lane green overbridge satellite compound. In the SES scheme, a section of Windmill Lane by the overbridge was realigned and the redundant section grassed over.	The addition of a section of Windmill Lane to the construction traffic route that was previously omitted from the Bill scheme and provision of temporary passing places at four locations along Windmill Lane (approximately 0.55ha). The purpose of this amendment is to facilitate access during construction for existing users and construction vehicles.
Revision of the temporary A425 Leamington Road at the Dallas Burston Polo Club.  (AP4-016-004)	The A425 will be temporarily diverted to the north of its current alignment and onto land used by the Dallas Burston Polo Club (including the main access, sections of two international grade polo pitches and part of an area used for training).	The realignment of the temporary diversion which will require less land from the Dallas Burston Polo Club removing the requirement for land acquisition from one international grade polo pitch. The land required from the Dallas Burston Polo Club in the vicinity of the polo pitches will reduce by approximately 1.4ha.  Additional land of approximately 0.7ha from another part of the Dallas Burston Polo Club to the south west to accommodate the realignment is required temporarily which is

SES<sub>3</sub> and AP<sub>4</sub> ES Volume 2 – CFA16, Ladbroke and Southam

Name of amendment	Description of the SES <sub>3</sub> scheme	Description of the AP <sub>4</sub> revised scheme
		outside the limits of the Bill. Temporary accesses will also be provided to the Dallas Burston Polo Club and the Codemasters site.
Revision of grassland habitat creation area adjacent to Dallas Burston Polo Club.  (AP <sub>4</sub> -016-005)	A permanent ecological compensation area located near the Dallas Burston Polo Club, between Long Itchington and Ufton Woods Site of Special Scientific Interest (SSSI) and Thorpe Rough. This is to provide improved habitat for bats including an underground bat cave.	Reconfiguration of the ecological compensation area to accommodate the potential future campsite development for the Dallas Burston Polo Club. The easterly section of the ecological compensation area will be reduced by approximately 3ha whilst retaining an approximate 30m strip for ecological connectivity. Land for ecological mitigation of approximately 1.46ha adjacent to the northern perimeter of the retained 30m strip of ecological compensation area is required outside of the original limits of the Bill.
Relocation of the secondary construction access route to follow Ridgeway Lane near Ufton.  (AP <sub>4</sub> -016-006)	The secondary access route utilises part of Ridgeway Lane and then follows the access track to Wood Farm and Cottage and crosses fields to the north portal area of Long Itchington Wood tunnel. This will be used, as required, for the movement of exceptional loads, in particular the tunnel boring machine (TBM). The new section of track across the fields will be removed after construction.	Relocation of the temporary secondary construction access route from the Wood Farm access track to follow more of Ridgeway Lane before crossing a field nearer the north portal in order to minimise effects on agricultural operations. The temporary secondary access route is required for the same duration as for the Bill scheme. This alternative route is approximately 200m longer than the Bill scheme and it requires an increase in temporary land required during construction of approximately 2.61ha. The decrease in land required along the Wood Farm access is approximately 2.69ha.  Ridgeway Lane will require widening and resurfacing. This will require some localised removal of established vegetation. Upon completion of use by HS <sub>2</sub> , the width and surfacing will be reduced and removed respectively to the extent agreed with the highway authority. Replacement planting is proposed at three locations.

Figure 2: Locations of amendments in CFA16



## 5 Assessment of amendments

### 5.1 Relocation of the Oxford Canal balancing pond to the east of HS<sub>2</sub> access (AP<sub>4</sub>-016-001)

- 5.1.1 The Bill provides for a balancing pond adjacent to the Oxford Canal on the west side of the HS<sub>2</sub> route.
- 5.1.2 The SES scheme amended the location of the balancing pond. In part 1 of the SES and AP<sub>2</sub> ES, design change SES-016-001 comprised an increase to the bund crest heights on both sides of the HS<sub>2</sub> route in the vicinity of Ladbroke and Wormleighton and this included the area to the south of the proposed Oxford Canal viaduct. For the balancing pond at the Oxford Canal, SES-016-001 provided for the following changes:
- the balancing pond was reshaped and relocated to the west of Bridleway SM<sub>116</sub> and the HS<sub>2</sub> maintenance access;
  - the mitigation earthworks were lengthened locally to meet Bridleway SM<sub>116</sub> and localised steepening of earthworks was no longer required in this location; and
  - the balancing pond and its turning head access were reconfigured.
- 5.1.3 Since the publication of the SES and AP<sub>2</sub> ES, a revision to the design has been identified, to relocate the balancing pond within the landscape mitigation earthworks to the east of Bridleway SM<sub>116</sub> and to an area of lower agricultural versatility, to reduce the loss of agricultural land. Two balancing ponds will be provided at revised locations. The northern balancing pond is immediately to the east of Bridleway SM<sub>116</sub> and will be approximately 0.14ha in area. The southern balancing pond is adjacent to Footpath SM<sub>116a</sub> and will be approximately 0.81ha in area. The amended area is identified on SES<sub>3</sub> and AP<sub>4</sub> ES maps CT-05-080 and CT-05-081.
- 5.1.4 The amount of land that will be required permanently will be reduced by approximately 1.8ha.
- 5.1.5 The maintenance access will be maintained along the line of Bridleway SM<sub>116</sub> and a turning head and parking area provided for the balancing pond to the north. The parking area will also serve the maintenance access point near the proposed Oxford Canal viaduct. There will be an access track and turning head for the balancing pond to the south.
- 5.1.6 For the SES<sub>3</sub> scheme, the outfall to the Oxford Canal was located to the west of Bridleway SM<sub>116</sub>. For the proposed amendment, the outfall for the northern balancing pond is to the east of Bridleway SM<sub>116</sub> and towards the Oxford Canal to the north. For the southern balancing pond, the outfall is to the Oxford Canal to the east.
- 5.1.7 Landscape mitigation planting will be provided to screen the proposed balancing ponds as identified on SES<sub>3</sub> and AP<sub>4</sub> ES map CT-06-080. Earthworks to the east of the northern balancing pond and to the north of the southern balancing pond will require localised steeper earthworks slopes to maintain screening levels. These steeper slopes are unsuitable for agricultural use and will therefore be planted.



- 5.1.8 The amendment is located within Bill limits and no additional land is required. However, additional powers are required for the revised access track to the balancing pond and associated turning head.
- 5.1.9 This amendment removes most of the triangular shaped area of land previously required permanently to the west of Bridleway SM116 within which the balancing pond was located for the SES3 scheme (CT-05-080 (A5, A6, B5, B6)). A small area of land near the canal is required temporarily for construction access. The overall reduction in land required for the scheme is approximately 1.82ha.

### **Topics included in the assessment**

- 5.1.10 The proposed relocation of the balancing pond (to two locations) and changes to land required permanently are not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: air quality, community, ecology, land quality, landscape and visual, socio-economics, sound, noise and vibration, traffic and transport, and water resources and flood risk. However, there are changes where reassessment is considered to be required in respect of: agriculture, forestry and soils, and cultural heritage.

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

#### *Introduction*

- 5.1.11 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*

- 5.1.12 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.
- 5.1.13 The quality of agricultural land affected by the amendment is entirely Subgrade 3b and relatively small (1.8ha) 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 CFA16 area. The route-wide effects on BMV land and forestry land are reported in Volume 3.

#### *Existing baseline*

- 5.1.14 This amendment will directly affect one holding, namely The Hall Farm (CFA16/1), which is a 546.3ha arable and livestock holding of medium sensitivity.

#### *Future baseline*

### **Construction (2017)**

- 5.1.15 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.

- 5.1.16 None of the identified developments affect the assessment of the amendment's likely construction impacts on agriculture, forestry and soils.
- 5.1.17 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)**

- 5.1.18 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.
- 5.1.19 None of the identified developments affect the assessment of the amendment's likely operational impacts on agriculture, forestry and soils.

### *Effects arising during construction*

- 5.1.20 The main ES reported a moderate adverse significant temporary effect on The Hall Farm during construction, resulting from severance of medium magnitude.
- 5.1.21 In comparison with the main ES and AP2 revised scheme, this amendment will reduce the amount of land required temporarily from 43.1ha (8% of holding) to 39.2ha (7%). However, the level of the significance of the temporary effect reported in the main ES will not change.
- 5.1.22 The relocated balancing ponds and tree planting associated with this amendment will require an additional 2.1ha of land permanently overall. This will increase the total amount of land required permanently from The Hall Farm from 33.9ha (6%) to 36.0ha (7%). This amendment will reduce the impact on this holding by relocating a balancing pond from agricultural land to the west of Bridleway SM116 to an area of lower agricultural versatility on the embankment to the east of the bridleway. Whilst the amount of land required permanently is considered to be of a low magnitude for a holding of this size (546.3ha) and type of enterprise, the level of significance of permanent effects on The Hall Farm remains moderate adverse, which is significant, due to the impact of severance (as described in the main ES).

### *Effects arising from operation*

- 5.1.23 This amendment (AP4-016-001) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.1.24 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.1.25 The amendment will result in no change in the likely residual significant effects reported in the main ES.

### *Cumulative effects*

- 5.1.26 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*

- 5.1.27 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*

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

### *Existing baseline*

- 5.1.29 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 for the SES and AP2 ES with the results of additional geophysical surveys for archaeology.
- 5.1.30 The main ES baseline provided in Volume 5 Gazetteer of Heritage Assets (Appendix CH-002-016 of the main ES), lists assets which could be affected by scheme changes introduced by the relocation of the balancing pond near the Oxford Canal.
- 5.1.31 The only heritage asset relevant to this assessment is an area of ridge and furrow earthworks of medieval date (asset reference LBS105)<sup>2</sup>, a non-designated asset of low value, which extends into the area proposed for the amendment.

### *Future baseline*

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

- 5.1.32 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 2017, additional to those identified in the main ES and the SES and AP2 ES.
- 5.1.33 None of the identified developments affect the assessment of the amendment's likely construction impacts on cultural heritage assets.

---

<sup>2</sup> Cultural heritage assets are identified with a unique reference code, LBSXXX; further detail on these assets can be found in the gazetteer in Volume 5 of the main ES: Appendix CH-002-016.

### **Operation (2026)**

5.1.34 Volume 5: 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.

5.1.35 None of the identified developments affect the assessment of the amendment's likely operational impacts on cultural heritage.

#### *Effects arising during construction*

5.1.36 The SES scheme requires the partial removal of an area of ridge and furrow earthworks (asset reference LBS105). This constituted a medium adverse impact on this asset of low value, resulting in a minor adverse effect which is not significant. The proposed amendment results in slightly less of this asset being lost, however there remains a medium adverse impact on this asset of low value resulting in a minor adverse effect, which is not significant.

5.1.37 The proposed amendment (AP<sub>4</sub>-016-001) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES and SES and AP<sub>2</sub> ES.

#### *Effects arising from operation*

5.1.38 The proposed amendment (AP<sub>4</sub>-016-001) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES and SES and AP<sub>2</sub> ES.

#### *Mitigation and residual effects*

5.1.39 Impacts on cultural heritage assets will be addressed in accordance with the provisions set out in the draft CoCP (see Volume 5: Appendix CT-003-000 of the main ES).

5.1.40 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.

5.1.41 The amendment will result in no change in the likely residual significant effects reported in the main ES and SES and AP<sub>2</sub> ES.

#### *Cumulative effects*

5.1.42 There are no new or different likely significant cumulative effects for cultural heritage 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.

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

5.1.43 The relocation and creation of two balancing ponds with associated turning heads will not result in any new or different significant residual effects and does not change the significance of the environmental effects as set out in the main ES or SES and AP<sub>2</sub> ES (Volume 2, CFA16 Ladbroke and Southam).

## 5.2 Relocation of the Oxford Canal viaduct to the north (AP4-016-002)

- 5.2.1 The Bill provides for construction of a viaduct over the Oxford Canal, as shown in the main ES, Volume 2, maps CT-05-080 and CT-05-081. The canal would have been unaffected and not subject to any temporary or permanent realignment under the SES3 scheme.
- 5.2.2 The SES scheme provides for an increase in the bund crest heights on both sides of the HS2 route in the vicinity of Ladbroke and Wormleighton (SES-016-001) which applies to the area around the Oxford Canal viaduct. Height increases to the earthwork embankments will provide greater mitigation of visual effects. Slopes too steep for agricultural use will be planted. The layout of balancing ponds, access tracks and public rights of way (PRoW) will be adjusted in four areas, all within the existing limits of the Bill.
- 5.2.3 Since publication of the SES and AP2 ES, an alternative configuration of the proposed viaduct has been developed following further discussions with the Canal and River Trust. The purpose of the proposed amendment is to maximise views of the open landscape for canal users and align the viaduct piers to be parallel to the canal. The changed area is identified on maps CT-05-080 and CT-05-081 in the SES3 and AP4 ES Volume 2 Map Book.
- 5.2.4 The span arrangement and overall length of the proposed viaduct will remain as per the Bill scheme. The amendment involves the proposed viaduct being moved approximately 20m northwards to enable the canal and towpath to pass through the southern-most span.
- 5.2.5 The approach to construction of the viaduct is the same as the SES3 scheme with the following exceptions:
- there will be works to the canal that will take approximately 18 months;
  - the current width of the canal, where it passes under the proposed viaduct, is approximately 10m. During construction, the canal will be narrowed for a length of approximately 40m whilst maintaining a minimum width of 7m to enable two vessels to pass. The south abutment will be moved northwards to become the southern canal wall; and
  - temporary cofferdams<sup>3</sup> are required for the construction of both the south abutment and the south pier of the viaduct.
- 5.2.6 The towpath and the canal will remain open throughout construction and the permanent width of both the canal and towpath will be the same as existing.
- 5.2.7 No additional land is required compared to the SES3 scheme. However, additional powers are required in relation to the revised viaduct design.

---

<sup>3</sup> A cofferdam is a temporary enclosure built within a body of water or water-filled ground to regulate in-flow and out-flow of water.

## Topics included in the assessment

- 5.2.8 The proposed movement of the viaduct and the works to the canal are not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES and SES and AP2 ES with respect to: air quality, land quality, socio-economics, and sound, noise and vibration. However, there are changes where reassessment is considered to be required in respect of: community, cultural heritage, ecology, landscape and visual, traffic and transport, and water resources and flood risk.

### Community

#### *Introduction*

- 5.2.9 This section of the report describes the environmental baseline that is relevant to the community 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*

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

#### *Existing baseline*

- 5.2.11 As described in the main ES (Volume 2, CFA Report 16, Section 5), The Oxford Canal Walk is a 77 mile long-distance path, which follows the waterway from Oxford to Hawkesbury. The section of the path in question follows the sinuous course of the canal between Wormleighton and Priors Hardwick. The path is located along the northern canal banks and is made up of hard standing and unmade ground. There are few crossing points along this section, which makes this a linear rather than a circular walking route.

#### *Future baseline*

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

- 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 2017, additional to those identified in the main ES.
- 5.2.13 None of the identified developments affect the assessment of the amendment's likely construction impacts on community.

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

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

### *Effects arising during construction*

- 5.2.16 The main ES anticipated that both the canal and towpath will be maintained during the construction of the Oxford Canal viaduct and that the inclusion of a short section of these recreational routes within the area required for the original scheme will have a negligible effect on their use and function. The amendment will maintain both the canal and the towpath during the temporary works and therefore will not change the level of significance of effects reported in the main ES.
- 5.2.17 The amendment (AP<sub>4</sub>-016-002) will not give rise to any new or different significant effects and will not change the level of significance reported in the main ES.

### *Effects arising from operation*

- 5.2.18 The main ES anticipated that both the canal and towpath will not be subject to any permanent realignment and that the inclusion of a short section of these recreational routes within the area required for the original scheme will have a negligible effect on their use and function. The amendment will not require a permanent realignment of the canal or the towpath and therefore will not change the level of significance of effects reported in the main ES.
- 5.2.19 The amendment (AP<sub>4</sub>-016-002) will not give rise to a new or different effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.2.20 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.2.21 The amendment will result in no change to the likely residual significant effects reported in the main ES.

### *Cumulative effects*

- 5.2.22 There are no new or different likely significant cumulative effects for community as a result of the AP<sub>4</sub> amendments interacting with one another or any other committed developments.

## **Cultural heritage**

### *Introduction*

- 5.2.23 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*

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

### *Existing baseline*

- 5.2.25 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.
- 5.2.26 The main ES baseline provided in Volume 5 Gazetteer of Heritage Assets (Appendix CH-002-016), lists assets which could be affected by scheme changes introduced by the relocation of the viaduct crossing the Oxford Canal. Details of new assets identified in this CFA since September 2013 are provided in Volume 5: SES and AP<sub>2</sub> Appendix CH-004-016 and Volume 5 map series CH-01; CH-02 and CH-03, where this was relevant to the assessment of new or different significant effects.
- 5.2.27 The only heritage asset that is relevant to this assessment due to potential change to its setting is the Oxford Canal (asset reference LBS019), a non-designated asset of moderate value.

### *Future baseline*

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

- 5.2.28 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.
- 5.2.29 None of the identified developments affect the assessment of the amendment's likely construction impacts on cultural heritage.

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

- 5.2.30 Volume 5: 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.
- 5.2.31 None of the identified developments affect the assessment of the amendment's likely operational impacts on cultural heritage.

### *Effects arising during construction*

- 5.2.32 The main ES reported a change in the setting and relationship with the wider landscape of the Oxford Canal (LBS019), resulting in a medium adverse impact and a moderate adverse effect, which is significant.
- 5.2.33 This amendment will not require additional land in comparison with the SES<sub>3</sub> scheme. The temporary narrowing of the canal will not permanently alter the canal. Although there will be a slight change to the physical fabric of the canal, this will not affect the overall historic alignment or function of the canal, and will not meaningfully change its significance. This will create a minimal adverse impact and a minor adverse effect, which is not significant. The slight change in location of the viaduct and the changes to the way in which the canal passes through the viaduct will not alter the magnitude of impact of the AP<sub>4</sub> revised scheme on the Oxford Canal (LBS019) compared to the SES<sub>3</sub> scheme.



- 5.2.34 The amendment (AP<sub>4</sub>-016-002) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES and SES and AP<sub>2</sub> ES.

#### *Effects arising from operation*

- 5.2.35 The amendment (AP<sub>4</sub>-016-002) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES and SES and AP<sub>2</sub> ES.

#### *Mitigation and residual effects*

- 5.2.36 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.

- 5.2.37 The amendment will result in no change in the likely residual significant effects reported in the main ES and SES and AP<sub>2</sub> ES.

#### *Cumulative effects*

- 5.2.38 There are no new or different likely significant cumulative effects for cultural heritage 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.

### **Ecology**

#### *Introduction*

- 5.2.39 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 SES<sub>3</sub> scheme.

#### *Scope, assumptions and limitations*

- 5.2.40 Updates to the scope of the assessment for ecology are set out in Volume 1 of 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 CT001-000/01 and CT-001-000/02 of the main ES) and in Addendum 4 to the SMR (SES 3 and AP<sub>4</sub> ES Volume 5: Appendix CT-001-000/5).
- 5.2.41 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 AP<sub>4</sub> revised scheme.

#### *Existing baseline*

- 5.2.42 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES and SES and AP<sub>2</sub> 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.

- 5.2.43 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 SES3 and AP4 ES Volume 5: Appendix EC-001-003. For those receptors described in the main ES, further details are provided in Volume 2, CFA16, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.2.44 There are no designated sites that are relevant to the assessment.

### **Habitats**

- 5.2.45 The only habitat that will be affected by the amendment is the Oxford Canal itself, which as stated in the main ES includes eutrophic (nutrient rich) standing water, a habitat of principal importance. The Warwickshire, Coventry and Solihull Biodiversity Action Plan lists rivers, streams and canals as priority habitats. The Oxford Canal also forms a wildlife corridor through the landscape, and is considered in the main ES to be of district/borough value.

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

- 5.2.46 The main ES identifies a population of breeding yellow wagtails using habitats along the Oxford Canal that has been evaluated in the main ES as being of district/borough value. Assemblages of other breeding and wintering birds along the canal are of local/parish value.
- 5.2.47 The main ES records a population of otters using the Oxford Canal and identifies it as being of district/borough value. No confirmed or potential otter holts have been recorded near to the land required for the amendment, but the canal is highly likely to be used by foraging and commuting otters.
- 5.2.48 The Oxford Canal is identified in the main ES as an assumed key foraging and commuting habitat for the bat assemblage associated with roosting, foraging and commuting habitat around Stoneton and Wormleighton, particularly associated with the Oxford Canal and several of the hedgerows that form habitat links between the village of Wormleighton, the Oxford Canal and Newfield Pool. This assemblage is of district/borough value.
- 5.2.49 Fish and aquatic macro-invertebrate assemblages in the Oxford Canal have no greater than local/parish value, as reported in the main ES.

### *Future baseline*

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

- 5.2.50 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.
- 5.2.51 None of the identified developments affect the assessment of the amendment's likely construction impacts on ecology.

### **Operation (2026)**

- 5.2.52 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.
- 5.2.53 None of the identified developments affect the assessment of the amendment's likely operational impacts on ecology.

#### *Effects arising during construction*

#### *Avoidance and mitigation measures*

- 5.2.54 Mitigation measures have been included as part of the design of the original scheme and avoid or reduce impacts to features of ecological value. Those that are relevant to the amendment include the viaduct over the Oxford Canal to retain wildlife connectivity for species such as otters and bats.
- 5.2.55 The assessment assumes implementation of the measures set out within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES), which includes translocation of protected species where appropriate.

#### *Designated sites*

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

### **Habitats**

- 5.2.57 The main ES reported that no significant effects on the Oxford Canal were expected. The amendment will require temporary, localised narrowing of the Oxford Canal. During construction this will reduce the width of the canal at the scheme crossing from its current 10m to a minimum of 7m. The canal already narrows to less than 7m at an existing bridge crossing the canal 45m to the west of the amendment. The amendment will not result in a change to the canal's function as a wildlife corridor and will not change the level of significance of the effects reported in the main ES.
- 5.2.58 The proposed narrowing will result in the temporary, localised reduction of no more than 0.01ha of standing water habitat and associated bank-side vegetation during construction. This is a typical canal habitat and is a very small proportion of this habitat within the Oxford Canal in CFA16. Therefore the amendment will not result in new or different significant effects, and will not change the level of significance of the effects reported in the main ES.
- 5.2.59 It is unlikely that the AP4 revised scheme will result in any new or different effects on habitats of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from the AP4 revised scheme are listed in SES3 and AP4 ES Volume 5: Appendix EC-003-003.

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

- 5.2.60 The main ES did not report any adverse effects on the conservation status of the local otter population. The localised narrowing of the canal by up to 3m will not result in a

notable change in the amount of foraging and commuting habitat available for otters. Additional construction disturbance as a result of the amendment, and any barrier effect this may cause, will not be notably greater than predicted in the main ES. There will be no effective physical barrier to otter movement along the canal during construction resulting from the amendment. Therefore there will be no new or different significant effects on the conservation status of otters as a result of the amendment and the level of significance of the effects reported in the main ES is unchanged.

- 5.2.61 The main ES predicted no significant effects on the bat assemblage associated with roosting, foraging and commuting habitat around Stoneton and Wormleighton, particularly associated with the Oxford Canal and several of the hedgerows that form habitat links between the village of Wormleighton, the Oxford Canal and Newfield Pool. The localised narrowing of the canal will not affect a large amount of foraging habitat available for bats, as the loss of standing water and bankside habitat will be a very small proportion of that available along the canal. Bats will still be able to commute along the canal in the location of the amendment, with no greater hindrance than that predicted by the main ES. Therefore, there will be no new or different significant effects on the assemblage as a result of the amendment and the level of significance of the effects reported in the main ES is unchanged.
- 5.2.62 It is unlikely that the AP4 revised scheme will result in any new or different significant effects on species receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from the AP4 revised scheme are listed in Volume 5: Appendix EC-003-003.

### *Cumulative effects*

- 5.2.63 There are no new or different likely significant cumulative effects for ecology as a result of the AP4 amendments interacting with one another or any relevant committed development.

### *Mitigation and residual effects*

#### *Other mitigation measures*

- 5.2.64 No additional mitigation measures (i.e. in addition to those identified in the main ES and SES and AP2 ES) are required.

### *Summary of likely residual effects*

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

### *Effects arising from operation*

- 5.2.66 There are no new or different significant operational effects for ecology as a result of the amendment.

## Landscape and visual assessment

### *Introduction*

- 5.2.67 This section of the report describes the environmental baseline in relation to landscape and visual that is relevant to the assessment. It then defines 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*

- 5.2.68 The assessment scope, key assumptions and limitations of the landscape and visual assessment are set out in Volume 1, the SMR (Volume 5: Appendix CT-0001-000/1) and the SMR Addendum (Volume 5: Appendix CT-0001-000/2) of the main ES. An update to the methodology for the landscape and visual assessment is also described in Volume 1 of the AP1 ES and Volume 1 of the SES and AP2 ES.

### *Existing baseline*

- 5.2.69 The area of land required for the amendment is located within Radbourne Ironstone Fringe Landscape Character Area (LCA) as described in the main ES (Volume 2, CFA16, Section 9).
- 5.2.70 Views east from PRoW (Bridleway) SM116 and north from PRoW (Footpath) SM200 (viewpoints 227.3.001 and 227.3.006) are also located in close proximity to the amendment and are described in the main ES (Volume 5: Appendix LV-001-016, Section 5).

### *Future baseline*

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

- 5.2.71 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.
- 5.2.72 None of the identified developments affect the assessment of the amendment's likely construction impacts on landscape and visual.

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

- 5.2.73 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.
- 5.2.74 None of the identified developments affect the assessment of the amendment's likely operational impacts on landscape and visual.

### *Effects arising during construction*

#### **Landscape assessment**

- 5.2.75 Radbourne Ironstone Fringe LCA was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The area has a high level of tranquillity and the landscape is valued at a local level for its network of PRoW and historic associations. The fields and the field boundaries appear regularly maintained to a high

standard and in good condition, and therefore it is considered to be of medium sensitivity to change. The main ES reported a medium magnitude of change as a result of the scale and extent of construction that will be at variance with the open agricultural landscape character. The medium magnitude of change, assessed alongside the medium sensitivity of the character area, resulted in a moderate adverse significant effect.

- 5.2.76 The revision to the configuration of the proposed viaduct over the Oxford Canal involves broadly the same approach to construction as the SES3 scheme with only a small number of changes. The proposed localised narrowing of the canal during construction, revised structure location and abutment arrangements are relatively minor in the context of the scale of the landscape character and will not change the original landscape assessment reported in the main ES.
- 5.2.77 The amendment (AP4-016-002) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.2.78 Viewpoint 227.3.001: views east from PRoW (Bridleway) SM116 was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The main ES reported a high magnitude of change as a result of construction works being visible in the foreground within the direct frame of view. When considered against the high sensitivity of this receptor this resulted in a major adverse significant effect.
- 5.2.79 Viewpoint 227.3.006: view north from PRoW (Footpath) SM200 was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The main ES reported a high magnitude of change as a result of works being visible in the middle ground and assessed alongside the high sensitivity of this receptor this resulted in a moderate adverse significant effect.
- 5.2.80 The degree of change to construction activities as a result of the proposed amendment compared to the SES3 scheme is sufficiently small to conclude that there are no new or different significant construction effects on visual receptors as a result of the proposed amendment, in comparison with the main ES. Therefore, for both of these receptors (viewpoints 227.3.001 and 227.3.006), the proposed amendment (AP4-016-002) 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 during operation*

#### **Landscape assessment**

- 5.2.81 Radbourne Ironstone Fringe LCA was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The main ES reported a medium magnitude of change assessed alongside the medium sensitivity of the character area resulting in a moderate adverse significant effect in year 1 of operation, and by year 15 through to year 60 this will remain unchanged as a result of the major infrastructure continuing to be at variance with the open agricultural landscape character.
- 5.2.82 The amendment (AP4-016-002) will not give rise to a new or different significant effect to the Radbourne Ironstone Fringe LCA and will not change the level of

significance of the effects reported in the main ES. This is due to the modest scale of change in comparison to the landscape character area.

### **Visual assessment**

- 5.2.83 Viewpoint 227.3.001 was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The main ES reported a major adverse significant effect in the summer and winter of year 1 during operation due to trains, overhead line equipment, the Oxford Canal viaduct and approach embankments that will be visible in the foreground. By year 15 and 60 the effects were reported to remain at a major adverse significant effect due to the close proximity of receptors and direct open views.
- 5.2.84 Viewpoint 227.3.006 was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The main ES reported a moderate adverse significant effect in summer and winter of year 1 operation due to raised earthworks, new planting and upper sections of overhead line equipment visible in the middle ground. By year 15 and 60 it was reported that this will reduce to non-significant as a result of maturing mitigation planting which will largely filter views.
- 5.2.85 For both of these visual receptors, the degree of change to operational activities compared to the SES3 scheme is sufficiently small to conclude that the proposed amendment (AP4-016-002) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.2.86 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.2.87 There are no new or different likely residual significant effects during construction or operation as a result of the proposed amendment in comparison with the main ES.

### *Cumulative effects*

- 5.2.88 There are no new or different significant cumulative effects for landscape and visual as a result of the AP4 amendments interacting one with another, the AP1 amendments, AP2 amendments or any relevant committed development.

### **Traffic and transport**

#### *Introduction*

- 5.2.89 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*

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

### *Existing Baseline*

- 5.2.91 The existing baseline is as described in the main ES (Volume 2 CFA16, Chapter 12) of the main ES.
- 5.2.92 Baseline surveys showed there to be an average of six boats per hour using the Oxford canal with a total of 14 users, including eight cyclists, of the canal tow path. The surveys on Bridleway SM116, where it passes over the canal, recorded no users.

### *Future baseline*

#### **Construction**

- 5.2.93 The future baseline for traffic and transport is as described in Volume 2 CFA16, Section 12 of the main ES.

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

- 5.2.94 The future baselines for traffic and transport are as set out in Volume 2, CFA16 Section 12 of the main ES.

### *Effects arising during construction*

- 5.2.95 The effect of construction of the SES3 scheme on the Oxford Canal was not considered to be significant, since no stoppage of the waterway was to have taken place. This situation remains the same with this amendment and the canal will remain open throughout construction. The amendment results in temporary narrowing of the canal during construction. The temporary narrowing of the canal to a minimum of 7m will still allow the passage of boats from opposite directions and users will experience normal operational conditions. No delays are expected to occur for canal users as a result of this amendment. The adjacent tow path and Bridleway SM116 will also remain open during construction works.
- 5.2.96 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*

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

### *Mitigation and residual effects*

- 5.2.98 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required. There are no new or different likely residual significant effects of the amendment.

### *Cumulative effects*

- 5.2.99 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.
- 5.2.100 There are no new or different likely significant cumulative effects for traffic and transport as a result of the AP4 amendments interacting with one another or AP2 amendments.



## Water resources and flood risk assessment

### *Introduction*

- 5.2.101 This section of the report describes the environmental baseline in relation to water resources and flood risk 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*

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

### *Existing baseline*

- 5.2.103 The water resources and flood risk baseline is as described in the main ES (Volume 2, CFA16, Section 13) and Volume 5: Appendix CT-001-000/2).
- 5.2.104 The flood risk information includes the Environment Agency fluvial flood maps and the updated Flood Maps for Surface Water (uFMfSW). The fluvial flood map indicates that the area for the amendment is within an area at low risk from fluvial flooding with an annual probability of flooding less than 1 in 1000 (0.1%). The uFMfSW indicates a small isolated area at risk from surface water flooding with an annual probability of flooding less than 1 in 100 (1%) south of the canal. The associated risk is therefore considered low.
- 5.2.105 The Environment Agency Flood Zone maps do not identify a fluvial flood risk in the vicinity of the canal, therefore the area is within Flood Zone 1 and the associated fluvial flood risk is low.
- 5.2.106 Topographic data (specifically light detection and aerial ranging<sup>4</sup>) indicates that the Oxford Canal, at the location of the crossing, is raised above surrounding ground level to the north. If structural breaching occurs, flooding is likely in the land to the north of the canal which is classed as less vulnerable. Due to the managed nature of water levels within canal systems, the risk of flooding from this source is low.
- 5.2.107 The land use in the vicinity of the Oxford Canal viaduct is agricultural and therefore classified as less vulnerable (moderate value receptor).

### *Future baseline*

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

- 5.2.108 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.
- 5.2.109 None of the identified developments affect the assessment of the amendment's likely construction impacts on water resources and flood risk.

---

<sup>4</sup> Light detection and aerial ranging is a high resolution remote-sensing technology which uses a laser to measure distance between an aircraft and the ground, buildings and vegetation to create a three-dimensional model.

### **Operation (2026)**

- 5.2.110 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.
- 5.2.111 None of the identified developments affect the assessment of the amendment's likely operational impacts on water resources and flood risk.

#### *Effects arising during construction*

- 5.2.112 The main ES reported a neutral effect on water resources and flood risk within this area.
- 5.2.113 Construction works for the proposed amendment will encroach into the canal and reduce the flow capacity of the channel during the construction phase. This reduction has the potential to affect the risk of overtopping and breach of the canal. Immediately to the west of the viaduct location there is an access track crossing the canal that reduces the width of the canal to similar width as proposed during the construction works. This reach of the canal is the highest point of the canal – the water levels drop through the lock systems in both directions away from the crossing point. The flows and velocities in this reach are therefore low. The proposed reduction in the width of the canal at this location will therefore not change the flow character along this reach of the canal.
- 5.2.114 As the canal is artificial and flow within it is carefully managed, the proposed amendment will not alter any flow characteristics or have any impact on water quality. There is therefore no significant effect on water resources or flood risk.
- 5.2.115 There are no permanent effects associated with this amendment as the narrowing of the canal is during construction only.
- 5.2.116 The proposed amendment (AP<sub>4</sub>-016-002) 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*

- 5.2.117 There are no operational effects associated with this amendment as the narrowing of the canal is during construction only.
- 5.2.118 The proposed amendment (AP<sub>4</sub>-016-002) will not give rise to a new or different significant operational effect and will not change the level of significance of the operational effects reported in the main ES.

#### *Mitigation and residual effects*

- 5.2.119 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.2.120 The proposed amendment is a temporary construction activity. The amendment will not result in any change in the likely residual significant effects reported in the main ES.

### *Cumulative effects*

- 5.2.121 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the AP4 amendments interacting with one another, the AP1 amendments, AP2 amendments or any relevant committed development.

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

- 5.2.122 The amendment to relocate of the Oxford Canal viaduct northwards does not result in any new or different significant residual effects and does not change the significance of the environmental effects as set out in the main ES or SES and AP2 ES (Volume 2, CFA16 Ladbroke and Southam).

## **5.3 Provision of temporary passing places along Windmill Lane (also known as Ladbroke Hill Lane) near Ladbroke for construction access (AP4-016-003)**

- 5.3.1 The Bill provides a construction traffic route along Windmill Lane (also known as Ladbroke Hill Lane) from the A423 Ladbroke Bypass to the Windmill Lane Green Overbridge satellite compound (refer to the main ES, Volume 2, map CT-05-083, D6). A section of Windmill Lane, by the overbridge, is to be realigned and the redundant section grassed over.
- 5.3.2 Since submission of the Bill, it has been identified that additional land within the highway limits of Windmill Lane is required to facilitate safer shared use of the lane by existing users and HS2 construction vehicles. As a result, the AP4 revised scheme will include additional land for temporary passing places along Windmill Lane during the construction phase.
- 5.3.3 Approximately 0.55ha of additional land is required temporarily along this section of Windmill Lane.
- 5.3.4 Passing places will be provided at four locations along Windmill Lane at the approximate locations identified on CT-05-083 (see SES3 and AP4 Volume 5 map book) on either or both sides of the road. Each passing place will be approximately 2m in width and approximately 15m in length plus approximately 5m entry and exit tapers. Approximately 0.4ha of additional land is required temporarily during construction and, of this, the passing places themselves require approximately 0.2ha of land. The passing places will be constructed within the highway verges. There will be no loss of agricultural land.
- 5.3.5 Approximately 100m of hedgerow will need to be removed and will be replanted on completion.

### **Topics to be included in the assessment**

- 5.3.6 The temporary use of the additional land is not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: agriculture, forestry and soils, air quality, community, land quality, landscape and visual, socio-economics, sound, noise and vibration, traffic

and transport, and water resources and flood risk. However, there are changes where reassessment is considered to be required in respect of cultural heritage and ecology.

## Cultural heritage

### *Introduction*

- 5.3.7 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*

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

### *Existing baseline*

- 5.3.9 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 SES and AP2 ES (Volume 5: SES and AP2 ES Appendix CH-004-016 and SES and AP2 ES Volume 5 map series CH-01; CH-02 and CH-03).
- 5.3.10 The main ES baseline provided in Volume 5 Gazetteer of Heritage Assets (Appendix CH-002-016 of the main ES), lists assets which could be affected by scheme changes introduced by the provision of passing places along Windmill Lane. Details of new assets identified in this CFA since September 2013 are provided in Volume 5: SES and AP2 Appendix CH-004-016 and SES and AP2 ES Volume 5 map series CH-01; CH-02 and CH-03, where this was relevant to the assessment of a new or different significant effect.
- 5.3.11 The only asset considered relevant to this assessment is Ladbroke ridge and furrow earthworks (asset reference LBS046), a non-designated asset of low value.

### *Future baseline*

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

- 5.3.12 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 2017, additional to those identified in the main ES and the SES and AP2 ES.
- 5.3.13 None of the identified developments affect the assessment of the amendment's likely construction impacts on cultural heritage.

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

- 5.3.14 Volume 5: 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.

- 5.3.15 None of the identified developments affect the assessment of the amendment's likely operational impacts on cultural heritage.

#### *Effects arising during construction*

- 5.3.16 The SES3 scheme required the partial removal of the Ladbroke ridge and furrow (asset reference LBS046). This constituted a high adverse impact on this asset of low value, resulting in a moderate adverse significant effect. The amendment will require additional land along Windmill Lane, which crosses through the asset, and therefore will remove additional parts of the asset. However, the scale of increase is small when considered in the context of the scale of the original scheme's impact. The amendment will not alter the type of impact (e.g. physical) nor will it impact on a different part of the asset's value.

- 5.3.17 The proposed amendment (AP4-016-003) will not give rise to a new or different significant effect and will not change the level of significance of effects reported in the main ES.

#### *Effects arising from operation*

- 5.3.18 The proposed amendment (AP4-016-003) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### *Mitigation and residual effects*

- 5.3.19 The proposed amendment will impact an additional area of LBS046. Impacts on cultural heritage assets will be addressed in accordance with the provisions set out in draft CoCP (see Volume 5: Appendix CT-003-000 of the main ES).

- 5.3.20 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.

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

#### *Cumulative effects*

- 5.3.22 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*

- 5.3.23 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*

- 5.3.24 Updates to the scope of the assessment for ecology are set out in Volume 1 of 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 CT001-000/01 and CT-001-000/02 of the main ES) and in Addendum 4 to the SMR (SES 3 and AP4 ES Volume 5: Appendix CT-001-000/5).

- 5.3.25 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*

- 5.3.26 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES and 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.
- 5.3.27 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 SES3 and AP4 ES Volume 5: Appendix EC-001-003. For those receptors described in the main ES, further details are provided in Volume 2, CFA16, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.3.28 There are no designated sites relevant to the assessment.

### **Habitats**

- 5.3.29 The land required for the amendment comprises a rural access lane, with verges dominated by mature hedgerows over the majority of its length.
- 5.3.30 The hedgerows consist of both species-rich and species-poor hedges, including some hedge sections, in both categories, with trees. The main ES reports that individual species-poor hedges have local/parish value whereas species-rich hedges are of district/borough value. The whole hedgerow network within the area, of which these hedges form a part, is considered in the main ES to have district/borough value as a wildlife corridor.
- 5.3.31 Within the land required for the amendment, between the hedges and Windmill Lane, are narrow strips of grass verge. The main ES reports that the grasslands recorded within the land required for construction of the scheme are of no more than local/parish value.
- 5.3.32 There is an unsurveyed pond within 5m of the amendment on the south side of Windmill Lane. A precautionary value of up to district/borough value is assumed for the pond habitat, as reported in the main ES.

### Protected and/or notable species

- 5.3.33 There are a number of trees along Windmill Lane that have moderate or high potential for roosting bats. No bat roosts have been confirmed to date. If used as roosts, they would form part of the habitat that supports a bat assemblage associated with foraging and commuting habitat surrounding a farm near Windmill Hill Spinney (mainly woodland and arable field boundaries) and potential roosting habitat within trees in this area. The following bat species have been recorded within this assemblage: common pipistrelle, soprano pipistrelle, noctule, *Myotis* species, Leisler's and serotine and the assemblage was reported in the main ES as being of district/borough value. The hedges along Windmill Lane are assumed to provide this assemblage with supporting habitat for foraging and commuting.
- 5.3.34 Amphibian surveys undertaken for the main ES identified the presence of a medium population of great crested newt using a pond located approximately 10m to the north of Windmill Lane at the eastern end of the amendment. The pond is already located within the land required for the construction of the SES3 scheme. This pond supports great crested newt within AMP1, which is assumed to use suitable terrestrial habitat within 250m of its constituent water bodies, including land required for the amendment. The boundary of AMP1 spans Windmill Lane. AMP1 has county/metropolitan value as stated in the main ES.
- 5.3.35 The pond which lies 5m from the amendment has not been surveyed for amphibians due to access restrictions. Using a precautionary approach, the main ES assumed that ponds which have not been surveyed could support breeding great crested newts of medium population size class and of up to county/metropolitan value.
- 5.3.36 The land required for the amendment contains hedgerows that are likely to provide suitable refuge habitat for reptile species such as grass snake, adder, common lizard and slow worm. The main ES reported a small breeding population of adder at Ladbroke Hill Farm, to the immediate north of Windmill Lane, which is of county/metropolitan value. There is also a small population of grass snake at the same site which is reported in the main ES as being of local/parish value.
- 5.3.37 Wintering and breeding bird surveys were undertaken for the main ES within some of the land required for the amendment and its vicinity, around Ladbroke Hill Farm. Species recorded during the surveys are considered to be common and widespread in the habitat types surveyed, with no large/important populations recorded. These bird populations are reported by the main ES as being of local/parish value.

### *Future baseline*

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

- 5.3.38 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.
- 5.3.39 None of the identified developments affect the assessment of the amendment's likely construction impacts on ecology.

### **Operation (2026)**

- 5.3.40 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.
- 5.3.41 None of the identified developments affect the assessment of the amendment's likely operational impacts on ecology.

### *Effects arising during construction*

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

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

#### **Designated sites**

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

#### **Habitats**

- 5.3.44 The amendment will require construction of up to four passing bays leading to an additional temporary loss of up to 100m of hedgerow, plus associated hedgerow trees, of which 90m is species-rich hedgerow.
- 5.3.45 The main ES reports a loss of 34.5km of hedgerow during construction of the original scheme, some of which includes species-rich hedgerows. This would result in an adverse effect on the conservation status of the hedgerow network that will be significant at a district/borough level. Given the relatively small additional losses, it is considered that the amendment will result in a different significant effect on the hedgerow network but does not change the level of significance of the effect reported in the main ES.
- 5.3.46 It is unlikely that the amendment will result in any other new or different significant effects on habitat receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from amendment are listed in Volume 5: Appendix EC-003-003.

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

- 5.3.47 The main ES predicted that the original scheme would have an adverse effect on the conservation status of the assemblage of bat species found at Windmill Hill Spinney that will be significant at a district/borough level. Due to its proximity and habitat connectivity, this bat assemblage is likely to also use the hedges along Windmill Lane for foraging and commuting. There could also be trees within the hedgerow suitable to support roosting bats. Given that the assemblage of bats includes rarer species, it could have value at up to a county/metropolitan level.
- 5.3.48 The additional land required for the amendment represents a very small increase in the loss of bat foraging habitat relative to the original scheme. There is also potential



for temporary fragmentation of bat commuting habitat through the creation of gaps of over 30m in hedgerows. There is also potential for the loss of hedgerow trees that, taking a precautionary approach, may contain roosting bats of rarer species. Given the small scale of additional habitat loss, the amendment results in a different significant effect on the local bat assemblage, but does not change the level of significance of the effect reported in the main ES.

- 5.3.49 The main ES reported an adverse effect on great crested newt within AMP1 which will be significant at a county/metropolitan level. The pond situated 5m south of the land required for the amendment is within the terrestrial habitat assumed to be used by AMP1, even though the presence of great crested newt in this pond has not been confirmed. The amendment has no direct impacts on this pond, but it will involve construction activity close to the pond and the removal and fragmentation of terrestrial habitat for great crested newts (up to 100m of hedgerow) near to the pond. Therefore the amendment results in a different significant effect on the conservation status of great crested newt within AMP1, but does not change the level of significance reported in the main ES.
- 5.3.50 The main ES reported an adverse effect on the conservation status of the small breeding population of adder at Ladbroke Hill Farm which will be significant at a county/metropolitan level. Only one juvenile adder was recorded in 2012–13 near Windmill Hill Spinney on a field margin close to a mix of woodland and scrub habitats on a steep ridge with south-facing slopes. The additional reptile habitat affected by the amendment (i.e. up to 100m of hedge and associated grass road-verge) is a small area of reptile habitat relative to the wider losses of more suitable habitat described in the main ES. The amendment results in a different significant effect on the adder population but does not change the level of significance of the effect reported in the main ES.
- 5.3.51 It is unlikely that the amendment will result in any other new or different effects on species receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from the amendment are listed in Volume 5: Appendix EC-003-003.

### *Cumulative effects*

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

### *Mitigation and residual effects*

#### **Other mitigation measures**

- 5.3.53 Any hedgerows that will be removed for the construction of passing bays along Windmill Lane will be replaced with species-rich hedgerow planting along the perimeter of the passing bay, using species that are native and prevalent in the local area. These replacement sections of hedgerow will connect with adjacent retained hedgerow along the lane. They will provide replacement habitat for great crested newt and foraging and commuting bats.
- 5.3.54 Compensatory habitat to address the different effects identified on adder and roosting bats in the area will be provided within the ecological compensation area

near Windmill Hill Spinney as reported in the main ES. These habitats will be provided in accordance with the principles of ecological mitigation identified within the SMR Addendum (Volume 5: Appendix CT-001-000/2).

- 5.3.55 These measures will be sufficient to maintain the favourable conservation status of the populations affected.

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

- 5.3.56 No new or different likely residual significant effects on ecological receptors occur as a consequence of the amendment. The likely residual significant effects of the AP<sub>4</sub> revised scheme in this area are therefore unchanged from those reported in the main ES.

#### *Effects arising from operation*

- 5.3.57 There are no new or different significant operational effects for ecology as a result of the amendment.

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

- 5.3.58 The amendment to provide temporary passing places along Windmill Lane does not result in any new or different significant residual effect or change the significance of the environmental effects as set out in the main ES (Volume 2, CFA16 Ladbroke and Southam).

### **5.4 Revision of the temporary A<sub>425</sub> Leamington Road diversion at the Dallas Burston Polo Club (AP<sub>4</sub>-016-004)**

- 5.4.1 The Bill makes provision for a tunnel beneath part of the Dallas Burston Polo Club, with the tunnel entrance sited south of the A<sub>425</sub> Leamington Road. During construction of the tunnel, the A<sub>425</sub> will be temporarily diverted to the north of its current alignment and onto land used by the Dallas Burston Polo Club (refer to the main ES, Volume 2, map CT-05-086). The land affected that is currently used by the Dallas Burston Polo Club includes the main entrance, an area used for training purposes, approximately one quarter of an international grade polo pitch (western 'blue' pitch) and the corner of a second pitch (the eastern 'red' pitch).
- 5.4.2 Since submission of the Bill, a solution that minimises temporary land required during construction from the Dallas Burston Polo Club has been identified. The changed area is identified on SES<sub>3</sub> and AP<sub>4</sub> ES map CT-05-086, and involves realignment of the temporary road diversion.
- 5.4.3 This will reduce the land required temporarily from the eastern 'red' pitch by approximately 0.4ha and western 'blue' polo pitch by 0.5ha. This will enable the Dallas Burston Polo Club to continue using the red pitch during construction. The total land required temporarily from this part of the Dallas Burston Polo Club will be reduced by approximately 1.4ha.
- 5.4.4 An additional area of land associated with the Dallas Burston Polo Club of approximately 0.7ha of land is required temporarily to accommodate the realignment from an area on the western side of the proposed tunnel. Consultation with the Dallas

Burston Polo Club has determined that this area is less important to the operation of the club than the area in the vicinity of the red and blue pitches.

- 5.4.5 A temporary accommodation access to the diverted A425 Leamington Road is included for the Codemasters site that was not included in the Bill scheme. This will be located to the south of the additional land and adjacent to the existing alignment of the A425 Leamington Road. A temporary accommodation access will also be provided connecting the Dallas Burston Polo Club to the temporary A425 Leamington Road diversion.
- 5.4.6 The alignment of the temporary road in the Bill scheme crosses an important hedgerow along the north verge of the A425 Leamington Road. The proposed realignment also crosses this important hedgerow although further to the west. The hedgerow will be replanted upon removal of the temporary works.

### **Topics to be included in the assessment**

- 5.4.7 The temporary use of the area of additional land on the western side of the proposed tunnel and the reduction of land required to the east of the road alignment 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: 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, air quality, community, cultural heritage, ecology, land quality, and landscape and visual.

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

#### *Introduction*

- 5.4.8 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*

- 5.4.9 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.
- 5.4.10 The area of agricultural land affected by the amendment is relatively small and therefore will not alter the significance of effect, or result in a different effect, on BMV agricultural land or forestry land within the CFA16 area. The route-wide effects on BMV land and forestry land are reported in Volume 3.
- 5.4.11 As the land is required temporarily during construction only, on completion of the works the land required for the amendment will be restored to its former use.

#### *Existing baseline*

- 5.4.12 This amendment will directly affect one holding, namely Home Farm, Stoneythorpe (CFA16/17), which is an 88.3ha arable holding of medium sensitivity. Part of this agricultural holding is let to the Dallas Burston Polo Club.

### *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. These 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 amendment's likely operational impacts on agriculture, forestry and soils.

### *Effects arising during construction*

- 5.4.18 In the main ES, the scheme was reported to have a moderate adverse significant temporary effect on Home Farm, Stoneythorpe during construction. This resulted from a medium magnitude of land required.
- 5.4.19 This amendment will reduce the amount of land required temporarily from Home Farm, Stoneythorpe by 0.7ha. This will reduce the total amount of land required temporarily from 15.1ha (or 17% of the holding) to 14.4ha (16%). This will not change the significance of the effect reported in the main ES, which remains as moderate adverse (which is significant).
- 5.4.20 The amount of land required permanently (7.4ha or 8% of the holding) for this amendment does not change from the original scheme. The significance of this permanent effect remains as minor adverse (not significant), as reported in the main ES.
- 5.4.21 The proposed amendment (AP4-016-004) will not give rise to any new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.4.22 The proposed amendment (AP4-016-004) will not give rise to any new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.4.23 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.4.24 The amendment will not result in any change in the likely residual significant effects reported in the main ES.

### *Cumulative effects*

- 5.4.25 This amendment does have an effect in combination with amendment AP4-016-005, as considered in the assessment of amendment AP4-016-005 in Section 5.5.
- 5.4.26 Other than the above, there are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the AP4 changes interacting with one another, the AP1 amendments, AP2 amendments or any relevant committed development.

## **Air quality**

### *Introduction*

- 5.4.27 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 environmental effects as a result of the proposed amendment, compared to those of the SES3 scheme.

### *Scope, assumptions and limitations*

- 5.4.28 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.
- 5.4.29 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*

- 5.4.30 The baseline conditions with regard to air quality have not changed from those reported in the main ES.
- 5.4.31 Receptors relevant to the proposed amendment that could potentially be affected by changes in air quality include residential properties; at Stoneythorpe Lodge, Home Farm and Lower Farm on the A425 Leamington Road, Southam.
- 5.4.32 There are no statutory or non-statutory designated sites that could potentially be affected by changes in air quality as a result of the proposed amendment.

### *Future baseline*

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

- 5.4.33 The future baseline air quality for construction in 2017 remains unchanged from that reported in the main ES (Volume 5: Appendix AQ-001-016).

- 5.4.34 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 reported in the main ES and the SES and AP2 ES.
- 5.4.35 There are two additional developments that introduce new receptors relevant to the air quality assessment.
- 5.4.36 At Dallas Burston Polo Club north of the A425 Leamington Road (Application 09/00873/OUT), as part of wider proposals for the club, the dwelling at Home Farm will be relocated approximately 700m west of its current location.
- 5.4.37 Also, as part of a proposed development at the Codemasters site (Application 12/00749/OUT) ancillary staff accommodation (approximately 100 beds) will be constructed, south of the A425 Leamington Road, Southam, immediately to the west of Lower Farm.

### **Operation (2026)**

- 5.4.38 The future baseline for air quality for operation in 2026 remains unchanged from that reported in the main ES (Volume 5: Appendix AQ-001-016).
- 5.4.39 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 reported in the main ES and the SES and AP2 ES.
- 5.4.40 None of the identified developments affect the assessment of the amendment's likely operational impacts on air quality.

### *Effects arising during construction*

- 5.4.41 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, including committed developments where relevant.
- 5.4.42 The construction dust assessment has taken into consideration changes to the magnitude of dust emissions for the dust generating activities associated with the amendment and the sensitivity of the area surrounding the amendment in terms of the receptors present and the distance of the receptors from the construction activities.
- 5.4.43 The main ES (Volume 5: Appendix AQ-001-016) did not report any significant effects from construction dust for any receptors within CFA16 and the level of significance remains unchanged with the proposed amendment.
- 5.4.44 The amendment does not change the magnitude of the earthworks, construction activities or possible transfer of dust and mud on to public highways from vehicles travelling to and from construction areas in terms of dust generating potential compared to that reported in the main ES (Volume 5: Appendix AQ-001-016).
- 5.4.45 The amendment comprises a change to the footprint of the earthworks and construction activities relative to the relevant receptors. There will be a low risk of construction dust impacts. 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 to both existing receptors and

those associated with new committed developments. The level of significance remains unchanged for the amendment compared to the effects reported in the main ES.

- 5.4.46 An assessment of construction traffic changes in the area of the amendment was carried out due to the change to the temporary diversion of the A425 Leamington Road for the proposed amendment. This resulted in negligible impacts at all assessed receptors (including new committed developments) and no significant air quality effects were identified.
- 5.4.47 The main ES (Volume 5: Appendix AQ-001-016) reported a negligible impact from construction traffic at residential properties adjacent to the A425 Leamington Road. The amendment will not change the magnitude of impact at these properties, and will not result in any new or different significant effects on air quality from construction traffic.
- 5.4.48 Overall, the amendment will not give rise to a new or different significant effect during construction and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.4.49 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 for air quality.

#### *Mitigation and residual effects*

- 5.4.50 Emissions to the atmosphere will be controlled and managed during construction through the route-wide implementation of the CoCP.
- 5.4.51 No other mitigation measures during construction or operation are required in relation to air quality.
- 5.4.52 The amendment will not give rise to new or different likely residual significant effects and will not change the level of significance of the effects on air quality as reported in the main ES.

#### *Cumulative effects*

- 5.4.53 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.

### **Community**

#### *Introduction*

- 5.4.54 This section of the report describes the environmental baseline that is relevant to the community 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*

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

### *Existing baseline*

- 5.4.56 Dallas Burston Polo Club is a private polo club which is located on the north-western side of Southam along the A425 Leamington Road. The club has four international grade pitches set in spacious grounds where regular fixtures and tournaments are held, attracting a large number of spectators during the peak of the season. Events are generally held once per month between April and September, with some attracting 3,000 spectators. Otherwise, the site holds livery services, and contains a club house, restaurant and corporate facilities. The Club has 25 playing members and holds weekly training sessions, which attract approximately 200 users per week.

### *Future baseline*

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

- 5.4.57 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.
- 5.4.58 The committed development at Dallas Burston Polo Club (Application 09/00873/OUT) includes new spectator facilities and a new arena building.

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

- 5.4.59 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.
- 5.4.60 None of the identified developments affect the assessment of the amendment's likely operational impacts on community.

### *Effects arising during construction*

- 5.4.61 The main ES identified that the area affected by temporary loss of land includes the main access to the Dallas Burston Polo Club, with the corners of two polo pitches and an adjoining area used for training purposes. The temporary loss of these areas will impact on the functioning of the Club and the facilities it is able to offer. The main ES identified that there will be a moderate adverse effect on the functioning of the polo club.
- 5.4.62 The AP4 amendment represents a reduction in the amount of land lost from the polo club pitches, however there will be an increase in the amount of land lost from the training area. The impact on the functioning of the club as a community resource will remain the same as identified in the main ES.
- 5.4.63 The amendment (revision of the temporary A425 Leamington Road at Dallas Burston Polo Club (AP4-016-004)) will not give rise to a new or different effect and will not change the level of significance of the effects reported in the main ES.



### *Effects arising from operation*

- 5.4.64 The amendment (revision of the temporary A425 Leamington Road at Dallas Burston Polo Club (AP4-016-004)) will not give rise to a new or different effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.4.65 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.4.66 The amendment will result in no change in the likely residual significant effects reported in the main ES.

### *Cumulative effects*

- 5.4.67 There are no new or different likely significant cumulative effects for community as a result of the AP4 amendments interacting with one another or any other committed developments.

## **Cultural heritage**

### *Introduction*

- 5.4.68 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*

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

### *Existing baseline*

- 5.4.70 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 AP2 ES.
- 5.4.71 Details of new assets identified in this CFA since September 2013 are provided in Volume 5: SES and AP2 Appendix CH-004-016 and SES and AP2 Volume 5 map series CH-01; CH-02 and CH-03, where this was relevant to the assessment of a new or different significant effect.
- 5.4.72 Heritage assets considered relevant to this assessment through change to their setting are the complex of assets around Stoney Thorpe, generally of post-medieval date, comprising;
- Stoney Thorpe Lodge gates (asset reference LBS096), a Grade II listed building of moderate value;

- Stoney Thorpe Hall and stable block (asset reference LBS067), a Grade II listed building of moderate value;
- Stoney Thorpe designed landscape (asset reference LBS068), an undesignated asset of low value; and
- Stoney Thorpe Home Farm (asset reference LBS074), an undesignated asset of low value.

### *Future baseline*

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

- 5.4.73 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.
- 5.4.74 None of the identified developments affect the assessment of the amendment's likely construction impacts on cultural heritage.

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

- 5.4.75 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.
- 5.4.76 None of the identified developments affect the assessment of the amendment's likely operational impacts on cultural heritage.

### *Effects arising during construction*

- 5.4.77 The main ES reported:
- a minimal adverse impact to Stoney Thorpe Lodge gates (asset reference LBS096) resulting in minor adverse effect, which is not significant;
  - a minimal adverse impact to Stoney Thorpe Hall and stable block (asset reference LBS067) resulting in a minor adverse effect, which is not significant;
  - a low adverse impact to Stoney Thorpe designed landscape (asset reference LBS068) resulting in a minor adverse effect, which is not significant; and
  - a medium adverse impact to Stoney Thorpe Home Farm (asset reference LBS074) resulting in a minor adverse effect, which is not significant.
- 5.4.78 This amendment will require an additional 0.7ha of land in comparison with the SES3 scheme, but would also remove 1.4ha that was previously required. The amendment will move the temporary road diversion an additional 22m away from the Stoney Thorpe Lodge gates (asset reference LBS096), Stoney Thorpe designed landscape (asset reference LBS068), Stoney Thorpe Home Farm (asset reference LBS074) and Stoney Thorpe Hall and Stable block (asset reference LBS067). Though moving the diversion further away from the heritage assets, the proposed amendment will not change the distance of the assets from the route as a whole and will therefore not result in any changes to the impact of the scheme.

- 5.4.79 The proposed amendment (AP<sub>4</sub>-016-004) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.4.80 The amendment does not alter the operational scheme. The proposed amendment (AP<sub>4</sub>-016-004) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### *Mitigation and residual effects*

- 5.4.81 Impacts on cultural heritage assets will be addressed in accordance with the provisions set out in the draft CoCP (see Volume 5: Appendix CT-003-000 of the main ES).
- 5.4.82 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.4.83 The amendment will result in no change in the likely residual significant effects reported in the main ES.

#### *Cumulative effects*

- 5.4.84 There are no new or different likely significant cumulative effects for cultural heritage 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.

### **Ecology**

#### *Introduction*

- 5.4.85 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 SES<sub>3</sub> scheme.

#### *Scope, assumptions and limitations*

- 5.4.86 Updates to the scope of the assessment for ecology are set out in Volume 1 of 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 CT001-000/01 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: Appendix CT-001-000/5).
- 5.4.87 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 AP<sub>4</sub> revised scheme.

#### *Existing baseline*

- 5.4.88 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES and SES and AP<sub>2</sub> ES, additional survey work

undertaken between April and July 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.

- 5.4.89 A summary of the baseline information relevant to the assessment of the amendment is provided below. This takes account of any relevant new or updated baseline information provided in SES<sub>3</sub> and AP<sub>4</sub> ES Volume 5: Appendix EC-001-003. For those receptors described in the main ES, further details are provided in Volume 2, CFA16, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.4.90 There is one statutory designated site, Long Itchington and Ufton Woods SSSI, located approximately 400m from land required for the amendment. The SSSI is designated for its traditionally managed oak-hazel ancient semi-natural woodland. This site is of national value.
- 5.4.91 Long Itchington and Ufton Woods SSSI is also on Natural England's ancient woodland inventory. Ancient woodlands represent an irreplaceable resource.

### **Habitats**

- 5.4.92 Habitats within the land required for the amendment include a length of species-rich hedgerow located on the north side of the A425 Leamington Road, west of the Dallas Burston Polo Club entrance. Part of this hedgerow is species-rich and was reported in the main ES as having district/borough value.
- 5.4.93 There is also hedgerow linkage from all woodland areas to Long Itchington and Ufton Woods SSSI, consisting of species-poor hedgerows. These hedgerows provide a habitat corridor that is a part of a wider hedgerow network in the area reported in the main ES as being of district/borough value.
- 5.4.94 The remaining land required for the amendment comprises improved grassland (approximately 0.5ha) and a small area of secondary woodland (approximately 0.05 ha) both of which were reported in the main ES as having local/parish value.

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

- 5.4.95 The main ES identifies an assemblage of bats using the habitats around the Dallas Burston Polo Club and north towards the Grand Union Canal, including Woodmeadow Farm, Long Itchington and Ufton Woods SSSI and Thorpe Rough. The assemblage of bats supports 11 species and was reported in the main ES as being of county/metropolitan value. The land required for the amendment also includes approximately 0.5ha of improved grassland that the main ES recorded within an assumed key foraging habitat for the assemblage of bats.
- 5.4.96 The area around the Dallas Burston Polo Club supports a population of commuting and foraging barbastelle bat, although no roosts have been identified. This population was referred to in the main ES as 'Population of barbastelle bat using the habitats around the Dallas Burston Polo Club and north toward the Grand Union Canal, including Woodmeadow Farm, Long Itchington and Ufton Woods SSSI and Thorpe Rough'. The population was reported as having up to regional value due to the

species' rarity and because the species is at the northern edge of its range in this location. During a dusk bat survey in July 2015, a single foraging barbastelle bat was recorded flying and feeding along a species-poor hedgerow within the middle of the two training grounds in Dallas Burston Polo Club. Barbastelle bats were not recorded foraging along this hedgerow during previous surveys carried out within the Dallas Burston Polo Club, although the bat is assumed to be part of the population described within the main ES. The hedgerow is within 15m of the land required for construction of the amendment.

- 5.4.97 Amphibian surveys undertaken for the main ES identified the presence of a small population of great crested newt using a pond located approximately 180m to the north of the land required for the amendment. This population forms part of AMP 6, which is assumed to use suitable terrestrial habitat within 250m of its constituent water bodies. However, the habitat within the amendment and within 250m of the AMP6 boundary is largely suboptimal for great crested newt, being improved grassland. AMP6 has been valued in the main ES at a district/borough level.
- 5.4.98 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 along field margins, woodland, scattered scrub, hedgerows and less intensively cut/grazed grassland. The main ES reports that assumed populations of common reptile species within the scheme are of local/parish value.
- 5.4.99 Wintering and breeding bird surveys were undertaken for the main ES within the land required for the amendment and its vicinity. Species recorded during both surveys are considered to be common and widespread in the habitat types surveyed, with no large/important populations recorded. These bird populations are reported by the main ES as being of local/parish value.

### *Future baseline*

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

- 5.4.100 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.
- 5.4.101 There are a number of committed developments associated with the expansion of the Dallas Burston Polo Club that are close to the land required for the amendment. These developments have potential to change the local ecological baseline in relation to great crested newt and bats. However, for this assessment it is assumed that any impacts to these species arising from these committed developments will be subject to European Protected Species licensing requirements which will ensure that the conservation status of these populations or assemblages is not adversely affected. Therefore, none of the identified developments are likely to alter the ecological baseline in a way that would be relevant to the assessment of the amendment.

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

- 5.4.102 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.

- 5.4.103 None of the identified developments affect the assessment of the amendment's likely operational impacts on ecology.

### *Effects arising during construction*

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

- 5.4.104 Mitigation measures have been included as part of the design as described in the main ES which avoid or reduce impacts to features of ecological value. Those that are relevant to the amendment are:

- placing the route in bored tunnel beneath Long Itchington and Ufton Woods SSSI, significantly reducing habitat loss and severance within habitats used by roosting, foraging and commuting bats near Dallas Burston Polo Club; and
- reinstatement of the A425 Leamington Road and associated roadside scrub habitats above Long Itchington Wood green tunnel will maintain a suitable habitat link for commuting bats and avoid habitat severance.

- 5.4.105 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**

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

#### **Habitats**

- 5.4.107 Compared to the A425 Leamington Road diversion within the original scheme, the amendment will result in the loss of a similar length of the species-rich hedgerow located on the north side of the A425 Leamington Road, west of the Dallas Burston Polo Club entrance. The section lost will be slightly to the west of that lost as a result of the SES3 scheme. Therefore the impact will have a different significant effect on the species-rich hedgerow but the level of significance will remain unchanged from that reported in the main ES.

- 5.4.108 It is unlikely that the AP4 revised scheme will result in any new or different effects on habitat receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from the AP4 revised scheme are listed in Volume 5: Appendix EC-003-003 Protected and/or notable species.

- 5.4.109 The main ES predicted that there would be an adverse effect on the conservation status of the assemblage of 11 bat species found to be using habitats around the Dallas Burston Polo Club and north toward the Grand Union Canal, including Woodmeadow Farm, Long Itchington and Ufton Woods SSSI and Thorpe Rough that will be significant at a county/metropolitan level. It is assumed that bats from this assemblage will utilise the small areas of habitat affected by the amendment. These affected habitats are likely to be used as a small part of the bats' wider foraging and commuting activity in the area. Overall, the additional land required for the amendment will result in a very small additional loss of potential commuting and foraging habitat relative to the SES3 scheme. The amendment will therefore result in

a different effect on the assemblage of 11 bat species found to be using habitats around the Dallas Burston Polo Club and north toward the Grand Union Canal, including Woodmeadow Farm, Long Itchington and Ufton Woods SSSI and Thorpe Rough although the level of significance of effect will not change from that reported in the main ES.

- 5.4.110 The main ES predicts no adverse effect on the conservation status of barbastelle bats arising from the original scheme. Overall, the additional land required for the amendment will result in a very small additional loss of potential barbastelle bat foraging habitat relative to the original scheme. No confirmed barbastelle bat roosts will be lost. As a result of 2015 baseline data, a hedgerow used by a single foraging barbastelle bat is within 15m of the amendment. The amendment has the potential to temporarily disturb foraging and commuting barbastelle bats through lighting, and noise from night-time construction and traffic using the temporary diversion. However, as there was only a single individual barbastelle recorded using this hedgerow and previous surveys have not recorded the presence of barbastelle in this location, it is likely that the area is not frequently used and is not part of a core foraging area. Any disturbance would be reduced to a level which is insignificant by following best practice construction measures within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES). Therefore the amendment will have no new or different significant effects upon the barbastelle bat population.
- 5.4.111 The main ES reported no significant effects on great crested newt in AMP6. The land required for the amendment encompasses a small amount of improved grassland habitat that is within 250m of a pond used by a small great crested newt population within AMP6. This grassland may provide some shelter and foraging habitat for the species. However, the additional temporary land required represents a very small proportion (up to 1%) of the available habitat within 250m of the pond, and is of suboptimal habitat quality for great crested newts. Better quality habitat exists to the north, east and west of the pond (e.g. woodland, parkland, semi-improved grassland, tall herbs). The amendment will not result in the fragmentation or isolation of AMP 6 and does not result in new or different significant effects on the conservation status of great crested newt within AMP6.
- 5.4.112 It is unlikely that the amendment will result in any new or different effects on species receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from the amendment are listed in Volume 5: Appendix EC-003-003.

### *Cumulative effects*

- 5.4.113 There is minor loss of habitat used by foraging and commuting barbastelle bats from this amendment and a reduction in mitigation for bats as a result of the revision of grassland habitat creation area adjacent to Dallas Burston Polo Club (AP4-016-005). However, these amendments will not give rise to any new or different likely significant cumulative effects for the barbastelle population.
- 5.4.114 There are no new or different likely significant cumulative effects for ecology as a result of the AP4 amendments interacting with one another or any relevant committed developments.

### *Mitigation and residual effects*

#### **Other mitigation measures**

- 5.4.115 Following removal of the temporary road diversion, the species-rich hedgerow along the north side of A425 Leamington Road will be replanted with native species that are prevalent in the local area in order to create a replacement species-rich hedgerow.
- 5.4.116 Mitigation for the loss of foraging and roosting habitat for bats in the area is already included within land for the original scheme, within the grounds of Dallas Burston Polo Club, close to the amendment. This mitigation land is being amended as part of AP4-016-005. Both the mitigation provided within the main ES, and the revised mitigation proposed under the AP4-016-005, will be suitable to mitigate for any additional habitat loss affecting bats as a result of the amendment in accordance with the principles of ecological mitigation identified within the SMR Addendum (main ES Volume 5: Appendix CT-001-000/2).
- 5.4.117 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.

### *Summary of likely residual effects*

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

### *Effects arising from operation*

- 5.4.119 There are no new or different significant operational effects for ecology as a result of the amendment.

## **Land quality**

### *Introduction*

- 5.4.120 This section of the report describes the environmental baseline in relation to land quality 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*

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

### *Existing baseline*

- 5.4.122 The existing and future baseline land quality information for the area is as described in the main ES (Volume 2, CFA16, Section 8).
- 5.4.123 The presence of made ground is indicated to the east of the land required for the amendment, on the eastern side of the River Itchen.



- 5.4.124 There are no superficial deposits underlying the area of the proposed amendment. Bedrock underlying the area is the Langport Member which comprises limestone and the Penarth Group comprising argillaceous rock and limestone. The Langport Member is classified by the Environment Agency as a Secondary (Undifferentiated) aquifer and the Penarth Group as a Secondary B aquifer.
- 5.4.125 A mineral safeguarding area (MSA) for deep coal spans the area of the proposed amendment, and the entirety of CFA16. A building stone MSA spanning the route from Southam to the northern end of CFA16 underlies the area of the proposed amendment.

### *Future baseline*

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

- 5.4.126 The potential for the baseline to change in the lead up to the construction of the amendment is limited to the extent to which any new development necessitates remediation or mitigation measures to control potential contamination releases. Any new development in the study area on potentially contaminated land will need to be suitable for its intended use as set out in the National Planning Policy Framework (NPPF). To meet this requirement new development sites may require remediation to be undertaken. This will mean that some areas described as having potentially contaminative current and/or historical land use, may no longer be of significance at the time of construction.
- 5.4.127 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.
- 5.4.128 None of the identified developments affect the assessment of the amendment's likely construction impacts on land quality.

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

- 5.4.129 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.
- 5.4.130 None of the identified developments affect the assessment of the amendment's likely operational impacts on land quality.

### *Effects arising during construction*

- 5.4.131 The following potentially contaminative land uses were identified in the main ES within 250m of the proposed amendment:
- Ufton Farm landfill site, situated approximately 250m south of the amendment (refer to main ES Volume 5: Map Book 16 – Land quality, map LQ-01-043, D9); and
  - Lower Farm Business Park, located approximately 230m south of the amendment (refer to main ES Volume 5: Map Book 16 – Land quality, map LQ-01-043, D10); and Stoney Thorpe Farm, located approximately 135m east of the amendment (refer to main ES Volume 5: Map Book 16 – Land quality, map

LQ-01-043, C6).

- 5.4.132 These land uses were assessed in the main ES as not posing a contaminative risk to the original scheme. The proposed amendment results in only a slight change to the land required for the construction of the AP<sub>4</sub> revised scheme and as such this assessment is considered to remain unchanged from the main ES.
- 5.4.133 A negligible temporary effect was anticipated on the deep coal MSA and building stone MSA in the main ES and this effect is not anticipated to change with the proposed amendment.
- 5.4.134 The proposed amendment (AP<sub>4</sub>-016-004) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.4.135 The proposed amendment (AP<sub>4</sub>-016-004) relates only to temporary works during the construction phase. As such it will not give rise to new or different significant effects and will not change the level of significance of effects arising from operation reported in the main ES.

#### *Mitigation and residual effects*

- 5.4.136 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.4.137 There are no new or different likely residual significant land quality effects as a result of the proposed amendment, in comparison with the main ES.

#### *Cumulative effects*

- 5.4.138 There are no new or different likely significant cumulative effects for land 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.

### **Landscape and visual assessment**

#### *Introduction*

- 5.4.139 This section of the report describes the environmental baseline in relation to landscape and visual that is relevant to the assessment. It then defines any new or different likely significant environmental effects as a result of the amendment, compared to those of the SES<sub>3</sub> scheme and Volume 1 of the SES and AP<sub>2</sub> ES.

#### *Scope, assumptions and limitations*

- 5.4.140 The assessment scope, key assumptions and limitations of the landscape and visual assessment are set out in Volume 1, the SMR (Volume 5: Appendix CT-0001-000/1) and the SMR Addendum (Volume 5: Appendix CT-0001-000/2) of the main ES. Updates to the methodology for the landscape and visual assessment are also described in Volume 1 of the AP<sub>1</sub> ES and Volume 1 of the SES and AP<sub>2</sub> ES.

### *Existing baseline*

- 5.4.141 The area of land required for the amendment is located within Southam Village Farmlands LCA as described in the main ES (Volume 2, CFA16, Section 9.3).
- 5.4.142 Views north from Lower Farm, south-east from Stoney Thorpe Home Farm and south from Dallas Burston Polo Club (viewpoints 243.2.001, 244.2.001 and 244.7.002) are located in close proximity to the amendment and are described in the main ES (Volume 5: Appendix LV-001-016, Section 5).

### *Future baseline*

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

- 5.4.143 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.
- 5.4.144 None of the identified developments affect the assessment of the amendment's likely construction impacts on landscape and visual.

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

- 5.4.145 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.
- 5.4.146 None of the identified developments affect the assessment of the amendment's likely operational impacts on landscape and visual.

### *Effects arising during construction*

#### **Landscape assessment**

- 5.4.147 Southam Village Farmlands LCA was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The area has a medium level of tranquillity and the landscape is valued at a local level for its network of PRow. Due to hedgerows replaced by wire fences and many appearing damaged or missing, the condition is fair and therefore it is considered to be of medium sensitivity to change. The main ES reported a medium magnitude of change as a result of construction plant crossing the landscape via haul roads, temporary loss of agricultural land and disruption of field usage. The medium magnitude of change, assessed alongside the medium sensitivity of the character area resulted in a moderate adverse significant effect.
- 5.4.148 The amendment will alter the arrangement of land required and construction works at the Dallas Burston Polo Club and will, in landscape character terms, be a minor change compared to the SES3 scheme.
- 5.4.149 The proposed amendment (AP4-016-004) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.4.150 Viewpoint 243.2.001 was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The main ES reported major adverse significant effects during construction due to visibility of the temporary diversion of the A425, vegetation removal, construction of the Long Itchington Wood tunnel and its porous portal.
- 5.4.151 Viewpoint 244.2.001 was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The main ES reported major adverse significant effects during construction due to visibility of the temporary diversion of the A425, vegetation removal, construction of the Long Itchington Wood tunnel and its porous portal.
- 5.4.152 Viewpoint 244.7.002 was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The main ES reported a moderate adverse significant effect on this viewpoint due to due to visibility of the temporary diversion of the A425, vegetation removal, construction of the Long Itchington Wood tunnel and its porous portal, assessed against the low sensitivity of the receptor.
- 5.4.153 The degree of change to construction activities as a result of the proposed amendment compared to the original scheme is sufficiently small to conclude that there are no new or different significant construction effects on views as a result of the proposed amendment, in comparison with the main ES.
- 5.4.154 The proposed amendment (AP4-016-004) will not give rise to a new or different significant effect on these visual receptors (viewpoints 243.2.001, 244.2.001 and 244.7.002) and will not change the level of significance of the effects reported in the main ES.

### *Effects arising during operation*

#### **Landscape assessment**

- 5.4.155 The proposed amendment (AP4-016-004) relates only to a change in construction, therefore it will not give rise to a new or different significant operational effect on the Southam Village Farmlands LCA and will not change the level of significance of the effects reported in the main ES.

#### **Visual assessment**

- 5.4.156 The main ES reported no significantly affected viewpoints during operation. The proposed amendment (AP4-016-004) relates only to a change in construction, therefore it will not give rise to a new or different significant operational effects and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.4.157 There are no new or different likely residual significant construction or operational landscape and visual effects as a result of the proposed amendment, in comparison with the main ES.
- 5.4.158 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.

### *Cumulative effects*

- 5.4.159 There are no new or different likely significant cumulative landscape and visual effects as a result of the AP4 amendments interacting with one another, the AP1 amendments, the AP2 amendments or any relevant committed development.

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

- 5.4.160 The amendment to change the land required for the temporary diversion of the A425 Leamington Road at Dallas Burston Polo Club will not result in any new or different significant residual effects and does not change the significance of the environmental effects as set out in the main ES (Volume 2, CFA16 Ladbroke and Southam).

## **5.5 Revision of grassland habitat creation area adjacent to Dallas Burston Polo Club (AP4-016-005)**

- 5.5.1 The Bill provides approximately 6.2ha of land for an area of grassland habitat creation between the Dallas Burston Polo Club and the Bascote Road (refer to the main ES, Volume 2, maps CT05-086 and CT06-086). This is primarily for the creation of habitat for bats and is referred to as an ecological compensation area hereafter.
- 5.5.2 Since submission of the Bill, a design has been developed so as not to preclude a potential future campsite development by the Dallas Burston Polo Club. The amendment is identified on map CT-05-086 in the SES3 and AP4 ES Volume 2 Map Book.
- 5.5.3 An area of approximately 3ha will be removed from the ecological compensation area identified for the Bill scheme (refer to SES3 and AP4 ES map CT-06-086). An approximate 30m wide strip along the field margin along the northern edge of the field will be retained to maintain ecological connectivity. The remainder of this field will no longer be used, allowing for potential future development of the campsite.
- 5.5.4 An additional area of approximately 1.46ha immediately to the north of the retained strip, will partially replace the land no longer to be used. Overall, there is a reduction in the total area of land required for ecological compensation of approximately 1.53ha. This area will still provide foraging habitat and commuting links between Long Itchington and Ufton Woods SSSI and Thorpe Rough and will still provide an area for the construction of an underground bat cave. Therefore, despite the reduction in area, sufficient mitigation will still be provided including connectivity for bats.
- 5.5.5 The purpose of the ecological compensation area is to connect woodland parcels between Thorpe Rough and Long Itchington and Ufton Woods to provide improved habitat for bats comprising improvements to hedgerow and woodland links, provision of a new water body, artificial roosts and an underground bat cave. This is unchanged from the Bill scheme.

### **Topics to be included in the assessment**

- 5.5.6 The permanent use of the new area of land identified for ecological compensation and the overall reduction in such land is not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: air quality, community, landscape and visual, socio-

economics, sound, noise and vibration, traffic and transport, and water resources and flood risk. However, there are changes where reassessment is considered to be required in respect of: agriculture, forestry and soils, cultural heritage, ecology, and land quality.

## **Agriculture, forestry and soils**

### *Introduction*

- 5.5.7 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*

- 5.5.8 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 5.5.9 The area of agricultural land affected by the amendment is relatively small and therefore will not alter the significance of effect, or result in a different effect, on BMV agricultural land or forestry land within the CFA16 area. The route-wide effects on BMV land and forestry land are reported in Volume 3.

### *Existing baseline*

- 5.5.10 This amendment will directly affect one holding, namely Home Farm, Stoneythorpe (CFA16/17), which is an 88.3ha arable holding of medium sensitivity. Part of this agricultural holding is let to the Dallas Burston Polo Club.

### *Future baseline*

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

- 5.5.11 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.
- 5.5.12 None of the identified developments affect the assessment of the amendment's likely construction impacts on agriculture, forestry and soils.
- 5.5.13 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)**

- 5.5.14 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.

- 5.5.15 None of the identified developments affect the assessment of the amendment's likely operational impacts on agriculture, forestry and soils.

#### *Effects arising during construction*

- 5.5.16 In the main ES the scheme was reported to have a moderate adverse significant temporary effect on Home Farm, Stoneythorpe during construction, resulting from a medium magnitude of land required. The permanent effect is reported as a minor adverse effect in the main ES, which is not significant; this results from a low magnitude of land required.
- 5.5.17 This amendment does not require any additional land temporarily from Home Farm, Stoneythorpe. However, it results in an overall decrease in the amount of land required permanently by 1.4ha from 7.4ha (or 8% of the holding) to 6.0ha (7%). The level of significance of the permanent effect on the holding remains as a minor adverse effect, which is not significant, as reported in the main ES.
- 5.5.18 The proposed amendment (AP4-016-005) will not give rise to a new or different significant effect and will not change the level of significance of effects from those described in the main ES.

#### *Effects arising from operation*

- 5.5.19 The proposed amendment (AP4-016-005) will not give rise to a new or different significant effect and will not change the level of significance of effects from those described in the main ES.

#### *Mitigation and residual effects*

- 5.5.20 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.5.21 The amendment will not result in any change in the likely residual significant effects reported in the main ES.

#### *Cumulative effects*

- 5.5.22 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of amendment in combination with relevant committed developments.
- 5.5.23 This amendment does have an effect in combination with amendment AP4-016-004, as considered below.
- 5.5.24 The amendment will result in an increase in the amount of land required temporarily from Home Farm, Stoneythorpe, by 0.7ha or 0.8% of the holding. There will also be a combined effect of decreasing the amount of land required permanently by 1.4ha. Overall, the level of significance of effects on Home Farm, Stoneythorpe, is unchanged from the main ES, i.e. moderate adverse significant temporary effect and minor adverse permanent effect which is not significant.

## Cultural heritage

### *Introduction*

- 5.5.25 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*

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

### *Existing baseline*

- 5.5.27 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 for the AP<sub>2</sub> revised scheme with the results of additional geophysical surveys for archaeology.
- 5.5.28 The main ES baseline provided in Volume 5 Gazetteer of Heritage Assets (Appendix CH-002-016) lists assets which could be affected by scheme changes introduced by the adjustments to the ecological mitigation. Details of new assets identified in this CFA since September 2013 are provided in Volume 5: SES and AP<sub>2</sub> Appendix CH-004-016 and Volume 5 map series CH-01; CH-02 and CH-03, where this was relevant to the assessment of a new or different significant effect.
- 5.5.29 Long Itchington assarts and woodland enclosures (asset reference LBS101), a non-designated asset of low value is potentially affected through physical change and change to its setting.

### *Future baseline*

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

- 5.5.30 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.
- 5.5.31 None of the identified developments affect the assessment of the amendment's likely construction impacts on cultural heritage.

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

- 5.5.32 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 Volume 5: Appendix CT-004-000 and the SES and AP<sub>2</sub> ES.
- 5.5.33 None of the identified developments affect the assessment of the amendment's likely operational impacts on cultural heritage.



### *Effects arising during construction*

- 5.5.34 The SES3 scheme did not affect the Long Itchington assarts and woodland enclosures (asset reference LBS101).
- 5.5.35 This amendment will require additional land in comparison with the SES3 scheme. Planting within Long Itchington assarts and woodland enclosures (asset reference LBS101) may remove minor elements in the historic landscape. These will result in a new minimal adverse impact and negligible adverse effect, which is not significant.

### *Effects arising from operation*

- 5.5.36 The proposed amendment (AP4-016-005) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.5.37 Impacts on cultural heritage assets will be addressed in accordance with the provisions set out in the draft CoCP (see Volume 5: Appendix CT-003-000 of the main ES). The amendment will not give rise to a new or different likely residual significant effect and will not change the level of significance of the effects reported in the main ES.

### *Cumulative effects*

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

## **Ecology**

### *Introduction*

- 5.5.39 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*

- 5.5.40 Updates to the scope of the assessment for ecology are set out in Volume 1 of 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 CT001-000/01 and CT-001-000/02 of the main ES) and in Addendum 4 to the SMR (SES 3 and AP4 ES Volume 5: Appendix CT-001-000/5).
- 5.5.41 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 amendment.
- 5.5.42 It is assumed that any future development within Dallas Burston Polo Club will take account of the presence of bats.

### *Existing baseline*

- 5.5.43 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES and SES and AP2 ES, additional survey work undertaken between April and July 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.
- 5.5.44 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 SES3 and AP4 ES Volume 5: Appendix EC-001-003. For those receptors described in the main ES, further details are provided in Volume 2, CFA16, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.5.45 There is one statutory designated site, Long Itchington and Ufton Woods SSSI, located within 500m of the land required for the amendment. The SSSI is approximately 150m from the amendment and is designated for its traditionally managed oak-hazel ancient semi-natural woodland. This site is of national value.
- 5.5.46 Long Itchington and Ufton Woods SSSI is also on the ancient woodland inventory. The only other ancient woodland relevant to the assessment is Thorpe Rough ancient semi-natural woodland, which is situated south-east of the SSSI and immediately adjacent to the land required for the amendment. Ancient woodlands represent an irreplaceable resource.
- 5.5.47 The land subject to this amendment forms a habitat corridor that connects Long Itchington and Ufton Woods SSSI with Thorpe Rough.

### **Habitats**

- 5.5.48 The land required for the amendment comprises mostly improved and some poor semi-improved grassland. These grassland habitats were evaluated in the main ES as being of local/parish value.

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

- 5.5.49 The main ES identifies an assemblage of bats using the habitats around the Dallas Burston Polo Club and north towards the Grand Union Canal, including Woodmeadow Farm, Long Itchington and Ufton Woods SSSI and Thorpe Rough. This assemblage supports 11 bat species and is of county/metropolitan value.
- 5.5.50 The area also supports a population of commuting and foraging barbastelle bat. No barbastelle roosts have been identified. This population was referred to in the main ES as a 'Population of barbastelle bats using the habitats around the Dallas Burston Polo Club and north toward the Grand Union Canal, including Woodmeadow Farm, Long Itchington and Ufton Woods SSSI and Thorpe Rough'. The population was reported as having up to regional value due to the species's rarity and because the species is at the northern edge of its range in this location. During a dusk bat survey in July 2015, a single foraging barbastelle bat was recorded flying and feeding along a species-poor hedgerow within the middle of the two training grounds in Dallas Burston Polo Club

grounds. Barbastelle bats were not recorded foraging along this hedgerow during previous surveys carried out within the Dallas Burston Polo Club, although the bat is assumed to be part of the population described within the main ES. The northern end of this hedgerow is approximately 20m from the land required for construction of the amendment.

- 5.5.51 Amphibian surveys undertaken for the main ES identified the presence of a small population of great crested newt using a pond located within 15m of the mitigation land that is to be removed from the scheme as a result of the amendment. The pond is also situated approximately 105m from the land required for the amendment. Great crested newts using this pond form part of assumed AMP6, which is assumed to use suitable terrestrial habitat within 250m of its constituent water bodies, including the land affected by the amendment. AMP6 was given district/borough value in the main ES.
- 5.5.52 There are two water bodies that fall outside of AMP6 but within 250m of the land required for the amendment that have not been subject to amphibian survey. These ponds are located approximately 55m and 145m to the north-east of the land required for the amendment next to Thorpe Rough. A precautionary assumption has been made in the main ES that each unsurveyed pond supports a medium great crested newt population of up to county/metropolitan value.
- 5.5.53 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 along field margins, woodland edges, hedgerows and less intensively cut/grazed grassland. The main ES reports that assumed populations of common reptile species within the land required for construction of the scheme are of local/parish value.
- 5.5.54 Wintering and breeding bird surveys were undertaken for the main ES within the land required for the amendment and its vicinity. Species recorded during these surveys are considered to be common and widespread in the habitat types surveyed, with no large or important populations recorded. These bird populations are reported by the main ES as being of local/parish value.

### *Future baseline*

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

- 5.5.55 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.
- 5.5.56 There are a number of committed developments associated with the expansion of the Dallas Burston Polo Club that are close to the land required for the amendment. These developments have potential to change the local ecological baseline in relation to great crested newt and bats. However, for this assessment it is assumed that any impacts on these species arising from these committed developments will be subject to European Protected Species licensing requirements which will ensure that the conservation status of these populations or assemblages is not adversely affected. Therefore, none of the identified developments are likely to alter the ecological baseline in a way that would be relevant to the assessment of the amendment.

## **Operation (2026)**

- 5.5.57 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.
- 5.5.58 None of the identified developments affect the assessment of the amendment's likely operational impacts on ecology.

### *Effects arising during construction*

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

- 5.5.59 A number of mitigation measures are described in the main ES to avoid or reduce impacts on features of ecological value. Those that may be relevant to the amendment by virtue of their proximity, include placing the route in bored tunnel beneath Long Itchington and Ufton Woods SSSI, significantly reducing habitat loss and severance within habitats used by roosting, foraging and commuting bats near Dallas Burston Polo Club.
- 5.5.60 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**

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

#### **Habitats**

- 5.5.62 It is unlikely that the amendment will result in any new or different significant effects on habitat receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from the amendment are listed in Volume 5 of the SES3 and AP4 ES: Appendix EC-003-003.

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

- 5.5.63 The main ES predicted no significant effects on great crested newt within AMP6. The planting works within the mitigation area would be carried out to reduce impacts on newts following best practice construction measures within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES). The amendment does not introduce any new or different significant effects on AMP6.
- 5.5.64 As the amendment relates to changing areas of mitigation for bats it is not anticipated to have any new or different significant effects on the population of barbastelle bat.
- 5.5.65 It is unlikely that the amendment will result in any new or different effects on species receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES) arising from the amendment are listed in Volume 5 of the SES3 and AP4 ES: Appendix EC-003-003.

### *Cumulative effects*

- 5.5.66 There is a reduction in mitigation for bats as a result of the amendment together with minor loss of habitat used by foraging and commuting barbastelle bats from the revision of the temporary A425 Leamington Road diversion at the Dallas Burston Polo Club (AP4-016-004). However, these amendments will not have new or different likely significant cumulative effects for the barbastelle population.
- 5.5.67 There are no new or different likely significant cumulative effects for ecology as a result of the AP4 amendments interacting with one another, the AP1 amendments, AP2 amendments or any other relevant committed development.

### *Mitigation and residual effects*

#### **Other mitigation measures**

- 5.5.68 The primary purpose of the land in relation to the amendment is to provide mitigation for impacts on local assemblages and populations of bats by providing enhanced bat habitat connectivity between Long Itchington and Ufton Woods SSSI and Thorpe Rough and by providing an underground bat cave to increase the amount of roosting habitat available.
- 5.5.69 As a result of the amendment, the extent of the mitigation area for bats within the AP4 revised scheme will be reduced by approximately 1.53ha in order to accommodate a potential future campsite development by Dallas Burston Polo Club. This area will still provide foraging habitat and commuting links between Long Itchington and Ufton Woods SSSI and Thorpe Rough and will still provide an area for the construction of an underground bat cave. Therefore, despite the reduction, the revised mitigation area is sufficient to address the significant effects reported in the main ES. This area includes the provision of a 30m strip of woodland and scrub planting to maintain connectivity between Long Itchington and Ufton Woods SSSI and Thorpe Rough. The land required for the amendment to the north will be used to relocate the provision of an underground bat cave. The underground bat cave was proposed in the main ES to enhance the area's suitability for hibernating bats, and will be located away from the potential future campsite development.
- 5.5.70 The majority of the mitigation area, although intended primarily for bats, will remain within the terrestrial range of great crested newts within AMP6. The provision of mitigation for the original scheme as well as sensitive landscaping will retain and provide suitable amphibian habitat within the terrestrial range of great crested newts within AMP6.
- 5.5.71 The amendment does not result in a new or different significant effects to those reported in the main ES on the local assemblage and population of bats or on great crested newt.
- 5.5.72 No additional mitigation measures (i.e. in addition to those identified in the main ES) are required.

### *Summary of likely residual effects*

- 5.5.73 No new or different likely residual significant effects on ecological receptors occur as a consequence of the amendment. The likely residual significant effects of the AP4

revised scheme in this area are therefore unchanged from those reported in the main ES.

## Land quality

### *Introduction*

- 5.5.74 This section of the report describes the environmental baseline in relation to land quality 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*

- 5.5.75 The assessment scope, key assumptions and limitations for land quality are as set out 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*

- 5.5.76 The existing and future baseline land quality information for the area is as described in the main ES (Volume 2, CFA16, Section 8).
- 5.5.77 The presence of made ground is not indicated on British Geological Survey mapping, but there is likely to be localised made ground associated with the existing roads in the vicinity of the land required for the amendment.
- 5.5.78 There are no superficial deposits underlying the area of the proposed amendment.
- 5.5.79 Bedrock underlying the area of the amendment is the Langport Member which comprises limestone and the Penarth Group comprising argillaceous rock and limestone. The Langport Member is classified by the Environment Agency as a Secondary (Undifferentiated) aquifer and the Penarth Group as a Secondary B aquifer.
- 5.5.80 An MSA for deep coal spans the area of the proposed amendment, and the entirety of CFA16. A building stone MSA, which spans the route from Southam to the northern end of CFA16, underlies the area of the proposed amendment.

### *Future baseline*

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

- 5.5.81 The potential for the baseline to change in the lead up to the construction of the amendment is limited to the extent to which any new development necessitates remediation or mitigation measures to control potential contamination releases. Any new development in the study area on potentially contaminated land will need to be suitable for its intended use as set out in the NPPF. To meet this requirement, new development sites may require remediation to be undertaken. This will mean that some areas described as having potentially contaminative current and/or historical land use, may no longer be of significance at the time of construction.
- 5.5.82 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.

- 5.5.83 None of the identified developments affect the assessment of the amendment's likely construction impacts on land quality.

### **Operation (2026)**

- 5.5.84 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.
- 5.5.85 None of the identified developments affect the assessment of the amendment's likely operational impacts on land quality.

### *Effects arising during construction*

- 5.5.86 The following potentially contaminative land uses were identified in the main ES in or within 250m of the proposed amendment:
- infilled pond, approximately 95m west of the amendment (refer to main ES Volume 5: Map Book 16 – Land quality, map LQ-01-043, B6); and
  - Heath Farm, approximately 50m east of the amendment area (refer to main ES Volume 5: Map Book 16 – Land quality, map LQ-01-043, B5).
- 5.5.87 The amendment includes a reduction in the previously defined area of land required for the permanent scheme and an additional area of land required for the permanent scheme for ecological compensation. As a result of the amendment, the infilled pond is no longer located in the area of land required for the permanent scheme, and Heath Farm is located within 50m of the amendment area. These identified land uses were assessed in the main ES as not posing a contaminative risk to the original scheme and this assessment is considered to remain the same for the construction phase based on the amendment.
- 5.5.88 A negligible temporary effect was anticipated on the building stone MSA and deep coal MSA in the main ES. An overall reduction in the area of land required has been identified as a result of the proposed amendment and there remains a negligible temporary effect on both the MSAs during construction.
- 5.5.89 The amendment (AP4-016-005) 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*

- 5.5.90 The amendment (AP4-016-005) will not give rise to new or different significant effects and will not change the level of significance of the operational effects reported in the main ES.

### *Mitigation and residual effects*

- 5.5.91 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.5.92 There are no new or different residual land quality effects as a result of the amendment, in comparison with the main ES.

### *Cumulative effects*

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

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

- 5.5.94 The amendment to revise the grassland habitat creation at Dallas Burston Polo Club will not result in any new or different significant effects and does not change the significance of the environmental effects as set out in the main ES (Volume 2, CFA16 Ladbroke and Southam).

## **5.6 Relocation of the secondary construction access route to follow Ridgeway Lane near Ufton (AP4-016-006)**

- 5.6.1 The Bill provides for a secondary construction access route to the north portal area of Long Itchington Wood tunnel for exceptional loads. This secondary construction access route is for the movement of exceptional loads, in particular the tunnel boring machine. The main access route includes a bridge unable to support heavy loads. The secondary access track will be used occasionally for exceptional loads with pedestrians and other traffic being marshalled during its use. The access track will only be used by HS2 Ltd during construction and will not be used during operation. The new section of track across the fields was to be removed after construction. This route was to use part of Ridgeway Lane and then follow the existing access track to Wood Farm and Cottage, crossing fields to the north portal area of Long Itchington Wood tunnel (refer to the main ES, Volume 2, CFA16 Map Book, maps CT-05-087 and CT-05-087-L1).
- 5.6.2 Since the submission of the Bill, a revised route for the secondary construction access has been identified that reduces the impacts on the agricultural operations of the affected landholding. The changed areas are identified on SES3 and AP4 ES maps CT-05-087, CT-05-087-L1 and CT-05-088a.
- 5.6.3 The amendment comprises the secondary construction access route following more of Ridgeway Lane before crossing a field nearer to the north portal. The access route is approximately 200m longer than that in the Bill scheme.
- 5.6.4 There will be three areas of additional land required, totalling approximately 2.61ha as follows:
- along the section of Ridgeway Lane between Ufton Hill and the junction of Ridgeway Lane and the Wood Farm access. The purpose of this is to make it consistent with the proposed upgrading of the additional section of Ridgeway Lane;
  - along Ridgeway Lane from the junction with the Wood Farm access track to the junction with the proposed new section of track along field boundaries; and
  - along the field boundaries to link Ridgeway Lane with the north portal. The section of access track along the field boundaries will be approximately 6m in



width (plus verges of approximately 2m width on each side) and will be removed after construction.

- 5.6.5 Ridgeway Lane will require widening and resurfacing. The amendment will require the use of the lane during construction only. Upon completion of construction, the width and surfacing will be reduced and removed respectively to the extent agreed with the highway authority. It is expected that some of the access track construction will remain permanently.
- 5.6.6 Approximately 2.69ha of land identified in the Bill is no longer required along the access track to Wood Farm and Cottage.
- 5.6.7 Sections of Ridgeway Lane will be closed to traffic for approximately four weeks during widening and resurfacing works but access will be maintained to properties and for non-motorised users. As Ridgeway Lane is a highway, powers are required to stop traffic. A temporary diversion for non-motorised users will be provided and this will be within the land area required for construction.
- 5.6.8 There are three areas to be replanted following removal of the temporary works (see SES3 and AP4 ES maps CT-05-087, CT-05-087-L1 and CT-05-088a). The first is at the junction of Ufton Hill and Ridgeway Lane, the second is to the north of the junction with Ridgeway Lane and the access track to Wood Farm and the third area is near Ridgeway Lane approximately where the secondary access passes along the field boundaries.

### Topics to be included in the assessment

- 5.6.9 The temporary use of this additional land is not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: air quality, land quality, socio-economics, sound, noise and vibration, and water resources and flood risk. However, reassessment was considered to be required in respect of: agriculture, forestry and soils, community, cultural heritage, ecology, landscape and visual, and traffic and transport.

### Agriculture, forestry and soils

#### *Introduction*

- 5.6.10 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*

- 5.6.11 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.
- 5.6.12 The area of agricultural land affected by the amendment is relatively small (an increase in the amount of land required temporarily by 1.8ha) and therefore will not alter the significance of effect, or result in a different effect, on BMV agricultural land or forestry land within the CFA16 area. The route-wide effects on BMV land and forestry land are reported in Volume 3.

- 5.6.13 As the land is required temporarily during construction only, on completion of the works the land required for the amendment will be restored to its former use.

*Existing baseline*

- 5.6.14 This amendment will directly affect one holding, Wood Farm (CFA16/14), which is a 161.9ha arable holding of medium sensitivity.

*Future baseline*

**Construction (2017)**

- 5.6.15 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.
- 5.6.16 None of the identified developments affect the assessment of the amendment's likely construction impacts on agriculture, forestry and soils.
- 5.6.17 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. These are not expected to change fundamentally the baseline circumstances described.

**Operation (2026)**

- 5.6.18 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.
- 5.6.19 None of the identified developments affect the assessment of the amendment's likely operational impacts on agriculture, forestry and soils.

*Effects arising during construction*

- 5.6.20 In the main ES the scheme was reported to have a moderate adverse temporary significant effect on Wood Farm during construction. This resulted from a medium magnitude of impact due to the amount of land required and a medium disruptive effect on the holding, i.e. construction noise affecting farm diversification, including a commercial equine business, holiday let, workshops and a cattery.
- 5.6.21 This amendment will reduce the disruptive effects of construction, by routing the occasional traffic using the access route away from the main building complex at Wood Farm. The amendment will also reduce the amount of land required temporarily from Wood Farm by 1.8ha from 29.1ha (or 18% of the holding) to 27.3ha (17%). The level of significance of this temporary effect will not change from the main ES, i.e. it stays as moderate adverse significant.
- 5.6.22 This amendment does not require any additional land permanently, and the level of significance of the permanent effect reported in the main ES is not changed, i.e. moderate adverse, significant.

- 5.6.23 The proposed amendment (AP4-016-006) will not give rise to any new or different significant effects, and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.6.24 The proposed amendment (AP4-016-006) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### *Mitigation and residual effects*

- 5.6.25 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.

- 5.6.26 The amendment will not result in any change in the likely residual significant effects reported in the main ES.

#### *Cumulative effects*

- 5.6.27 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 or any other committed development.

### **Community**

#### *Introduction*

- 5.6.28 This section of the report describes the environmental baseline that is relevant to the community 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*

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

#### *Existing baseline*

- 5.6.30 Ridgeway Lane forms part of the Centenary Way. The Centenary Way is a 158km route that runs from Shipston-on-Stour in the south of Warwickshire to Kingsbury in the north. The route heads north out of Ufton to cross the Grand Union Canal at Longhole Bridge.

#### *Future baseline*

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

- 5.6.31 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.
- 5.6.32 None of the identified developments affect the assessment of the amendment's likely construction impacts on community.

### **Operation (2026)**

- 5.6.33 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.
- 5.6.34 None of the identified developments affect the assessment of the amendment's likely operational impacts on community.

#### *Effects arising during construction*

- 5.6.35 The main ES identified that the shared use of Ridgeway Lane for a period of about three years by a limited number of construction vehicles will impair the functional value, ambience and enjoyment of this section of the route and the inclusion of the route within the boundary of land required for the construction of the original scheme was therefore assessed in the main ES as giving rise to a minor adverse effect on people using this section of the Centenary Way, which was not significant.
- 5.6.36 The amendment will result in additional works along Ridgeway lane to widen and resurface the road and construction traffic using the route for an additional 200m. Additionally sections of Ridgeway Lane will be closed to traffic for approximately four weeks during construction but access will be maintained to properties and for non-motorised users a temporary diversion will be provided.
- 5.6.37 There will be additional disturbance to the users of Centenary Way due to these changes. However, no new or different significant amenity effects have been identified as a result of this change in the length of route to be used.
- 5.6.38 The proposed amendment (AP4-016-006) will not give rise to any new or different significant effects and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

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

#### *Mitigation and residual effects*

- 5.6.40 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.6.41 The amendment will result in no change in the likely residual significant effects reported in the main ES.

#### *Cumulative effects*

- 5.6.42 There are no new or different likely significant cumulative effects for community as a result of the AP4 amendments interacting with one another or any other committed developments.

## Cultural heritage

### *Introduction*

- 5.6.43 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*

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

### *Existing baseline*

- 5.6.45 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 SES and AP2 ES.
- 5.6.46 Details of new assets identified in this CFA since September 2013 are provided in Volume 5: SES and AP2 Appendix CH-004-016 and Volume 5 map series CH-01; CH-02 and CH-03, where this was relevant to a new or different significant effect.
- 5.6.47 Heritage assets considered relevant to this assessment are:
- The Ridgeway (asset reference LBS091), a non-designated asset of low value, potentially of prehistoric date; and
  - Ashgrove Farm Brickworks (asset reference LBS085), a non-designated asset of low value, of post-medieval date.

### *Future baseline*

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

- 5.6.48 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.
- 5.6.49 None of the identified developments affect the assessment of the amendment's likely construction impacts on cultural heritage.

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

- 5.6.50 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.
- 5.6.51 None of the identified developments affect the assessment of the AP4 amendment's likely operational impacts on cultural heritage.

### *Effects arising during construction*

- 5.6.52 The SES3 scheme included works to widen and resurface Ridgeway Lane for approximately 330m. These works have the potential to remove the Ridgeway and archaeological features associated it (asset reference LBS091), a non-designated asset of low value. The main ES reported that this would result in a medium adverse impact and minor adverse effect, which is not significant.
- 5.6.53 The construction of the SES3 scheme had no impact on Ashgrove Farm Brickworks (asset reference LBS085), a non-designated asset of low value.
- 5.6.54 The amendment will require additional land in comparison with the SES3 scheme. The amendment will require the widening and resurfacing of an additional 920m of Ridgeway Lane compared to the SES3 scheme, which may remove the Ridgeway and archaeological features associated it (asset reference LBS091).
- 5.6.55 Although the proposed amendment will result in an increased area of physical impact on potential archaeological remains compared to the SES3 scheme, given the landscape scale of the asset, the impact would remain as a minor adverse impact, which is not significant.
- 5.6.56 The proposed amendment may also remove a small part of the Ashgrove Farm Brickworks (asset reference LBS085) during the widening of Ridgeway Lane, resulting in a minimal adverse impact. This would constitute a new impact compared to what was reported in the main ES, giving rise to a negligible adverse effect, which is not significant.
- 5.6.57 The proposed amendment (AP4-016-006) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.6.58 The proposed amendment (AP4-016-006) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.6.59 Effects on cultural heritage assets will be addressed in accordance with the provisions set out in the draft CoCP (see Volume 5: Appendix CT-003-000 of the main ES).
- 5.6.60 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.6.61 The amendment will result in no change in the likely residual significant effects reported in the main ES.

### *Cumulative effects*

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

## Ecology

### *Introduction*

- 5.6.63 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*

- 5.6.64 Updates to the scope of the assessment for ecology are set out in Volume 1 of 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 CT001-000/01 and CT-001-000/02 of the main ES) and in Addendum 4 to the SMR (SES 3 and AP4 ES Volume 5: Appendix CT-001-000/5).
- 5.6.65 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*

- 5.6.66 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES and 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.
- 5.6.67 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 SES3 and AP4 ES Volume 5: Appendix EC-001-003. For those receptors described in the main ES, further details are provided in Volume 2, CFA16, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.6.68 There is one statutory designated site, Long Itchington and Ufton Woods SSSI, located approximately 125m from land required for the amendment at its closest point (southern end). The SSSI is designated for its traditionally managed oak-hazel ancient semi-natural woodland and is of national value. The HS2 route passes beneath the SSSI in tunnel.
- 5.6.69 Long Itchington and Ufton Woods SSSI is also on the ancient woodland inventory. Ancient woodlands represent an irreplaceable resource.

### **Habitats**

- 5.6.70 The land required for the amendment mostly comprises an existing unsurfaced track known as Ridgeway Lane which is bordered over much of its length by species-poor

intact hedgerows. The total length of species-poor hedgerow potentially within the land required for the amendment is approximately 100m, some of which is recorded as being hedgerow with trees (southern section). These hedgerows form part of a network of hedgerows which act as wildlife corridors within the area that is of district/borough value.

- 5.6.71 There is a small area (0.16ha) of secondary broadleaved semi-natural woodland on the east side of the land required for the amendment, adjacent to Ridgeway Lane. Up to 0.09ha of this woodland area falls within the land required for the amendment. The main ES reported that secondary woodland has local/parish value.
- 5.6.72 To either side of Ridgeway Lane, and beyond its associated boundary hedgerows, the land comprises mostly arable habitat, with the exception of one improved grassland field at the southern end of the land required for the amendment. At its northern end, the land required for the amendment splits away from Ridgeway Lane and crosses an arable field. Arable habitat is considered to have negligible value due to its intensive use and its abundance across the area and the wider countryside. Improved grassland is of local/parish value.
- 5.6.73 The amendment brings the secondary construction access route within approximately 8m of a pond situated to the immediate west of Ridgeway Lane. Access to the pond for detailed survey has not been possible due to access restrictions, and therefore a precautionary value of up to district/borough value is assumed for such habitat, as reported in the main ES.

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

- 5.6.74 Bat surveys have not been completed along the majority of Ridgeway Lane as it was not within the land required for construction of the original scheme. The arable fields surrounding the land required for the amendment are of low habitat quality for bats and fall outside of any key foraging or commuting habitat identified in the main ES. The hedgerows and small area of woodland along Ridgeway Lane, within the land required for the amendment, nevertheless provide potential commuting and foraging habitat for an assumed assemblage of bats. The trees within the hedgerows along the lane and within the small area of woodland could also support roosting bats belonging to the assemblage. This assumed bat assemblage is considered, as a precaution, to have up to county/metropolitan value.
- 5.6.75 There are three ponds located within 250m of the land required for the amendment although none of these have been surveyed due to access restrictions. One of these is 8m from the land required for the amendment. The main ES makes a precautionary assumption that unsurveyed ponds each contain a medium sized population of great crested newt that is up to county/metropolitan value.
- 5.6.76 Although there are no records of reptiles within the land required for the amendment, it is likely to contain suitable habitat for common reptile species along field margins, woodland and hedgerows. The main ES reports that assumed populations of common reptile species within the scheme are of local/parish value.
- 5.6.77 No notable species or populations of birds have been found within or adjacent to the land required for the amendment. However the loss of woodland and hedgerows will remove potential nesting habitat for common birds of local/parish value.



### *Future baseline*

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

- 5.6.78 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.
- 5.6.79 None of the identified developments affect the assessment of the amendment's likely construction impacts on ecology.

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

- 5.6.80 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.
- 5.6.81 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**

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

#### **Designated sites**

- 5.6.83 There will be no new or different significant effects on designated sites during construction as a result of the amendment.

#### **Habitats**

- 5.6.84 The main ES reports that a network of 34.5km of hedgerow will be lost during construction of the original scheme, some of which includes species-rich hedgerows, resulting in an adverse effect on the conservation status of the hedgerow network that would be significant at a district/borough level. The land required for the amendment will result in the loss of an additional 100m of species-poor hedgerow. The additional hedgerow loss represents a different significant effect but the level of significance is unchanged from that reported in the main ES.
- 5.6.85 The amendment reduces the area of secondary broadleaved woodland included in the scheme at the southern end of Ridgeway Lane by 0.04ha.

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

- 5.6.86 The amendment is within 8m of an unsurveyed pond that has been assumed, on a precautionary basis, to support a medium population of great crested newts and has up to country/metropolitan value. The secondary construction access route was just over 250m from the pond in the original scheme. The pond supporting the assumed breeding population of great crested newts will not be lost. However, the amendment results in the loss of 100m of species-poor hedgerow within 250m of the pond which could be used for foraging and shelter by great crested newt.

- 5.6.87 The main ES did not record any significant effects on the assumed great crested newt population in this pond. The amendment will result in an adverse effect on the conservation status of the assumed great crested newt population using this pond that will be significant at up to a county/metropolitan level. This is a new significant effect.
- 5.6.88 The loss of trees within the land required for the amendment could lead to the loss of bat roosts and commuting and foraging habitat along Ridgeway Lane. This could lead to adverse effects on the conservation status of the bat assemblage which will be significant up to a county/metropolitan level. This is a new significant effect.
- 5.6.89 It is unlikely that the amendment will result in any other new or different effects on species receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the main ES and SES and AP2 ES) arising from the amendment are listed in Volume 5: Appendix EC-003-003.

### *Cumulative effects*

- 5.6.90 There are no new or different likely significant cumulative effects for ecology as a result of the amendment acting in combination with another amendment in AP4, or as a result of any relevant committed development interacting with the AP4 revised scheme.

### *Mitigation and residual effects*

#### **Other mitigation measures**

- 5.6.91 Implementation of measures within the draft CoCP will ensure there will be no killing or injury of newts as a result of the amendment. Any 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).
- 5.6.92 Hedgerows will be included within the landscape design for the scheme to compensate for hedgerow loss. All hedgerow removed for the amendment along Ridgeway Lane will be replaced through replanting using native hedge species that are prevalent within the local area. This will mitigate the loss of great crested newt resting and sheltering habitat in the longer term, once the new hedgerow planting matures, and will maintain the conservation status of the great crested newt population.
- 5.6.93 The adoption of measures within the draft CoCP will provide appropriate controls to prevent disturbance to roosting bats. Loss of roosts will be mitigated in accordance with the principles of ecological mitigation identified within the SMR Addendum (Volume 5: Appendix CT-001-000/2). The hedgerow replacement along Ridgeway Lane will maintain a bat commuting and foraging habitat in the longer term, once the new hedgerow planting matures. These measures will maintain the conservation status of the assumed bat assemblage.

## Summary of likely residual effects

- 5.6.94 With the implementation of the mitigation measures proposed, the new or different ecological effects arising from the AP4 revised scheme are reduced to a level where they are not significant. The significant effects of the AP4 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Effects arising from operation*

- 5.6.95 There are no new or different significant operational effects for ecology as a result of the amendment.

## Landscape and visual assessment

### *Introduction*

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

### *Scope, assumptions and limitations*

- 5.6.97 The assessment scope, key assumptions and limitations of the landscape and visual assessment are set out in Volume 1, Volume 2 CFA16 Report, the SMR (Volume 5: Appendix CT-0001-000/1) and the SMR Addendum (Volume 5: Appendix CT-0001-000/2) of the main ES. Updates to the methodology for the landscape and visual assessment are also described in Volume 1 of the AP1 ES and Volume 1 of the SES and AP2 ES.

### *Existing baseline*

- 5.6.98 The area of land required for the amendment is located within Ufton Vale Farmlands LCA as described in the main ES (Volume 2, CFA16, Section 9.3).
- 5.6.99 Views north-east from Wood Farm and north-east from Ridgeway Lane (E2994) (viewpoints 247.2.004 and 247.3.003) are located in close proximity to the area and are described in the main ES (Volume 5: Appendix LV-001-016, Section 5).

### *Future baseline*

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

- 5.6.100 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.
- 5.6.101 None of the identified developments affect the assessment of the amendment's likely construction impacts on landscape and visual.

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

- 5.6.102 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.

- 5.6.103 None of the identified developments affect the assessment of the amendment’s likely operational impacts on landscape and visual.

*Effects arising during construction*

**Landscape assessment**

- 5.6.104 Ufton Vale Farmlands LCA was assessed as not being significantly affected by the SES3 scheme and will not be significantly affected by this amendment. The Ufton Vale Farmlands LCA has a medium level of tranquillity and the landscape is valued at a local level for its rural character and network of PRow. Its condition is fair, due to the balance between those parts of the LCA where the hedgerows and vegetation patterns are extensive and intact compared with those where hedgerows are loosely defined, and therefore it is considered to be of medium sensitivity to change. The main ES reported a minor adverse, non-significant effect during construction due to the localised extent of the works in comparison to the scale of the landscape character area.
- 5.6.105 The proposed access track follows Ridgeway Lane, before crossing a field nearer the north portal of Long Itchington Wood tunnel, and will involve the widening and resurfacing of the existing lane and the removal of some lengths of the existing hedgerow that runs parallel to the lane. However, this is a minor change when compared to the SES3 scheme and will not therefore give rise to a new or different significant effect on the Upton Vale Farmlands LCA and will not change the level of significance of the effects reported in the main ES.

**Visual assessment**

- 5.6.106 Viewpoint 247.2.004 was assessed as being affected by the SES3 scheme and will also be affected by this amendment. The main ES reported a major adverse significant effect due to the construction of the Long Itchington Wood north portal, Longhole viaduct and the construction of the approach embankments, all visible in the foreground of the view. This also included the removal of hedgerows and vegetation along the Grand Union Canal.
- 5.6.107 Viewpoint 247.2.004 will experience a slight difference in views with the temporary access track in the middle ground but other parts of the view will remain unaltered.
- 5.6.108 Viewpoint 247.3.003 was assessed as being affected by the SES3 scheme, and will also be affected by this amendment. The main ES reported a major adverse significant effect due to the construction of the Long Itchington Wood north portal, Longhole viaduct and the construction of the approach embankments, all visible in the foreground of the view. This also included the removal of hedgerows and vegetation along the Grand Union Canal.
- 5.6.109 Viewpoint 247.3.003 will experience a slight difference in views as a result of the proposed relocation of the temporary access track onto Ridgeway Lane however, this will not change the effects reported in the main ES.
- 5.6.110 The proposed amendment (AP4-016-006) will not give rise to a new or different significant effect on visual receptors (247.2.004 and 247.3.003) and will not change the level of significance of the effects reported in the main ES.

### *Effects arising during operation*

#### **Landscape assessment**

- 5.6.111 Ridgeway Lane will be used as an access track for construction only, and upon completion of those works the width and surfacing will be reduced and removed. Three areas of hedgerow adjacent to the lane will be replanted following removal of temporary construction access.
- 5.6.112 The proposed amendment (AP4-016-006) will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### **Visual assessment**

- 5.6.113 Viewpoint 247.2.004 was assessed as being affected by the original scheme, and will also be affected by this amendment. The main ES reported a major adverse effect during operation in year 1, 15 and 60 due to raised earthworks and overhead line equipment in the middle ground, and new planting landform changes due to Ufton Wood porous portal in the foreground in the direct frame of view. By year 15 new planting in the foreground will be established and planting on raised earthworks will also largely filter views of overhead line equipment.
- 5.6.114 Viewpoint 247.3.003 was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a major adverse effect during operation in year 1, 15 and 60 due to the open views of raised earthworks. This will reduce to moderate adverse in summer of year 1. By year 15 and beyond to year 60, due to new planting largely filtering views, the effects will reduce to non-significant.
- 5.6.115 The proposed amendment (AP4-016-006) will not give rise to a new or different significant effect on visual receptors (247.2.004 and 247.3.003) and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.6.116 No additional mitigation measures to those identified in the main ES and subsequent SES and AP ES reports are required.
- 5.6.117 There are no new or different likely residual significant effects during construction or operation as a result of the proposed amendment in comparison with the main ES.

### *Cumulative effects*

- 5.6.118 There are no new or different likely significant cumulative effects for landscape and visual as a result of the AP4 amendments interacting with one another or any other committed development.

#### **Traffic and transport**

##### *Introduction*

- 5.6.119 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*

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

### *Existing baseline*

- 5.6.121 The existing baseline is as described in the main ES (Volume 2 CFA16, Chapter 12) and in Volume 5 Part 2 (TR-001-000) of the main ES.
- 5.6.122 Baseline surveys showed that where Ridgeway Lane passed over the Grand Union Canal there were 25 users per day comprised of 11 cyclists and 14 pedestrians.

### *Future baseline*

#### **Construction**

- 5.6.123 The future baseline for traffic and transport is as described in Volume 2 CFA16, Section 12 of the main ES.

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

- 5.6.124 The future baselines for traffic and transport are as set out in Volume 2, CFA16 (Section 12) of the main ES.

### *Effects arising during construction*

- 5.6.125 The original scheme resulted in a minor adverse effect on journey ambience along Ridgeway Lane as users would be affected by adjacent construction traffic and the potential need to cross a road utilised by construction traffic.
- 5.6.126 The amendment relates to the relocation of part of the temporary provision of the secondary construction access route. Traffic generated by the works will be limited to the occasional exceptional loads and there will be no significant impact on other road users from this traffic. Although sections of Ridgeway Lane will be closed to traffic for approximately four weeks during widening and resurfacing works, access will be maintained to properties and for non-motorised users. These changes will have no substantial impact on existing users of Ridgeway Lane.
- 5.6.127 The amendment to Ridgeway Lane will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.6.128 Ridgeway Lane is only used during construction and the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.6.129 No additional mitigation measures (i.e. in addition to those identified in the main ES and subsequent SES reports) are required.
- 5.6.130 There are no new or different likely residual significant effects of the proposed amendment.

### *Cumulative effects*

- 5.6.131 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.
- 5.6.132 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.

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

- 5.6.133 The amendment to the secondary access route along Ridgeway Lane will not result in any new or different significant residual effects and does not change the significance of the environmental effects as set out in the main ES (Volume 2, CFA16 Ladbroke and Southam).

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

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





**High Speed Two (HS2) Limited**

One Canada Square  
London E14 5AB

**T** 020 7944 4908

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

Z22