

# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

## Supplementary Environmental Statement and Additional Provision 2 Environmental Statement

Volume 2 | Community forum area report

CFA11 | Stoke Mandeville and Aylesbury

July 2015

SES and AP2 ES 3.2.1.11



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## Department for Transport

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

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

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

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

# Structure of this report

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

Part 1 provides supplementary environmental information relating to:

- new baseline information with respect to European Protected Species surveys;
- changes to the design or construction assumptions which do not require a change to the Bill; and
- corrections to the main ES.

Part 1 of each CFA report includes, where relevant:

- a description of the changes within the CFA that have triggered the need for reassessment;
- an assessment of the environmental effects of the changes for relevant environmental topics considering the:
  - scope, assumptions and limitations of the SES assessment;
  - changes of relevance to the assessment;
  - environmental baseline;
  - effects arising during construction;
  - effects arising from operation; and
  - mitigation and residual effects; and
- a summary of any new or different likely residual significant effects as a result of the changes.

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

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



- mitigation and residual effects; and
- a summary of any new or different likely residual significant effects as a result of each proposed amendment.

# 1 Introduction

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

- 1.1.10 It should be noted that, since submission of the Bill, the scheme design has been revised by SES design changes, amendments described in the AP1 ES (AP1 amendments) and amendments described in the AP2 ES (AP2 amendments).
- 1.1.11 In order to differentiate between the original proposals and subsequent changes, the following terms are used:
- 'the original scheme' - the Bill scheme submitted to Parliament in November 2013, which was assessed in the main ES;
  - 'the AP1 revised scheme' - the original scheme as amended by the AP submitted in September 2014;
  - 'the SES scheme' - the original scheme with the design changes described in the SES; and
  - 'the AP2 revised scheme' - the original scheme as amended by the SES scheme and AP2.

# Part 1: Supplementary Environmental Statement

## 2 Summary of changes

### 2.1 New environmental baseline information

#### Ecology

- 2.1.1 Surveys for great crested newt have been undertaken in this area since the production of the main ES (September 2013).
- 2.1.2 Details of all survey work and desk-study information gathered since September 2013 which is relevant to this area are provided in the SES and AP2 ES Volume 5: Appendix EC-001-002 and SES and AP2 ES Volume 5 map series EC-04; EC-05 and EC-11.
- 2.1.3 A summary of the supplementary ecological information that is relevant to the SES assessment is included within Section 3 under 'Ecology'.
- 2.1.4 SES and AP2 ES Volume 5: Appendix EC-002-002 provides a summary of additional baseline survey data collected since September 2013, which has resulted in no change to the conclusions of the main ES. The SES and AP2 ES Volume 5: Appendix EC-003-002 identifies additional local/parish level effects which occur as a consequence of SES changes but are not significant.

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

- 2.2.1 There are no changes to the design or construction assumptions in the Stoke Mandeville and Aylesbury CFA (CFA11) not requiring a change to the Bill that result in a new or different significant effect.

#### Changes to the design or construction assumptions in other CFAs affecting this CFA

- 2.2.2 Design changes in other CFAs affect CFA11, in particular the removal of the sustainable placement area at Hunt's Green in CFA10 and the reduction of landscape earthworks at Lower Boddington in CFA15. Consequently the movement of excavated material by heavy goods vehicle (HGV) will change in this CFA and traffic flows will differ in comparison to the original scheme. The assessment in relation to this is presented in Section 3.3: 'Assessment of changes' under traffic and transport.

### 2.3 Corrections to the main ES

- 2.3.1 Since submission of the Bill, the need for a number of corrections in the contents of the main ES has been identified. Table 1 provides a list of those instances where there has been a need to correct the Volume 2 CFA report for Stoke Mandeville and Aylesbury because of the potential to alter the significant environmental effects reported in the main ES or a factual inaccuracy relating to significant effects has been identified. The table gives the location of the correction in the main ES, the reason for

the correction, replicates the text from the main ES, where applicable provides revised text, and identifies whether the correction changes a significant effect reported in the main ES. Where relevant, these corrections have been taken into account in the technical assessments contained within Section 3 of this SES.

Table 1: Summary of corrections to the main ES in CFA11

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
<p>Sound, noise and vibration</p> <p>Paragraph 11.5.16, Volume 2, CFA11 of the main ES</p>	<p>Old Moat Farmhouse, Marsh Lane, Stoke Mandeville was described as a single property however it should have been described as two properties.</p>	<p>First sentence:</p> <p>The assessment has identified four additional residential buildings close to the Proposed Scheme...</p>	<p>First sentence:</p> <p>'The assessment has identified five additional residential buildings close to the Proposed Scheme...</p>	<p>Yes.</p> <p>One additional dwelling is identified as being subject to a significant adverse effect, and is consequently estimated to be likely to qualify for noise insulation.</p> <p>The mitigation measures, including noise insulation will reduce noise inside all dwellings such that it will not reach a level where it would significantly affect residents.</p>
<p>Sound, noise and vibration</p> <p>Table 15, Section 11 in Volume 2, CFA11 of the main ES</p>	<p>Operational vibration assessment locations 700333 and 700334 were omitted from the assessment.</p> <p>In the main ES, the properties represented by these assessment locations were reported as subject to an adverse operational airborne noise effect. When these are assessed alongside other local adverse noise effects, the overall effect is considered significant.</p> <p>The properties represented by the omitted assessment locations have been identified as also being impacted by operational vibration.</p>	<p>Source of significant effect</p> <p>Airborne noise increase from new train services and the road traffic on Stoke Mandeville Bypass.</p> <p>Location and details</p> <p>Southern edge of Stoke Mandeville. Approximately 30 dwellings along the Risborough Road in the vicinity of Old Risborough Road and Whitethorn Close including shared open areas. Forecast increases in sound from the railway are likely to cause a major adverse effect on the acoustic character of the area around the closest properties, reducing with distance away from the Proposed Scheme. The effect on the acoustic character of residential</p>	<p>Source of significant effect</p> <p>Airborne noise increase and vibration from new train services.</p> <p>Location and details</p> <p>Southern edge of Stoke Mandeville. Approximately 30 dwellings along the Risborough Road in the vicinity of Old Risborough Road and Whitethorn Close including shared open areas. Forecast increases in sound from the railway are likely to cause a major adverse effect on the acoustic character of the area around the closest properties, reducing with distance away from the Proposed Scheme. The effect on the acoustic character of residential areas that are located further from the railway would be a minor effect. Forecast vibration levels from the railway are likely to cause a minor adverse effect at the very</p>	<p>Yes:</p> <p>Operational vibration assessment locations 700333 and 700334 are likely to experience a combined noise and vibration effect (as part of the overall significant effect).</p> <p>No additional mitigation measures, other than those proposed in the main ES are required.</p>

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
		areas that are located further from the railway would be a minor effect.	closest properties  (See SES and AP2 ES Volume 5: SV-004-011 for updated calculations)	

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

- 2.4.1 The changes described above in Sections 2.1 to 2.3 result in new or different significant effects in respect of: air quality; ecology; and traffic and transport.



## 3 Assessment of changes

### 3.1 Air quality

#### Introduction

3.1.1 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 changes introduced in Section 2, compared to the original scheme and also compared to any relevant AP1 amendments. Consideration is given to the implications of changes in traffic flows during construction.

#### Scope, assumptions and limitations

3.1.2 The assessment scope, key assumptions and limitations for air quality are set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1), the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES and the SMR Addendum 2 (Volume 5: Appendix CT-001 -000/3) of the SES and AP2 ES.

#### Changes of relevance to this assessment

3.1.3 Design changes in other CFAs have resulted in changes to the movement of excavated material. These include:

- removal of the sustainable placement area at Hunt's Green Farm in CFA10 (SES-010-001); and
- a reduction of landscape earthworks at Lower Boddington in CFA15 (SES-015-001).

3.1.4 Whilst originating in other CFAs, these SES design changes have altered predicted HGV traffic flows in the Stoke Mandeville and Aylesbury area during construction, in comparison to those under the original scheme.

3.1.5 The main traffic and transport change associated with the SES scheme changes is that the A41, between A418 Oxford Road and the boundary of CFA12, and the A418 Oxford Road, between the route and the A41 in Aylesbury, are no longer proposed to be used for the movement of excavated material, which result in a corresponding decrease in HGV movements and their associated emissions on these roads. Although there will be movements of HGVs within the Stoke Mandeville and Aylesbury area under the SES scheme, there will no longer be the movement of excavated material.

3.1.6 These changes have been assessed as they are considered to have the potential to result in new or different likely significant effects on air quality within CFA11.

#### Environmental baseline

##### *Existing baseline*

3.1.7 The baseline conditions with regard to air quality have been updated from those reported in the main ES, in terms of updated background maps released by the Department for Environment, Food and Rural Affairs (Defra).

- 3.1.8 Defra background concentrations maps<sup>1</sup> provide estimates of background concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> for 1km grid squares across the UK. The 2010 maps were used as the basis for the assessment reported in the main ES. The 2011 maps have been used as the basis for the assessment reported in the SES and AP2 ES.
- 3.1.9 There are two relevant continuous air quality monitoring sites within the Stoke Mandeville and Aylesbury area, these being: Bicester Road and Friarage Road in Aylesbury. There are also seven relevant diffusion tube monitoring locations, these being: Corner Friarage/Oxford Road, 89 Friarage Road, Bicester Road West, Bicester Road East, Elmhurst Road, Long Meadow and Croft Street. This monitoring data was used in the SES assessment, alongside Defra background concentration maps, to characterise the baseline air quality for the Stoke Mandeville and Aylesbury area. These maps indicated that the average background pollutant concentrations across the Stoke Mandeville and Aylesbury wider area were better than the relevant air quality standards in most locations. Pollutant concentrations in Aylesbury were worse than air quality standards and consequently there is an air quality management area (AQMA) within Aylesbury, which is potentially affected by the SES scheme.
- 3.1.10 There are no statutory or non-statutory designated sites for nature conservation within the Stoke Mandeville and Aylesbury area that could potentially be affected by changes in air quality as a result of the SES scheme.

### *Future baseline*

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

- 3.1.11 SES and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 3.1.12 None of the identified developments affect the assessment of the SES scheme's likely construction impacts on air quality.

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

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

### **Effects arising during construction**

#### *Avoidance and mitigation measures*

- 3.1.15 Emissions to the atmosphere will be controlled and managed during construction through the route-wide implementation of the CoCP.

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<sup>1</sup> Department for Environment, Food and Rural Affairs (Defra) (2014) Defra background maps 2011; <http://laqm.defra.gov.uk/maps/maps2011.html>; Accessed: March 2015.

3.1.16 The assessment of the SES scheme has assumed that the general measures detailed Section 7 of the draft CoCP (Volume 5: Appendix CT-003-000) in the main ES will be implemented.

3.1.17 No additional avoidance and mitigation measures are proposed for the SES scheme.

### *Assessment of impacts and effects*

#### **Temporary effects**

3.1.18 In the main ES there were some receptors along the section of the A41 Gatehouse Road and the A41 Bicester Road on the west side of Aylesbury where moderate adverse impacts were identified. This was reported as a temporary significant effect in the main ES.

3.1.19 The reduction in traffic flows from that reported in the main ES will reduce adverse effects on air quality for receptors reported in the main ES. Significant effects for receptors on the A41 in Aylesbury that were previously reported in the main ES are now not significant. This is because of the reduction of HGVs compared to the main ES as the route is no longer proposed to be used for the movement of excavated material. The overall impact of the SES scheme changes in traffic in CFA11 was found to be slight adverse for NO<sub>2</sub>, which is not significant, at one receptor along the A41 in Aylesbury: identified as receptor 11-24 in the main ES, and negligible at other locations. The supporting assessment for this conclusion can be found in SES and AP2 ES Appendix AQ-001-011.

#### **Permanent effects**

3.1.20 The SES scheme results in no permanent changes as a result of construction activities and consequently there will be no new or different significant effects and the level of significance of the effects reported in the main ES will not change.

### *Other mitigation measures*

3.1.21 No other mitigation measures during construction are required in relation to air quality.

### *Cumulative effects*

3.1.22 There are no new or different likely significant cumulative effects for air quality as a result of the SES changes acting in combination with the SES or in AP1, or as a result of any relevant committed development interacting with the SES scheme.

### *Summary of likely residual significant effects*

3.1.23 The proposed change to the movement of excavated material will remove the temporary residual significant effect for all receptors along the section of the A41 Gatehouse Road and the A41 Bicester Road on the west side of Aylesbury. This will change the level of significance of the residual effects reported in the main ES from moderate adverse to no effect, with the exception of 22 Monmouth Close where there will be a slight adverse effect for NO<sub>2</sub> which is not significant.

## Effects arising from operation

- 3.1.24 The SES scheme results in no changes to operation and consequently there will be no new or different significant effects and the level of significance of the effects reported in the main ES will not change.

## 3.2 Ecology

### Introduction

- 3.2.1 This section of the report describes the environmental baseline in relation to ecology that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 2, compared to the original scheme and also compared to any relevant AP1 amendments. Consideration is given to the potential for impacts on species, habitats and sites designated on the basis of their importance for nature conservation.

### Scope, assumptions and limitations

- 3.2.2 The assessment scope for ecology is as set out in Volume 1 of the SES and AP2 ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/01) and the SMR Addendum (Volume 5: Appendix CT-001-000/02) of the main ES.
- 3.2.3 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported in the main ES, Volume 5: Appendix CT-001-000/2. This constitutes a 'reasonable worst-case' basis for the subsequent assessment. The precautionary approach to the assessment that has been adopted identifies the likely significant ecological effects of the SES scheme.

### Changes of relevance to this assessment

- 3.2.4 The only change relevant to this assessment is new survey information relating to great crested newt.

### Environmental baseline

#### *Existing baseline*

- 3.2.5 The ecological baseline for the assessment takes into account baseline information collected in support of the main ES, which included field survey data, aerial photography and relevant existing information gathered from national organisations and from regional and local sources. A full list is provided in Appendix EC-001-002, EC-002-002, EC-003-002 and EC-004-002 of the main ES.
- 3.2.6 The assessment also takes into account additional survey information for great crested newt collected since September 2013.
- 3.2.7 A summary of the baseline information relevant to the assessment is provided below. Further details of all baseline information obtained since September 2013 is provided in the SES and AP2 ES Volume 5: Appendix EC-001-002 and SES and AP2 ES Volume 5 map series EC-04; EC-05 and EC-11. For those receptors described in the main ES,

further details are provided in Volume 2, CFA11, Section 7.3 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 3.2.8 There has been no change to the baseline information relating to designated sites as set out in Volume 2, CFA11 of the main ES.

### **Habitats**

- 3.2.9 There has been no change to the baseline information relating to habitats as set out in Volume 2, CFA11 of the main ES.

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

- 3.2.10 A medium size class metapopulation<sup>2</sup> of great crested newt (peak survey count of seven adults in one pond and six adults in the other) has been identified in two ponds near Old Risborough Road since submission of the main ES and is of county/metropolitan value. The two ponds are isolated from other known great crested newt populations, the nearest being 1.5km to the east at The Orchard, Nash Lee Road.

### *Future baseline*

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

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

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

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

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<sup>2</sup> A group of spatially separated populations of the same species which interact at some level.

## Effects arising during construction

### *Avoidance and mitigation measures*

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

### *Assessment of impacts and effects*

#### **Designated sites**

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

#### **Habitats**

- 3.2.17 The new baseline data will not give rise to a new or different significant effect on habitats and will not change the level of significance of the effects reported in the main ES.

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

- 3.2.18 The metapopulation of great crested newt near Old Risborough Road has been identified since publication of the main ES and will be affected by construction of the scheme. Both ponds will be retained, however the metapopulation will be affected by habitat fragmentation.
- 3.2.19 Much of the habitat suitable for great crested newt is present in the gardens of the surrounding properties and will be retained. However, the construction of the Stoke Mandeville South Embankment will result in the loss of approximately 2ha of pasture (50m from the ponds at its closest point) and the Stoke Mandeville bypass will result in the loss of approximately 1.5ha of semi-improved grassland (80m at its closest point). Other habitat within 250m of the ponds is dominated by arable fields (approximately 10ha) and is less suitable for this species. As it is likely that the great crested newt uses habitats beyond the surrounding gardens, the wider loss of terrestrial habitat is likely to result in a permanent adverse effect on the conservation status of this great crested newt metapopulation. This is a new significant effect which was not reported in the main ES and is significant at the county/metropolitan level.

### *Cumulative effects*

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

### *Other mitigation measures*

- 3.2.21 The main ES reports that landscape mitigation will be created within 250m of the ponds used by the great crested newt metapopulation at Old Risborough Road. It will include the planting of hedgerows along the proposed A4010 Stoke Mandeville bypass and along the route near Old Risborough Road. The planting will be in accordance with the Ecological Principles of Mitigation (Volume 5: Appendix CT001-001/2 of the main ES). Most of the suitable habitat for this species (semi-improved grassland and

pasture) affected by the scheme in this area will also be reinstated post-construction. Together these measures will reduce the impacts to a level that will not result in a significant adverse effect on the conservation status of the great crested newt metapopulation present.

### *Summary of likely residual significant effects*

- 3.2.22 No new or different residual effects on ecological receptors are likely to occur as a consequence of the updated survey data. The significant residual effects of the SES scheme in this area are therefore unchanged from those reported in the main ES.

### **Effects arising from operation**

- 3.2.23 The new survey information relating to great crested newt 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.

## **3.3 Traffic and transport**

### **Introduction**

- 3.3.1 This section of the report describes the environmental baseline in relation to traffic and transport that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 2 compared to the original scheme.

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

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

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

- 3.3.3 SES changes in other CFAs have resulted in changes to the movement of excavated material. In particular, the following changes are relevant to this assessment:
- removal of the sustainable placement area at Hunt's Green Farm in CFA10 (SES-010-001); and
  - reduction of landscape earthworks near Lower Boddington in CFA15 (SES-015-001).
- 3.3.4 Whilst originating in other CFAs, these SES scheme changes have resulted in changes to forecast HGV traffic flows within the Stoke Mandeville and Aylesbury area during construction, in comparison to those in the original scheme.
- 3.3.5 The main traffic and transport changes associated with the SES design changes affect the A41, between A418 Oxford Road and the boundary of CFA12, and the A418 Oxford Road, between the HS2 route and the A41 in Aylesbury. These are no longer proposed to be used for the movement of excavated material, resulting in a decrease in HGV movements on these roads compared to the main ES. Although there will be movements of HGVs within this CFA under the SES scheme, no roads will be used for the movement of excavated material.

## Environmental baseline

### *Existing baseline*

- 3.3.6 The existing baseline remains unchanged from that reported in the main ES (Volume 2, CFA11, Section 12.3).

### *Future baseline*

#### **Construction**

- 3.3.7 The future baseline for construction remains unchanged from that reported in the main ES (Volume 2, CFA11, Section 12.3).

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

- 3.3.8 The future baselines for operation in 2026 and 2041 remain unchanged from those reported in the main ES (Volume 2, CFA11, Section 12.3).

## Effects arising during construction

### *Avoidance and mitigation measures*

- 3.3.9 Avoidance and mitigation measures are as set out in Volume 2, CFA11, Section 12 of the main ES.

### *Assessment of impacts and effects*

#### **Temporary effects**

- 3.3.10 The SES scheme results in amended HGV traffic flows compared to the original scheme in the Stoke Mandeville and Aylesbury area. There are reductions in HGV flows compared to the main ES, which generate new or different significant effects and change the level of significance of the effects reported in the main ES in relation to delays to vehicle users and congestion, at the following junctions:
- A41 Bicester Road with Aylesbury Way Parkway: a minor adverse significant effect (reported as a moderate adverse significant effect in the main ES);
  - A41 Bicester Road with Jackson Road and Dickins Way: a minor adverse significant effect (reported as a moderate adverse significant effect in the main ES);
  - A41 Bicester Road with Rabans Lane: a minor adverse significant effect (reported as a moderate adverse significant in the main ES);
  - A41 Bicester Road with Meadowcroft: a minor adverse significant effect (reported as a moderate adverse significant effect in the main ES);
  - A41 Bicester Road with Broadfields: a minor adverse significant effect (reported as a moderate adverse significant effect in the main ES);
  - A418 Oxford Road with Coldharbour Way: a minor adverse significant effect (reported as a major adverse significant effect in the main ES);
  - A418 Oxford Road with Ellen Road: a minor adverse significant effect (reported as a major adverse significant in the main ES);



- A41 Bicester Road with Griffin Lane: a minor adverse significant effect (reported as a moderate adverse significant effect in the main ES);
- A418 Oxford Road with Churchill Avenue and Fowler Road: a minor adverse significant effect (reported as a major adverse significant effect in the main ES);
- A41 Bicester Road with A4157 Weedon Road and A41 Gatehouse Road: a minor adverse significant effect (reported as a moderate adverse significant effect in the main ES); and
- A418 Oxford Road with A41 Gatehouse Road and A41 Friarage Road: a minor adverse significant effect (reported as a major adverse significant effect in the main ES).

3.3.11 The amended HGV flows also removes significant effects reported in the main ES in relation to traffic-related severance<sup>3</sup> for non-motorised users at the following locations:

- A418 Oxford Road, between the HS2 route and the A41 in Aylesbury (reported as a major adverse effect in the main ES under the description 'A418 Oxford Road, between Thame and Aylesbury'); and
- A41, between A418 Oxford Road and the boundary of CFA12 (reported as a moderate adverse effect in the main ES under the description 'A41 Bicester Road, west of A418').

### **Permanent effects**

3.3.12 Permanent effects of construction on traffic and transport are reported under 'Effects arising from operation'.

### *Other mitigation measures*

3.3.13 No changes to the mitigation measures reported in Volume 2, CFA11 of the main ES are required.

### *Cumulative effects*

3.3.14 Cumulative effects are reported in Volume 2, CFA11, Section 12 of the main ES. The above assessment has taken into account these cumulative effects, including planned development by taking account of background traffic growth, as well as traffic and transport impacts of works being undertaken in neighbouring areas.

### *Summary of likely residual significant effects*

3.3.15 Amended HGV flows, as a consequence of the SES scheme, result in minor residual significant adverse effects with regard to delays to vehicle users and congestion for the junctions of A41 Bicester Road with Aylesbury Way Parkway, A41 Bicester Road with Jackson Road and Dickins Way, A41 Bicester Road with Rabans Lane, A41

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<sup>3</sup> In the context of traffic and transport, Severance is used to relate to a change in ease of non-motorised users due to, for example, a change in travel distance or travel time or a change in traffic levels on a route that makes it harder for non-motorised users to cross. A reference to severance does not imply a route is closed to access.

Bicester Road with Meadowcroft, A41 Bicester Road with Broadfields, A41 Bicester Road with A4157 Weedon Road and A41 Gatehouse Road, A41 Bicester Road with Griffin Lane (all reported as a moderate adverse significant effects as in the main ES), and A418 Oxford Road with Coldharbour Way, A418 Oxford Road with Ellen Road, A418 Oxford Road with Churchill Avenue and Fowler Road, A418 Oxford Road with A41 Gatehouse Road and A41 Friarage Road (all reported as a major adverse significant effects as in the main ES).

3.3.16 In addition, the significant adverse effects in relation to traffic-related severance for non-motorised users at the A418 Oxford Road, between the route and the A41 in Aylesbury (major adverse significant effect reported in the main ES), and the A41 between the A418 Oxford Road and the boundary of CFA12 (all reported as a moderate adverse significant effect in the main ES) are removed.

3.3.17 The significant effects that result from construction of the SES scheme are shown on map TR-03-055 in the SES and AP2 ES Volume 5, Map Book, Traffic and Transport Map Book.

### **Effects arising from operation**

3.3.18 The SES scheme results in no changes to operation and consequently 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.

# Part 2: Additional Provision 2 Environmental Statement

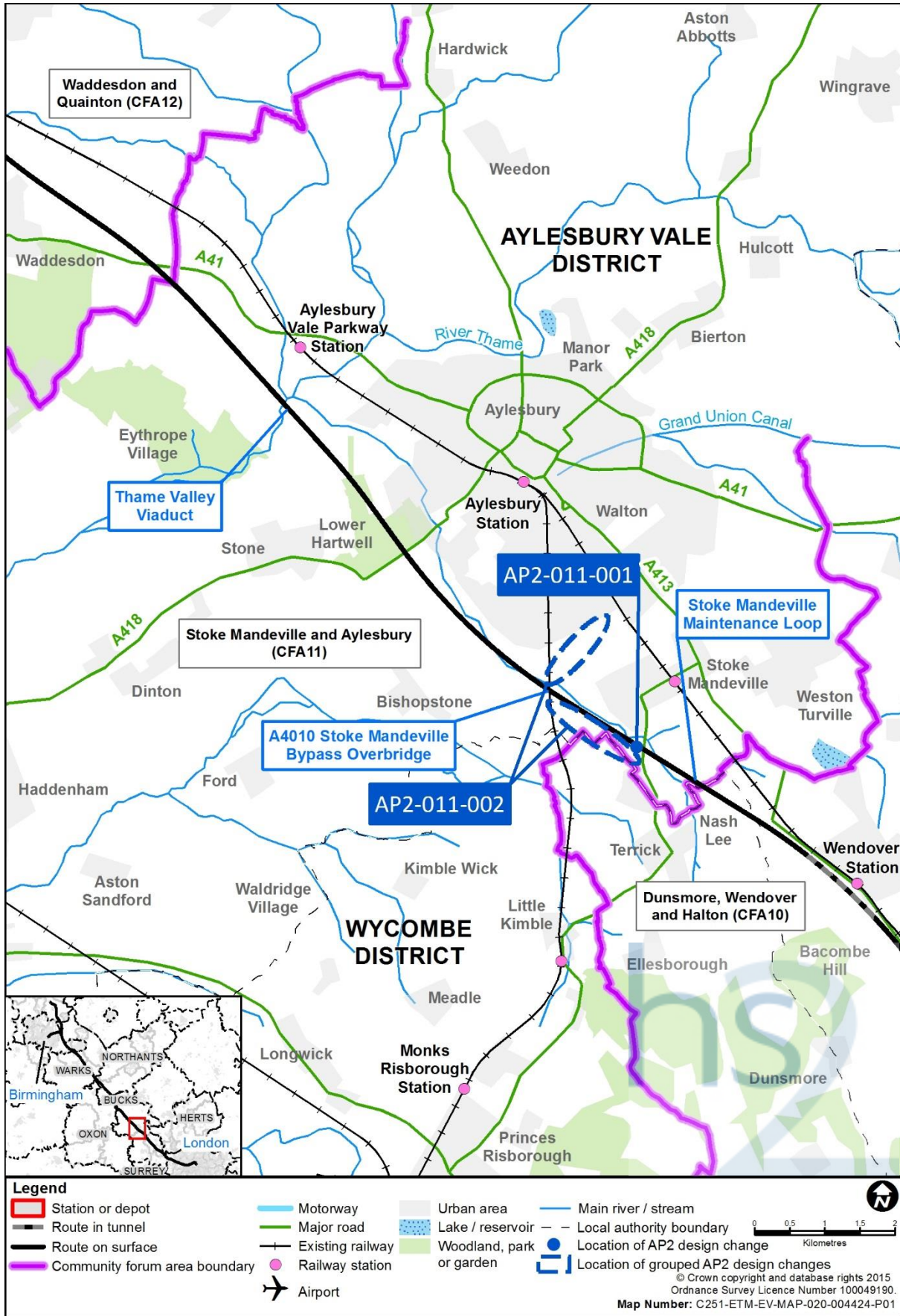
## 4 Summary of amendments

4.1.1 Table 2 provides a summary of the amendments in the Stoke Mandeville and Aylesbury CFA (CFA11) and Figure 1 shows the locations.

Table 2: Summary of amendments in CFA11

Name of amendment	Description of the original scheme or AP1 revised scheme	Description of the AP2 revised scheme
Additional land required for Old Risborough Road maintenance access point and turning head.  (AP2-011-001)	The permanent stopping-up of Old Risborough Road. There is no provision for a maintenance access point, parking area or turning head at the stopped-up length of Old Risborough Road on the west side of the route.	Additional land is required for the permanent provision on the south of Old Risborough Road and adjacent to the west of the route in order to construct a maintenance access point, including parking for maintenance vehicles and turning head, on the west side of the route.
Noise mitigation on the A4010 Stoke Mandeville Bypass.  (AP2-011-002)	The permanent provision of the A4010 Stoke Mandeville bypass. The original scheme makes no provision for mitigation of traffic noise from the bypass contributing to the likely operational noise significant effect on local residents and Booker Park School.	The permanent provision of three earth bunds for a total length of 1km and two noise fence barriers along the side of the A4010 Stoke Mandeville Bypass. The bunds and noise fence barriers will extend to 2m in height above the road level of the bypass. Land outside the original limits of the Bill is permanently required to construct the bunds and noise fence barriers.

Figure 1: Locations of amendments in CFA11



## 5 Assessment of amendments

### 5.1 Additional land required for Old Risborough Road maintenance access point and turning head (AP2-011-001)

- 5.1.1 The Bill provides for the permanent stopping-up of Old Risborough Road, to the south of Stoke Mandeville (refer to maps CT-05-041 and CT-06-041 in the main ES Volume 2, CFA11 Map Book). It does not provide for a maintenance access point or a turning head at the stopped-up section of Old Risborough Road on the west side of the route. A maintenance access point and a turning head are provided off Old Risborough Road on the east side of the route, to access a proposed ecological mitigation pond.
- 5.1.2 Since submission of the Bill, it has been identified that there is a need for a permanent maintenance access point for HS2 Ltd vehicles to park during maintenance operations, a turning head for vehicles to ensure the public can turn around at the dead end, and a parking area on the west side of the route. The maintenance access point, turning head and parking area will be located on the south of Old Risborough Road and adjacent to the route (refer to maps CT-05-041 and CT-06-041 in the SES and AP2 ES Volume 2, CFA11 Map Book).
- 5.1.3 The estimated duration of construction of the maintenance access point, turning head and parking area is one month. The majority of the land required is within the original limits of the Bill; however, approximately 20m<sup>2</sup> of additional land will be required for the amendment.
- 5.1.4 The maintenance access point, parking area and turning head are not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES with respect to: agriculture, forestry and soils; air quality; community; ecology; land quality; landscape and visual assessment; socio-economics; sound, noise and vibration; traffic and transport and water resources and flood risk assessment. However, reassessment was considered to be required in respect of cultural heritage.

#### Cultural heritage

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

- 5.1.5 The assessment scope, key assumptions and limitations for cultural heritage 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*

- 5.1.6 The cultural heritage baseline for the assessment takes into account information collected in support of the main ES, which included walk-over and geophysical surveys, remote-sensing data, and data from national and local registers. A full list is provided in Volume 2, Section 6.3 of the main ES. In addition, the baseline has been updated with the results of additional survey work comprising geophysical surveys for archaeology.

- 5.1.7 The maintenance access point, parking area and turning head will be constructed close to a number of heritage assets. North Lee Farm (asset reference<sup>4</sup> DWH144), which has been assessed as having moderate heritage value mainly for its buried archaeological potential, lies over 500m to the south-west of the amendment. There is a row of houses on Old Risborough Road between the amendment and North Lee Farm.
- 5.1.8 Running in a band to the north-east of the amendment (at a distance of 120m at its closest point), is the St Mary's Church Stoke Mandeville historic landscape (asset reference SMA097), formed of early medieval, medieval and post medieval elements. The landscape's primary focus is the site of the now demolished St Mary's Church (asset reference SMA003), which lies 375m to the south-east of the amendment. The secondary focus, Stoke House (asset reference SMA007), a Grade II listed building, lies 360m to the north-east. Both have their own associated landscape. St Mary's Church's setting includes earthworks of a deserted medieval settlement along with post medieval enclosures, assessed as being of high value. Stoke House also has earthworks linked to medieval activity, with the majority of the landscape setting being post medieval. Stoke House and its setting has been assessed as being of moderate value. Approximately 150m to the north of the amendment is the Stoke Mandeville village envelope (asset reference SMA096), which comprises predominantly early post medieval enclosures; this has been assessed as being of moderate heritage value.

### *Future baseline*

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

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

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

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

### *Effects arising during construction*

- 5.1.13 The main ES reported major adverse effects, which are significant, for St Mary's Church Stoke Mandeville historic landscape (asset reference SMA097) and the site of the now demolished St Mary's Church (asset reference SMA003). Significant moderate adverse effects were reported for Stoke House (asset reference SMA007) and the Stoke Mandeville village envelope (asset reference SMA096).

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<sup>4</sup> Asset reference: a unique code for each cultural heritage asset identified within the study area; further detail on these assets can be found in the gazetteer in Volume 5: Appendix CH-002-011 of the main ES.

- 5.1.14 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 as the amendment does not encroach onto any of the heritage assets previously identified.

#### *Effects arising from operation*

- 5.1.15 The main ES reported a major adverse effect, which is significant, for Stoke House (asset reference SMA007) and a moderate adverse effect, which is also significant, for the Stoke Mandeville village envelope (asset reference SMA096).
- 5.1.16 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 as the amendment does not alter the settings of the heritage assets previously identified.

#### *Mitigation and residual effects*

- 5.1.17 No mitigation measures in addition to those identified in the main ES are required. The amendment will result in no change in the likely residual significant effects reported in the main ES.

#### *Cumulative effects*

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

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

- 5.2.1 The use of the additional land for the Old Risborough Road maintenance access point and turning head does not change the significance of the environmental effects or proposed mitigation as set out in the main ES (Volume 2, CFA11, Stoke Mandeville and Aylesbury).

## **5.3 Noise mitigation on the A4010 Stoke Mandeville bypass (AP2-011-002)**

- 5.3.1 The Bill provides for the construction of the A4010 Stoke Mandeville bypass (refer to maps CT-05-041, CT-06-041, CT-05-041-L1, CT-06-041-L1, CT-05-042 and CT-06-042 in the main ES Volume 2, CFA11 Map Book). The existing A4010 Risborough Road will be stopped-up where it would be crossed by the HS2 route, approximately 200m to the south of Stoke Mandeville. The proposed bypass connects the A4010 Risborough Road from a junction approximately 250m south of the HS2 route and is aligned around the west of Stoke Mandeville to a junction with B4443 Lower Road, on the north-west of Stoke Mandeville. The Bill did not provide measures to reduce traffic noise from the bypass resulting in a residual significant operational noise effect.

- 5.3.2 Since submission of the Bill, the need for mitigation of traffic noise from the Stoke Mandeville bypass has been further considered. The amendment comprises construction of noise barriers in the form of landscape earthworks ('bunds') and noise fence barriers:
- two bunds, one approximately 300m long and the other approximately 340m long, along the east side of the bypass near properties on Old Risborough Road (refer to maps CT-05-041, CT-06-041, CT-05-041-L1 and CT-06-041-L1 in the SES and AP2 ES Volume 2, CFA11 Map Book). The gap between the bunds allows for the passage of Footpath ELL/2;
  - a noise fence barrier, approximately 70m long, along the east side of the bypass and extending from the southern end of the bunds described above (refer to maps CT-05-041 and CT-06-041 in the SES and AP2 ES Volume 2, CFA11 Map Book);
  - a noise fence barrier, approximately 335m long, along the north-west side of the bypass (refer to maps CT-05-042 and CT-06-042 in the SES and AP2 ES Volume 2, CFA11 Map Book); and
  - a bund, approximately 400m long, along the north-west side of the bypass, from the northern extent of the noise fence barrier to the junction of the bypass and B4443 Lower Road (refer to maps CT-05-042 and CT-06-042 in the SES and AP2 ES Volume 2, CFA11 Map Book).
- 5.3.3 The estimated duration of construction of the amendment is three months. Approximately 1.6ha of land outside the original limits of the Bill is required for the amendment. The AP1 revised scheme included an amendment for additional land required for the A4010 Stoke Mandeville bypass to the south of Stoke Mandeville (AP1-011-007). This is still proposed as part of the AP2 revised scheme.
- 5.3.4 The bunds and noise fence barriers will extend approximately 2m in height above the road level of the bypass. The bunds will be constructed from surplus excavated material.
- 5.3.5 The bunds and noise fence barriers 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; socio-economics; traffic and transport and water resources and flood risk assessment. However reassessment was considered to be required in respect of: agriculture, forestry and soils; cultural heritage; landscape and visual assessment; and sound, noise and vibration.
- 5.3.6 The noise barriers along the southern part of the proposed bypass are located within the Dunsmore, Wendover and Halton area (CFA10) however the assessment of the effects of the noise barriers is presented in this report only, as no new or different significant effects are predicted for receptors within CFA10.



## **Agriculture, forestry and soils**

### *Scope, assumptions and limitations*

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

### *Existing baseline*

- 5.3.8 The land required for the noise mitigation has soils in the Grove association, as described in the main ES (Volume 2, CFA11, Section 3). These soils are characterised by fine loamy topsoil over clay subsoil that are calcareous and seasonally waterlogged, and typically in Wetness Class III. The quality of the agricultural land is Subgrade 3a, which is amongst the best and most versatile (BMV) land and considered a receptor of high sensitivity in this area.
- 5.3.9 The land required temporarily and permanently for the amendment is wholly within the Stoke House land holding (CFA11/1), a 93ha arable and equestrian unit.

### *Future baseline*

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

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

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

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

### *Effects arising during construction*

- 5.3.16 The requirement for a further 1.6ha of BMV agricultural land will increase the total area of BMV land required in this CFA to 87.2ha. This does not give rise to a new or different significant effect, nor change the major/moderate adverse effect reported in the main ES, which is significant.
- 5.3.17 The requirement for a further 1.6ha of agricultural land increases the total area of land within Stoke House required during construction to 23.8ha. This does not give rise to new or different significant adverse effects, nor change the significance of the temporary effect on Stoke House during construction as reported in the main ES, i.e. major/moderate adverse (due to the proportion of the holding required), which is significant.
- 5.3.18 The permanent effect on Stoke House from construction of the original scheme was assessed as moderate adverse, which is significant, due to the proportion of the holding required (14%). The additional 1.6ha of agricultural land permanently required for the amendment increases the proportion of the holding required to 17%. This gives rise to a different effect but does not change its level of significance, which remains as moderate adverse.

### *Effects arising from operation*

- 5.3.19 The proposed amendment to provide noise mitigation on the A4010 Stoke Mandeville bypass 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*

- 5.3.20 No additional mitigation measures are required. The permanent effect on Stoke House from construction of the original scheme was assessed as moderate adverse, which is significant, due to the proportion of the holding required (14%). The additional 1.6ha of agricultural land permanently required for the amendment increases the proportion of the holding required to 17%. This gives rise to a different effect but does not change its level of significance, which remains as moderate adverse.

### *Cumulative effects*

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

## **Cultural heritage**

### *Scope, assumptions and limitations*

- 5.3.22 The assessment scope, key assumptions and limitations for cultural heritage 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*

- 5.3.23 The cultural heritage baseline for the assessment takes into account information collected in support of the main ES, which included walk-over and geophysical survey, remote-sensing data and data from national and local registers. A full list is provided in Volume 2, Section 6.3 of the main ES. In addition, the baseline has been updated with the results of additional survey work comprising geophysical surveys for archaeology.
- 5.3.24 The noise mitigation will be implemented close to a number of heritage assets. The closest of these are Romano British features on the Risborough Road (asset reference SMA009), which are assets of moderate value that lie approximately 90m east from the southernmost point of the amendment. Directly to the south of the amendment is North Lee Farm (asset reference DWH144), which has been assessed as having moderate heritage value mainly for its buried archaeological potential. The asset also includes a farm complex with a farmhouse, yard and agricultural outbuildings. This is typical of a Chiltern farmstead built around the time of parliamentary land enclosures in the area. Its associated agricultural surroundings add to the heritage value of the farmstead.
- 5.3.25 To the north of the amendment is the St Mary's Church Stoke Mandeville historic landscape (asset reference SMA097), formed of early medieval, medieval and post medieval elements. The landscape's primary focus is the site of the now demolished St Mary's Church (asset reference SMA003), which lies 450m to the south-east of the amendment. The secondary focus, Stoke House (asset reference SMA007), lies 660m to the east of the land required for the amendment. Stoke House is a Grade II listed, 18th century building with parts of a moat on the west and north sides. Both have their own associated landscape. The St Mary's Church historic landscape includes the earthworks of a deserted medieval settlement along with post medieval enclosures. These are of high heritage value. Stoke House also has earthworks linked to medieval activity, with the majority of the landscape setting being post medieval. Stoke House and its setting has been assessed as being of moderate value. Also within the historic landscape, 270m to the east of the amendment, is Millhouse farm (asset reference SMA095). Assessed as being of low value, it has historical and architectural interest as an example of a post-enclosure farmstead, with the rural landscape in which it lies contributing to its value.
- 5.3.26 Approximately 415m to the north-east of the amendment lies the Stoke Mandeville village envelope (asset reference SMA096), which comprises of predominantly early post-medieval enclosures, this has been assessed as being of moderate heritage value.

### *Future baseline*

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

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

### **Operation (2026)**

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

#### *Effects arising during construction*

- 5.3.31 The amendment to provide noise mitigation on the A4010 Stoke Mandeville bypass 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 and the AP1 ES, as the amendment does not encroach onto any of the heritage assets previously identified or alter their settings.

#### *Effects arising from operation*

- 5.3.32 The original scheme was predicted to have a major adverse effect, which is significant, on the setting of Stoke House (asset reference SMA007) during operation due to the introduction of structures into the agricultural landscape, railway noise and artificial lighting at night. Increased noise levels from the movement of trains at the Stoke Mandeville village envelope (asset reference SMA096) under the original scheme was predicted to have a noticeable impact on the ability to understand and appreciate the historic landscape context of the asset: a moderate adverse effect, which is significant (refer to Volume 2, CFA11, Section 6 of the main ES).
- 5.3.33 Whilst the noise barriers will reduce road noise at Stoke House (asset reference SMA007) and the Stoke Mandeville village envelope (asset reference SMA096), this will not change the significance of the adverse effects, as set out in the main ES, as the effects on these assets are predominantly caused by factors other than road noise.
- 5.3.34 The proposed amendment to provide noise mitigation on the A4010 Stoke Mandeville bypass 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 in the AP1 ES, as the amendment does not encroach onto any of the heritage assets previously identified or alter their settings.

#### *Mitigation and residual effects*

- 5.3.35 The amendment will result in no change to the likely major adverse significant residual effects reported in the main ES. No additional mitigation measures are proposed.

#### *Cumulative effects*

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

## Landscape and visual assessment

### *Scope, assumptions and limitations*

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

### *Existing baseline*

- 5.3.38 The area of land required for the amendment is located within the Longwick Vale Landscape Character Area (LCA) in CFA10 and the Stoke Mandeville Vale LCA in CFA11, as described in the main ES (Volume 2, CFA10 and CFA11 respectively, Section 9.3).
- 5.3.39 Views located in close proximity to the amendment, which are described in the main ES (Volume 2, CFA11, Section 9.3), are:
- Viewpoint 111.2.001: view east from dwellings on Old Risborough Road;
  - Viewpoint 112.4.001: view west from A4010 Risborough Road, Stoke Mandeville;
  - Viewpoint 112.2.002: view south-west from Stoke House, Stoke Mandeville;
  - Viewpoint 113.4.001: view east from Marsh Lane, Marsh; and
  - Viewpoint 114.2.002: view west from Moat Farm, Stoke Mandeville.
- 5.3.40 The AP1 ES identified a new receptor: Viewpoint AP1 114.2.003: view south from Elmfield, Lower Road.
- 5.3.41 This amendment will introduce a new representative viewpoint into the area: AP2.114.3.003: view north-west from Hall End and north-east from the PRoW SMA/16. This is described in SES and AP2 ES Volume 5: Appendix LV-001-011.

### *Future baseline*

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

- 5.3.42 SES and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.3.43 None of the identified developments affect the assessment of the amendment's likely construction impacts on the landscape and visual assessment.

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

- 5.3.44 SES and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.3.45 None of the identified developments affect the assessment of the amendment's likely operational impacts on the landscape and visual assessment.

## *Effects arising during construction*

### **Landscape assessment**

- 5.3.46 Stoke Mandeville Vale LCA was assessed as being affected by the original scheme and will also be affected by this amendment. The landscape is valued by the local community and is in fair condition and tranquillity is low. Therefore, it is considered to be of low sensitivity to change. The main ES reported a moderate adverse significant effect during construction due to construction of a maintenance loop, the new A4010 Stoke Mandeville bypass, the Princes Risborough to Aylesbury Line realignment, the realignment of three PRow and the presence of the Risborough Road satellite compound.
- 5.3.47 The construction of noise fence barriers and earth bunds immediately north and north-west of the A4010 bypass will take place between the new line, maintenance loop construction works and the bypass construction works and immediately adjacent to the bypass north of the railway line. The amendment will therefore be barely perceptible in the wider landscape and will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.3.48 Longwick Vale LCA was assessed as being affected by the original scheme and will also be affected by this amendment. The overall condition is good, the landscape is of local value and there is a high level of tranquillity, therefore it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse significant effect during construction due to formation of cuttings up to 4m deep, the construction of the Stoke Grove auto-transformer station, the realignment of the B4009 Nash Lee Road, the construction of the maintenance loop and the construction of the new A4010 Stoke Mandeville bypass.
- 5.3.49 The construction of noise fence barriers and earth bunds immediately north and north-west of the A4010 bypass slightly increase the extent of construction activity but 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**

- 5.3.50 Viewpoint 111.2.001: view east from dwellings on Old Risborough Road was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported significant effects due to the presence of construction activities, plant and machinery on the decommissioning of Old Risborough Road and the construction of the line and the maintenance loop. The amendment will be constructed adjacent to the bypass and the works will be partially screened by intervening vegetation. Consequently, the increased activity due to the amendment will not be perceptible in the context of the works on the original scheme. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects on these receptors reported in the main ES.
- 5.3.51 Viewpoint 112.4.001: view west from A4010 Risborough Road, Stoke Mandeville and Viewpoint 112.2.002: view south-west from Stoke House, Stoke Mandeville were assessed as being affected by the original scheme and will also be affected by this

amendment. The main ES reported significant effects due to the presence of construction activities, plant and machinery on the decommissioning of Old Risborough Road and the construction of the line and the maintenance loop. The amendment will be constructed on the far side of the line and the maintenance loop from the viewpoints and the increased activity will not be perceptible, especially in the context of the works on the original scheme. It will not give rise to a new or different significant effect and will not change the level of significance of the effects on these receptors reported in the main ES.

- 5.3.52 Viewpoint 113.4.001: view east from Marsh Lane, Marsh was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported significant effects due to the presence of construction activities associated with the new A4010 Stoke Mandeville bypass. The amendment will be constructed on the far side of the bypass from the viewpoint and the increased activity will not be perceptible, especially in the context of the bypass works on the original scheme. It will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.3.53 Viewpoint 114.2.002: view west from Moat Farm, Stoke Mandeville was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a significant effect during construction due to the presence of construction activities associated with the new railway line and the A4010 Stoke Mandeville bypass. The amendment will be constructed on the far side of the bypass from the viewpoint and hence the increased activity will not be perceptible, especially in the context of the bypass works on the original scheme. It will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.3.54 Viewpoint AP1. 114.2.003: view south from Elmfield, Lower Road was assessed as being affected by the AP1 revised scheme and will also be affected by this amendment. The AP1 ES reported a major adverse effect during construction due to the close proximity of the construction works on the Stoke Mandeville bypass. The construction of the proposed earthwork bunds and noise fence barriers will be viewed as one of the series of components of the bypass scheme. 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 AP1 ES.
- 5.3.55 Viewpoint AP2.114.3.003: view north-west from Hall End and north-east from the PRoW SMA/16 will be affected by this amendment. The works on the noise bund will be clearly visible from Hall End, which looks north-west, but there will be no view of the construction works from PRoW SMA/16 because the footpath will be temporarily stopped up during construction. Overall, the magnitude of change to the view from Viewpoint 114.3.003 will be medium. The medium magnitude of change, assessed against the high sensitivity of the receptor will result in a new moderate adverse effect, which is significant.

### *Effects arising from operation*

#### **Landscape assessment**

- 5.3.56 The Stoke Mandeville LCA was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a moderate adverse

significant effect during year 1 of operation due to a noticeable reduction in tranquillity as a result of visual intrusion, the loss of hedgerow vegetation and severance of agricultural land. By year 15 and beyond, the effect would be non-significant, when mitigation planting has matured.

- 5.3.57 The noise barriers will be new structures in the landscape, but characteristic features in the context of the bypass and embankment. They will be largely inconspicuous in the Stoke Mandeville LCA. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.3.58 The Longwick Vale LCA was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a moderate adverse significant effect during year 1 of operation due to direct impacts from the presence of earthworks and embankments and increased openness as a result of vegetation losses during the construction period. By year 15 and beyond, the effect would be non-significant, when mitigation planting has matured.
- 5.3.59 The noise barriers will be new structures in the landscape, but characteristic features in the context of the bypass and embankment. They will be largely inconspicuous in the LCA. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.3.60 Viewpoint 111.2.001: view east from dwellings on Old Risborough Road 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 year 1, year 15 and year 60 of operation due to the presence of overhead line equipment, noise fence barriers and the Risborough Road underpass in the view and the loss of vegetation, allowing open views towards Whitethorn Farm. The proposed earth bunds will be visible in filtered views beyond back garden vegetation. They will partially screen the bypass from receptors. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.3.61 Viewpoint 112.4.001: view west from A4010 Risborough Road, Stoke Mandeville and Viewpoint 112.2.002: view south-west from Stoke House, Stoke Mandeville were assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a moderate adverse significant effect in year 1 and year 15, reducing to not-significant by year 60 due to the presence of the railway line, a new pylon and the maintenance loop in the view and the loss of vegetation, opening up views towards Risborough Road. The proposed earth bunds will be inconspicuous in the view because they will be largely screened by the rail alignment. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.3.62 Viewpoint 113.4.001: view east from Marsh Lane, Stoke Mandeville was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a moderate adverse significant effect in year 1, reducing to non-significant by year 15, due to the presence of the A4010 Stoke Mandeville bypass and the opening up of views towards the urban edge of Stoke Mandeville. The proposed earth bunds will be inconspicuous in the view because they will be largely



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

- 5.3.63 Viewpoint 114.2.002: view west from Moat Farm, Stoke Mandeville was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a moderate adverse significant effect during operation, but reducing to non-significant by year 15, due to the presence of the rail alignment, the Footpath SMA/9 accommodation overbridge and the bypass. The proposed earth bunds will be constructed on the far side of the bypass from the viewpoint and will be partially screened by intervening vegetation. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.3.64 Viewpoint AP1.114.2.003: view south from Elmfield, Lower Road was assessed as being affected by the original scheme and the AP1 revised scheme and will also be affected by this amendment. The AP1 ES reported a moderate adverse significant effect during year 1 of operation, reducing to a non-significant effect by Year 15, due to the close proximity of the A4010 Stoke Mandeville bypass and associated roundabout. The bund and noise fence barriers will appear largely inconspicuous in the view as they will be adjacent to the bypass and will be seen in the context of the road alignment. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.3.65 Viewpoint AP2.114.3.003: view north-west from Hall End and north-east from the PRoW SMA/16 will be affected by this amendment. The noise fence barriers will be clearly visible from users of PRoW SMA/16 and the adjacent PRoW and in filtered views over the bypass from Hall End. They will be new features in the view, but they will be seen in the context of the road alignment and the existing Princess Risborough to Aylesbury Line, which is on a viaduct. They will not be wholly uncharacteristic additions to the view. The magnitude of change will be medium. The medium magnitude of change, assessed against the high sensitivity of the receptor will result in a new moderate adverse effect in year 1. Once mitigation planting on the bund and on the bypass embankment matures, the new structures will be integrated into the landscape and largely screened from view. The effects will reduce to non-significant by year 15.

### *Mitigation and residual effects*

- 5.3.66 Woodland planting with native species on the northern and western sides of the bunds will improve screening of the bypass when viewed from the north and west. Planting along the bypass will screen the noise fence barriers from the west. The new planting will help to integrate the new structures into the landscape.
- 5.3.67 The amendment will result in a new moderate adverse residual visual effect on the new receptor Viewpoint 114.3.003: view north-west from Hall End and north-east from the PRoW SMA/16 during construction and year 1 of operation (refer to maps LV-03-039 and LV-04-039 in the SES and AP2 ES Volume 2, CFA11 Map Book. Once mitigation planting on the bund and on the bypass embankment matures, the new

structures will be integrated into the landscape and largely screened from view. The effects will reduce to non-significant by year 15.

### *Cumulative effects*

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

## **Sound, noise and vibration**

### *Scope, assumptions and limitations*

- 5.3.69 The assessment scope, key assumptions and limitations for sound, noise and vibration 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.
- 5.3.70 Local assumptions for sound, noise and vibration are set out in main ES Volume 2, CFA11, Stoke Mandeville and Aylesbury.

### *Existing baseline*

- 5.3.71 The baseline sound, noise and vibration information for the area is described in the main ES (Volume 5, Appendix SV-002-011). Baseline noise levels representative of the assessment locations affected by the amendment have been used in both the construction and operational assessments.

### *Future baseline*

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

- 5.3.72 SES and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.3.73 None of the identified developments affect the assessment of the amendment's likely construction impacts on sound, noise and vibration.

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

- 5.3.74 SES and AP2 ES Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES (Volume 5: Appendix CT-004-000).
- 5.3.75 None of the identified developments affect the assessment of the amendment's likely operational impacts on sound, noise and vibration.

### *Effects arising during construction*

- 5.3.76 The closest sensitive receptors to the noise bunds and barriers are residential properties on Old Risborough Road, located approximately 200m to the north-east and are represented by assessment location 314965<sup>5</sup>. Construction works associated

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<sup>5</sup> See map number SV-03-021 (H7) in the Volume 5 Sound, noise and vibration - Country South (Part 2 of 4) Map Book of the main ES.

with the Risborough Road subway are the activities resulting in the highest forecast noise levels at the receptor.

5.3.77 The construction works associated with the amendment do not represent a substantial intensification of the works reported in the main ES. Due to this and the lack of proximity to the nearest noise sensitive receptor, the outcomes of the assessment reported in the main ES remain unchanged.

5.3.78 The amendment of noise mitigation on the A4010 Stoke Mandeville bypass will not give rise to new or different significant effects from those reported in the main ES.

### *Effects arising from operation*

5.3.79 The main ES identified likely significant effects at the south-western edge of Aylesbury, at approximately 25 dwellings in the vicinity of Westfield and Batt Furlong including the shared open area at Westfield, and at Booker Park School, identified as OSV11-Co3 and OSV11-No1, respectively<sup>6</sup>. At these dwellings, the likely adverse noise effect was predicted as a result of increases in sound from the new road bypass and the realigned railway.

5.3.80 The amendment includes noise barriers to the west and east of the bypass road between the route and eastern side of Aylesbury, and the western and southern extent of Stoke Mandeville.

5.3.81 An assessment has been undertaken to determine whether operational noise levels from the AP2 revised scheme would result in a likely significant effect(s), using the significance criteria detailed in the main ES (Volume 5, Appendix SV-001-000). The predicted operational sound, noise and vibration levels as a result of this amendment are presented in SES and AP2 ES (Appendix SV-004-011).

5.3.82 The noise mitigation provided by the amendment reduces the operational noise levels associated with the new bypass. There will be a negligible impact from rail and road noise at the properties in the vicinity of Westfield and Batt Furlong, and the operational sound levels at Booker Primary School will be lower than the relevant impact criteria. Therefore the amendment will remove the likely significant operational noise effects OSV11-Co3 and OSV11-No1 identified in the main ES (refer to Volume 5, Appendix SV-001-000).

### *Mitigation and residual effects*

5.3.83 The assessment assumes implementation of the measures set out within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES) for construction of the noise barriers. No additional mitigation measures are proposed other than the mitigation provided by the amendment itself.

5.3.84 The residual significant operational noise effects identified in the main ES at properties in the vicinity of Westfield and Batt Furlong, and the Booker Park Primary School, identified as OSV11-Co3 and OSV11-No1 (refer to map SV-05-021 in the SES and AP2 ES Volume 2, CFA11 Map Book) are removed as a result of this amendment.

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<sup>6</sup> See map number SV-05-021 in the Volume 2 Map Book of the main ES.

### *Cumulative effects*

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

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

- 5.4.1 The use of the additional land for noise barriers does not change the significance of the effects or proposed mitigation as set out in the main ES (Volume 2, CFA11, Stoke Mandeville and Aylesbury) in relation to cultural heritage.
- 5.4.2 The permanent effect on Stoke House from construction of the original scheme was assessed as moderate adverse, which is significant, due to the proportion of the holding required (14%). The additional 1.6ha of agricultural land permanently required for the amendment increases the proportion of the holding required to 17%. This gives rise to a different effect but does not change its level of significance, which remains as moderate adverse.
- 5.4.3 The amendment will result in a moderate adverse residual visual effect, which is significant on Viewpoint AP2.114.3.003 during construction, when the works on the bund will be clearly visible, and during year 1 of operation, when the noise fence barriers will be clearly visible (refer to maps LV-03-039 and LV-04-039 in the SES and AP2 ES Volume 2, CFA11 Map Book). Once mitigation planting on the bund and on the bypass embankment matures, the new structures will be integrated into the landscape and largely screened from view. The effects will reduce to non-significant by year 15.
- 5.4.4 The residual significant operational noise effects identified in the main ES at properties in the vicinity of Westfield and Batt Furlong and the Booker Park Primary School are removed as a result of this amendment.

## **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.

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