

HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement 3 and
Additional Provision 4 Environmental Statement

Volume 2 | Community forum area reports
CFA22 Whittington to Handsacre

October 2015

SES3 and AP4 ES 3.2.1.22



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Department for Transport

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Structure of the HS₂ Supplementary Environmental Statement 3 and Additional Provision 4 Environmental Statement

The Supplementary Environmental Statement 3 (SES₃) and Additional Provision 4 Environmental Statement (AP₄ ES) comprises:

- non-technical summary (NTS). This provides a summary in non-technical language of the SES₃ (Part 1) and AP₄ 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') as updated by subsequent SES and AP ES documents;
- Volume 1: introduction to the SES₃ and AP₄ ES. This introduces the supplementary environmental information and design changes included within the SES₃ and amendments, which have resulted in the need to amend the Bill, within the AP₄ 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 SES₃ (Part 1) and amendments within the AP₄ 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 SES₂ documents (and SES₃ for the AP₄ amendments) are reported. The AP₁, AP₂ and AP₃ 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 SES₃ (Part 1) and amendments within the AP₄ ES (Part 2) compared to those reported in the main ES as updated by SES and SES₂ (and SES₃ for the AP₄ amendments). The AP₁, AP₂ and AP₃ 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 SES₃ (Part 1) and amendments within the AP₄ ES (Part 2) compared to those reported in the main ES as updated by SES and SES₂ (and SES₃ for the AP₄ amendments). The AP₁ and AP₂ amendments

SES3 and AP4 ES Volume 2 – CFA22; Whittington to Handsacre

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 SES3 and AP4 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 SES₃ and AP₄ 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 to 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 SES₃ 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 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 AP₄ 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 SES3 (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 change assessed within the SES3 for this CFA includes temporary junction improvements.
- 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 SES3 is to provide an assessment of any new or different likely significant environmental effects arising from the changes described.
- 1.1.9 For this CFA, the changes brought forward by AP2 were substantial, and included changes to both the vertical and horizontal alignment of the HS2 route. The scale of the amendments was such that the Volume 2 report was rewritten in its entirety, effectively replacing the CFA22 Volume 2 document prepared for the main ES. For this CFA, the SES3 changes are therefore compared to the AP2 revised scheme, not the SES scheme, on the assumption that the AP2 amendments are enacted. It is assumed that the SES3 changes will only proceed in the event that the AP2 amendments are enacted.
- 1.1.10 The AP4 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 amendment assessed within the AP4 ES for this CFA includes a revised diversion of an electricity line.
- 1.1.11 The AP4 ES assesses each amendment separately for all relevant topics. For this CFA the purpose of the AP4 ES is to provide an assessment of any new or different likely significant environmental effects arising from the amendments compared to the AP2 revised scheme, as it is assumed that the AP4 amendment will only proceed in the event that the AP2 amendments are enacted.
- 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 SES3 and AP4 ES.

Part 1: Supplementary Environmental Statement 3

2 Summary of changes

2.1 New environmental baseline information

Ecology

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

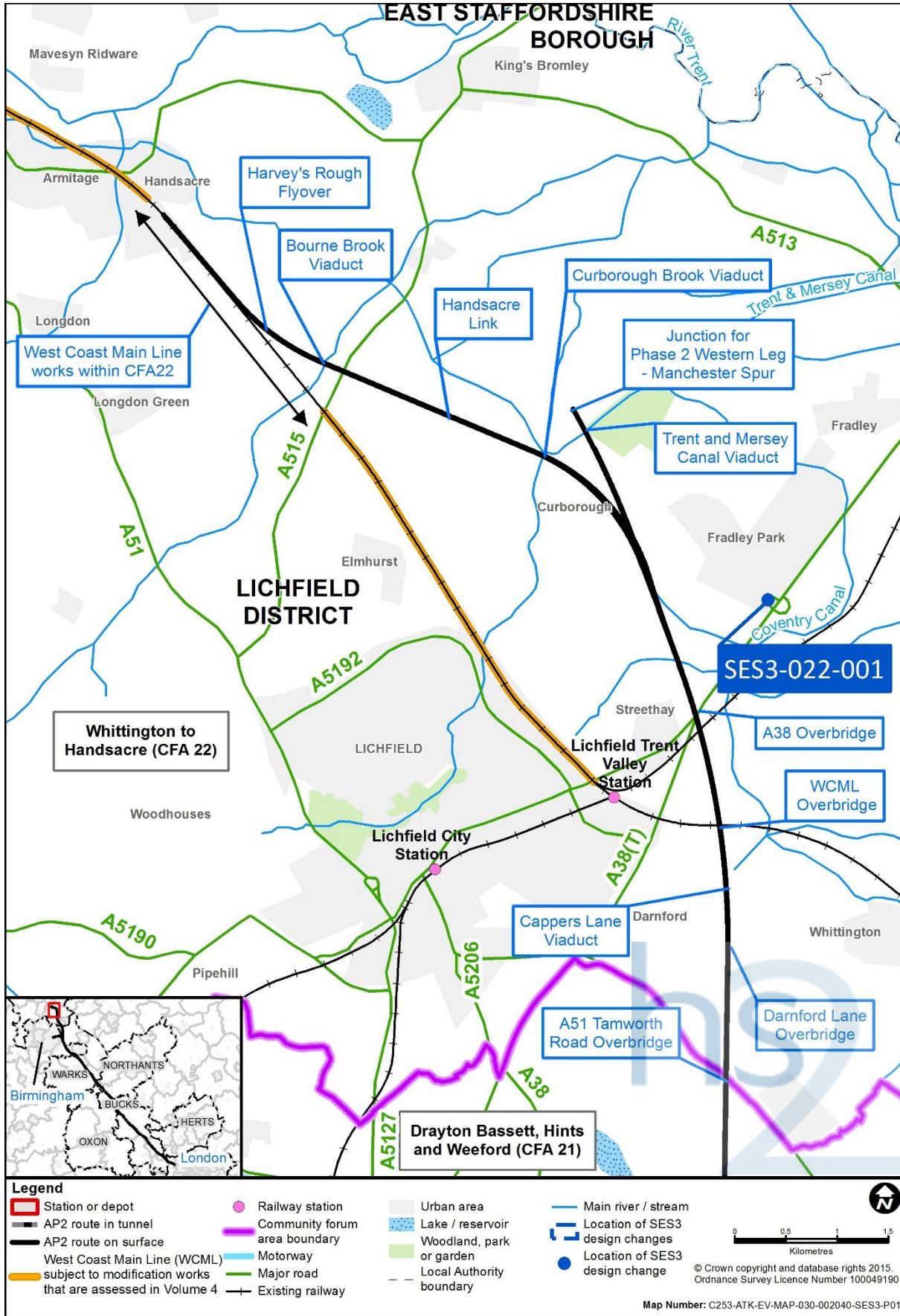
2.2 Changes to the design or to construction assumptions not requiring a change to the Bill

- 2.2.1 Table 2 provides a summary of the change 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 Whittington to Handsacre CFA (CFA22).

Table 2: Summary of changes to the design or to construction assumptions not requiring a change to the Bill in CFA22

Name of design change or construction assumption	Description of the AP2 revised scheme	Description of the SES3 change
Temporary improvements to the junction between the A38 Rykneld Street and Wood End Lane (SES3-022-001)	Temporary use of the existing junction between the A38 Rykneld Street and Wood End Lane at Hilliard's Cross as a route for construction traffic.	Construction of temporary improvements to the junction between Wood End Lane and the connection to the southbound slip roads of the A38 Rykneld Street at Hilliard's Cross. The works are designed to mitigate significant construction traffic effects associated with congestion and delays at the junction, as reported in the SES and AP2 ES. The improvement works do not require any additional powers.

Figure 1: Locations of design changes in CFA22



Description of changes to the design or construction assumptions

Temporary improvements to the junction between the A38 Rykneld Street and Wood End Lane (SES3-022-001)

- 2.2.2 The existing junction between Wood End Lane and the A38 Rykneld Street at Hilliard’s Cross was identified as a route for construction traffic in the main ES and the SES and AP2 ES (refer to main ES maps CT-05-126-R1 and CT-06-126-R1, grid reference A7 and A8, Volume 2, CFA22 Map Book).
- 2.2.3 The SES and AP2 ES (Part 1) reported a new major significant effect in relation to congestion and delays at the junction. The SES and AP2 ES (Part 2) also reported this same major significant effect for the AP2 revised scheme.
- 2.2.4 This SES3 change includes mitigation to remove the major significant effect identified in relation to congestion and delay for vehicle users of the junction between Wood End Lane and the connection to the A38 Rykneld Street southbound slip road. The improvements will be temporary and are expected to be in place between mid-2018 and mid-2023. All works will be contained within the highway boundary. The SES3 change will comprise the following temporary improvements to the junction of the slip road and Wood End Lane (refer to map CT-05-126-R1 in the SES3 and AP4 ES Volume 2, CFA22 Map Book):
- the introduction of traffic lights to control parts of the junction;
 - all approaches to the signalised junction will be widened in order to provide two lanes from all directions and the road markings will be changed appropriately; and
 - the widening of the approach for the slip road overbridge will require construction of a retaining wall. The retaining wall will be a maximum of 3.5m above the existing embankment level. The maximum height of the existing embankment is approximately 7.0m.
- 2.2.5 The improvements will be temporary in nature and removed upon completion of the works. The land will be reinstated to its previous condition.
- 2.2.6 It is recognised that there may be a benefit to making these temporary improvements permanent. HS2 will discuss this further with the highway authorities (Highways England and Staffordshire County Council) to agree if these measures should be removed after the works, or retained as a permanent improvement using highway authority powers.
- 2.2.7 It is anticipated that the works will be constructed in early 2018 and take approximately 24 weeks to construct and will remain in place for approximately five years and three months. The works will be undertaken within the existing highway authority boundary, and no additional Bill powers are required.

2.3 Topics included in the SES3 assessment

- 2.3.1 The changes described in Sections 2.1 and 2.2 result in new or different significant effects in respect of community, ecology, and traffic and transport.

3 Assessment of changes

3.1 Community

Introduction

- 3.1.1 This section of the report describes the environmental baseline in relation to community 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 those reported in the SES and AP₂ ES.

Scope, assumptions and limitations

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

SES₃ changes of relevance to this assessment

- 3.1.3 The temporary improvements to the junction between the A38 Rykneld Street and Wood End Lane is of relevance to this assessment (SES₃-022-001).

Environmental baseline

Existing baseline

- 3.1.4 The existing baseline remains unchanged from that reported in the SES and AP₂ ES, CFA 22, Volume 2, Section 9.3.
- 3.1.5 The study area has regard to the proposed routing of construction traffic and takes account of the catchment areas for community facilities that could be affected where crossed by the SES₃ scheme.
- 3.1.6 Fradley is situated in the centre of the Whittington to Handsacre area and to the north-east of the SES₃ scheme. Significant development has taken place at Fradley over recent years, including a new housing estate known as Fradley South. The community has a modest range of facilities, including a church, a community hall, a primary school and some convenience shops. Fradley falls within the catchment area for the Friary School (Secondary) and GP surgeries at Lichfield.

Future baseline

Construction (2017)

- 3.1.7 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.
- 3.1.8 None of the identified developments affect the assessment of the SES₃ scheme's likely construction impacts on community.

Operation (2026)

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

Effects arising during construction

Avoidance and mitigation measures

- 3.1.11 No avoidance or mitigation measures, additional to those reported in the SES and AP₂ ES, are required.

Assessment of impacts and effects

Temporary effects

- 3.1.12 The main ES described that the community of Fradley would not be significantly affected during the construction of HS₂. Construction works were considered to be too far from residential receptors within Fradley to cause significant amenity effects. Isolation effects, particularly relating to access to facilities at Lichfield from Fradley, were considered to be negligible due to the phasing and nature of the works on the A₃₈ Rykneld Street and Wood End Lane.
- 3.1.13 The SES and AP₂ ES (CFA₂₂, Volume 2) provided a correction to the main ES, identifying a new major significant traffic effect in relation to congestion and delays at the junction between Wood End Lane and the connection to the A₃₈ Rykneld Street southbound slip road as a result of additional construction traffic. This congestion would affect residents travelling from Fradley to Lichfield on a daily basis to access secondary schools, health centres and other facilities. As this traffic effect could last for a period of approximately two years, this was assessed as giving rise to a temporary moderate adverse significant isolation effect on the community of Fradley.
- 3.1.14 This SES₃ change seeks to mitigate the identified significant transport effect. Additional traffic and transport analysis (see the Traffic and Transport section 3.3) demonstrates that under the revised arrangement the junction will operate within capacity and there will be no significant increase in delay and congestion due to HS₂ construction traffic, removing the major adverse significant traffic effect. This changes the level of significance of the temporary isolation community effect reported in the SES and AP₂ ES from a moderate adverse significant effect to a negligible adverse effect which is not significant. The community impact assessment is detailed in Table 3 below and the location of the removed significant effect is shown in the SES₃ and AP₄ ES Volume 5 Community Map Book, map sheet CM-01-121.

Permanent effects

- 3.1.15 The temporary improvement of the highway junction between the A₃₈ Rykneld Street southbound slip road and Wood End Lane will have no permanent effects on community.

Other mitigation measures

3.1.16 No further mitigation measures are required.

Cumulative effects

3.1.17 There are no new or different likely significant cumulative effects for community.

Summary of likely residual significant effects

3.1.18 The proposed change will reduce a temporary moderate adverse residual significant isolation effect on the community of Fradley that was reported in the SES and AP₂ ES (CFA22, Volume 2) to a negligible adverse effect, which is not significant.

Effects arising from operation

3.1.19 The SES₃ change does not alter the operation of the scheme and so there are no new or different significant operation effects for community as a result of the proposed SES₃ change, in comparison with those described in the SES and AP₂ ES.

Volume 5 amendments

3.1.20 Table 3 sets out the changes to the SES and AP₂ ES, Volume 5, Appendix CM-001-022, Community Impact Assessment Table.

Table 3: Residents of Fradley

Resource name	Residents of Fradley
CFA	CFA22 – Whittington to Handsacre
Resource type	Residents.
Resource description/profile	Residents of Fradley dependent upon access to facilities at Lichfield, including the Friary School (Secondary) and health care facilities.
Assessment year	Construction phase (2017+).
Impact: temporary isolation	Impact: potential to disrupt journeys to access community facilities at Lichfield, including secondary schools and health care facilities, due to congestion at the Wood End Lane/A38 Rykneld Street junction caused by construction traffic. Duration: approximately two years during construction.
Assessment of magnitude	The traffic and transport assessment has predicted no significant increase in delay and congestion due to HS2 construction traffic at the A38 Rykneld Street/Wood End Lane junction. Traffic management measures are proposed on the A38 Rykneld Street but no significant delays are predicted associated with the works at Streethay. Journeys made to access secondary schools and other community facilities on a day to day basis will not be significantly affected by the SES ₃ scheme. The magnitude of impact is negligible, based on the results of the traffic and transport assessment. This is a change in the assessment from that reported in the main ES for the original scheme and the SES and AP ₂ ES for the AP ₂ revised scheme as a result of mitigation within the SES ₃ scheme.

Resource name	Residents of Fradley
Relevant receptors	Secondary school pupils residing in Whittington.
Assessment of sensitivity of receptors (s) to impact	Trips are made on a daily basis and all families with children of secondary age will be affected. Limited alternative routes to Lichfield via Wood End Lane will also be affected during construction, albeit no significant congestion or delays are predicted. Sensitivity Rating: medium.
Significance rating of effect	Negligible adverse effect – not significant. This is a removal of a temporary significant effect reported in the SES and AP ₂ ES as a result of mitigation within the SES ₃ scheme design. Previously, the construction of the AP ₂ revised scheme was assessed as having a moderate adverse isolation effect on the community of Fradley.
Proposed mitigation options for significant effects	No further mitigation identified.
Residual effects significance rating	Negligible adverse effect – non significant. This is a removal of a temporary significant effect reported in the SES and AP ₂ ES as a result of mitigation within the SES ₃ scheme design.

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 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 reported in the SES and AP₂ ES.
- 3.2.2 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

- 3.2.3 Updates to the scope of the assessment for ecology are as set out in Volume 1 of the SES₃ and AP₄ ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR and the SMR Addendum (Volume 5: Appendix CT-001-000/01 and CT-001-000/02 of the main ES) and in Addendum 4 to the SMR (SES₃ and AP₄ ES Volume 5: CT-001-000/5).
- 3.2.4 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

- 3.2.5 The following SES₃ changes are relevant to this assessment:

- new baseline surveys related to great crested newt undertaken in 2015; and
- the temporary improvement to the junction between the A38 Rykneld Street and Wood End Lane (SES3-022-001).

Environmental baseline

Existing baseline

- 3.2.6 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 including: Staffordshire County Council (Staffordshire Ecological Record) and Staffordshire Wildlife Trust. The assessment also takes into account additional desk-study and survey information that is reported in Volume 5 of the SES and AP2 ES.
- 3.2.7 Supplementary information relevant to the SES3 assessment in this CFA includes additional survey work for great crested newt and Phase 1 habitat survey of the area of additional land required at Hilliard's Cross junction. Details of all amphibian surveys undertaken in this area during 2015 are provided in SES3 and AP4 ES, Volume 5: Appendix EC-001-003 and Volume 5 map series EC-04.
- 3.2.8 For receptors described in the main ES, further details are provided in Volume 2, CFA22, Section 7 and in Volume 5, including maps EC-01 to EC-12. For receptors described in the SES and AP2 ES, further details are described in CFA22, Volume 2, Section 11, and in SES and AP2 ES Volume 5, including maps EC-01, EC-04 EC-05, EC-11 and EC-12.
- 3.2.9 A summary of the baseline information relevant to the SES3 assessment is provided below.

Designated sites

- 3.2.10 There are no statutory or non-statutory designated nature conservation sites or areas of ancient woodland which are relevant to the assessment of the temporary improvements to the junction between the A38 Rykneld Street and Wood End Lane.

Habitats

- 3.2.11 The temporary improvement to the junction between the A38 Rykneld Street and Wood End Lane consists of existing highways land associated with Wood End Lane and the A38 Rykneld Street slip road.
- 3.2.12 Land within the highways boundary consists of hardstanding, bordered by managed amenity grassland with trees, ruderal vegetation, areas of dense scrub and short lengths of intact species-poor hedgerows. A dry drainage ditch supporting ruderal species is also present along the northern side of Wood End Lane. Scrub habitat is considered to have up to local/parish value. The hedgerow network within land required for the construction of the AP2 revised scheme was reported in the SES and AP2 ES as having district/borough value. Taking a precautionary approach, the species-poor hedgerows relevant to the SES3 assessment could form part of the hedgerow network of the wider area and is considered to be of up to district/borough

value. Areas of hardstanding, amenity grassland and ruderal vegetation are of negligible value.

Protected and/or notable species

- 3.2.13 In the SES and AP₂ ES, water bodies which were unsurveyed or had received incomplete surveys within the land required for the construction of the SES₃ scheme, were assumed as a precaution to support a medium population of great crested newt and in each case were valued at up to a county/metropolitan level.
- 3.2.14 Between April and June 2015, eDNA¹ surveys were undertaken on water bodies within land required for the SES₃ scheme that were scoped in for detailed surveys for great crested newt but which had previously been unsurveyed or had received incomplete surveys due to land access restrictions. Surveys at two water bodies confirmed the presence of great crested newt. Both of these water bodies were located within Assumed Metapopulations (AMP) identified in the SES and AP₂ ES (AMP 30 and AMP 32) as of county/metropolitan value.
- 3.2.15 Nine of the water bodies surveyed in 2015 located within land required for the construction of the SES₃ scheme outside AMPs have returned negative results for great crested newt eDNA and great crested newts are now assumed absent:
- one field pond located north-west of Harvey's Rough, within the land required for the AP₂ revised scheme; and
 - eight water bodies located to the north-west of Vicar's Coppice within the land required for the construction of the AP₂ revised scheme.
- 3.2.16 No records of protected or notable species within the land required for the SES₃ change of the temporary improvement to the junction between the A38 Rykneld Street and Wood End Lane were reported in the SES and AP₂ ES.
- 3.2.17 There are no known great crested newt breeding ponds within 250m of the land required for the temporary improvement to the junction between the A38 Rykneld Street and Wood End Lane. Two water bodies are visible on the relevant Ordnance Survey map and aerial photography (reviewed as part of this assessment) located approximately 200m and 145m to the north-west of the SES₃ change, in Fradley Business Park. An additional pond is located approximately 210m to the east of the SES₃ change. All three water bodies are isolated from the land required for the SES₃ change by either areas of hardstanding and roads within Fradley Business Park or by the A38 Rykneld Street dual carriageway. These three water bodies were not considered to require detailed amphibian surveys as part of the SES and AP₂ ES and this remains the case for the SES₃ change.
- 3.2.18 The areas of trees, dense scrub and intact hedgerows within the land required for the SES₃ change could be used by roosting, foraging and commuting bats. However, the proximity of these habitats to the A38 Rykneld Street and Wood End Lane makes this less likely, due to the associated light and noise disturbance. An assemblage of bats was reported using foraging and commuting habitats adjacent to Fradley Business

¹ 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.

Park, west of Wood End Lane in the SES and AP₂ ES, which is located approximately 500m to the south-west of the proposed SES₃ change. On a precautionary basis, it is assumed that the assemblage of bats recorded adjacent to Fradley Business Park uses foraging and commuting habitats within the land required for the proposed change. This assemblage of bats was considered to have district/borough value as reported in the SES and AP₂ ES.

- 3.2.19 The trees and scrub within the land required for the SES₃ design change have the potential to support breeding birds. Breeding and wintering bird assemblages, and populations of breeding lapwing and breeding tree sparrow, were reported in the arable fields to the south of Fradley Business Park in the SES and AP₂ ES. This includes land immediately adjacent to the south of the land required for the SES₃ change. The breeding and wintering bird assemblages were reported to have local/parish value, and the populations of breeding lapwing and tree sparrow were reported to have district/borough and county/metropolitan value respectively. Considering the habitat present, and the setting adjacent to an existing road, it is likely that common and widespread bird species will be present in these areas and that these bird populations would be of no more than local/parish value.

Future baseline

Construction (2017)

- 3.2.20 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.
- 3.2.21 None of the identified developments affect the assessment of the amendment's likely construction impacts on ecology.

Operation (2026)

- 3.2.22 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.
- 3.2.23 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

- 3.2.24 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

- 3.2.25 The temporary improvement to the junction between the A38 Rykneld Street and Wood End Lane will not give rise to a new or different significant effect in relation to designated sites and will not change the level of significance of the effects reported in the SES and AP₂ ES.

Habitats

- 3.2.26 The SES and AP₂ ES reported that the combined loss (29.5km) and severance of hedgerows within CFA22 as a result of the AP₂ revised scheme will cause an adverse effect on the conservation status of the hedgerow network which will be significant at a district/borough level. Taking a precautionary approach, and assuming all lengths of hedgerow within the additional land required are to be removed, an additional length of approximately 50m of species-poor hedgerow will be lost as a result of the SES₃ change. Based on the small scale of this change it is not considered to result in a new or different significant effect, and will not change the level of significance of the effects reported in the SES and AP₂ ES.
- 3.2.27 It is unlikely that the temporary improvement to the junction between the A38 Rykneld Street and Wood End Lane will result in any other new or different effects on habitats of relevance at more than the local/parish level. Local/parish effects which are in addition to those identified in the SES and AP₂ ES are listed in Volume 5: Appendix EC-003-003 of the SES₃ and AP₄ ES.

Protected and/or notable species

- 3.2.28 The SES and AP₂ ES reported 29 water bodies would be lost within the land required for the construction of the AP₂ revised scheme that were deemed suitable for amphibians. At that time, these water bodies were unsurveyed, or received incomplete surveys, and were therefore assumed to support a medium population of great crested newt and were given a precautionary valuation, in each case, of up to a county/metropolitan level. The SES and AP₂ ES stated that the loss of these water bodies could result in an adverse effect on the conservation status of great crested newt populations which would be significant, in each case, at up to a county/metropolitan level.
- 3.2.29 The 2015 baseline data relevant to great crested newts has identified that these water bodies are highly unlikely to support great crested newt. Therefore, nine precautionary significant adverse effects at the county/metropolitan level that were reported in the SES and AP₂ ES due to the loss of water bodies suitable for amphibians will not now occur.
- 3.2.30 For the remaining 20 water bodies that remain unsurveyed, the precautionary adverse effect on the conservation status of great crested newt populations will remain significant, in each case, at up to a county/metropolitan level.
- 3.2.31 It is unlikely that the SES₃ change will result in any other new or different effects on species receptors of relevance at more than the local/parish level. Local/parish level effects which are in addition to those identified in the SES and AP₂ ES are listed in Volume 5: Appendix EC-003-003 of the SES₃ and AP₄ ES.

Cumulative effects

- 3.2.32 There are no new or different likely cumulative effects for ecology.

Other mitigation measures

- 3.2.33 No additional mitigation measures in addition to those identified in the SES and AP₂ ES are required.

Summary of likely residual significant effects

- 3.2.34 Following the implementation of mitigation measures already described in the SES and AP2 ES, no new or different residual effects on ecological receptors will occur as a consequence of the new baseline information and temporary improvement to the junction between the A38 Rykneld Street and Wood End Lane. The significant residual effects in this area are therefore unchanged from those reported in the SES and AP2 ES.

Effects arising from operation

- 3.2.35 There are no new or different significant operational effects for ecology compared to those reported in the SES and AP2 ES as a result of the new baseline information and temporary improvement to the junction between the A38 Rykneld Street and Wood End Lane.

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 those reported in the SES and AP2 ES.

Scope, assumptions and limitations

- 3.3.2 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.

Changes of relevance to this assessment

- 3.3.3 The temporary improvements to the junction between the A38 Rykneld Street and Wood End Lane is of relevance to this assessment (SES3-022-001).

Environmental baseline

Existing baseline

- 3.3.4 The existing baseline is as described in the SES and AP2 ES (CFA22, Volume 2, Chapter 16) and in Volume 5 Part 2 (TR-001-000) of both the main ES and the SES and AP2 ES.
- 3.3.5 The existing traffic flows along Wood End Lane and which use the Hilliard's Cross junction amount to 17,000 vehicles per day.

Future baseline

Construction

- 3.3.6 The future baseline for construction is as described in the SES and AP2 ES. Future baseline traffic volumes in the peak hours are forecast to grow by around 11% by 2021 compared to 2012.

Operation (2026 and 2041)

- 3.3.7 The future baseline for operation is as described in the SES and AP₂ ES. Future baseline traffic volumes in the peak hours are forecast to grow by around 18% by 2026 as compared to 2012 and 38% by 2041 as compared to 2012.

Effects arising during construction

Avoidance and mitigation measures

- 3.3.8 This SES₃ change is being introduced to mitigate a significant effect identified in the SES and AP₂ ES. No further avoidance or mitigation measures, additional to those reported in the SES and AP₂ ES, are required.

Assessment of impacts and effects

Temporary effects

- 3.3.9 The SES and AP₂ ES reported that changes in traffic flows during construction will result in a significant increase in congestion and delay for vehicle users at the western part of the junction between A38 Rykneld Street and Wood End Lane, considered to be a major adverse effect. This SES₃ change relates to mitigation works to provide signalisation and widening on the approaches to provide two lanes into the junction from each direction. As a result of these works, the junction will operate within capacity and there will be no significant increase in delay and congestion due to HS₂ construction traffic. The SES₃ change therefore removes the major adverse effect reported in the SES and AP₂ ES.

Permanent effects

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

Other mitigation measures

- 3.3.11 No change to the other mitigation described in the SES and AP₂ ES (CFA₂₂, Volume 2, Chapter 16) and in Volume 5 Part 7 (TR-001-000) is required.

Cumulative effects

- 3.3.12 The above assessment has considered 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.
- 3.3.13 There are no new or different likely significant cumulative effects for traffic and transport.

Summary of likely residual significant effects

- 3.3.14 The temporary improvements to the junction between A38 Rykneld Street and Wood End lane will remove the significant major adverse residual effect reported in the SES and AP₂ ES at the junction between the A38 Rykneld Street and Wood End Lane (Hilliard's Cross).

Effects arising from operation

Assessment of impacts and effects

- 3.3.15 The SES and AP₂ ES reported no significant effect at the junction of the A38 Rykneld Street and Wood End Lane during operation. The SES₃ change includes only temporary works and will be removed after completion of HS2 construction works unless the highway authority seeks its retention. There are no new or different significant operational effects for traffic and transport as a result of the SES₃ change compared to those reported in the SES and AP₂ ES.

Part 2: Additional Provision 4 Environmental Statement

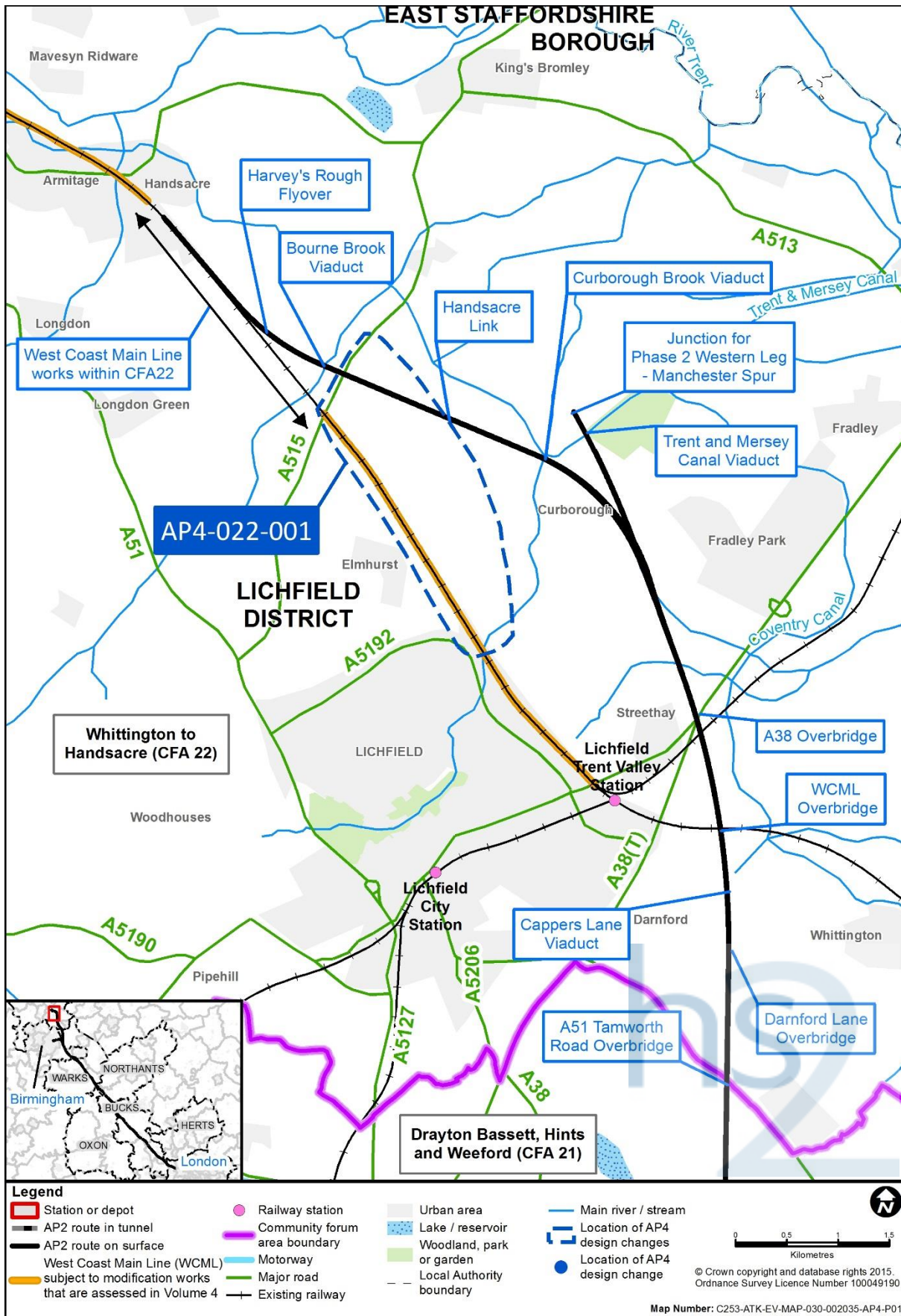
4 Summary of amendments

4.1.1 Table 4 provides a summary of the amendment in the Whittington to Handsacre CFA (CFA22), and Figure 2 shows the location.

Table 4: Summary of amendments in CFA22

Name of amendment	Description of the AP2 revised scheme	Description of the AP4 revised scheme
<p>Revised diversion of an electricity transmission line north of Lichfield (AP4-022-001).</p>	<p>The AP2 revised scheme provided for land to facilitate the diversion of a 132 kV electricity transmission line. This diversion included the removal of overhead power lines and pylons between the junction of Watery Lane and Wood End Lane, and a pylon west of A515 Lichfield Road south of Kings Bromley Marina, with a buried diversion route along the A515 and Wood End Lane to new terminal pylons at each end.</p>	<p>The amendment includes a revised diversion of the 132kV power line consisting of underground cabling linked from the new pylon into the A515 Lichfield Road (as described in the SES and AP2 ES); extending to the south-west to the West Coast Main Line (WCML); then running parallel to the WCML until the junction with Watery Lane at which point the cabling goes underneath the WCML and then in a southerly direction within Watery Lane to the A5192 Eastern Avenue. From this junction, the underground diversion extends in a south-easterly direction along the A5192 Eastern Avenue, before connecting into the Lichfield substation.</p> <p>The revised diversion involves the removal of an additional 2km of overhead transmission line between a pylon at the junction of Watery Lane and Wood End Lane and the electricity substation off the A5192 Eastern Avenue, Lichfield.</p> <p>The amendment will require an additional 5.1ha of land temporarily. The amendment will permanently require a total addition of 7.2ha of land but will reduce the need for land in other areas by 5.1ha. This will result in an overall requirement of 2.1ha of additional land permanently.</p>

Figure 2: Locations of amendments in CFA22



5 Assessment of amendments

5.1 Revised diversion of an electricity transmission line north of Lichfield (AP4-022-001)

- 5.1.1 The AP2 revised scheme provided for the HS2 route in this area to be relocated to the south and a diversion of the 132 kV Western Power electricity transmission line was proposed. This diversion included the removal of overhead power lines and pylons between the junction of Watery Lane and Wood End Lane, and a pylon west of the A515 Lichfield Road south of Kings Bromley Marina, with a buried diversion route along the A515 Lichfield Road and Wood End Lane to new terminal pylons at each end (refer to SES and AP2 ES maps CT-06-128, CT-06-128L1, and CT-06-129).
- 5.1.2 Since publication of the SES and AP2 ES, further design work has been undertaken with Western Power which has identified that the connection to the existing power line on Wood End Lane cannot be achieved. A revised diversion has been developed to address this.
- 5.1.3 The revised diversion developed in conjunction with Western Power includes a longer underground diversion of the 132 kV power line, with less of the power line routed within public roadways. This buried diversion described from north to south, consists of the following:
- underground cabling linked from the new pylon (refer to SES3 and AP4 ES map CT-05-129, H5) into the A515 Lichfield Road, extending within the A515 Lichfield Road south-west to the WCML (refer to map CT-05-129a-L1, D2);
 - underground cabling then extending in a south-easterly direction parallel to the WCML using directional drilling, until Watery Lane (refer to map CT-05-149, G4) at which point the cable goes underneath the WCML and then in a southerly direction within Watery Lane; and
 - underground cabling from the junction of Watery Lane and the A5192 Eastern Avenue (refer to map CT-05-149, H6), extending in a south-easterly direction along the A5192 Eastern Avenue, before connecting into the Lichfield substation (refer to map CT-05-148, B5).
- 5.1.4 The amendment will remove approximately 2km of existing overhead electricity transmission line and associated pylons between the junctions of Wood End Lane and the WCML with Watery Lane.
- 5.1.5 The section of the amendment that runs within the A515 Lichfield Road will remain as was described in the SES and AP2 ES.
- 5.1.6 The amendment includes temporary works within Watery Lane and the A5192 Eastern Avenue associated with burying the power line. Temporary works within Watery Lane will last approximately three weeks. Construction of the diversion route within Watery Lane will be within a signalised traffic management system with a single lane closure of up to 250m.
- 5.1.7 The construction of the diversion route within the southern grass verge of the A5192 Eastern Avenue will eliminate the need for lane closures along the A5192 Eastern

Avenue. Any necessary crossings of the A₅₁₉₂ Eastern Avenue will occur within the existing boundaries of the A₅₁₉₂ Eastern Avenue (from Watery Lane and towards the electrical substation). They are expected to take place during weekends and at night. Final access into the Western Power substation will use the existing access routes and remain within the substation boundaries. The estimated duration of the works along the A₅₁₉₂ Eastern Avenue is six weeks.

- 5.1.8 Where the route crosses watercourses and ponds, the diversion will be bored underneath these features to avoid adverse impacts to the watercourses and ponds and associated habitats.
- 5.1.9 Where existing hedgerows are removed for the diversion work, they will be replaced on their existing alignments or along the amended property boundary, as appropriate.
- 5.1.10 Construction will occur over an approximately six-month period, starting in 2019 and ending in 2020. Outages and connections will occur sequentially after completion of construction activities for these works in 2020 and will last three months. Following the completion of the outages and connections, the removal of existing power lines will be completed over a three-month period at the end of 2020.
- 5.1.11 The section of the amendment along the A₅₁₅ Lichfield Road is located within land identified as required for construction in the SES and AP₂ ES (map CT-05-129). The remainder of the amendment will require the addition of approximately 5.1ha of new land temporarily, and an overall 2.1ha area of new land permanently. The area of land required permanently is comprised of a total addition of 7.2ha of land and a total reduction of 5.1ha of land, across the entirety of the amendment, resulting in an overall requirement of 2.1ha of additional land permanently. After construction, the land will largely be reinstated to agricultural use with a permanent access right for maintenance purposes along the length of the diversion.
- 5.1.12 The new diversion route crosses the route of the following footpaths: Kings Bromley Footpath 17, Curborough and Elmhurst 13b, Curborough and Elmhurst 10b and Lichfield City 8b. The routes of these footpaths will be diverted locally and temporarily around the construction works associated with the amendment as they progress for the safety of users. However, it is not anticipated that the length of the journey along any of these identified footpaths will increase by more than 50m as a result of the local diversions. There may also be a need to close the identified footpaths temporarily and for short periods (approximately one week) where safe access cannot be maintained during specific works. All footpath routes would be reinstated along their existing alignments following construction of the amendment.
- 5.1.13 An alternative diversion route considered with Western Power followed the same route along the A₅₁₅ Lichfield Road and Wood End Lane as established in the SES and AP₂ ES but differed at Watery Lane. The alternative diversion route proposed to bury the electricity transmission line within the entirety of Watery Lane, including crossing the Full Brook bridge. HS₂ did not consider that this alternative had any advantages over the AP₄ amendment. This alternative was not progressed due to the necessary closure of Watery Lane for 24 weeks, which would impact surrounding stakeholders and would not be viable with the Full Brook Bridge rebuilding requirements.

5.2 Topics included in the assessment

- 5.2.1 The power line diversion is not considered to result in changes that will require a reassessment of the effects or proposed mitigation as set out in the SES and AP₂ ES with respect to: air quality; community; socio-economics; sound, noise and vibration; and water resources and flood risk assessment. However, reassessment is considered to be required in respect of agriculture, forestry and soils; cultural heritage; ecology; land quality; landscape and visual assessment and traffic and transport.

Agriculture, forestry and soils

Introduction

- 5.2.2 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 described in the SES and AP₂ ES.

Scope, assumptions and limitations

- 5.2.3 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 5.2.4 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 best and most versatile (BMV) agricultural land or forestry land within the CFA₂₂ area. The route-wide effects on BMV land and forestry land are reported in Volume 3.

Existing baseline

- 5.2.5 This amendment will directly affect three agricultural holdings described in the SES and AP₂ ES (CFA₂₂, Volume 2, Section 7); these comprise: Curborough Farm (CFA₂₂/8), Black Slough Farm (CFA₂₂/13), Hanchwood (CFA₂₂/15). Curborough Farm (272ha) and Hanchwood (121ha) are mixed arable and livestock holdings, which have some irrigated crops, and are of high sensitivity to change. Black Slough Farm is a 56ha dairy enterprise of high sensitivity to change.
- 5.2.6 This amendment also affects a new holding not previously reported in the main ES or SES and AP₂ ES. This is a 12ha parcel of woodland called Tomhay Wood (CFA₂₂/51), which is considered to be of low sensitivity.

Future baseline

Construction (2017)

- 5.2.7 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 SES and AP₂ ES.
- 5.2.8 None of the identified developments affect the assessment of the AP₄ amendment's likely construction impacts on agriculture, forestry and soils.
- 5.2.9 Most existing environmental stewardship agreements will expire in 2015 and will be replaced by a new environmental land management scheme (countryside

stewardship) which, together with the new greening measures introduced by Common Agricultural Policy reform, will affect the detailed management of individual farm holdings but are not expected to change fundamentally the baseline circumstances described.

Operation (2026)

5.2.10 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 SES and AP₂ ES.

5.2.11 None of the identified developments affect the assessment of the AP₄ amendment's likely operational impacts on agriculture, forestry and soils.

Effects arising during construction

5.2.12 The SES and AP₂ ES reported a temporary major/moderate adverse significant effect on Curborough Farm. The area of agricultural land required temporarily from this holding will increase from 33.8ha (12% of the holding) to 36.7ha (13%) as a result of the amendment, but this will not change the level of significance reported in the SES and AP₂ ES. The SES and AP₂ ES also reported a permanent major/moderate adverse significant effect on Curborough Farm. The area required permanently from this holding will increase slightly from 30.0ha (11%) to 30.2ha (11%) as a result of the amendment, but this will not change the level of significance reported in the SES and AP₂ ES.

5.2.13 The SES and AP₂ ES reported a temporary major adverse significant effect on Black Slough Farm. The area of agricultural land required temporarily from this holding will reduce from 26.1ha (47%) to 24.3ha (43%) as a result of the amendment, but this will not change the level of significance of effect reported in the SES and AP₂ ES. The SES and AP₂ ES also reported a permanent major adverse significant effect on Black Slough Farm. There is no change in the area required permanently from this holding and there is no change to the level of significance of effect reported in the SES and AP₂ ES. As with the AP₂ revised scheme, the AP₄ revised scheme is likely to extinguish the dairy enterprise at this holding.

5.2.14 The SES and AP₂ ES reported a temporary major adverse significant effect on Hanchwood, due to a high level of disruptive effects/safety issues associated with a commercial farm shoot. The area of agricultural land required temporarily from this holding will increase from 15.4ha (13%) to 16.4ha (13%) as a result of the amendment, but this will not change the level of significance of effect reported in the SES and AP₂ ES. The SES and AP₂ ES reported a permanent major/moderate adverse significant effect on Hanchwood. The area required permanently from this holding will increase from 11.5ha (9%) to 12.4ha (10%) as a result of the amendment, but this will not change the level of significance of effect reported in the SES and AP₂ ES, which stays as major/moderate adverse (significant).

This amendment will require 0.6ha (5%) both temporarily and permanently from Tomhay Wood. The significance of this effect is assessed as negligible, which is not significant.

Effects arising from operation

- 5.2.15 This 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 SES and AP₂ ES.

Mitigation and residual effects

- 5.2.16 No additional mitigation measures (i.e. in addition to those identified in the SES and AP₂ ES) are required.
- 5.2.17 The amendment will not give rise to new or different residual significant effects and will not change the level of significance of the effects reported in the SES and AP₂ ES.

Cumulative effects

- 5.2.18 There are no new or different likely significant cumulative effects for agriculture, forestry and soils.

Cultural heritage

Introduction

- 5.2.19 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 reported in the SES and AP₂ ES.

Scope, assumptions and limitations

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

Existing baseline

- 5.2.21 The cultural heritage baseline for the assessment takes into account information collected in support of the main ES for the original scheme. This included 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 for the AP₂ revised scheme with the results of additional survey work comprising geophysical surveys for archaeology and a review of historic mapping and other available historic data sources to verify the status of a number of sites in the vicinity of the AP₂ revised scheme, which the Woodland Trust believes to be ancient woodland, that are not currently listed on the ancient woodland inventory.
- 5.2.22 Heritage assets potentially affected by this amendment through physical change are:
- WHA₃₃₄² Tewnals Lane hedgerow, a non-designated asset of moderate value;
 - WHA₂₂₅ Vicar's Coppice, a designated ancient woodland of high value; and

² Cultural heritage assets potentially affected by the amendment through physical change are identified with a unique reference code, 'WHAXXX'; further detail on these assets can be found in the gazetteer in Volume 5 of the main ES (Appendix CH-002-022).

- WHA224 Tomhay Wood, a designated ancient woodland of high value.

Future baseline

Construction (2017)

- 5.2.23 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 SES and AP2 ES.
- 5.2.24 None of the identified developments affect the assessment of the AP4 amendment's likely construction impacts on cultural heritage.

Operation (2026)

- 5.2.25 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 SES and AP2 ES.
- 5.2.26 None of the identified developments affect the assessment of the AP4 amendment's likely operational impacts on cultural heritage.

Effects arising during construction

- 5.2.27 The amendment will cause disturbance to the Tewnals Lane hedgerow (asset reference: WHA334), which is an asset of moderate value. The AP2 revised scheme required the removal of a substantial portion of the hedgerow. This was reported in the SES and AP2 ES as a medium adverse impact resulting in a moderate adverse effect, which is significant.
- 5.2.28 The amendment will require the removal of different parts of this asset from those parts removed as a result of the AP2 revised scheme. However, the scale of impact will remain as a medium adverse impact, and the resultant effect would remain as a moderate adverse effect, as reported in the SES and AP2 ES. The amendment will not affect the asset in a different way (i.e. it remains a physical impact), neither will it affect the hedgerow's significance.
- 5.2.29 Vicar's Coppice (asset reference: WHA225) is located approximately 25m from the land required for the amendment. The SES and AP2 ES reported a low adverse impact on this asset of high value which resulted in a moderate adverse effect, this will be unchanged by the amendment.
- 5.2.30 Tomhay Wood (asset reference: WHA224), an asset of high value, was not affected by the AP2 revised scheme. The revised utility diversion passes between this asset and the WCML on the route of an existing track (that runs parallel to the WCML), and as such will result in minimal loss of woodland and no loss of significance. This change will not give rise to any new significant effects.

Effects arising from operation

- 5.2.31 The amendment 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 SES and AP2 ES.

Mitigation and residual effects

- 5.2.32 No additional mitigation measures (i.e. in addition to those identified in the SES and AP2 ES) are required.
- 5.2.33 The amendment will not give rise to new or different residual significant effects and will not change the level of significance of the effects reported in the SES and AP2 ES.

Cumulative effects

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

Ecology

Introduction

- 5.2.35 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 AP2 revised scheme.

Scope, assumptions and limitations

- 5.2.36 Updates to the scope of the assessment for ecology are set out in Volume 1 of the SES3 and AP4 ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR and the SMR Addendum (Volume 5: Appendix CT-001-000/01 and CT-001-000/02 of the main ES) and in Addendum 4 to the SMR (SES3 and AP4 ES Volume 5: CT-001-000/5).
- 5.2.37 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

- 5.2.38 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 for great crested newt undertaken from April 2015 to June 2015, aerial photography and relevant existing information gathered from national organisations and from regional and local sources including: Staffordshire Ecological Record and Staffordshire Wildlife Trust.
- 5.2.39 The summary of the baseline information relevant to the assessment of the amendment takes account of any relevant 2015 survey information provided in SES3 and AP4 Volume 5: Appendix-001-003. For those receptors described in the SES and AP2 ES, further details are provided in the SES and AP2 ES CFA22, Volume 2, Section 11 and in Volume 5, including maps EC-01, EC-04 EC-05 EC-11 and EC-12.

Designated sites

- 5.2.40 There are no statutory designated nature conservation sites relevant to the assessment.

5.2.41 There are seven Local Wildlife Sites (LWSs) within 500m of the amendment. LWS are named as either Sites of Biological Importance (SBIs) or Biodiversity Alert Sites (BASs) in Staffordshire. Five LWSs are relevant to the assessment in this area including:

- Curborough House Hedgerows SBI – located approximately 25m from the land required for the construction of the amendment. This SBI consists of hedges valued for the high number of woody species and standard trees along their length. This LWS was valued in the SES and AP2 ES as of county/metropolitan value;
- Curborough Hall Farm Hedgerows BAS – located approximately 10m from the land required for the construction of the amendment. The BAS consists of hedges valued for the high number of woody species and standard trees along their length. This LWS was valued in the SES and AP2 ES as of county/metropolitan value;
- Fullbrook Farm (hedge 3) BAS – located adjacent to the land required for the construction of the amendment lying north of the WCML. This BAS consists of a hedge valued for its large height, width and good shape. This LWS was not valued in the SES and AP2 ES. It is of county/metropolitan value;
- Vicar’s Coppice BAS – located approximately 25m from the land required for the construction of the amendment. The BAS consists of 7ha of ancient semi-natural broadleaved woodland. This LWS was valued in the SES and AP2 ES as of county/metropolitan value; and
- Tomhay Wood SBI – located adjacent to the land required for the construction of the amendment lying north of the WCML. The site consists of a remnant area of ancient woodland with some planted areas. This LWS was valued in the SES and AP2 ES as being of county/metropolitan value.

5.2.42 No additional areas of ancient woodland that are situated outside of designated sites are located within or adjacent to the land required for the amendment.

Habitats

5.2.43 Areas of improved grassland, semi-improved grassland and amenity grassland are present along the route of the amendment, primarily along the road verge of the A5192 Eastern Avenue, agricultural field edges adjacent to the WCML, and within the area of the pylon and transmission line removal to the north-west and south of Watery Lane. The areas of improved grassland, semi-improved grassland and amenity grassland within the land required for the amendment are considered to be of no more than negligible value.

5.2.44 Areas of hardstanding and three buildings are present along the diversion route to the west of the WCML and east of the A5192 Eastern Avenue associated with an existing electricity substation. These areas of hardstanding and buildings are of negligible value.

5.2.45 Small areas of arable land are present within the land required for the amendment, mainly within the area of pylon and transmission line removal to the north-west of

Watery Lane. Arable land within the Whittington to Handsacre area (CFA₂₂) was assessed as having negligible value in the SES and AP₂ ES.

- 5.2.46 The hedgerow network within land required for construction was reported in the SES and AP₂ ES as having district/borough value. Seven hedgerows are located partly within the land required for the amendment adjacent to the WCML, and within the area of pylon and transmission line removal to the north-west of Watery Lane. Taking a precautionary approach, these hedgerows could be species-rich and form part of the wider hedgerow network and are considered to be of up to district/borough value. One hedgerow which makes up Fullbrook Farm (hedge 3) BAS is located immediately adjacent to the land required for the amendment. A review of aerial photography indicates that the section of hedgerow located adjacent to the land required for the amendment is very narrow with gaps, supporting no standard trees. However, as this hedgerow is within the BAS it is of county/metropolitan value.
- 5.2.47 The land required for the proposed diversion routed along the WCML lies adjacent to Tomhay Wood, an area of remnant ancient woodland. Access to Tomhay Wood was not available for survey for the SES and AP₂ ES, therefore a precautionary approach to the woodland valued it at county/metropolitan level. An area of young plantation woodland is located within land required for pylon and transmission line removal to the south of Watery Lane. This area of plantation woodland was not valued in the SES and AP₂ ES, but is considered to be of up to local/parish value. In addition, areas of scattered scrub and trees are present along the diversion route, mainly along field boundaries, along Full Brook and the A₅₁₉₂ Eastern Avenue road verge. The SES and AP₂ ES valued areas of scrub within the Whittington to Handsacre area (CFA₂₂) as of being up to local/parish value.
- 5.2.48 The pylon and transmission line removal to the north-west of Watery Lane crosses Curborough Brook, which was valued in the SES and AP₂ ES as of local/parish value. The land required for the amendment along the WCML crosses Full Brook and an unnamed watercourse, neither of which were reported in the SES and AP₂ ES. Full Brook has a sinuous channel in the vicinity of the amendment crossing point and is likely to support a variety of in-channel habitat and is considered to be of no more than local/parish value. The unnamed watercourse has a straight channel and is likely to be a field drain of no more than local/parish value.
- 5.2.49 There are two water bodies within land required for the amendment. The first is located adjacent to the WCML, in the area of the pylon and transmission line removal to the south of Watery Lane. The second is formed by a pooled area of an unnamed watercourse as it enters a culvert under the WCML. No access was available to these water bodies during preparation of the SES and AP₂ ES. On a precautionary basis these water bodies are assumed to have up to district/borough value.

Protected and/or notable species

- 5.2.50 No records of protected or notable species within the land required for the amendment were reported in the SES and AP₂ ES.
- 5.2.51 Two water bodies are located within the land required for the amendment, one located to the south of Watery Lane and one formed by a pooled area of an unnamed watercourse as it enters a culvert under the WCML. Surveys have not been undertaken

of these two water bodies. Nine further ponds are located within 250m of the land required for the amendment.

- 5.2.52 Of these nine ponds, the SES and AP₂ ES reported a small great crested newt metapopulation within two ponds near Curborough Cottages of district/ borough value, and located within land required for the amendment. A third was previously scoped out of any requirement for great crested newt surveys due to its distance from the AP₂ revised scheme, and the remaining six water bodies were not surveyed due to access restrictions. The SES and AP₂ ES reported that ponds which have not been surveyed could support breeding populations of great crested newts of medium population size class, and using a precautionary approach these populations were assessed as having up to county/metropolitan value.
- 5.2.53 There are no buildings or trees supporting known bat roosts within the land required for the amendment. A review of aerial photography indicates that a number of trees are adjacent to Full Brook and within the A5192 Eastern Avenue road verge which could have potential to support roosting bats. In addition, three buildings are present to the east of the A5192 Eastern Avenue which could have potential to support roosting bats. The SES and AP₂ ES reported an assemblage of bats using the Trent and Mersey Canal and adjacent woodlands (Ravenshaw Wood, Black Slough, the Slaish and Fradley Wood) located approximately 750m north of the land required for the amendment. This included common pipistrelle, soprano pipistrelle, brown long-eared bat, Daubenton's bat, Natterer's bat, Leisler's bat, noctule, whiskered bat, Brandt's bat, seotine and Nathusius's pipistrelle. Connective habitat, in the form of hedgerows, watercourses and woodland, links the trees located within the land required for the amendment to those used by the bat assemblage. Taking a precautionary approach, the trees and buildings present within the land required for the amendment could support roosting bats that are part of the assemblage of bats using the Trent and Mersey Canal and adjacent woodlands (Ravenshaw Wood, Black Slough, the Slaish and Fradley Wood). In addition, bats from this assemblage could potentially utilise hedgerows, watercourses and trees within the area required for the amendment as foraging areas and commuting routes. This assemblage of bats was reported in the SES and AP₂ ES as being of regional value.
- 5.2.54 The trees, hedgerows and agricultural fields within the land required for the amendment have the potential to support breeding birds. Considering the habitat present and the agricultural setting, it is likely that common and widespread bird species will be present in these areas and that these bird populations would be of no more than local/parish value.
- 5.2.55 The grassland and field margins present within the land required for the amendment could support common reptile species. The SES and AP₂ ES considered that areas of suitable habitat for reptiles which have not yet been subject to survey are likely to support low numbers of reptile species of local/parish value.
- 5.2.56 Locations of species records from surveys conducted in support of the AP₂ revised scheme are illustrated on SES and AP₂ ES maps EC-01, EC-04, EC-05, EC-11 and EC-12, Volume 5, Map Book Ecology.

Future baseline

Construction (2017)

- 5.2.57 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.
- 5.2.58 None of the identified developments affect the assessment of the amendment's likely construction impacts on ecology.

Operation (2026)

- 5.2.59 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 and the SES and AP₂ ES.
- 5.2.60 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

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

Designated sites

- 5.2.62 The SES and AP₂ ES reported that no impacts were expected on Tomhay Wood SBI or Fullbrook Farm (hedge 3) BAS. The amendment consists of a buried diversion route that will follow the alignment of an existing track running parallel to the WCML in the location of the Fullbrook Farm (hedge 3) BAS and Tomhay Wood SBI. As such, the amendment will not result in the loss of woodland or hedgerow from within these designated sites. The amendment will not give rise to any new or different significant effects on designated sites and will not change the level of significance of the effects reported in the SES and AP₂ ES.

Habitats

- 5.2.63 The SES and AP₂ ES reported that the combined loss (29.5km) and severance of hedgerows within the Whittington to Handsacre area (CFA22) will cause an adverse effect on the conservation status of the hedgerow network which will be significant at a district/borough level. Taking a precautionary approach an additional length of 400m of hedgerow will be lost as a result of the amendment. The amendment will give rise to a different significant effect. However, this will not change the level of significance of the effects reported in the SES and AP₂ ES.
- 5.2.64 It is unlikely that the amendment will result in any other new or different effects on habitat receptors of relevance at more than the local/parish level. Additional local/parish level effects (i.e. in addition to those identified in the SES and AP₂ ES) arising from the amendment are listed in Volume 5: Appendix EC-003-003 of the SES₃ and AP₄ ES.

Protected and/or notable species

- 5.2.65 The amendment will involve directional drilling to allow cables to be passed underneath the existing watercourses (e.g. Full Brook and the unnamed watercourse) to avoid adverse impacts. This will ensure that the water body formed by the unnamed watercourse will remain unaffected by the amendment. The pond located to the south of Watery Lane, which lies partially within the land required for the amendment, is currently oversailed by the existing transmission line. As such, the removal of the pylons and transmission lines in this area will not lead to the loss of this pond.
- 5.2.66 The SES and AP2 ES did not report any significant effects on the great crested newt population near Curborough Cottages as a result of the AP2 revised scheme. The removal of pylons and transmission lines will result in the loss of up to 1.9ha of terrestrial habitat used by great crested newt consisting of improved grassland, arable land and parts of field boundary hedgerows located within land required for the amendment. There will also be small areas of potential terrestrial habitat used by assumed great crested newt populations in unsurveyed water bodies within 250m of the land required as a result of the loss of the arable land (2.5ha), improved grassland (0.7ha), and parts of field boundary hedgerows (185m). The amendment will not give rise to a new or different significant effect on any of the individual assumed great crested newt populations in these unsurveyed ponds
- 5.2.67 The implementation of measures within the CoCP will ensure there will be no killing or injury of great crested newts (if present) as a result of the amendment. The amendment will result in a different significant effect on the conservation status of great crested newt population, due to the loss of additional terrestrial habitat. However, this will not change the level of the significance of effects reported in the SES and AP2 ES.
- 5.2.68 The SES and AP2 ES reported that the combined impacts of the loss of roosts and key foraging areas along with the severance of commuting routes on the assemblage of bats using the Trent and Mersey Canal and adjacent woodland will result in an adverse effect on the conservation status of the assemblage of bats that will be significant at a regional level. Bats from this assemblage may utilise areas of habitat, such as trees and buildings for roosting, and trees and hedgerows for foraging and commuting that are potentially affected by the amendment. These affected potential roosting, foraging and commuting habitats, are likely to represent a negligible part of the wider foraging and commuting resource and roosting provision that is available to this assemblage of bats. The adoption of measures within the CoCP will provide controls to reduce the risk of displacement of bats and the loss of roosts (if present). The amendment will result in a change in the impacts on the assemblage of bats using the Trent and Mersey Canal and adjacent woodland. However, the scale of the change in impacts will be minor and will not result in new or different significant effects and will not change the level of significance of the effects reported in the SES and AP2 ES.
- 5.2.69 It is considered 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. Local/parish level effects which are in addition to those identified in the SES and AP2 ES are listed in Volume 5: Appendix EC-003-003 of the SES3 and AP4 ES.

Cumulative Effects

5.2.70 There are no new or different likely cumulative effects for ecology.

Mitigation and residual effects

Other mitigation measures

5.2.71 Hedgerows that are removed for the diversion work will be replaced on their existing alignments. In addition, existing mitigation reported in the SES and AP2 ES to compensate for the loss of wildlife corridors that hedgerows provide includes new hedgerow creation. With the implementation of these mitigation measures, it is expected that the different effect on hedgerows and the wildlife corridors will be reduced to a level which will not result in any significant effect on the conservation status of the habitat.

5.2.72 In addition to the replacement of hedgerows, the majority of agricultural land affected by the diversion will be reinstated to agricultural use. As such, areas of terrestrial habitat will not be permanently lost to the AP4 revised scheme and will be available to great crested newt following construction. With the implementation of these mitigation measures, it is expected that the different effect on great crested newt will be reduced to a level which will not result in any significant effect on the conservation status the population concerned.

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

Summary of likely residual effects

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

Effects arising from operation

5.2.75 There are no new or different significant operational effects for ecology as a result of the amendment in comparison with those reported in the SES and AP2 ES. No avoidance and mitigation measures additional to those reported in the SES and AP2 ES are required.

Land quality

Introduction

5.2.76 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 AP2 revised scheme.

Scope, assumptions and limitations

5.2.77 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

- 5.2.78 The existing baseline information for land quality for the amendment is as described in the SES and AP2 ES (CFA22, Volume 2, Section 12).
- 5.2.79 The presence of made ground is not indicated on British Geological Survey (BGS) mapping, but there is likely to be made ground associated with the WCML and existing highways.
- 5.2.80 Glaciofluvial Sheet Deposits comprising sand and gravel with lenses of clay, silt and organic material underlie the northern end of the amendment area and Alluvium is present around Curborough Brook in the south of the amendment area, comprising clay, silt, sand and gravel. The Environment Agency classifies both of these deposits as a Secondary A aquifer.
- 5.2.81 Bedrock of the Triassic Period is shown by BGS mapping to underlie the amendment area. The Sherwood Sandstone Group, comprising pebbly, gravelly sandstone, is present at the southern extent and the Mercia Mudstone Group, described as red and green-grey mudstones and subordinate siltstones with widespread thin beds of gypsum/anhydrite, underlies the remainder of the amendment area. The Environment Agency classifies the Sherwood Sandstone bedrock as a Principal aquifer and the Mercia Mudstone bedrock as a Secondary B aquifer.
- 5.2.82 The northern part of the area affected by the amendment site is situated in an extensive sand and gravel Mineral Consultation Area (MCA) relating to Glaciofluvial Sheet Deposits.
- 5.2.83 There are no geo-conservation resources such as Sites of Special Scientific Interest or Local Geological Sites identified in the amendment area.

Future baseline

Construction (2017)

- 5.2.84 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. 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.
- 5.2.85 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.
- 5.2.86 None of the identified developments affect the assessment of the AP4 revised scheme's likely construction impacts on land quality.

Operation (2026)

- 5.2.87 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.
- 5.2.88 None of the identified developments affect the assessment of the AP₄ revised scheme's likely operational impacts on land quality.

Effects arising during construction

- 5.2.89 The amendment requires additional permanent land located adjacent to the route of the WCML. Additional land is also required along Watery Lane and the A5192 Eastern Avenue within the existing highway boundary to accommodate the required utility works.
- 5.2.90 The WCML was assessed in Volume 2 of the SES and AP₂ ES as posing a potential contamination risk. A temporary minor adverse effect was identified to groundwater during construction in the vicinity of the WCML, because of the potential for contaminants from the railway line to be mobilised and migrate to groundwater. This is considered to remain the same for the amendment.
- 5.2.91 Utility works within existing highway land are a low risk construction activity with respect to land quality, and in line with the previous approach (SES and AP₂ ES, CFA22, Volume 2, Section 12.1.10), the additional land required within Watery Lane and the A5192 Eastern Avenue is not considered to require specific assessment.
- 5.2.92 The northern extent of the area affected by the amendment is situated in a sand and gravel MCA. This area was assessed in the SES and AP₂ ES and construction of the AP₂ revised scheme was anticipated to have a negligible (not significant) effect on the MCA. This is unlikely to change as a result of the amendment.
- 5.2.93 In summary, 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 SES and AP₂ ES (negligible to minor adverse).

Effects arising from operation

- 5.2.94 A negligible (non-significant) permanent effect was identified in the SES and AP₂ ES from potential contamination associated with the WCML. This is considered to remain the same with the amendment.
- 5.2.95 A minor adverse (non-significant) permanent effect on the sand and gravel MCA was identified in the SES and AP₂ ES. This is unlikely to change as a result of the amendment.
- 5.2.96 The amendment will not give rise to new or different significant effects and will not change the level of significance of the effects reported in the SES and AP₂ ES.

Mitigation and residual effects

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

- 5.2.98 The amendment will not give rise to a new or different residual significant effects and will not change the level of significance of the effects reported in the SES and AP₂ ES.

Cumulative effects

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

Landscape and visual assessment

Introduction

- 5.2.100 This section of the report describes the environmental baseline in relation to landscape and visual that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the amendment, compared to those of the AP₂ revised scheme.

Scope, assumptions and limitations

- 5.2.101 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

- 5.2.102 The area of land required for the amendment is located within the Settled Heathlands Landscape Character Area (LCA) which extends from Wood End Lane at Fradley to Ashton Hays Farm, as described in the SES and AP₂ ES (CFA₂₂, Volume 2, Section 13.3.7).
- 5.2.103 Viewpoint 360.3.004 (North-east from Public Right of Way (PRoW) Curborough and Elmhurst footpath 13) is located in close proximity to the amendment and is described in the SES and AP₂ ES (CFA₂₂, Volume 5, Appendix LV-001-022, Part 2).

Future baseline

Construction (2017)

- 5.2.104 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.
- 5.2.105 None of the identified developments affect the assessment of the amendment's likely construction impacts on landscape character and views.

Operation (2026)

- 5.2.106 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.
- 5.2.107 None of the identified developments affect the assessment of the amendment's likely operational impacts on landscape character and views.

Effects arising during construction

Landscape assessment

- 5.2.108 The Settled Heathlands LCA was assessed as being affected by the AP2 revised scheme and will also be affected by this amendment. The condition of the LCA is assessed as fair, having a medium level of tranquillity and as being of district value, therefore it is considered to be of medium sensitivity to change. The SES and AP2 ES reported a major adverse significant effect during construction due to the wide scale of construction works and a reduction in tranquillity. The nature of the construction activity associated with the peak construction phase of the AP4 revised scheme is not expected to change relative to the AP2 revised scheme, as reported in the SES and AP2 ES. The amendment will not give rise to a new or different significant landscape effect and will not change the level of significance of the effects reported in the SES and AP2 ES.

Visual assessment

- 5.2.109 The nature of the construction activity associated with the peak construction phase of the AP4 revised scheme is not expected to change relative to the AP2 revised scheme, as reported in the SES and AP2 ES.
- 5.2.110 Viewpoint 360.3.004 (north-east from PRoW Curborough and Elmhurst footpath 13) will have a view of the enabling works as a result of the amendment to replace a section of overhead electricity transmission line with an underground cable in advance of the main construction works. This will not result in a significant effect and will occur in advance of the peak construction phase. Following the completion of the cable route diversion, the redundant additional section of overhead electricity transmission line visible in the middle ground of the extreme right hand side of the viewpoint will be removed. The construction activity relating to this element of the amendment will not result in a new or different effect, due to limited visibility of the extended length of overhead line to be removed in addition to that reported in the SES and AP2 ES. This element of the amendment will not give rise to a significant effect.
- 5.2.111 Viewpoint 360.3.004 was assessed as not being significantly affected by the AP2 revised scheme and will also not be significantly affected by this amendment. The SES and AP2 ES reported a minor adverse effect during construction (CFA22, Volume 5 Appendix LV-001-022 part 4) due to the visibility of the upper elements of cranes seen in the background, beyond intervening hedgerow vegetation and gently undulating landform.
- 5.2.112 The subsequent removal of an additional section of overhead line may be seen in combination with peak construction phase activities forming part of the AP2 revised scheme, however this will not give rise to a new or different significant visual effect and will not change the level of significance of the effects on reported in the SES and AP2 ES (CFA22, Volume 5, Appendix LV-001-022 part 4).

Effects arising during operation

Landscape assessment

- 5.2.113 The Settled Heathlands LCA was assessed as being affected by the AP2 revised scheme and will also be affected by this amendment. The SES and AP2 ES reported a

moderate adverse significant effect during year 1 of operation, due to the introduction of engineering infrastructure into a predominantly rural area and a reduction in tranquillity due to the presence of trains. The moderate adverse significant effect would continue to year 15, reducing to minor adverse (non-significant) by year 60, due to the maturing of planting.

- 5.2.114 This amendment will only affect a small part of the LCA 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 SES and AP₂ ES.

Visual assessment

- 5.2.115 Viewpoint 360.3.004 (View north-east from PRow Curborough and Elmhurst footpath 13) was assessed as being not significantly affected by the AP₂ revised scheme and will also not be affected by this amendment. The SES and AP₂ ES reported a negligible non-significant effect in the winter of year 1, due to the route being in the background of the view, seen beyond intervening mature field boundary vegetation.
- 5.2.116 The assessment provided in the SES and AP₂ ES took account of the removal of the section of overhead 132kV electricity route between Watery Lane and the A515 Lichfield Road, which formed a minor element within this view. The removal of a section of additional overhead line as part of the amendment will provide some localised visual benefit, 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 SES and AP₂ ES.

Mitigation and residual effects

- 5.2.117 No additional mitigation measures (i.e., in addition to those identified to those identified in the SES and AP₂ ES) are required.
- 5.2.118 There are no new or different residual construction effects for landscape and visual as a result of the amendment, in comparison with the SES and AP₂ ES.

Cumulative effects

- 5.2.119 There are no new or different likely significant cumulative effects for landscape and visual.

Traffic and transport

Introduction

- 5.2.120 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 AP₂ revised scheme and the SES₃ scheme.

Scope, assumptions and limitations

- 5.2.121 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

- 5.2.122 The existing baseline is as described in the SES and AP2 ES (CFA22, Volume 2, Chapter 16) and in Volume 5 (Appendix TR-001-000) of both the main ES and the SES and AP2 ES.
- 5.2.123 In addition, supplementary surveys were conducted along the A5192 Eastern Avenue in Lichfield and along Watery Lane, which are reported in the SES3 and AP4ES, Volume 5, Appendix TR-001-000.
- 5.2.124 The baseline analysis determined that the existing traffic flows were as follows:
- A515 Lichfield Road: 4,500 vehicles per day;
 - Wood End Lane: 4,100 vehicles per day;
 - A5192 Eastern Avenue: 16,000 vehicles per day; and
 - Watery Lane: 3,000 vehicles per day.

Future baseline

Construction

- 5.2.125 The future baseline for construction is as described in the SES and AP2 ES (CFA22, Volume 2, Chapter 16). Future baseline traffic volumes in the peak hours are forecast to grow by around 11% by 2021 compared to 2012.

Operation (2026 and 2041)

- 5.2.126 The future baseline for operation is as described in the SES and AP2 ES (CFA22, Volume 2, Chapter 16). Future baseline traffic volumes in the peak hours are forecast to grow by around 18% by 2026 as compared to 2012 and around 38% by 2041 as compared to 2012.

Effects arising during construction

- 5.2.127 The diversion route crosses or runs adjacent to three roads: the route passes cables underneath the A515 Lichfield Road, runs alongside and passes underneath the southern section of Watery Lane and then runs along the northern verge of the A5192 Eastern Avenue. The works will be constructed under local traffic management without substantial impact on traffic flows. There were no significant effects from the AP2 revised scheme in association with the diversion of these power cables, and there are no new or different significant effects for traffic and transport as a result of this amendment.
- 5.2.128 The diversion route also crosses the route of the following footpaths: Kings Bromley Footpath 17, Curborough and Elmhurst 13b, Curborough and Elmhurst 10b and Lichfield City 8b. The routes of these footpaths will be diverted locally and temporarily around the construction works associated with the amendment as they progress, for the safety of users. However, it is not anticipated that the length of the journey along these identified footpaths will increase by more than 50m as a result of the local diversions. There may also be a need to close the identified footpaths temporarily and for short periods (approximately one week) where safe access cannot be maintained during specific works. All footpath routes will be reinstated along their existing

alignment following construction of the amendment. Although the identified footpaths will be diverted or closed for up to one week, due to the length of the local diversions and the length of time that any one footpath would be closed, the amendment would not result in a new or different significant effect.

Effects arising from operation

- 5.2.129 The amendment only relates to construction. Hence, there are no new or different operational effects for traffic and transport as a result of the amendment compared to those reported in the SES and AP₂ ES.

Mitigation and residual effects

- 5.2.130 No additional mitigation measures in addition to those identified in the SES and AP₂ ES are required.
- 5.2.131 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 SES and AP₂ ES.

Cumulative effects

- 5.2.132 The above assessment has considered 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.
- 5.2.133 There are no new or different likely significant cumulative effects for traffic and transport.

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

- 5.3.1 The revised diversion of an electricity transmission line north of Lichfield will not result in any new or different significant effects or change the level of significance of the environmental effects or proposed mitigation as set out in the SES and AP₂ ES for all topics.

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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