

High Speed Two Phase 2a (West Midlands - Crewe)

Background information and data

Ecological baseline data used in the
Supplementary Environmental Statement 2 and
Additional Provision 2 Environmental Statement
(BID-EC-019-000)

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Department for Transport

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

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1 Introduction

1.1.1 This document sets out Background Information and Data (BID) that accompanies the High Speed Two (HS2) Phase 2a (West Midlands - Crewe) Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES)¹.

1.1.2 This document details supplementary ecological baseline data for habitats not reported in the BID document² that accompanied the High Speed Two (HS2) Phase 2a (West Midlands - Crewe) Environmental Statement (ES)³, published in July 2017 (the main ES), and the BID document⁴ that accompanied the Supplementary Environmental Statement (SES1) and the Additional Provision Environmental Statement (AP1 ES)⁵, published in March 2018.

1.1.3 This report should be read in conjunction with the SES2 and AP2 ES Volume 2, Community area (CA) reports and Volume 3, Route-wide effects. In addition, this report should be read in conjunction with the following BID documents that accompanied the main ES:

- Ecological baseline data – Phase 1 habitat survey (see BID EC-002-000 of the main ES); and
- Ecological baseline data – National vegetation classification and ancient woodland (see BID EC-004-000 of the main ES).

1.1.4 This report provides details on the findings of ground-truthed habitat surveys and aerial imagery habitat interpretation on land required for the SES2 scheme and the areas subject to the AP2 amendments. The amendments which are considered in the Additional Provision section of this report are:

- Additional land and a change in Bill powers required for a grid supply point connection to National Grid Parkgate substation (AP2-001-015) in the Fradley to Colton area (CA1);
- Additional land required for the diversion of a National Grid gas pipeline and a new utility compound, west of Colwich Bridleway 35 accommodation overbridge (AP2-002-004) in the Colwich to Yarlet area (CA2);
- Additional land and a change to Bill powers required along the A34 Stone Road for the provision of a new access to Yarlet School (AP2-002-027) in the Colwich to Yarlet area (CA2);

¹ HS2 Ltd (2019), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement*, <https://www.gov.uk/government/organisations/high-speed-two-limited>

² HS2 Ltd (2017), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data to accompany Environmental Statement*, <https://www.gov.uk/government/collections/hs2-phase-2a-environmental-statement#background-information-and-data>

³ HS2 Ltd (2017), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Environmental Statement*, <https://www.gov.uk/government/collections/hs2-phase-2a-environmental-statement>

⁴ HS2 Ltd (2018), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information Data to accompany Supplementary Environmental Statement and Additional Provision Environmental Statement*, <https://www.gov.uk/government/collections/hs2-phase-2a-supplementary-environmental-statement-and-additional-provision-environmental-statement#background-information-and-data>

⁵ HS2 Ltd (2018), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Supplementary Environmental Statement and Additional Provision Environmental Statement*, <https://www.gov.uk/government/collections/hs2-phase-2a-supplementary-environmental-statement-and-additional-provision-environmental-statement>

BID EC-019-000 SES2 and AP2 ES

- Additional land required for provision of a power supply to Whitmore Heath tunnel (AP2-004-001) in the Stone and Swynnerton area (CA3);
- Additional land required for provision of a power supply to Whitmore Heath tunnel (AP2-004-001) in the Whitmore Heath and Madeley area (CA4);
- Additional land required for construction traffic at the A500 Shavington Bypass (AP2-005-001) in the South Cheshire area (CA5); and
- Additional land for a new diversion of a United Utilities water mains supply north of Heath Farm (AP2-005-101) in the South Cheshire area (CA5).

1.1.5 Maps referred to in this report are contained in the BID Ecology Map Book, Map Series EC-02 which accompanies the SES2 and AP2 ES. The ecological assessment is detailed in the following SES2 and AP2 ES documents¹:

- Volume 2, Community area reports;
- Volume 3, Route-wide effects; and
- Volume 5, Appendices.

1.1.6 In order to differentiate between the original scheme and the subsequent changes, the following terms are used:

- 'the original scheme' – the Bill scheme submitted to Parliament in July 2017, which was assessed in the main ES;
- 'the SES1 scheme' – the original scheme with the changes described in the SES1 submitted in March 2018;
- 'the AP1 revised scheme' – the SES1 scheme as amended by the AP1 submitted in March 2018;
- 'the SES2 scheme' – the SES1 scheme with the changes described in the SES2; and
- 'the AP2 revised scheme' – the SES2 scheme as amended by the AP2.

1.1.7 In this report, the scheme is referred to as the SES2 scheme and AP2 revised scheme only.

2 Supplementary Environmental Statement 2

2.1 Introduction

- 2.1.1 This section details supplementary ecological baseline data relating to habitat types. It should be read in conjunction with the Ecological baseline data – Phase 1 habitat survey report that accompanied the main ES (see BID EC-002-000)⁶ and the supplementary ecological baseline data report that accompanied the SES1 and AP1 ES (see BID EC-004-000)⁷.
- 2.1.2 Details of the standard methodology used for Phase 1 habitat survey are provided in the Environmental Impact Assessment Scope and Methodology Report (SMR) Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-002).
- 2.1.3 The surveys were undertaken to verify (i.e. ground-truth⁸) the assumed baseline reported in the Ecological baseline data – Phase 1 habitat survey report that accompanied the main ES (see BID EC-002-000) and the Supplementary ecological baseline data report that accompanied the SES1 and AP1 ES (see BID EC-004-000 SES1 and AP1 ES). There is no change to the habitat types reported in the main ES, which were interpreted from aerial imagery.
- 2.1.4 Descriptions of the habitat types that have been subject to ground-truthed survey are provided for each CA. Woodlands directly adjacent to the land required for the SES2 scheme are also described because this baseline information is of relevance to the assessment.

2.2 Deviations, constraints and limitations

- 2.2.1 Phase 1 habitat survey visits were conducted between February and March 2018, outside of the optimum botanical survey window which is during the summer when more plant species are evident. The absence of evidence of any particular species should not be taken as proof that the species is not present, or that it will not be present in the future. Nevertheless, the survey findings in this report do allow for an appropriate level of interpretation of the likely ecological value of the habitat types present and the information presented is sufficiently robust.
- 2.2.2 Professional judgement was used to determine the likely habitat types present in the land required for the SES2 scheme from aerial imagery habitat interpretation (where a Phase 1 habitat survey has not been undertaken) and as such provides a sufficiently robust baseline.

⁶ HS2 Ltd (2017), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data to accompany Environmental Statement, Ecological baseline data – Phase 1 habitat survey*, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627494/E39_BID-EC-002-000_WEB.pdf

⁷ HS2 Ltd (2018), *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data to accompany Supplementary Environmental Statement and Additional Provision Environmental Statement, Supplementary ecological baseline data*, <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-supplementary-ecological-and-biodiversity-march-2018>

⁸The habitat types previously interpreted from aerial imagery were verified by a walkover survey and hence 'ground-truthed'.

2.3 Fradley to Colton (CA1)

Introduction

- 2.3.1 The Fradley to Colton area is predominantly agricultural land, with scattered small woodlands, farmsteads and villages. The topography is relatively flat across the Trent floodplain near Kings Bromley and undulating north-west of Hill Ridware and south-west of Blithfield Reservoir.
- 2.3.2 This section describes the findings of ground-truthed surveys within the area of land required for the SES2 scheme to verify the habitat types reported in the main ES. At the end of this section, the updated ground-truthing survey and aerial imagery interpretation data for the area of land required for the SES2 scheme in the Fradley to Colton area is presented in a summary table.

Woodland

- 2.3.3 Two types of woodland habitat are present within or directly adjacent to areas of land required for the SES2 scheme, which are semi-natural broadleaved woodland and plantation broadleaved woodland.
- 2.3.4 Semi-natural broadleaved woodland qualifies as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the Natural Environment and Rural Communities Act (NERC) Act (2006)⁹ and a conservation priority of the Staffordshire Biodiversity Action Plan (BAP)¹⁰. Four areas of semi-natural broadleaved woodland, located within the land required for the SES2 scheme, have been ground-truthed. These are:
- an un-named woodland is located on the south side of the Trent and Mersey Canal near Woodend Lock, west of Fradley (see SES2 and AP2 ES BID Map Book, Map EC-02-301). The woodland, covering an area of 0.6ha, is dominated by ash (*Fraxinus excelsior*) with occasional pedunculate oak (*Quercus robur*) and alder (*Alnus glutinosa*). The understorey comprises hazel (*Coryllus avellana*), hawthorn (*Crateagus monogyna*), holly (*Ilex aquifolium*) and elder (*Sambucus nigra*). The field layer includes bramble (*Rubus fruticosus* agg.), bracken (*Pteridium aquilinum*), bluebell (*Hyacinthoides non-scripta*) and dog's-mercury (*Mercurialis perennis*);
 - Slaish Wood is located on the south side of the Trent and Mersey Canal, south of Rileyhill (see SES2 and AP2 ES BID Map Book, Map EC-02-301). The woodland, covering an area of 8ha, is dominated by pedunculate oak, with frequent alder and crack willow (*Salix fragilis*). Holly is occasional within the understorey. The field layer is dominated by bramble, with bracken frequent and bluebell which is rare;
 - Rice's Gorse woodland is located on the north side of the Trent and Mersey Canal, south of Rileyhill (see SES2 and AP2 ES BID Map Book, Map EC-02-301). The woodland, covering an area of 1ha, is dominated by pedunculate oak, with

⁹ Natural Environment and Rural Communities Act 2006 Chapter 16, Her Majesty's Stationery Office, London (2006)

¹⁰ Staffordshire Biodiversity Partnership, Staffordshire Biodiversity Action Plan, <http://www.sbap.org.uk/>

ash and western hemlock (*Tsuga heterophylla*) both occasional. The field layer is dominated by bramble; and

- Westfield Covert Ancient Woodland Inventory woodland is located west of Kings Bromley (see SES2 and AP2 ES BID Map Book, Map EC-02-302). The woodland, covering an area of 0.6ha, is dominated by sycamore (*Acer pseudoplatnus*), with frequent pedunculate oak and silver birch (*Betula pendula*). Alder and crack willow are both occasional. The understorey comprises hawthorn and elder which are both frequent. The field layer supports bramble and common nettle (*Urtica dioica*) which are both abundant.

2.3.5 An unnamed plantation broadleaved woodland is located directly adjacent to the land required for the SES2 scheme, to the north-east of Woodend Common Farm, south-east of Rileyhill (see SES2 and AP2 ES BID Map Book, Map EC-02-301). The woodland, covering an area of 1.9ha, is dominated by pedunculate oak.

2.3.6 An unnamed plantation mixed woodland is located directly adjacent to the land required for the SES2 scheme, to the north-west of Woodend Common Farm, south-east of Rileyhill (see SES2 and AP2 ES BID Map Book, Map EC-02-301). The woodland, covering an area of 2.2ha woodland, is dominated by pedunculate oak and ash, with Western hemlock (*Tsuga heterophylla*) occasional.

Scrub

2.3.7 Scrub is present in strips and patches adjacent to fields and woodland within the areas of land required for the SES2 scheme. The most frequently recorded scrub species are blackthorn (*Prunus spinosa*), bramble, elder and hawthorn.

Hedgerows

2.3.8 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are present within the areas of land required for the SES2 scheme. The most frequently recorded hedgerow tree and shrub species are ash, blackthorn and hawthorn.

Parkland and scattered trees

2.3.9 A low density of standard trees is present in clusters and lines within the areas of land required for the SES2 scheme. The most frequently recorded tree species were pedunculate oak, ash, sycamore, common lime (*Tilia × cordata*) and horse-chestnut (*Aesculus hippocastanum*).

Grassland and marsh

2.3.10 The most frequent grassland habitat types present within the areas of land required for the SES2 scheme are improved grassland and species-poor semi-improved grassland.

2.3.11 Small fragments of semi-improved neutral grassland are located within the areas of land required for the SES2 scheme, near Kings Bromley, Pipe Ridware and Blithbury. These grassland areas support a range of plant species including crested dog's-tail (*Cynosurus cristatus*) and common knapweed (*Centaurea nigra*).

- 2.3.12 Marshy grassland is located within the areas of land required for the SES2 scheme east of the Moreton Brook, north-west of Colton (see SES2 and AP2 ES BID Map Book, Map EC-02-304). The marshy grassland, covering an area of 3.6ha, is dominated by soft-rush (*Juncus effusus*), hard-rush (*Juncus inflexus*) and Yorkshire-fog (*Holcus lanatus*) with creeping buttercup (*Ranunculus repens*) which is occasional.

Water bodies

- 2.3.13 In total 54 ponds¹¹ are located within the areas of land required for the SES2 scheme, of which 29 were previously ground-truthed and a further 12 have been ground-truthed and confirmed to contain water.

Arable and cultivated land

- 2.3.14 Arable land is the predominant habitat type within the land required for the SES2 scheme. No notable plant species were recorded within arable headlands and margins.

Buildings and structures

- 2.3.15 A low density of isolated residential buildings and farmsteads are present within the areas of land required for the SES2 scheme. The farmsteads mainly comprise barns, sheds and residential dwellings.

Summary of updated habitat types within the Fradley to Colton area

- 2.3.16 Table 1 provides a summary of the habitat type metrics recorded up to March 2018 within the areas of land required for the SES2 scheme in the Fradley to Colton area.

Table 1: Habitat type metrics within the land required for the SES2 scheme in the Fradley to Colton area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	7.8ha	7.9ha
Semi-natural mixed woodland	None	2.5ha
Plantation broadleaved woodland	4.1ha	0.4ha
Plantation coniferous woodland	None	0.2ha
Plantation mixed woodland	0.4ha	0.2ha
Scrub	3.4ha	1.3ha
Intact native species-rich hedge	20.2km	20.7km
Intact species-poor hedge	11.4km	None
Defunct native species-rich hedge	3.7km	None
Defunct species poor hedge	2.8km	0.3km

¹¹ This includes standing open water in ditches, pools, ponds, lakes and reservoirs ≤2ha. The pond numbers reported in the main ES and the SES1 and AP1 ES differ as a consequence of ground-truthing verification survey visits and changes to the land required.

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Native species-rich hedge with trees	8.3km	0.3km
Species-poor hedge with trees	5.1km	0.1km
Parkland and scattered trees	0.7ha	None
Semi-improved neutral grassland	12.4ha	4ha
Species-poor semi-improved grassland	16.9ha	0.9ha
Improved grassland	125.3ha	53.3ha
Amenity grassland	1ha	4.9ha
Marshy grassland	0.6ha	None
Watercourses	1.4km	0.01km
Water bodies	1ha (41 ponds)	0.9ha (13 ponds)
Arable and cultivated land	201.8ha	178.3ha
Buildings and structures	0.1ha	0.9ha

2.4 Colwich to Yarlet (CA2)

Introduction

- 2.4.1 The Colwich to Yarlet area consists mainly of agricultural land, woodlands, farmsteads and villages. The topography is undulating with several low hills to the north-east of Little Haywood, the River Trent floodplain to the west of Great Haywood, and predominantly higher ground between Ingestre and Yarlet.
- 2.4.2 This section describes the findings of ground-truthed surveys within the area of land required for the SES2 scheme to verify the habitat types reported in the main ES. At the end of this section, the updated ground-truthing survey and aerial imagery interpretation data for the area of land required for the SES2 scheme in the Colwich to Yarlet area is presented in a summary table.

Woodland

- 2.4.3 Two types of woodland habitat are present within and directly adjacent to the areas of land required for the SES2 scheme, which are semi-natural broadleaved woodland, plantation broadleaved and plantation mixed woodland.
- 2.4.4 An unnamed woodland is a semi-natural broadleaved woodland which qualifies as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the NERC Act (2006) and a conservation priority of the Staffordshire BAP. The woodland is located at Haywood Junction alongside the Trent and Mersey Canal, west of Great Haywood (see SES2 and AP2 ES BID Map Book, Map EC-02-306). The woodland, covering an area of 0.8ha, comprises of alder, crack willow, sycamore, pedunculate oak, silver birch and downy birch (*Betula pubescens*). The understorey includes dog-rose (*Rosa canina* agg.), elder, hazel and holly.

2.4.5 Small unnamed plantation broadleaved woodlands are present within and directly adjacent to the land required for the SES2 scheme. The most frequently recorded tree species is pedunculate oak.

2.4.6 Bricklawn Covert is a plantation mixed woodland, which is located north-west of Tixall Farm, south of Ingestre (see SES2 and AP2 ES BID Map Book, Map EC-02-306). The woodland, covering an area of 3ha, comprises of pedunculate oak, ash, sycamore and non-native evergreen conifers (not identified to species level).

Scrub

2.4.7 Scrub is present in strips and patches adjacent to fields and woodland within the areas of land required for the SES2 scheme. The most frequently recorded plant species within scrub habitat were blackthorn, bramble, elder and hawthorn.

Hedgerows

2.4.8 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are present within the areas of land required for the SES2 scheme. The most frequently recorded hedgerow tree and shrub species are ash, blackthorn, dog-rose, field maple (*Acer campestre*), hawthorn, hazel, holly and pedunculate oak.

Parkland and scattered trees

2.4.9 A low density of standard trees is present in clusters and lines within the areas of land required for the SES2 scheme. The most frequently recorded tree species are ash, pedunculate oak and sycamore.

Grassland and marsh

2.4.10 The most frequent grassland habitat types present within the areas of land required for the SES2 scheme are improved grassland and species-poor semi-improved grassland.

2.4.11 Small fragments of semi-improved neutral grassland are located within the areas of land required for the SES2 scheme, between Hopton and Marston. These grassland areas support a range of plant species including crested dog's-tail and common knapweed.

Water bodies

2.4.12 In total 44 ponds¹² are located within the areas of land required for the SES2 scheme, of which 33 were previously ground-truthed and a further four have been ground-truthed and confirmed to contain water.

Arable and cultivated land

2.4.13 Arable fields are extensively distributed within the areas of land required for the SES2 scheme. No notable plant species were recorded within arable headlands and margins.

¹² This includes standing open water in ditches, pools, ponds, lakes and reservoirs ≤2ha. The pond numbers reported in the main ES and the SES1 and AP1 ES differ as a consequence of ground-truthing verification survey visits and changes to the land required.

Buildings and structures

- 2.4.14 A low density of isolated residential buildings and farmsteads are present within areas of land required for the SES2 scheme. The farmsteads mainly comprise barns, sheds and residential dwellings.

Summary of updated habitat types within the Colwich to Yarlet area

- 2.4.15 Table 2 provides a summary of the habitat type metrics recorded up to March 2018 within the areas of land required for the SES2 scheme in the Colwich to Yarlet area.

Table 2: Habitat type metrics within the land required for the SES2 scheme in the Colwich to Yarlet area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	2.1ha	10.1ha
Semi-natural mixed woodland	None	0.1ha
Plantation broadleaved woodland	4.5ha	0.3ha
Plantation coniferous woodland	0.04ha	None
Plantation mixed woodland	2.4ha	None
Scrub	0.5ha	0.2ha
Intact native species-rich hedge	7.7km	9.7km
Intact species-poor hedge	8.1km	0.04km
Defunct native species-rich hedge	0.5km	0.2km
Defunct species poor hedge	2.1km	0.2km
Native species-rich hedge with trees	2.8km	0.15km
Species-poor hedge with trees	4.4km	None
Parkland and scattered trees	3.4ha	0.04ha
Unimproved neutral grassland	0.1ha	None
Semi-improved neutral grassland	4.9ha	4ha
Species-poor semi-improved grassland	27.7ha	0.3ha
Improved grassland	128.9ha	34.7ha
Amenity grassland	13.7ha	1.3ha
Marshy grassland	None	None
Watercourses	0.8km	None
Water bodies	1.1ha (37 ponds)	0.6ha (7 ponds)
Arable and cultivated land	97.5ha	79.7ha
Buildings and structures	0.7ha	0.7ha

2.5 Stone and Swynnerton (CA3)

Introduction

- 2.5.1 The Stone and Swynnerton area is predominantly agricultural land and woodland, with villages and farmsteads. The topography is undulating with areas of lower level agricultural land to the west of Stone and higher ground between Swynnerton and Swynnerton Old Park.
- 2.5.2 This section describes the findings of ground-truthed surveys within the area of land required for the SES2 scheme to verify the habitat types reported in the main ES. At the end of this section, the updated ground-truthing survey and aerial imagery interpretation data for the area of land required for the SES2 scheme in the Stone and Swynnerton area is presented in a summary table.

Woodland

- 2.5.3 Three types of woodland habitat are present within and directly adjacent to the areas of land required for the SES2 scheme, which are semi-natural broadleaved woodland, plantation broadleaved woodland and plantation mixed woodland.
- 2.5.4 Semi-natural broadleaved woodland qualifies as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the NERC Act (2006) and a conservation priority of the Staffordshire BAP. Two areas of semi-natural broadleaved woodland, located within the land required for the SES2 scheme, have been additionally ground-truthed. These are:
- an un-named woodland located at Stone Golf Club, west of Stone (see SES2 and AP2 ES BID Map Book, Map EC-02-310). The woodland, covering an area of 1.6ha, is dominated by ash and pedunculate oak and alder and crack willow are both occasional. The understorey comprises hawthorn, holly, elder and blackthorn. The field layer includes bluebell, dog's-mercury and common nettle; and
 - New Waste Plantation woodland located to the north-east of Upper Hatton (see SES2 and AP2 ES BID Map Book, Map EC-02-312a). The woodland, covering an area of 7.6ha, comprises pedunculate oak, ash and sycamore. Cherry laurel (*Prunus laurocerasus*) is dominant within the understorey with elder which is occasional. The field layer includes bramble, bluebell and broad buckler-fern (*Dryopteris dilatata*).
- 2.5.5 Small unnamed plantation broadleaved woodlands are present within the areas required for the SES2 scheme. The most frequently recorded tree species are pedunculate oak, sweet-chestnut (*Castanea sativa*) and silver birch.
- 2.5.6 Small unnamed plantation mixed woodlands are present within the areas required for the SES2 scheme. The most frequently recorded tree species are pedunculate oak and Scot's pine (*Pinus sylvestris*).

Scrub

- 2.5.7 Scrub is present in strips and patches adjacent to field, woodland and watercourse margins within the areas of land required for the SES2 scheme. The most frequently recorded plant species were blackthorn, bramble, dog-rose, elder and hawthorn.

Hedgerows

- 2.5.8 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are present within the areas of land required for the SES2 scheme. The most frequently recorded hedgerow tree and shrub species are blackthorn and hawthorn.

Parkland and scattered trees

- 2.5.9 A low density of standard trees is present in clusters and lines within the areas of land required for the SES2 scheme. The most frequently recorded tree species are pedunculate oak, ash, sycamore, beech, common lime and horse-chestnut.

Grassland and marsh

- 2.5.10 The most frequent grassland habitat types present within the areas of land required for the SES2 scheme are improved grassland and species-poor semi-improved grassland.
- 2.5.11 Small fragments of semi-improved neutral grassland are located within the areas of land required for the SES2 scheme, at Stone Golf Club and Sandyford Farm. These grassland areas support a range of plant species including crested dog's-tail and common knapweed.

Water bodies

- 2.5.12 In total 65 ponds¹³ are located within the areas of land required for the SES2 scheme, of which 55 were previously ground-truthed and a further six have been ground-truthed and confirmed to contain water.

Arable and cultivated land

- 2.5.13 Arable land is the predominant habitat type within the land required for the SES2 scheme. The large arable fields are frequently bordered by hedgerows and trees. No notable plant species were recorded within arable headlands and margins.

Buildings and structures

- 2.5.14 A low density of isolated residential buildings and farmsteads are present within the areas of land required for the SES2 scheme. The farmsteads mainly comprise barns, sheds and residential dwellings.

¹³ This includes standing open water in ditches, pools, ponds, lakes and reservoirs ≤ 2 ha. The pond numbers reported in the main ES and the SES1 and AP1 ES differ as a consequence of ground-truthing verification survey visits and changes to the land required.

Summary of updated habitat types within the Stone and Swynnerton area

2.5.15 Table 3 provides a summary of the habitat type metrics recorded up to March 2018 within the land required for the SES2 scheme in the Stone and Swynnerton area.

Table 3: Habitat type metrics within the land required for the SES2 scheme in the Stone and Swynnerton area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	10.7ha	12.9ha
Semi-natural mixed woodland	5.5ha	None
Plantation broadleaved woodland	1.6ha	0.5ha
Plantation coniferous woodland	3.5ha	0.05ha
Plantation mixed woodland	0.4ha	0.02ha
Scrub	2.3ha	0.4ha
Intact native species-rich hedge	8.9km	5.8km
Intact species-poor hedge	13.3km	None
Defunct native species-rich hedge	3.1km	None
Defunct species poor hedge	4.8km	None
Native species-rich hedge with trees	4.8km	0.4km
Species-poor hedge with trees	6.6km	None
Parkland and scattered trees	0.4ha	None
Unimproved neutral grassland	0.1ha	None
Semi-improved neutral grassland	20.7ha	1.5ha
Species-poor semi-improved grassland	8.3ha	4.5ha
Improved grassland	135.9ha	12.6ha
Amenity grassland	2.8ha	2ha
Marshy grassland	0.3ha	None
Watercourses	1.1km	None
Water bodies	2.4ha (61 ponds)	0.4ha (4 ponds)
Arable and cultivated land	154.2ha	74.8a
Buildings and structures	0.1ha	0.5ha

2.6 Whitmore Heath to Madeley (CA4)

Introduction

- 2.6.1 The Whitmore Heath to Madeley area is predominantly agricultural land with woodland, villages and farmsteads. The topography is undulating with areas of lower level agricultural land adjacent to the River Meece and River Lea, with higher ground around Whitmore.
- 2.6.2 This section describes the findings of ground-truthed surveys within the area of land required for the SES2 scheme to verify the habitat types reported in the main ES. At the end of this section, the updated ground-truthing survey and aerial imagery interpretation data for the area of land required for the SES2 scheme in the Whitmore Heath to Madeley area is presented in a summary table.

Woodland

- 2.6.3 Two types of woodland habitat are present within the areas of land required for the SES2 scheme, which are semi-natural broadleaved woodland and plantation mixed woodland.
- 2.6.4 Moat Wood woodland is a semi-natural broadleaved woodland which qualifies as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the NERC Act (2006) and a conservation priority of the Staffordshire BAP. The woodland is located north-west of Whitmore (see SES2 and AP2 ES BID Map Book, Map EC-02-313b). The woodland, covering an area of 5.2ha, comprises pedunculate oak, wild cherry (*Prunus avium*), silver birch and ash. The understorey comprises hazel, hawthorn and holly. The field layer includes bramble, bracken and bluebell.
- 2.6.5 An unnamed plantation mixed woodland is located in the centre of Madeley (see SES2 and AP2 ES BID Map Book, Map EC-02-314). The woodland, covering an area of 0.7ha, comprises beech and Leyland cypress (*Cupressus × leylandii*).

Scrub

- 2.6.6 Scrub is present in strips and patches adjacent to field, woodland and watercourse margins within the areas of land required for the SES2 scheme. The most frequently recorded plant species within scrub habitat are blackthorn, bramble, dog-rose, elder and hawthorn.

Hedgerows

- 2.6.7 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are present within the areas of land required for the SES2 scheme. The most frequently recorded hedgerow tree and shrub species are hawthorn and hazel.

Parkland and scattered trees

- 2.6.8 A low density of standard trees is present in clusters and lines within the areas of land required for the SES2 scheme. The most frequently recorded tree species are pedunculate oak, ash, sycamore, beech and horse-chestnut.

Grassland and marsh

- 2.6.9 The most frequent grassland habitat types present within the areas of land required for the SES2 scheme are improved grassland and species-poor semi-improved grassland.
- 2.6.10 Marshy grassland is located within the land required for the SES2 scheme to the west of Hey Sprink (see SES2 and AP2 ES BID Map Book, Map EC-02-314). The marshy grassland, covering an area of 8.6ha, is dominated by soft-rush.

Water bodies

- 2.6.11 In total 39 ponds¹⁴ are located within the areas of land required for the SES2 scheme, of which 27 were previously ground-truthed and a further six have been ground-truthed and confirmed to contain water.

Arable and cultivated land

- 2.6.12 Arable fields are extensively distributed within the areas of land required for the SES2 scheme. The large arable fields are frequently bordered by hedgerows and trees. No notable plant species were recorded within arable headlands and margins.

Buildings and structures

- 2.6.13 A low density of isolated residential buildings and farmsteads are present within the areas of land required for the SES2 scheme. The farmsteads mainly comprise barns, sheds and residential dwellings.

Summary of updated habitat types within the Whitmore Heath to Madeley area

- 2.6.14 Table 4 provides a summary of the habitat type metrics recorded up to March 2018 within the areas of land required for the SES2 scheme in the Whitmore Heath to Madeley area.

Table 4: Habitat type metrics within the land required for the SES2 scheme in the Whitmore Heath to Madeley area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	7.4ha	13.3ha
Semi-natural mixed woodland	0.02ha	0.02ha
Plantation broadleaved woodland	0.2ha	None
Plantation coniferous woodland	6.2ha	None
Plantation mixed woodland	7ha	0.1ha
Scrub	0.6ha	None
Recently felled broad-leaved woodland	0.3ha	0.3ha

¹⁴ This includes standing open water in ditches, pools, ponds, lakes and reservoirs ≤2ha. The pond numbers reported in the main ES and the SES1 and AP1 ES differ as a consequence of ground-truthing verification survey visits and changes to the land required.

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Intact native species-rich hedge	4.9km	3.6km
Intact species-poor hedge	6km	None
Defunct native species-rich hedge	3km	0.1km
Defunct species poor hedge	2.2km	None
Native species-rich hedge with trees	4.5km	0.01km
Species-poor hedge with trees	3.5km	None
Parkland and scattered trees	0.6ha	None
Semi-improved acid grassland	0.2ha	None
Unimproved neutral grassland	3ha	None
Semi-improved neutral grassland	16.1ha	11.8ha
Species-poor semi-improved grassland	22.8ha	0.1ha
Improved grassland	160.3ha	19.6ha
Amenity grassland	1ha	1ha
Marshy grassland	5.1ha	4.1ha
Watercourses	1.1km	None
Water bodies	1.3ha (33 ponds)	0.4ha (6 ponds)
Arable and cultivated land	62.2ha	8.7ha
Buildings and structures	0.2ha	0.05ha

2.7 South Cheshire (CA5)

Introduction

- 2.7.1 The South Cheshire area comprises a large proportion of agricultural land, with scattered small woodlands, becoming increasingly urban near Crewe. The topography is gently undulating and relatively level near Crewe.
- 2.7.2 This section describes the findings of ground-truthed surveys within the area of land required for the SES2 scheme to verify the habitat types reported in the main ES. At the end of this section, the updated ground-truthing survey and aerial imagery interpretation data for the area of land required for the SES2 scheme in the South Cheshire area is presented in a summary table.

Woodland

- 2.7.3 There is an unnamed plantation broadleaved woodland within the land required for the SES2 scheme to the north-east of Shavington (see SES2 and AP2 ES BID Map Book, Map EC-02-317). The woodland, covering an area of 0.2ha, comprises

pedunculate oak, Scot's pine (*Pinus sylvestris*), hornbeam (*Carpinus betulus*), hawthorn, blackthorn and holly.

Scrub

- 2.7.4 Scrub is present in strips and patches adjacent to field, woodland and watercourse margins within the areas of land required for the SES2 scheme. The most frequently recorded plant species are blackthorn, bramble, elder and hawthorn.

Hedgerows

- 2.7.5 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are present within the areas of land required for the SES2 scheme. The most frequently recorded hedgerow tree and shrub species are ash, blackthorn, dog-rose, hawthorn and holly.

Parkland and scattered trees

- 2.7.6 A low density of standard trees is present in clusters and lines within the areas of land required for the SES2 scheme. The most frequently recorded tree species are pedunculate oak and ash.

Grassland and marsh

- 2.7.7 The most frequent grassland habitat types present within the areas of land required for the SES2 scheme are improved grassland and species-poor semi-improved grassland.
- 2.7.8 Semi-improved neutral grassland is within the areas of land required for the SES2 scheme to the south of Jubilee Farm (see SES2 and AP2 ES BID Map Book, Map EC-02-317). The semi-improved neutral grassland, covering an area of 4.2ha, comprises of Yorkshire-fog, creeping bent (*Agrostis stolonifera*), red fescue (*Festuca rubra*), common knapweed (*Centaurea nigra*), oxeye daisy (*Leucanthemum vulgare*), ribwort plantain (*Plantago lanceolata*) and creeping buttercup (*Ranunculus repens*).

Water bodies

- 2.7.9 In total 49 ponds¹⁵ are located within the areas of land required for the SES2 scheme, of which 42 were previously ground-truthed and a further one have been ground-truthed and confirmed to contain water.

Arable and cultivated land

- 2.7.10 Arable land is the predominant habitat type within the areas of land required for the SES2 scheme. The arable fields are frequently bordered by hedgerows and trees. No notable plant species were recorded within arable headlands and margins.

Buildings and structures

- 2.7.11 A low density of isolated residential buildings and farmsteads are present within the areas of land required for the SES2 scheme. The farmsteads mainly comprise barns,

¹⁵ This includes standing open water in ditches, pools, ponds, lakes and reservoirs ≤2ha. The pond numbers reported in the main ES and the SES1 and AP1 ES differ as a consequence of ground-truthing verification survey visits and changes to the land required.

sheds and residential dwellings. Buildings are present in higher densities near Crewe. These buildings mainly consist of residential and industrial buildings associated with the town.

Summary of updated habitat types within the South Cheshire area

2.7.12 Table 5 provides a summary of the habitat type metrics recorded up to March 2018 within the areas of land required for the SES2 scheme in the South Cheshire area.

Table 5: Habitat type metrics within the land required for the SES2 scheme in the South Cheshire area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	4.3ha	4.7ha
Semi-natural mixed woodland	None	0.1ha
Plantation broadleaved woodland	0.2ha	2ha
Plantation coniferous woodland	0.03ha	None
Plantation mixed woodland	0.04ha	0.4ha
Scrub	4.9ha	4.9ha
Intact native species-rich hedge	3.5km	3km
Intact species-poor hedge	4.7km	None
Defunct native species-rich hedge	0.3km	None
Defunct species poor hedge	2.8km	None
Native species-rich hedge with trees	2.6km	None
Species-poor hedge with trees	5.6km	None
Parkland and scattered trees	0.1ha	None
Unimproved neutral grassland	None	None
Semi-improved neutral grassland	7.3ha	2ha
Species-poor semi-improved grassland	56.8ha	0.1ha
Improved grassland	51.4ha	41ha
Amenity grassland	0.2ha	1.5ha
Marshy grassland	1.4ha	None
Watercourses	0.6km	None
Water bodies	3.7ha (43 ponds)	0.3ha (6 ponds)
Arable and cultivated land	161.1ha	35.2ha
Buildings and structures	0.02ha	1.9ha

3 Additional Provision 2 Environmental Statement

3.1 Introduction

- 3.1.1 This section details supplementary ecological baseline data relating to habitat types within areas subject to the AP2 amendments. It should be read in conjunction with the Ecological baseline data – Phase 1 habitat survey report that accompanied the main ES (see BID-EC-002-000) and the Supplementary ecological baseline data that accompanied the SES1 and AP1 ES (see BID-EC-004-000).
- 3.1.2 Details of the standard methodology used for Phase 1 habitat survey are provided in the SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-002).
- 3.1.3 Descriptions of the habitat types within areas subject to the AP2 amendments have mainly been determined from interpretation of aerial imagery. The updated aerial imagery interpretation data and ground-truthing survey information (recorded before 2018) for the areas subject to the AP2 amendments is presented in a summary table for each community area. Woodlands directly adjacent and Ancient Woodland Inventory (AWI) sites up to 500m from the areas of land subject to the AP2 amendments are also described because this baseline information is of relevance to the assessment.

3.2 Deviations, constraints and limitations

- 3.2.1 Professional judgement was used to determine the likely habitat types present in the areas subject to amendment from aerial imagery habitat interpretation (where Phase 1 habitat survey visits have not been undertaken) and as such provides a sufficiently robust baseline.

3.3 Fradley to Colton (CA1)

Introduction

- 3.3.1 Phase 1 habitat survey visits were previously undertaken on some areas of land which are subject to the AP2 amendments. Where land access was not possible the habitat types within the other areas of land subject to the AP2 amendments have been determined by interpreting aerial imagery.
- 3.3.2 The AP2 amendment relating to the additional land and a change in Bill powers required for a grid supply point connection to National Grid Parkgate substation (AP2-001-015) in the Fradley to Colton area is of relevance to the assessment.

Woodland

- 3.3.3 There are four Ancient Woodland Inventory (AWI) sites that are located up to 370m from the area subject to the AP2 amendment. These are:
- Birch and Roosthill Woods AWI, covering an area of 45.8ha, is located to the east of Bromley Wood (see SES2 and AP2 ES BID Map Book, Map EC-02-303-R3), located adjacent to the area subject to the AP2 amendment;

- Chantry Wood AWI, covering an area of approximately 9.8ha, is located to the south-west of Newborough (see SES2 and AP2 ES BID Map Book, Map EC-02-303-R3), approximately 20m north of the area subject to the AP2 amendment;
- Poole's Coppice AWI, covering an area of approximately 2ha, is located to the north-east of Hoar Cross (see SES2 and AP2 ES BID Map Book, Map EC-02-303-R3), approximately 260m east of the area subject to the AP2 amendment; and
- Bath Wood and Paddock Rough AWI, covering an area of approximately 2.7ha, is located to the west of Hoar Cross (see SES2 and AP2 ES BID Map Book, Map EC-02-303-R3), approximately 370m south-east of the area subject to the AP2 amendment.

3.3.4 On the basis of the heritage review undertaken by HS2 Ltd, there is an additional woodland of relevance to the AP2 amendment, which does not appear on the AWI but is considered to be potentially ancient. Lower Birches Plantation, covering an area of approximately 3.7ha, is located to the west of Newhall Farm alongside the Pur Brook, south-west of Newborough (see SES2 and AP2 ES BID Map Book, Map EC-02-303-R3), partially within the area subject to the AP2 amendment.

3.3.5 Semi-natural broadleaved woodland qualifies as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the NERC Act (2006) and a conservation priority of the Staffordshire BAP. Semi-natural broadleaved woodland is likely to be at the four AWI sites identified above.

3.3.6 Small unnamed plantation broadleaved woodlands are present (approximately 500m² in total) and scattered across the area subject to the AP2 amendment.

Scrub

3.3.7 Small areas of scrub (approximately 100m² in total) are present and scattered across the area subject to the AP2 amendment.

Hedgerows

3.3.8 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are present within the area subject to the AP2 amendment.

Grassland and marsh

3.3.9 The most frequent grassland habitat type present within the area subject to the AP2 amendment is improved grassland.

3.3.10 There are two areas where semi-improved neutral grassland is likely to be present within the area subject to the AP2 amendment. These are:

- meadows alongside the River Blithe to the north of Blithford Farm (see SES2 and AP2 ES BID Map Book, Map EC-02-304-R1); and
- meadows between Chantry Farm and Newborough End (see SES2 and AP2 ES BID Map Book, Map EC-02-303-R3).

Watercourses

- 3.3.11 The River Blithe (including Little Blithe) and its tributaries Ash Brook and Pur Brook are located within the area subject to the AP2 amendment. These watercourses may qualify as habitats of principal importance and a conservation priority of the Staffordshire BAP. Several smaller watercourses/tributaries associated with these watercourses are also located within the land required for the amendment.

Water bodies

- 3.3.12 In total 36 ponds¹⁶ are located within the area subject to the AP2 amendment.

Arable and cultivated land

- 3.3.13 Arable land is the predominant habitat type within the area subject to the AP2 amendment.

Buildings and structures

- 3.3.14 A low density of isolated residential buildings and farmsteads are present within the area subject to the AP2 amendment. The farmsteads mainly comprise barns, sheds and residential dwellings.

Summary of updated habitat types within the Fradley to Colton area

- 3.3.15 Table 6 provides a summary of the habitat type metrics recorded up to March 2018 within the area subject to the AP2 amendment in the Fradley to Colton area.

Table 6: Habitat type metrics within the areas subject to AP2 amendment in the Fradley to Colton area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	0.3ha	3.4ha
Plantation broadleaved woodland	0.05ha	None
Scrub	0.01ha	2.5ha
Intact native species-rich hedge	1.5km	21km
Intact species-poor hedge	0.5km	0.01km
Defunct native species-rich hedge	0.3km	0.2km
Defunct species-poor hedge	0.1km	None
Native species-rich hedge with trees	0.7km	0.01km
Species-rich hedge with trees	0.7km	None
Semi-improved neutral grassland	0.6ha	2.4ha
Species-poor semi-improved grassland	0.6ha	None

¹⁶This includes standing open water in ditches, pools, ponds, lakes and reservoirs ≤2ha.

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Improved grassland	2.4ha	20ha
Amenity grassland	0.03ha	0.8ha
Watercourses	0.1km	0.01km
Water bodies	None	1.5ha (36 ponds)
Arable and cultivated land	8ha	222.8ha
Buildings and structures	0.01ha	0.3ha

3.4 Colwich to Yarlet (CA2)

Introduction

3.4.1 Phase 1 habitat survey visits were previously undertaken on some parts of the areas which are subject to the AP2 amendments. Where land access was not possible the habitat types within the other parts subject to the AP2 amendments have been determined by interpreting aerial imagery.

3.4.2 The following AP2 amendments in the Colwich to Yarlet area are of relevance to the assessment:

- additional land required for the diversion of a National Grid gas pipeline and a new utility compound, west of Colwich Bridleway 35 accommodation overbridge (AP2-002-004); and
- additional land and a change to Bill powers required along the A34 Stone Road for the provision of a new access to Yarlet School (AP2-002-027).

Woodland

3.4.3 Semi-natural broadleaved woodland qualifies as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the NERC Act (2006) and a conservation priority of the Staffordshire BAP. Semi-natural broadleaved woodland is present on the west side Ingestre Park Golf Club within the additional land required for the diversion of a National Grid gas pipeline and a new utility compound, west of Colwich Bridleway 35 accommodation overbridge (AP2-002-004) (see SES2 and AP2 ES BID Map Book, Map EC-02-306).

3.4.4 Small unnamed plantation broadleaved woodlands are present within the areas subject to the AP2 amendments, including the woodland on the east side of the A34 Stone Road within the additional land and a change to Bill powers required along the A34 Stone Road for the provision of a new access to Yarlet School (AP2-002-027) (see SES2 and AP2 ES BID Map Book, Map EC-02-309a).

Scrub

3.4.5 Small areas of scrub (approximately 200m² in total) are present and scattered across the areas subject to the AP2 amendments.

Hedgerows

- 3.4.6 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are present within the areas subject to the AP2 amendments.

Parkland and scattered trees

- 3.4.7 A low density of standard trees is present in clusters and lines within the areas subject to the AP2 amendments. The most frequently recorded tree species are ash, pedunculate oak and sycamore.

Grassland and marsh

- 3.4.8 The most frequent grassland habitat type present within the areas subject to the AP2 amendments is improved grassland.

Water bodies

- 3.4.9 In total 5 ponds¹⁷ are located within the areas subject to the AP2 amendments.

Arable and cultivated land

- 3.4.10 Arable land is the predominant habitat type within the areas subject to the AP2 amendments.

Buildings and structures

- 3.4.11 A low density of isolated residential buildings and farmsteads are present within the area subject to the AP2 amendments. The farmsteads mainly comprise barns, sheds and residential dwellings.

Summary of updated habitat types within the Colwich to Yarlet area

- 3.4.12 Table 7 provides a summary of the habitat type metrics recorded up to March 2018 within the areas subject to the AP2 amendments in the Colwich to Yarlet area.

Table 7: Habitat type metrics within the areas subject to AP2 amendments in the Colwich to Yarlet area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	1.1ha	0.5ha
Semi-natural mixed woodland	None	0.04ha
Plantation broadleaved woodland	0.2ha	0.1ha
Plantation mixed woodland	None	0.3ha
Scrub	0.02ha	0.1ha
Intact native species-rich hedge	1.3km	2.6km
Intact species-poor hedge	1.1km	None

¹⁷This includes standing open water in ditches, pools, ponds, lakes and reservoirs ≤2ha.

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Defunct species-poor hedge	0.3km	None
Native species-rich hedge with trees	0.2km	None
Species-poor hedge with trees	1km	None
Parkland and scattered trees	0.02ha	None
Semi-improved neutral grassland	0.3ha	0.02ha
Species-poor semi-improved grassland	0.4ha	None
Improved grassland	21.5ha	2.3ha
Amenity grassland	2.9ha	0.4ha
Water bodies	None	0.04ha (5 ponds)
Arable and cultivated land	26.6ha	63ha
Buildings and structures	0.02ha	0.05ha

3.5 Stone and Swynnerton (CA3)

Introduction

- 3.5.1 Phase 1 habitat survey visits were previously undertaken on some parts of the areas which are subject to the AP2 amendments. Where land access was not possible the habitat types within the other parts subject to the AP2 amendments have been determined by interpreting aerial imagery.
- 3.5.2 The AP2 amendment relating to additional land required for provision of a power supply to Whitmore Heath tunnel (AP2-004-001) in the Stone and Swynnerton area is of relevance to the assessment.

Woodland

- 3.5.3 Semi-natural broadleaved woodland qualifies as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the NERC Act (2006) and a conservation priority of the Staffordshire BAP. Small areas of semi-natural broadleaved woodland (approximately 800m² in total) are present within the area subject to the AP2 amendment, including Swynnerton Heath (see SES2 and AP2 ES BID Map Book, Map EC-02-312a).
- 3.5.4 Semi-natural mixed woodland is present in the area subject to the AP2 amendment, including Clifford's Wood (see SES2 and AP2 ES BID Map Book, Map EC-02-312a).
- 3.5.5 Plantation broadleaved woodland is present within the areas subject to the AP2 amendment (see SES2 and AP2 ES BID Map Book, Map EC-02-312a).
- 3.5.6 Small unnamed plantation coniferous woodlands (approximately 600m² in total) are present within the area subject to the AP2 amendment, including woodland north-east of Lower Hatton (see SES2 and AP2 ES BID Map Book, Map EC-02-312a).

- 3.5.7 A small unnamed plantation mixed woodland (approximately 300m² in total) is present within the area subject to the AP2 amendment at Long Compton Farm (see SES2 and AP2 ES BID Map Book, Map EC-02-311).

Scrub

- 3.5.8 Small areas of scrub (approximately 500m² in total) are present and scattered across the area subject to the AP2 amendment.

Hedgerows

- 3.5.9 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are likely to be present within the area subject to the AP2 amendment.

Grassland and marsh

- 3.5.10 The most frequent grassland habitat type present within the area subject to the AP2 amendment is improved grassland.

- 3.5.11 Semi-improved neutral grassland is present within the area subject to the AP2 amendment, including between Sandyford and Long Compton Farm (see SES2 and AP2 ES BID Map Book, Map EC-02-311).

Arable and cultivated land

- 3.5.12 Arable land is the predominant habitat type within the area subject to the AP2 amendment.

Buildings and structures

- 3.5.13 A low density of isolated residential buildings and farmsteads are present within the area subject to the AP2 amendment. The farmsteads mainly comprise barns, sheds and residential dwellings.

Summary of updated habitat types within the Stone and Swynnerton area

- 3.5.14 Table 8 provides a summary of the habitat type metrics recorded up to March 2018 within the area subject to the AP2 amendment in the Stone and Swynnerton area.

Table 8: Habitat type metrics within the areas subject to AP2 amendment in the Stone and Swynnerton area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	0.3ha	1.3ha
Semi-natural mixed woodland	0.08ha	None
Plantation broadleaved woodland	0.2ha	0.1ha
Plantation coniferous woodland	0.06ha	None
Plantation mixed woodland	0.03ha	0.2ha
Scrub	0.05ha	0.3ha

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Intact native species-rich hedge	2.3km	2.4km
Intact species-poor hedge	2.4km	0.5km
Defunct native species-rich hedge	0.3km	None
Defunct species-poor hedge	0.2km	None
Native species-rich hedge with trees	1km	0.2km
Species-poor hedge with trees	0.4km	None
Semi-improved neutral grassland	0.5ha	0.05ha
Species-poor semi-improved grassland	0.4ha	None
Improved grassland	6.6ha	9.3ha
Amenity grassland	0.04ha	2.2ha
Arable and cultivated land	10.7ha	4.3ha
Buildings and structures	None	0.04ha

3.6 Whitmore Heath to Madeley (CA4)

Introduction

- 3.6.1 Phase 1 habitat survey visits were previously undertaken on some parts of the areas which are subject to the AP2 amendments. Where land access was not possible the habitat types within the other parts subject to the AP2 amendments have been determined by interpreting aerial imagery.
- 3.6.2 The AP2 amendment relating to additional land required for provision of a power supply to Whitmore Heath tunnel (AP2-004-001) in the Whitmore Heath and Madeley area is of relevance to the assessment.

Woodland

- 3.6.3 Semi-natural broadleaved woodland qualifies as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the NERC Act (2006) and a conservation priority of the Staffordshire BAP. Small areas of semi-natural broadleaved woodland (approximately 0.2ha in total) are present within and directly adjacent to the area subject to the AP2 amendment, including Madeley (see SES2 and AP2 ES BID Map Book, Map EC-02-312a).

Scrub

- 3.6.4 Small areas of scrub (approximately 400m² in total) are present and scattered across the area subject to the AP2 amendment.

Hedgerows

- 3.6.5 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are likely to be present within the area subject to the AP2 amendment.

Grassland and marsh

- 3.6.6 The most frequent grassland habitat type present within the area subject to AP2 amendment is improved grassland.
- 3.6.7 Semi-improved neutral grassland is present within the area subject to the amendment at Madeley (see SES2 and AP2 ES BID Map Book, Map EC-02-314).
- 3.6.8 A small area of marshy grassland (approximately 600m² in total) is present within the area subject to the amendment, on the south side of Madeley (see SES2 and AP2 ES BID Map Book, Map EC-02-314).

Arable and cultivated land

- 3.6.9 Arable land is the predominant habitat type within the area subject to the AP2 amendment.

Buildings and structures

- 3.6.10 A low density of isolated residential buildings and farmsteads are present within the area subject to the AP2 amendment. The farmsteads mainly comprise barns, sheds and residential dwellings.

Summary of updated habitat types within the Whitmore Heath to Madeley area

- 3.6.11 Table 9 provides a summary of the habitat type metrics recorded up to March 2018 within the area subject to the AP2 amendment in the Whitmore Heath to Madeley area.

Table 9: Habitat type metrics within the area subject to AP2 amendment in the Whitmore Heath to Madeley area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	None	0.2ha
Scrub	0.04ha	None
Intact native species-rich hedge	0.2km	0.2km
Intact species-poor hedge	1km	None
Defunct species-poor hedge	0.3km	None
Native species-rich hedge with trees	1.1km	None
Species-poor hedge with trees	0.2km	None
Semi-improved neutral grassland	0.2ha	1ha
Species-poor semi-improved grassland	1.2ha	None

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Improved grassland	2.3ha	0.4ha
Amenity grassland	0.06ha	0.3ha
Marshy grassland	0.6ha	None
Arable and cultivated land	4.4ha	11ha
Buildings and structures	0.01ha	0.03ha

3.7 South Cheshire (CA5)

Introduction

- 3.7.1 Phase 1 habitat survey visits were previously undertaken on some parts of the areas which are subject to AP2 amendments. Where land access was not possible the habitat types within the other parts subject to AP2 amendments have been determined by interpreting aerial imagery.
- 3.7.2 The following AP2 amendments in the South Cheshire area are of relevance to the assessment:
- additional land required for construction traffic at the A500 Shavington Bypass (AP2-005-001); and
 - additional land for a new diversion of a United Utilities water mains supply north of Heath Farm (AP2-005-101).

Woodland

- 3.7.3 Semi-natural broadleaved woodland qualifies as lowland mixed deciduous woodland, a habitat of principal importance in Section 41 of the NERC Act (2006) and a conservation priority of the Staffordshire BAP. Semi-natural broadleaved woodland is present within the area subject to the additional land for a new diversion of a United Utilities water mains supply north of Heath Farm (AP2-005-101), to the west of Chorlton Lane (see SES2 and AP2 ES BID Map Book, Map EC-02-317).
- 3.7.4 A small unnamed plantation broadleaved woodland is present within the additional land required for construction traffic at the A500 Shavington Bypass (AP2-005-001), alongside the A500 Basford-Hough-Shavington Bypass (see SES2 and AP2 ES BID Map Book, Map EC-02-317).

Scrub

- 3.7.5 Small areas of scrub (approximately 0.7ha in total) are present and scattered across the areas subject to the AP2 amendments.

Hedgerows

- 3.7.6 Hedgerows that comprise 80% native woody species qualify as a habitat of principal importance. Hedgerows of this type are present within the areas subject to the AP2 amendments.

Parkland and scattered trees

- 3.7.7 A low density of standard trees is present in clusters and lines within the areas subject to the AP2 amendments. The most frequently recorded tree species are pedunculate oak and ash.

Grassland and marsh

- 3.7.8 The most frequent grassland habitat type present within the areas subject to the AP2 amendments is improved grassland.
- 3.7.9 Semi-improved neutral grassland is present within the areas subject to the AP2 amendments, including the area subject to the additional land for a new diversion of a United Utilities water mains supply north of Heath Farm (AP2-005-101), to the west of Chorlton Lane (see SES2 and AP2 ES BID Map Book, Map EC-02-317).

Water bodies

- 3.7.10 In total 3 ponds¹⁸ are located within the areas subject to the AP2 amendments.

Arable and cultivated land

- 3.7.11 Arable land is the predominant habitat type within the areas subject to the AP2 amendments.

Buildings and structures

- 3.7.12 A low density of isolated residential buildings and farmsteads are present within the areas subject to the AP2 amendments. The farmsteads mainly comprise barns, sheds and residential dwellings.

Summary of updated habitat types within the South Cheshire area

- 3.7.13 Table 10 provides a summary of the habitat type metrics recorded up to March 2018 within the areas subject to the AP2 amendments in the South Cheshire area.

Table 10: Habitat type metrics within the areas subject to AP2 amendments in the South Cheshire area

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Semi-natural broadleaved woodland	0.4ha	0.4ha
Plantation broadleaved woodland	0.9ha	0.8ha
Scrub	0.2ha	0.5ha
Intact native species-rich hedge	1km	1.1km
Intact species-poor hedge	1km	None
Defunct native species-rich hedge	0.08km	None
Defunct species-poor hedge	0.4km	None

¹⁸This includes standing open water in ditches, pools, ponds, lakes and reservoirs ≤2ha.

BID EC-019-000 SES2 and AP2 ES

Habitat type	Surveyed area (ha)/length (km) verified during ground-truthing (up to March 2018)	Un-surveyed area (ha)/length (km) interpreted from aerial imagery
Native species-rich hedge with trees	0.4km	0.01km
Species-poor hedge with trees	0.9km	None
Parkland and scattered trees	0.02ha	None
Semi-improved neutral grassland	0.2ha	0.1ha
Species-poor semi-improved grassland	4.8ha	0.1ha
Improved grassland	5.6ha	4.4ha
Amenity grassland	0.06ha	0.2ha
Water bodies	None	0.2ha (3 ponds)
Arable and cultivated land	6.7ha	3.8ha
Buildings and structures	0.02ha	0.01ha

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