



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

## Background Information and Data

Ecology and biodiversity

Ecological baseline data - protected and or notable flora

(BID-EC-003-000)



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## Department for Transport

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

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# 1 Introduction

1.1.1 This report presents a summary of the ecological baseline data relating to protected and notable flora, including veteran trees.

1.1.2 Ecological baseline data has been collected for the assessment of High Speed Rail (West Midlands - Crewe) that will pass through the following community areas (CA):

- CA1: Fradley to Colton;
- CA2: Colwich to Yarlet;
- CA3: Stone and Swynnerton;
- CA4: Whitmore Heath to Madeley; and
- CA5: South Cheshire.

1.1.3 The following baseline ecology reports can also be referred to:

- Ecological baseline data - phase 1 habitat survey (Background Information and Data: BID-EC-002-000);
- Ecological baseline data - national vegetation classification and ancient woodland (Background Information and Data: BID-EC-004-000);
- Ecological baseline data - hedgerows (Background Information and Data BID-EC-005-000);
- Ecological baseline data - river habitat, river corridor, and ditch surveys, (Background Information and Data: BID-EC-006-000);
- Ecological baseline data - amphibian and pond surveys (Background Information and Data: BID-EC-007-000);
- Ecological baseline data - reptiles (Background Information and Data: BID-EC-8-000);
- Ecological baseline data - breeding and wintering birds (Background Information and Data: BID-EC-009-000);
- Ecological baseline data - otter and water vole (Background Information and Data: BID-EC-010-000);
- Ecological baseline data - hazel dormouse (Background Information and Data: BID-EC-011-000);
- Ecological baseline data – bats (Background Information and Data: BID-EC-012-000);
- Ecological baseline data - white clawed crayfish and other invertebrate (Background Information and Data: BID-EC-013-000); and

- Ecological baseline data - fish (Background Information and Data: BID-EC-014-000).

1.1.4 Note that baseline data for badger is not made publically available due to the historic persecution of this species

1.1.5 The ecological assessment is detailed in the High Speed Rail (West Midlands - Crewe) Environmental Statement (ES)<sup>1</sup>.

- Volume 2, Community area reports;
- Volume 3, Route-wide effects;
- Volume 4, Off-route effects; and
- Volume 5, Appendices.

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<sup>1</sup> HS2 Ltd (2017), *High Speed Rail (West Midlands – Crewe) Environmental Statement (ES)*, [www.gov.uk/hs2](http://www.gov.uk/hs2)

## 2 Protected and or notable flora

### 2.1 Methodology

2.1.1 Desk study records related to protected and/or notable flora, including veteran trees, were obtained from the following data sources:

- Staffordshire Ecological Record<sup>2</sup>;
- rECOrd<sup>3</sup>, Local Biological Records Centre for the Cheshire region;
- Woodland Trust Ancient and Veteran Tree Inventory<sup>4</sup>; and
- where publically available, information has been gathered from site management plans.

2.1.2 In addition records of protected and/or notable flora were made during the course of Phase 1 habitat and National Vegetation Classification (NVC) surveys.

2.1.3 Information on the status of wildflowers internationally, nationally and in Staffordshire and Cheshire was taken from:

- The Vascular Plant Red Data List for Great Britain published by JNCC (updated 2010)<sup>5</sup>;
- A Vascular Plant Red List for England (Stroh et al, 2014)<sup>6</sup>;
- the list of Nationally Rare and Nationally Scarce plants compiled by the Botanical Society of Britain and Ireland (BSBI) and available on their website<sup>7</sup>;
- the list of Species of Principal Importance in England in Section 41 of the Natural Environment and Rural Communities Act 2006<sup>8</sup>;
- Staffordshire Rare Plant Register 2017<sup>9</sup>;
- A Checklist of the Flora of Staffordshire (Revised 2017)<sup>10</sup>;
- Staffordshire Biodiversity Action Plan<sup>11</sup>;
- Cheshire County Rare Plant Register (2015)<sup>12</sup>; and
- Cheshire Region Biodiversity Action Plan<sup>13</sup>.

<sup>2</sup> Staffordshire Ecological Record, *The Ecological Database for Staffordshire*, [http://www.staffs-ecology.org.uk/html2015/index.php?title=Main\\_Page](http://www.staffs-ecology.org.uk/html2015/index.php?title=Main_Page)

<sup>3</sup> rECOrd, *Local Biological Records Centre serving Cheshire*, <http://www.record-lrc.co.uk>

<sup>4</sup> The Woodland Trust, *The Ancient Tree Hunt*, <http://www.ancient-tree-hunt.org.uk/recording/>

<sup>5</sup> Cheffings, C.M. & Farrell, L. (Eds), Dines, T.D., Jones, R.A., Leach, S.J., McKean, D.R., Pearman, D.A., Preston, C.D., Rumsey, F.J., Taylor, I. (2005), *The Vascular Plant Red Data List for Great Britain*. Species Status 7: 1-116. Joint Nature Conservation Committee, Peterborough

<sup>6</sup> P.A. Stroh, P.A., Leach, S.J., August, T.A., Walker, K.J., Pearman, D.A., Rumsey, F.J., Harrower, C.A., Fay, M.F., Martin, J.P., Pankhurst, T., Preston, C.D., Taylor I. (2014), *A Vascular Plant Red List for England*, Botanical Society of Britain and Ireland.

<sup>7</sup> Botanical Society of Britain & Ireland, *BSBI species accounts*, <http://bsbi.org/species-accounts>

<sup>8</sup> *Natural Environment and Rural Communities (NERC) Act 2006 (Section 41) Biodiversity lists and action (England)*. London, Her Majesty's Stationery Office

<sup>9</sup> Botanical Society of Britain & Ireland, *Rare Plant Registers*, <http://bsbi.org/rare-plant-registers>

<sup>10</sup> Hawksford, J.E. (2017), *A Checklist of the Flora of Staffordshire*, Staffordshire Wildlife Trust

<sup>11</sup> Staffordshire Biodiversity Action Plan Steering Group (2001), *Staffordshire Biodiversity Action Plan*, Staffordshire Wildlife Trust

<sup>12</sup> Kay, G. M. (2015), *Cheshire County Rare Plant Register*, Cheshire Wildlife Trust



- 2.1.4 Information on the national status of notable plants, taken from The Vascular Plant Red Data List for Great Britain, is based on the International Union for the Conservation of Nature (IUCN) Red List<sup>14</sup> criteria. Under these criteria Least Concern is a category that includes species that do not qualify for the following status:
- Critically Endangered;
  - Endangered;
  - Vulnerable; or
  - Near Threatened.
- 2.1.5 These species are described as widespread and abundant on the Red List and therefore are not included as notable plants for this assessment.
- 2.1.6 The Staffordshire Rare Plants Register lists species, where possible to tetrad (2km x 2km squares) level, on the IUCN Red List Categories, and then Other Categories of Nationally Rare Species and Nationally Scarce Species. The Staffordshire Rare Plants Register also provides a Supplementary List of Locally Rare Species, Locally Scarce and Declining Species, Last Sightings of Probably Extinct Natives, and Rare Significant Non-Natives.
- 2.1.7 The Staffordshire Checklist does not give a status of 'notable' but gives a frequency of occurrence within tetrads in the county. Species with a frequency of Uncommon (found in 39 to 109 tetrads in the county), or Rare (9 to 38 tetrads), or Very Rare (1 to 8 tetrads) were considered to be Staffordshire county notables. Species from the Rare Plants Register and those listed as Uncommon, Rare or Very Rare in the Staffordshire Checklist have been included in the tables of notable species.
- 2.1.8 The Cheshire County Rare Plant Register lists Internationally Rare, Nationally Rare, Nationally Scarce and Locally Rare plant species, and then provides a species account for each. The Register also provides a list of species which should be regarded as 'potentially vulnerable' as they occur in 4-16 sites.
- 2.1.9 Species within any of these categories have been included in the tables of notable species.
- 2.1.10 For this project the definition of a veteran tree is taken from Annex 2 of the National Planning Policy Framework (glossary)<sup>15</sup>: 'A tree which, because of its great age, size or condition is of exceptional value for wildlife, in the landscape, or culturally.'

## 2.2 Deviations, constraints and limitations

- 2.2.1 There were no restrictions on access to desk study records which have constrained the available baseline.
- 2.2.2 Information on notable flora was collected during the Phase 1 habitat and NVC surveys. Due to the seasonal variation in emergence of some plant species, surveyors

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<sup>13</sup> Cheshire Wildlife Trust (2007), *Cheshire region Biodiversity Action Plan*, <https://www.cheshirewildlifetrust.org.uk/biodiversity>

<sup>14</sup> International Union for the Conservation of Nature (IUCN) 2016, *The IUCN Red List of Threatened Species*, Version 2016-3. <http://www.iucnredlist.org>

<sup>15</sup> National Planning Policy Framework, <https://www.gov.uk/guidance/national-planning-policy-framework/annex-2-glossary>

may not have recorded all notable plant species present. Many of the plant records were obtained within vegetation sampling during NVC surveys, and where their exact location was not recorded details of the site in which they were recorded are given.

- 2.2.3 Information on veteran trees was not specifically available at the county level for Staffordshire or Cheshire, but information on nationally recognised veteran trees was obtained from the Woodland Trust<sup>4</sup>.

## 2.3 Baseline

- 2.3.1 Those records of protected and/or notable species which are located within or adjacent to the land required for construction of the Proposed Scheme, and any more distant, which are considered potentially subject to adverse effects, are considered relevant to the assessment and are reported here.

### Desk study

- 2.3.2 A summary of desk study records of protected or notable flora considered relevant to the assessment is provided in Table 1.

Table 1: Desk study records of protected and notable species records relevant to the assessment in CA1 to CA5

Common name	Latin name	Status <sup>16</sup>	Location	Date	OS grid reference	CA	Within the land required for construction of the Proposed Scheme (Yes/No)
Stinking chamomile	<i>Anthemis cotula</i>	Vulnerable (The Vascular Plant Red Data List for Great Britain)  Vulnerable (Staffordshire Rare Plant Register 2017)	Arable field east of Lea Hall Farm near Admaston	11 July 2016	SK050229	CA1	No
Field woundwort	<i>Stachys arvensis</i>	Near Threatened (The Vascular Plant Red Data List for Great Britain)  Near Threatened (Staffordshire Rare Plant Register 2017)	Arable field north of Quintin's Orchard	25 October 2008	SK087187	CA1	Yes
Galingale	<i>Cyperus longus</i>	Near Threatened (The Vascular Plant Red Data List for Great Britain)  Near Threatened (Staffordshire Rare Plant Register 2017)	Stockwell Heath (pond)	27 September 2011	SK056215	CA1	No

<sup>16</sup> Where the status listed is the same in "A Vascular Plant Red List for England" and "The Vascular Plant Red Data List for Great Britain", only "The Vascular Plant Red Data List for Great Britain" has been referenced

Common name	Latin name	Status <sup>16</sup>	Location	Date	OS grid reference	CA	Within the land required for construction of the Proposed Scheme (Yes/No)
Corn marigold	<i>Glebionis segetum</i>	Vulnerable (A Vascular Plant Red List for England) Vulnerable (Staffordshire Rare Plant Register 2017)	King's Bromley Lane near a Nature Reserve	27 June 2011	SK103168	CA1	Yes
Frogbit	<i>Hydrocharis morsus-ranae</i>	Vulnerable (A Vascular Plant Red List for England) Vulnerable (Staffordshire Rare Plant Register 2017)	Stockwell Heath (pond)	27 September 2011	SK056215	CA1	No
Galingale	<i>Cyperus longus</i>	Near Threatened (The Vascular Plant Red Data List for Great Britain) Near Threatened (Staffordshire Rare Plant Register 2017)	Coastal and floodplain grazing marsh near Hoo Mill Bridge, Ingestre	11 August 2006	SJ998241	CA2	No
Ivy-leaved water-crowfoot	<i>Ranunculus hederaceus</i>	Cheshire Region Biodiversity Action Plan Species	Pond 7, Lower Den Farm, Wrinehill, Cheshire	16 April 2008 to 10 May 2008	SJ737480	CA5	No
Ivy-leaved water-crowfoot	<i>Ranunculus hederaceus</i>	Cheshire Region Biodiversity Action Plan Species	Pond 11, Lower Den Farm, Wrinehill, Cheshire	16 <sup>th</sup> April 2008 to 10 <sup>th</sup> May 2008	SJ738481	CA5	Yes

2.3.3 There are numerous records of bluebell (*Hyacinthoides non-scripta*) obtained from the desk study in all CAs. This species is a Cheshire Local Biodiversity Action Plan (BAP)<sup>13</sup> species and is listed on Schedule 8 of the Wildlife and Countryside Act (WCA) 1981<sup>17</sup> (as amended) which lists protected plants in England. This species is listed in respect of Section 13(2) only: plants which are protected from selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative); or advertising (any of these) for buying or selling. This species is omitted from the primary offence in the Act of intentional picking, uprooting or destruction due to its widespread distribution and locally high abundance in Britain.

2.3.4 Following a review of desk study records, bluebell was found to be present within the land required for the construction of the proposed scheme near Colton, Whitmore Wood and Manor Road Verges (near Hey House). There are four records at three locations within 100m from the land required for the Proposed Scheme at John's Gorse, Hey Sprink (to the south-west of) and east of Wrinehill Wood.

<sup>17</sup> Wildlife and Countryside Act 1981 (England and Wales) (as amended), Chapter 69. Her Majesty's Stationery Office, London

## Field survey

2.3.5 A summary of protected or notable flora considered relevant to the assessment recorded during field surveys is provided in Table 2.

Table 2: Records of protected and notable flora relevant to the assessment obtained during field survey in CA1 to CA5

Common name	Latin name	Status <sup>18</sup>	Location	OS grid reference	CA	Within the land required for the construction of the Proposed Scheme (Yes/No)
Bog pimpernel	<i>Anagallis tenella</i>	Rare (Checklist of the Flora of Staffordshire 2017)  Locally Scarce (Staffordshire Rare Plant Register 2017)	West of the B5014 Uttoxeter Road	SK082195	CA1	Yes
Native black poplar	<i>Populus nigra</i> subsp. <i>betulifolia</i>	Staffordshire Biodiversity Action Plan Species  Rare (Checklist of the Flora of Staffordshire 2017)	South-west of Blithbury Road	SK075201	CA1	Yes
Ragged robin	<i>Silene flos-cuculi</i>	Near Threatened (A Vascular Plant Red List for England)  Near Threatened (Staffordshire Rare Plant Register 2017)	North-west of Birchwood	SJ868348	CA3	Yes
Wood-sorrel	<i>Oxalis acetosella</i>	Near Threatened (A Vascular Plant Red List for England)  Near Threatened (Staffordshire Rare Plant Register 2017)	Clifford's Wood	SJ836371	CA3	No
Corn spurrey	<i>Spergula arvensis</i>	Vulnerable (The Vascular Plant Red Data List for Great Britain)  Vulnerable (Staffordshire Rare Plant Register 2017)	North of Hatton Common	SJ825384	CA3	Yes
Quaking-grass	<i>Briza media</i>	Near Threatened (A Vascular Plant Red List for England)  Near Threatened (Staffordshire Rare Plant Register 2017)	South-west of Bent Lane;  Grassland east of Meece Brook	SJ813396	CA4	Yes

<sup>18</sup> Where the status listed is the same in "A Vascular Plant Red List for England" and "The Vascular Plant Red Data List for Great Britain", only "The Vascular Plant Red Data List for Great Britain" has been referenced

Field scabious	<i>Knautia arvensis</i>	Near Threatened (A Vascular Plant Red List for England) Near Threatened (Staffordshire Rare Plant Register 2017)	South-west of Bent Lane; Grassland east of Meece Brook	SJ813396	CA4	Yes
Wood-sorrel	<i>Oxalis acetosella</i>	Near Threatened (A Vascular Plant Red List for England) Near Threatened (Staffordshire Rare Plant Register 2017)	South-west of Snape Hall Road	SJ796414	CA4	Yes
Wood-sorrel	<i>Oxalis acetosella</i>	Near Threatened (A Vascular Plant Red List for England) Near Threatened (Staffordshire Rare Plant Register 2017)	Whitmore Wood	SJ792417	CA4	Yes
Wood-sorrel	<i>Oxalis acetosella</i>	Near Threatened (A Vascular Plant Red List for England) Near Threatened (Staffordshire Rare Plant Register 2017)	Hey Sprink	SJ789429	CA4	No

2.3.6 Bluebell (WCA Schedule 8) was recorded during field surveys within the land required for the construction of the Proposed Scheme:

- Lodge Covert,
- Stabhill Plantation;
- within mature hedgerows surrounding Calloway Pit;
- within hedgerows along Green Lane track;
- Cash's Pit;
- throughout the plantation woodlands north-west of Clifford's Wood;
- along Dog Lane;
- along Checkley Lane;
- Whitmore Wood;
- a woodland south of Randilow;
- within a hedgerow north of, and woodland east of, Grange Farm;
- a hedgerow west of Moss House; and
- south-west and north-west of Coppice Bank Farm.

2.3.7 Records for bluebell were also present directly adjacent to the Proposed Scheme at:

- Hurst Wood;

- The Shrubs;
- woodland around Blakelow;
- Glebe House;
- Closepit Plantation;
- within mature hedgerows surrounding Calloway Pit;
- The Stretters;
- Clifford's Wood;
- throughout the plantation woodlands north-west of Clifford's Wood;
- a woodland south of the A53 at Coney Greave;
- Whitmore Heath;
- Barhill Wood;
- Hey Sprink;
- woodland area south of Moss House; and
- south-west of Coppice Bank.

## Discussion

### *Fradley to Colton (CA1)*

- 2.3.8 Field visits recorded a Staffordshire BAP species, the native black poplar, within the land required for the construction of the Proposed Scheme, south-west of Blithbury Road.
- 2.3.9 One species listed as Rare on the Staffordshire Rare Plant Register 2017 and Locally Scarce on the Staffordshire Rare Plant Register 2017, Bog pimpernel (*Anagallis tenella*), was recorded during the field visit west of the B5014 Uttoxeter Road along the field edge of an arable field, within the land required for construction of the Proposed Scheme.
- 2.3.10 Field visits also identified bluebell within Hurst Wood, directly adjacent to the land required for the construction of the Proposed Scheme.
- 2.3.11 Desk study identified two species that are within the land required for construction of the Proposed Scheme, field woundwort (*Stachys arvensis*), listed as Near Threatened on the Vascular Plant Red Data List for Great Britain, was recorded just north of Quintin's Orchard within a hedgerow adjacent to an arable field and corn marigold (*Glebionis segetum*), listed as Vulnerable on the Vascular Plant Red List for England and Staffordshire Rare Plant Register (2017), was recorded south of King's Bromley Lane.
- 2.3.12 Desk study records for bluebell were identified within the land required for the construction of the Proposed Scheme near Finners Hill, north-east of Colton and directly adjacent to the Proposed Scheme at John's Gorse.

- 2.3.13 The desk study also identified three species adjacent to the Proposed Scheme: galingale (*Cyperus longus*), stinking chamomile (*Anthemis cotula*) and frogbit (*Hydrocharis morsus-ranae*). Galingale, listed as Near Threatened on the Vascular Plant Red Data List for Great Britain, was recorded in the residential area of Stockwell Heath. Stinking chamomile, recorded in an arable field east of Lea Hall Farm near Admaston, and frogbit, recorded near Stockwell Heath, are both listed as Vulnerable on the Vascular Plant Red Data List for Great Britain.
- 2.3.14 Four veteran trees were identified in the Fradley to Colton community area, one during the desk study exercise and three during the field surveys. The following are within the land required for the construction of the Proposed Scheme:
- field surveys recorded a pedunculate oak (*Quercus robur*) 350m east of Pipe Wood Lane along a track west of Dawson Lane, at Hadleygate at grid reference: SK095184;
  - desk study<sup>19</sup> and field survey revealed an ancient oak tree on Newlands Lane at grid reference: SK058209, south of Stockwell Heath; field surveys recorded a veteran black poplar south of Blithbury Road and east of Stonyford Lane at grid reference: SK075201; and
  - field surveys recorded a veteran pedunculate oak north of Moreton Brook at grid reference: SK038222.
- 2.3.15 No other protected or notable species were reported from desk study or recorded during field surveys in the Fradley to Colton community area.

### *Colwich to Yarlet (CA2)*

- 2.3.16 The desk study identified one species directly adjacent to the Proposed Scheme that is listed on the Vascular Plant Red Data List for Great Britain. The Near Threatened galingale was recorded in coastal and floodplain grazing marsh near Hoo Mill Bridge in Ingestre.
- 2.3.17 Eight veteran trees were identified in the Colwich to Yarlet community area, one during the desk study exercise and seven during the field surveys:
- field surveys recorded a veteran lime (*Tilia* sp.) directly adjacent to the Proposed Scheme, located on the south-west side of Ingestre Park Golf Course (SJ973241);
  - field surveys recorded a veteran horse-chestnut (*Aesculus hippocastanum*) directly adjacent to the Proposed Scheme, located on the south-west side of Ingestre Park Golf Course (SJ972241);
  - field surveys recorded a veteran ash (*Fraxinus excelsior*) (SJ942259) within the Proposed Scheme area, located south of Hopton Lane/west of Spode Avenue in Hopton;

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<sup>19</sup> A veteran oak (Tree 113476) at SK058209 <http://www.ancient-tree-hunt.org.uk/recording/tree.htm?tree=6bf6237c-442e-4ad2-950e-2dd1255ea39c>

- field surveys recorded a veteran horse-chestnut (SJ943257) within the Proposed Scheme area, located south of Lower House Farm, Hopton within a small woodland;
- field survey and desk study recorded a veteran oak (Tree 113476 on the Ancient Tree Inventory) within the Proposed Scheme area, located in a field on the north-west side of The Grove at Yarlet Hill (SJ912290); and
- field surveys recorded three veteran beech (*Fagus sylvatica*) trees (SJ910291, SJ910292) within the Proposed Scheme area, located south of Yarlet Bank Farm.

2.3.18 No other protected or notable species were reported from desk study or recorded during field surveys in the Colwich to Yarlet community area.

### *Stone and Swynnerton (CA3)*

2.3.19 The field surveys conducted in the Stone and Swynnerton community area identified one species listed as Near Threatened on the Vascular Plant Red List for England and the Staffordshire Rare Plant Register 2017 within the land required for construction of the Proposed Scheme: wood-sorrel (*Oxalis acetosella*), recorded within Clifford's Wood.

2.3.20 Another species listed as Near Threatened on the Vascular Plant Red List for England and the Staffordshire Rare Plant Register 2017, ragged robin (*Silene flos-cuculi*) was recorded directly adjacent to the land required for the construction of the Proposed Scheme within north-west of Birchwood.

2.3.21 Field survey within the Stone and Swynnerton community area identified bluebell within the land required for the construction of the Proposed Scheme:

- Lodge Covert;
- Stabhill Plantation;
- within mature hedgerows surrounding Calloway Pit;
- within hedgerows along Green Lane track;
- Cash's Pit;
- throughout the plantation woodlands north-west of Clifford's Wood; and
- within the hedgerow along Dog Lane.

2.3.22 Records for bluebell were also recorded directly adjacent to the Proposed Scheme at:

- The Shrubs;
- the woodland around Blakelow;
- Glebe House;
- Closepit Plantation;
- within mature hedgerows surrounding Calloway Pit;



- The Stretters;
- Clifford's Wood; and
- throughout the plantation woodlands north-west of Clifford's Wood.

2.3.23 Four veteran trees were identified during field surveys within the land required for the construction of the Proposed Scheme in the Stone and Swynnerton community area as follows:

- a veteran ash located at grid reference SJ892319, next to a private road to the south of Walton House Farm;
- a veteran oak, located at grid reference SJ856361, to the west of the large pool to the south of Sandyford Farm;
- a veteran ash, located at grid ref SJ830376, off Common Lane to the west of Clifford's Wood; and
- a veteran oak, located directly adjacent to Common Lane and a plantation woodland, to the north of Hatton at grid reference SJ831378.

2.3.24 Veteran trees were also recorded directly adjacent to the Proposed Scheme, within a large area of parkland to the south and east of Swynnerton, south-west of Lodge Covert. Many of the trees are mature specimens with at least one veteran oak identified.

2.3.25 No other protected or notable species were reported from desk study or recorded during field surveys in the Stone and Swynnerton community area.

#### *Whitmore Heath and Madeley (CA4)*

2.3.26 Field surveys recorded three species within the land required for construction of the Proposed Scheme that appear on the Vascular Plant Red List for England and Staffordshire Rare Plant Register 2017. These species are listed as Near Threatened: Quaking-grass (*Briza media*), Field scabious (*Knautia arvensis*) and wood-sorrel.

2.3.27 Quaking-grass and field scabious were recorded in the species-rich semi-improved grassland area east of Meece Brook (south-west of Bent Lane). Wood-sorrel was recorded south-west of Snape Hall Road and at Whitmore Wood. It was also recorded 100m from the Proposed Scheme within Hey Sprink woodland.

2.3.28 Field survey within the Whitmore Heath and Madeley area recorded bluebell within the land required for the construction of the Proposed Scheme:

- along Checkley Lane;
- Whitmore Wood;
- within a woodland south of Randilow;
- within a hedgerow north of, and woodland east of, Grange Farm; and
- a hedgerow west of Moss House.

2.3.29 Bluebells were recorded directly adjacent to the Proposed Scheme:

- at a woodland south of the A53 at Coney Greave;
- Whitmore Heath;
- Barhill Wood;
- Hey Sprink; and
- the woodland area south of Moss House.

2.3.30 The desk study identified bluebell records within the land required for the construction of the Proposed Scheme around hedgerows and grassland areas at Whitmore Wood and near Manor Road Verges (near Hey House). Records for bluebell were also recorded directly adjacent to the Proposed Scheme at Hey Sprink (to the south-west of) woodland and a small woodland east of Wrinehill Wood.

2.3.31 Fourteen veteran trees were identified during the field surveys within the land required for the construction of the Proposed Scheme in the Whitmore Heath and Madeley community area as follows:

- a veteran oak is located at grid reference SJ812400, within a field to the east of Bent Lane and Meece Brook;
- a veteran oak is located within a field north of the A53 Newcastle Road, east of The Old Rectory at grid reference SJ807408;
- a veteran oak is located within a field north of the A53 Newcastle Road, west of The Old Rectory at grid reference SJ804407;
- two veteran oaks are located within the field at The Hill at grid reference SJ800406, north of the A53 Newcastle Road and east of Common Lane;
- a veteran oak is located on the southern edge of Whitmore Wood Ancient Woodland at grid reference SJ793414;
- a veteran ash is located on the eastern edge of a wood south of Hey Sprink at grid reference SJ787424;
- a veteran oak is located directly adjacent to the east side of Manor Road at grid reference SJ775422, near Manor Holding and the disused rail line (Silverdale);
- a veteran oak is located by a pond within a field east of Manor Road and south of Hey House Lodge at grid reference SJ775428;
- a veteran oak is located directly adjacent to the west side of Red Lane, just north of a small broadleaved woodland and east of Bar Hill House Farm at grid ref SJ768437;
- a veteran oak is located directly adjacent to the west side of Red Lane, just south of a small broadleaved woodland and east of Bar Hill House Farm at grid ref SJ767435;
- a veteran ash is located at grid reference SJ769440, on the boundary of a field west of Red Lane, just south of Sandfield House;
- a veteran large leaved lime (*Tilia platyphyllos*) is located on the boundary of a field, west of the A525 Barhill Road at Bar Hill Cottage at grid reference SJ766439; and

- a veteran oak is located within a field east of Wrinehill Wood at grid reference SJ756451.

2.3.32 No other protected or notable species were reported from desk study or recorded during field surveys in the Whitmore Heath and Madeley community area.

### *South Cheshire (CA5)*

2.3.33 Two Cheshire BAP species, the ivy-leaved water-crowfoot (*Ranunculus hederaceus*) and bluebell were identified in the desk and field study within the land required for the construction of the Proposed Scheme. Ivy-leaved water-crowfoot was identified from desk study at two ponds within the Lower Den Farm. Bluebell records were identified from the field survey within the land required for the construction of the Proposed Scheme north-west of Coppice Bank and directly adjacent to the Proposed Scheme south-west of Coppice Bank.

2.3.34 Desk study records within the South Cheshire community area identified bluebell within the land required for the construction of the Proposed Scheme north of Grange Farm, within a hedgerow containing mature oak trees.

2.3.35 Three veteran trees were identified in the South Cheshire community area within the land required for the construction of the Proposed Scheme during the field surveys, as follows:

- a veteran oak is located at grid reference SJ737478, directly adjacent to the south west corner of Den Lane and the small track west of Moss House;
- a veteran oak is located within a hedgerow, north-west of the unnamed tributary of Gresty Brook and associated broadleaved woodland and east of Gonsley Green Farm at grid reference SJ733483; and
- a veteran oak is located at Basford House, just south of Newcastle Road east of the West Coast Main Line at grid reference SJ723513.

2.3.36 A veteran oak tree was also recorded directly adjacent to the Proposed Scheme, located in a field south of the West Coast Main Line and north of Den Lane near Coppice Bank, at grid reference SJ736481.

2.3.37 No other protected or notable species were reported from desk study or recorded during field surveys in the South Cheshire community area.

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