

**M54 to M6 Link Road**

**TR010054**

**Volume 6**

**6.3 Environmental Statement**

**Appendices**

**Appendix 8.4 Designated Sites and  
Habitats**

Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed  
Forms and Procedure) Regulations 2009

January 2020

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning  
(Applications: Prescribed Forms and  
Procedure) Regulations 2009**

**M54 to M6 Link Road**  
Development Consent Order 202[ ]

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**6.3 Environmental Statement Appendices**  
**Appendix 8.4 Designated Sites and Habitats**

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# 1 Introduction

- 1.1.1 Highways England are developing a link road between the M54 and M6 to provide a link between Junction 1 of the M54, M6 North and the A460 to Cannock. The M54 to M6 Link Road (herein referred to as ‘the Scheme’) aims to reduce congestion on local / regional routes, particularly the A449 and A460 and deliver improved transport links to encourage the development of the surrounding area. This appendix has been prepared in respect of designated sites and habitats relating to the Scheme.
- 1.1.2 The appendix includes the following information:
- relevant legislation and policy;
  - methodologies for desk and field-based assessments undertaken in 2019 including for designated Sites (Statutory and non-statutory); protected and notable<sup>1</sup> flora and non-native invasive plant species; habitats of principal of importance (HPI<sup>2</sup>) and ancient woodland; other terrestrial habitats (i.e. undesignated); habitat condition assessments.
  - competencies of the ecologists involved in undertaking the above surveys;
  - limitations to the surveys undertaken and any assumptions made as a result of incomplete data;
  - survey results; and
  - the approach for determining the nature conservation importance of the biodiversity features recorded.
- 1.1.3 This appendix should be read in conjunction with Chapter 8: Biodiversity of the Environmental Statement (ES) [TR010054/APP/6.1].

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<sup>1</sup> Notable species are considered to be:- Species of Principal Importance listed at Section 41 of the Natural Environment and Rural Communities Act 2006 – Staffordshire Biodiversity Action Plan species- Species Listed on the Staffordshire Rare Plants Register 2018 - Red Data Book species based on IUCN criteria (Stroh et. al. 2014. A Vascular Plant Red List for England. Botanical Society of Britain and Ireland, Bristol) - Rare species not based on IUCN criteria (Nationally rare - occurring in 15 or fewer hectads (1km square) in Great Britain or Nationally scarce – occurring in 16-100 hectads but not in a Red List Category) as defined by JNCC.

<sup>2</sup> Habitats listed on the Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006.

## 2 Relevant Legislation and Policy

### 2.1 Legislation

2.1.1 Specific habitats receive legal protection in the UK under various pieces of legislation, including:

- the Wildlife and Countryside Act (WCA) 1981 (as amended);
- the Conservation of Habitats and Species and Planning Regulations 2017;
- Ramsar Convention 1975;
- the Countryside and Rights of Way (CROW) Act 2000;
- the Hedgerows Regulations 1997; and
- the Natural Environment and Rural Communities Act (NERC) 2006.

2.1.2 Full details of this legislation is provided in Appendix 8.1 Legislation and Policy Framework [TR010054/APP/6.3].

### 2.2 Planning policy

2.2.1 Full detail of relevant national and local planning policy planning policy relevant to nature conservation is provided in Appendix 8.1 Legislation and Policy Framework [TR010054/APP/6.3] and a summary of national and is provided in detail in Chapter 8: Biodiversity of the ES [TR010054/APP/6.1].

### 2.3 Priority habitats

2.3.1 The following habitats relevant to the Scheme are listed on the NERC 2006 (refer to Appendix 8.1):

- arable field margins;
- hedgerows;
- ponds;
- lowland mixed deciduous woodland; and
- wood pasture and parkland.

2.3.2 In addition, the Staffordshire Biodiversity Action Plan (SBAP) (Ref 1) lists the following priority habitats that are relevant to the Scheme:

- lowland wood-pasture and parkland;
- native woodland;
- wet woodland;
- ancient/diverse hedgerows;
- lowland wet grassland
- unimproved neutral grassland
- ponds, lakes and canals;
- reedbeds; and
- rivers and streams.

2.3.3 The SBAP lists the following priority plant species:

- Dyers Greenweed *Genista tinctoria*;
- Hybrid Bilberry *Vaccinium x intermedium*;
- Floating Water-plantain *Luronium natans*;
- Grass Wrack Pondweed *Potamogeton compressus*; and
- Native Black Poplar *Populus nigra* var. *betulifolia*

## 3 Methodology

### 3.1 Desk study

#### **Designated sites (statutory and non-statutory)**

3.1.1 Staffordshire Ecological Record Centre (SERC), and the Ecological records centre for Birmingham and the Black Country (EcoRecord) were consulted in 2018 for the records outlined below (collectively known as the Desk Study Area):

- Ramsar sites - sites encompass wetlands of international importance designated under the Ramsar convention 1975;
- Special Areas of Conservation (SAC) - sites of European importance designated under the EC Habitats Directive to help conserve species or habitats listed under Annexes I and II of the Directive (as amended). The sites are protected under the Conservation of Habitats and Species and Planning Regulations 2017;
- Special Protection Areas (SPA) - sites are classified for rare or vulnerable birds, listed in Annex I of the Birds Directive, and for regularly occurring migratory species. The sites are protected under the Conservation of Habitats and Species and Planning Regulations 2017;
- National Nature Reserves (NNR) - important natural and semi-natural ecosystems in the UK managed to provide opportunities for scientific study. NNRs are designated under the National Parks and Access to the Countryside Act 1949 and the WCA 1981;
- Sites of Special Scientific Interest (SSSI) - notified under Section 28 of the WCA 1981, as amended. SSSIs are examples of the country's best wildlife and geological sites; and
- Local Nature Reserves (LNR) - sites with wildlife or geological features that are of special interest locally (and are often publicly accessible) are designated under National Parks and Access to the Countryside Act 1949.
- Local Wildlife Sites (LWS) - local non-statutory nature conservation sites which are protected through Policy EQ1 of the South Staffordshire Core Strategy;
- Sites of Biological Interest (SBIs) – identified by the Staffordshire as the best remaining examples of habitats which rate highly on the basis of such factors as naturalness, diversity, or rarity of species or communities. They frequently comprise remnants of larger areas of semi-natural vegetation sometimes with associated dependant plant or animal species;
- Biodiversity Alert Sites (BAS) – identified by the Staffordshire as a significant part of the County's nature conservation resource but often of lower quality, smaller size or suffering from more damage or disturbance than an SBI;
- records of protected/notable flora, HPI and ancient woodlands within 2 km; and
- records of non-native invasive plant species listed on Schedule 9 of the WCA 1981 within 2 km (as amended).

- 3.1.2 In addition, Multi-Agency Geographic Information for the Countryside (MAGIC) Interactive Maps was consulted in August 2019 to assess the location and extent of habitats of principal importance, woodlands listed on the Ancient Woodland Inventory (AWI) and SSSI Impact Risk Zones<sup>3</sup> (IRZ) that overlap with the Scheme boundary.
- 3.1.3 Only records up to 10 years old were considered within the assessment. Due to the potential for temporal changes in habitats over time, records for plant species older than 10 years are considered more likely to provide a false representation of current plant species composition.
- 3.1.4 The designated site data is ordered according to level of importance then distance from the Scheme Boundary. Distances are given in kilometres to one decimal place, or two decimal places where the site is closer than 0.1 km to the Scheme boundary.

### **Ancient Woodland**

- 3.1.5 Ancient woodland information was requested from the sources identified above as well as the AWI. Consultation with Natural England was also undertaken to agree which woodland blocks within and adjacent to the Scheme boundary were considered to be ancient, the locations of which are shown on Figure 8.2 of the ES [TR010054/APP/6.2]. Confirmation of agreement is outlined within the Statement of Common Ground with Natural England [TR010054/APP/7.3].

### **Phase I Habitat Survey**

- 3.1.6 Phase I habitat surveys were carried out in April and May 2018 and July 2019, both within the Scheme boundary and 50 m from the Scheme boundary (Figure 8.3 [TR010054/APP/6.2]). The surveys included habitats present within designated sites, areas of HPI, and potential ancient woodland sites.
- 3.1.7 The technique was based upon Phase I survey methodology (Ref 2). This technique provides an inventory of the habitat types present and dominant species. The purpose of the survey was to identify and map habitats. Where relevant and where access was possible, relative species abundance was recorded using the DAFOR scale (D=dominant, A=abundant, F=frequent, O=occasional, R=rare)<sup>4</sup>. This method, though subjective provides additional information, to that provided by the Phase I habitat survey method and is useful in helping to distinguish grassland types and in assessing the condition of habitats.
- 3.1.8 Annotated target notes (TN) are used to show the geographical location of distinct habitat areas. These are provided on the associated habitat plans (Figure 8.3 [TR010054/APP/6.2]).
- 3.1.9 Habitats across the survey area are reviewed against the Guidelines for the selection of LWS in Staffordshire (Ref 3) to determine whether they met the criteria for designation.

<sup>3</sup> IRZs have been developed by Natural England to provide an initial assessment of potential effects on SSSIs. These define zones around each SSSI which reflect the particular sensitivities of the features for which they site is notified and indicate the types of development which could potentially cause adverse effects. Broadly, the range of potentially significant developments decrease with distance from a particular site. Inclusion in an IRZ does not indicate that an impact would automatically occur but identifies a potential risk on which Natural England would expect Local Planning Authorities to consult them.

<sup>4</sup> The prefix L is used where a species at the given scale "locally".

- 3.1.10 Weather conditions for the surveys were dry and sunny (15 - 24°C), with cloud cover ranging from 10 – 50 % and light winds of 1-2 (Beaufort scale).

### **Hedgerow Survey**

- 3.1.11 Hedgerow surveys were undertaken both within the Scheme boundary and the area 50 m from the Scheme boundary in July 2019 (Figure 8.3 [TR010054/APP/6.2]). The aim of the hedgerow survey was to assign a level of ecological importance (see Section 3.4) to each hedgerow and to classify the hedgerow as 'important' or 'not important' under the wildlife and landscape criteria of The Hedgerows Regulations 1997. Species-rich hedgerows have been considered as those supporting at least five woody species as outlined in the Hedgerow Regulations 1997.
- 3.1.12 Qualification as an important hedgerow was assigned in line with the Hedgerow Regulations where:
- the hedgerow is more than 30 years old; and
  - it satisfies at least one of the criteria below.
- 3.1.13 The criteria referred to above are:
- The hedgerow supports (or there are records within the last 5 years for fauna and 10 years for flora held by a record centre indicating it supports) species listed at Schedule 1 (birds), Schedule 5 (animals) or Schedule 8 (plants) of the WCA 1981 (as amended), is a declining breeder in the Red Data Birds in Britain , or is endangered, extinct, rare or vulnerable in the British Red Data Books or the Red Data Books of Britain and Ireland.
  - The hedgerow includes:
    - at least 7 woody species on average, in a 30 m length or;
    - 6 woody species on average in a 30 m length plus three additional features (see a to h below) or;
    - 6 woody species on average in a 30 m length including native black poplar, small-leaved lime *Tilia cordata*, large leaved lime *Tilia platyphyllos* or wild service tree *Sorbus torminalis* or;
    - at least 5 woody species on average in a 30 m length and four additional features (see below).
  - The Hedgerow is adjacent to a bridleway, foot path/road used by public, path/byway open to all traffic, with at least four woody species and at least two of the additional features described in (a) to (h) below;
- 3.1.14 Additional features a to h referred to above are:
- A bank or wall which supports the hedgerow along at least half of its length.
  - Gaps which when combined do not exceed 10% of the length of the hedgerow.
  - Where the length of the hedgerow does not exceed 50 m and contains at least one standard tree.
  - Where the length of the hedgerow exceeds 50 m but does not exceed 100 m and contains at least two standard trees.



- Where the length of the hedgerow exceeds 100 m and contains at least one standard tree for each 50 m of hedgerow on average.
- At least three woodland plant species within one metre, in any direction, of the outermost edges of the hedgerow.
- Hedgerow connections scoring four points or more in accordance where a connection with another hedgerow scores one point and a connection with a pond or a woodland in which the majority of trees are broad-leaved trees scores two points (a hedgerow needs to be within 10 m of another to qualify).
- A parallel hedgerow within 15 m of the hedgerow.

#### Hedgerow Evaluation and Grading System (HEGs)

- 3.1.15 Following consultation with Staffordshire County Council, for hedgerows that were identified as being directly affected by the Scheme the HEGs methodology was implemented (Ref 4). This involves recording the following parameters:
- structure (e.g. width, height, cross-section etc.);
  - connectivity (presence of gaps and end connections);
  - diversity (number of species and canopy species dominance); and
  - associated features (banks, ditches and verges).
- 3.1.16 A desk top analysis was then undertaken to allocate a score following the information recorded in the field and to enable a 'grade' to be allocated which then allows an ecological value to be applied to the hedgerows as follows:
- Grade 1: High to very high value;
  - Grade 2: Moderately high to high value;
  - Grade 3: Moderate value; and
  - Grade 4: Low value.
- 3.1.17 Hedgerows of Grade 2 and above are specified as being of conservation priority (Ref 4).

#### **Invasive Plant Species**

- 3.1.18 Any non-native invasive plant species listed on Schedule 9 of the WAC 1981 (as amended) identified during field surveys were recorded and are noted in the relevant sections in this Appendix.

### **3.2 Evaluation of ecological importance**

- 3.2.1 The evaluation of designated sites, habitats and species is defined in accordance with guidance published by Chartered Institute of Ecological and Environmental Management (CIEEM) (Ref 5). The level of importance of specific ecological features is assigned using a geographic frame of reference.
- 3.2.2 The importance (value) of ecological features (comprising designated sites, habitats, species assemblages and populations of plant species) is assessed with reference to their:
- nature conservation status (which relates to rarity and threat status);

- conservation value (which relates to the need to conserve representative areas of different habitats and the genetic diversity of species populations); and
- legal status (i.e. whether they are afforded protection under legislation).

3.2.3 Other characteristics considered to contribute to the importance of ecological features include, but were not limited to the following taken from the Ratcliffe criteria (Ref 6):

- fragility;
- size;
- habitat diversity;
- potential value
- typicalness;
- position with the ecological/geological unit;
- recorded history;
- naturalness; and
- intrinsic appeal.

3.2.4 Importance is determined based on the following geographical contexts:

- International and European - internationally designated sites such as SAC and wetlands of international importance (Ramsar sites) that are designated for their habitats or botanical species;
- National (England) - nationally designated sites such as SSSI or sites that would meet SSSI criteria but are not currently designated;
- Regional (West Midlands) – habitat communities that occur within regionally important sites or localities, and whose loss would significantly affect the national distribution of the habitat or species;
- County (Staffordshire) - habitats that are part of the designation of county sites or that qualify for designation as a LWS, SBI and BAS.
- Local (South Staffordshire – District or Shereshill/Hilton - Parish); undesignated ecological features such as hedgerows and woodlands that contribute to the maintenance of a habitat at a local level; and
- Negligible (less than local).

3.2.5 Guidelines for the selection of LWS in Staffordshire (Ref 3) were referred to assess the importance of habitats in a county context.

### 3.3 Habitat distinctiveness and condition assessment

3.3.1 The findings of the Phase I Habitat Survey and other parameters collected during the surveys were then used to assess the condition and distinctiveness of habitats using the guidance provided in Annex B of the Chief Highway Engineer Memorandum 422/18 (Ref 7, Annex A).

3.3.2 Within the guidance, distinctiveness is allocated by Phase I habitat type and associated cores are outlined in Table 3.1. Distinctiveness is based largely on the characteristics outlined in section 3.2 above.



**Table 3.1: Habitat distinctiveness scores**

Distinctiveness	Score
High	6
Medium	4
Low	2

- 3.3.3 The guidance (Ref 7) outlines three “condition criteria” for types of Phase I habitats which are broadly based on the condition assessment contained within Natural England’s Farm Environment Plan Manual (Ref 8). There are three condition assessment categories; good, moderate and poor which are allocated based on the number of condition criteria met by the surveyed habitat. A score is then allocated as outlined in Table 3.2.

**Table 3.2: Habitat condition scores**

Number of condition criteria matched	Condition	Score
3	Good	3
2	Moderate	2
1	Poor	1
0	Poor	1

- 3.3.4 This information has then been used to calculate the number of biodiversity units present within the Scheme boundary (distinctiveness score x condition score x area) which has information the biodiversity metric calculations for the Scheme (Appendix 8.2 [TR010054/APP/6.3]).

## 3.4 Assumptions and limitations

### Desk study

- 3.4.1 The information collected from the background record search represents only those records submitted to records centres and is therefore not considered to be a definitive list of protected and priority flora identified within the Desk Study Area. If records have not been provided, this does not confirm absence from the Scheme boundary.
- 3.4.2 The following are inherent limitations of a desk study which includes obtaining data from a Biological Records Centre (BRC):
- Recorder bias - biological records are not a representation of the distribution of species within the search area, only records of those species, so the dataset provided by a BRC may be biased towards the favoured locations / ‘patches’ of local recorders and the presence (or absence) of specialist recording groups (plant group) within that county or vice county;
  - Incomplete data – the current dataset held by a BRC is the considered to be the most accurate and most up-to-date representation of species within each BRC boundary although records are largely random. Where atlases which have systematically surveyed monads, tetrads, or hectads for taxonomic groups

within a given area are available these records therein are a more accurate picture of species assemblage and distribution;

- Data availability lag - Resources at BRCs can be limited, which can lead to a lag between the time that records are submitted by recorders and the time that they are verified and entered into the database for that county. Additionally, special interest recording groups (which often hold their own datasets) may only submit their records annually (if at all) which causes further lag in dataset accuracy; and
- Changes in Data due to the Verification Process –Where new information or specialist knowledge sheds light on the validity of recent or historical submitted records, the verification process may add or remove which may alter the results of a data search over time with same parameters.

### 3.5 Field surveys

- 3.5.1 Woodland habitats within the highway boundaries were not surveyed in detail due to access restrictions. Figure 8.4 [TR010054/APP/6.2] shows all areas where landowners refused access and Table 3.1 of this appendix and Figure 8.3 [TR010054/APP/6.2] show specific locations. Where possible, habitat type, species composition and abundance were compiled using views from public footpaths (pavements at the roadside). Due to the relative simplicity of the woodland habitats within the highway boundary (consisting almost exclusively of broadleaved plantation established during the past 30 – 50 years), sufficient information was gathered to assign the habitat type and to assess the condition and distinctiveness of habitats therefore, these limitations are not considered to have significantly affected the assessment.
- 3.5.2 The 2019 surveys were undertaken during July, when many woodland species have already flowered and set seed. Therefore, woodland species lists may not be comprehensive. However, it was possible to gather enough information to determine the condition and distinctiveness of the woodland against the criteria provided in Annex B of the Chief Highway Engineer Memorandum 422/18 (Ref 7); and whether or not woodland habitats would be likely to qualify for selection against the Staffordshire LWS Selection Criteria, therefore, this limitation is not considered to have significantly affected the assessment.
- 3.5.3 A reasonably comprehensive species list could be compiled for uncut grassland habitats with most grasses being in inflorescence during the survey. However, some fields were livestock grazed or had recently been cut. Where this was the case there was sufficient vegetation present to distinguish between improved and semi-improved leys, but a full species list could not be compiled in all cases. However, this is not considered to have significantly affected the assessment.
- 3.5.4 The list of invasive plant species included on Schedule 9 of the WCA 1981 (as amended) includes a range of species, some of which are aquatic. The Extended Phase I habitat surveys identified presence of Japanese knotweed *Fallopia japonica*, giant knotweed *Fallopia sachalinensis*, hybrid knotweed *Fallopia spp*, giant hogweed *Heracleum mantegazzianum*, Himalayan balsam *Impatiens glandulifera*, rhododendron *Rhododendron ponticum* and cotoneaster species *Cotoneaster spp*.

Other invasive species may not have been recorded but this is considered sufficient to have identified key constraints in relation to invasive species.

- 3.5.5 Where habitats within the survey area were not accessible at all, even from adjacent accessible land, they were subject to assessment from publicly available aerial imagery and Google Street View (Map data 2017 Google), the MAGIC website and a review of field survey from surrounding land parcels where possible were used to determine likely main habitats present as accurately as possible.
- 3.5.6 Habitats assigned from aerial assessment was conducted by a suitably qualified and experienced habitat ecologist. Where available, other information, such as designated site citations, were used to help determine habitat types present. Where there was doubt regarding the species composition and diversity through a lack of sufficient information, a precautionary approach was employed and the habitat was classified as being of a high species-diversity.
- 3.5.7 In addition, for habitats where field access was not possible, the condition assessment for these habitat types has been based on those recorded by field survey for the same habitat types within the Scheme boundary, where these are directly connected to the inaccessible habitats.
- 3.5.8 Despite the above limitations, it is considered that enough information has been gained from the surveys to determine the Phase I habitat types listed in the condition assessment method and to determine qualifying features for the condition assessment.

**Table 3.3: Location specific survey limitations**

Target note (shown on Figure 8.3 [TR010054/APP/6.2])	Issue
TN6, TN36, TN84, TN85, TN86, TN87, TN91, TN92, TN93, TN94, TN95, TN96, TN98, TN99, TN100, TN101, TN102, TN103, TN105, TN106, TN108 – 125, TN129 – TN140.	No access due to highways land restrictions or landowner restrictions so habitats ascertained from a combination of viewing from adjacent land parcels and aerial assessments.
TN3, TN4, TN42, TN50, TN62, TN67	No comprehensive species list due to either being recently cut or sheep grazed.

## 4 Results and Evaluation

### 4.1 Desk study

- 4.1.1 Table 4.1 provides a summary of the statutorily designated sites within the Desk Study Area. The locations of these designations are shown on Figure 8.2.
- 4.1.2 There are several international designations located within 30 km of the Scheme boundary (Figure 8.1 [TR010054/APP/6.2]); however, none of these are designated for bats and therefore in line with DMRB guidance (Ref 9) have been screened out from further assessment.
- 4.1.3 One SSSI and one LNR within 2 km of the Scheme boundary. There are no within the Desk Study Area. Table 4.1 provides a summary of these sites.

**Table 4.1: Statutory nature conservation designations within the Desk Study Area**

Designation	Reason(s) for designation	Importance (reasoning)	Distance and direction from the Scheme boundary
Stowe Pool and Walk Mill Clay Pit SSSI (only Walk Mill Clay Pit is within the study area)	The only section of this SSSI that is within the Study Area is Walk Mill Clay Pit. This site has historically supported a large and significant population of white-clawed crayfish.	National (SSSI)	The site is 1.5 km north east from the Scheme boundary.  Located to the north of the M6 Toll and east of the M6, therefore there are significant major barriers between the site and the Scheme boundary.
Four Ashes Pit SSSI	Designated for its geological interest a sequence of sands and gravels, overlain by till lying on top of Triassic Sandstone bed rock	National (SSSI)	The site is approximately 4.1 km north west of the Scheme boundary and is located at its closest point approximately 7 m from the Affected Road Network (ARN).
Chasewater and the Southern Staffordshire Coalfield Heaths SSSI	Wet and dry lowland heath, fens and oligotrophic (nutrient-poor) standing open water habitats. Also supports two nationally scarce vascular plant species: floating water-plantain <i>Luronium natans</i> and round-leaved wintergreen <i>Pyrola rotundifolia</i>	National (SSSI)	The site is approximately 7.5 km east of the Scheme boundary and is located at its closest point approximately 38 m from the ARN.

Designation	Reason(s) for designation	Importance (reasoning)	Distance and direction from the Scheme boundary
Belvide Reservoir SSSI	Large reservoir located within agricultural land particularly important as a wintering site for shoveler <i>Anas clypeata</i> . It also supports large numbers of moulting and wintering water-birds and is noted for its breeding birds and ability to attract a great variety of migrants and rare Vagrants.	National (SSSI)	The site is approximately 9.5 km north west of the Scheme boundary and is located at its closest point approximately 1 m from the ARN.
Wyrley and Essington Canal LNR	Variety of wildlife habitats, including open water, dry canal bed, wet grassland, scrub and woodland which supports bird and invertebrate species, some of which are included on the Staffordshire Biodiversity Action Plan.	County (SBI)	The site is approximately 1.4 km east of the Scheme boundary.

4.1.4 Table 4.2 provides a summary of non-statutory designated sites within the Desk Study Area.

**Table 4.2: Non-statutory nature conservation designations within 2km of the Scheme Boundary**

Designation	Reason(s) for designation	Importance (reasoning)	Relationship to the Scheme
Lower Pool SBI and LWS	A large ornamental pool with both emergent and floating vegetation.	County (LWS)	Within the Scheme boundary. The Scheme would have a direct impact on this LWS.
Brookfield Farm, Shareshill, SBI and LWS	An area of wet woodland comprising alder and willow carr that is drying out in some areas of the site. Sycamore is common in the drier parts of the wood. Part of which is classified as ancient woodland (see below).	County (LWS)	Within the Scheme boundary. The Scheme would cross the western end of the SBI.
Coven Heath SBI and LWS	A small area of remnant wet heathland.	County (LWS)	0.2 km north-west of the Scheme boundary but separated from any earthworks by the A449 and the railway line.

Designation	Reason(s) for designation	Importance (reasoning)	Relationship to the Scheme
Keeper's Wood, Hilton Park SBI and LWS	Mature mixed deciduous/conifer plantation.	County (LWS)	0.35 km east of the Scheme boundary. The site is linked to the Scheme through arable farmland and hedgerows.
Westcroft Farm (land north of), Bushbury, SBI and LWS	A linear strip of alder/crack willow woodland along the stream with sycamore abundant in the canopy away from the stream. Hazel ( <i>Corylus avellana</i> ) frequents the understorey throughout the woodland, with scattered elder and holly ( <i>Ilex aquifolium</i> ).	County (LWS)	Approximately 1.1 km south of the Scheme boundary. There may be some limited connectivity to the Scheme via hedgerows and arable fields; however, the M54 acts as a barrier to the majority of the Scheme.
Hatherton Reservoir, Cheslyn Hay SBI and LWS	Reservoir with high quality water and diverse emergent and submerged vegetation.	County (LWS)	1.3 km north-east of the Scheme boundary. A large industrial estate, quarry and the M6 act as major barriers between the site and the Scheme boundary and there are no identified hydrological or hydrogeological connections. .
Wyrley and Essington Canal SBI and LWS	Variety of wildlife habitats, including open water, dry canal bed, wet grassland, scrub and woodland which supports bird and invertebrate species, some of which are included on the Staffordshire Biodiversity Action Plan.	County (LWS)	1.4 km east of the Scheme boundary and does not have any connectivity to the Scheme boundary.
Hatherton Bridge (by) Hatherton SBI and LWS	Rough semi-improved field with many ruderal species.	County (LWS)	1.6 km north-west of the Scheme and is separated from the Scheme boundary by Great Saredon Road.
Pennymore Hay Farm SBI and LWS	An area of remnant species rich marsh that has been damaged by tipping.	County (LWS)	1.8 km north-west of the Scheme boundary but the A496 is a major barrier therefore there is no direct connectivity to the Scheme.



Designation	Reason(s) for designation	Importance (reasoning)	Relationship to the Scheme
Moseley Hall SNCI	Mature semi-natural and amenity woodland along course of Waterhead Brook and large former mill pond.	County (SNCI)	0.5 km south of the Scheme boundary. There may be some limited connectivity to the Scheme via hedgerows and arable fields; however, the M54 acts as a barrier to the majority of the Scheme.
Northcote Farm Parkland SNCI	Mature parkland with areas of recent planted woodland and strip of diverse semi-natural woodland along course of Waterhead Brook.	County (SNCI)	0.8 km south of the Scheme boundary. There may be some limited connectivity to the Scheme via hedgerows and arable fields; however, the M54 acts as a barrier to the majority of the Scheme.
Northcote Farm Coppice SNCI	Small broad-leaved coppice woodland.	County (SNCI)	1.1 km south of the Scheme boundary. There may be some limited connectivity to the Scheme via hedgerows and arable fields; however, the M54 acts as a barrier to the majority of the Scheme.
The Hag retained BAS	Woodland dominated by sycamore, with some oak and much hawthorn around the edges. Within the wood is a very steep-sided pond without emergent vegetation.	Local (BAS)	0.08 km south of the Scheme boundary. There is arable land, hedgerows and woodland connecting the BAS to the Scheme. There are no hydrological links between the site and the Scheme.
Saredon Hall Farm retained Biodiversity Alert Site BAS <sup>5</sup> (south-east of)	An area of oak woodland with a small pond. Much of the wood is impenetrable with bramble <i>Rubus</i> sp. and nettle <i>Urtica dioica</i> . Additionally, there is a small pond to the south of the wood, fringed by glaucous sedge <i>Carex flacca</i> , reedmace <i>Typha</i> sp. and broad-leaved pondweed <i>Potamogeton natans</i> in the water.	Local (BAS)	0.3 km north of the Scheme boundary. The M6 Toll acts as a significant major barrier between the site and the Scheme boundary.

<sup>5</sup> "Biodiversity Alert Sites (BAS) are sites of local rather than County importance. These sites have some nature conservation value and have the potential to be of 'substantive nature conservation value' through appropriate management. This designation helps target land management advice to bring new sites into the SBI system." [http://www.staffs-ecology.org.uk/html2015/index.php?title=SBI\\_Guidelines:\\_Introduction](http://www.staffs-ecology.org.uk/html2015/index.php?title=SBI_Guidelines:_Introduction)

Designation	Reason(s) for designation	Importance (reasoning)	Relationship to the Scheme
Westcroft retained BAS (woods north of)	A mixed wood containing mainly pedunculate oak <i>Quercus robur</i> , sycamore and Scots pine <i>Pinus sylvestris</i> . The understorey is dominated by elder and hawthorn <i>Crataegus monogyna</i> .	Local (BAS)	0.5 km south of the Scheme boundary. The site is to the south-west of the southern section of the Scheme. There is a large industrial park which is considered a significant barrier between the site and the Scheme.
Hatherton Branch Canal BAS	The section of canal between the M6 and Oak Lane.	Local (BAS)	1 km north of the Scheme boundary with potential connectivity via hedgerows and arable fields. There are no hydrological links to the Scheme boundary.
Lodge Hill (north-east of) BAS	A small damp depression at the edge of an arable field.	Local (BAS)	1.2 km north-east of the Scheme boundary. The M6 Toll, the M6 and the A4601 are major barriers and there are no hydrological links.
Hatherton Pines retained BAS	An area of plantation coniferous woodland, situated between the two Hatherton Pools. The area of most importance is the grassland between the plantations which has a rich flora due to poor soil conditions, including kidney vetch ( <i>Anthyllis vulneraria</i> ) and bilberry ( <i>Vaccinium myrtillus</i> ).	Local (BAS)	1.3 km north-east of the Scheme boundary. The M6 Toll, the M6 and the A4601 are major barriers and there are no hydrological links.
Ashmore Lodge, Essington (disused mineral railway line), Retained BAS	An old dismantled mineral line now covered by neutral grassland with some wooded areas.	Local (BAS)	1.3 km south of the Scheme boundary and the M54 and Bognop Road are major barriers.
Essington Pools retained BAS	As well as the open water there are two areas of woodland, an area of tall planting and amenity grassland. The amenity grassland is regularly mown.	Local (BAS)	1.4 km south-east of the Scheme boundary. The village of Essington is a major barrier and there are no hydrological links.



### Habitats of principal importance and ancient woodland

- 4.1.5 There are multiple blocks of woodland noted as HPis within the Desk Study Area, primarily associated with the statutorily designated sites and roadside vegetation. The locations of these are shown on Figure 8.5 [TR010054/APP/6.2] and they are considered to be of local ecological importance due to the prevalence of similar habitats in the Desk Study Area.
- 4.1.6 There is one parcel of reedbed located within the Desk Study Area. Its location is shown on Figure 8.5 [TR010054/APP/6.2]. It is considered to be of County importance due to the limited abundance and distribution of this habitat within Staffordshire.
- 4.1.7 There are several parcels of woodland that are listed on the AWI as outlined in Table 4.3 and shown on Figure 8.2 [TR010054/APP/6.2]. In addition to the woodlands listed on the AWI, a section of Brookfields Farm LWS and SBI has been confirmed through map regression, consultation with Natural England and the Phase I habitat survey as being ancient woodland.

**Table 4.3: Ancient woodland within the Desk Study Area**

Name	Category	Importance (reasoning)	Relationship to the Scheme
Brookfields Farm	Ancient and Semi-Natural Woodland	National*	Within the Scheme boundary and within 200 m of the ARN.
Oxden Leasow (Whitgreaves wood)	Ancient and Semi-Natural Woodland	National*	Within the Scheme boundary and within 200 m of the ARN.
Beech Head	Ancient and Semi-Natural Woodland	Assumed National**	340 m east of the Scheme boundary. Located to the south of the M54, which is a major barrier between Beech Head and the Scheme. No pathways to the receptor.
Keeper's Wood	Ancient and Semi-Natural Woodland/Ancient Re-planted woodland	Assumed National**	712 m east of the Scheme boundary. The site is linked to the Scheme through arable farmland and hedgerows.
Spring Coppice	Ancient and Semi-Natural Woodland	Assumed National**	1 km east of the Scheme boundary. Located between the two carriageways of the M54 therefore there are major barriers between Spring Coppice and the Scheme.
Burns Wood (west)	Ancient and Semi-Natural Woodland	Assumed National**	1.4 km east of the Scheme boundary split by the M6. The western parcel is linked to the Scheme through arable farmland and hedgerows; however, the eastern parcel is separated from the Scheme boundary by the M6.

Name	Category	Importance (reasoning)	Relationship to the Scheme
Burns Wood (East) Wakeman's Wood and Warstone Belt	Ancient and Semi-Natural Woodland	Assumed National**	1.6 km east and within 200 m of the ARN.
Essington Wood	Ancient and Semi-Natural Woodland	Assumed National**	1.8 km east and within 200 m of the ARN.
<p>*meets a number of criteria for which an LWS would be designated due to the presence of ancient woodland, indicator species, ancient woodland is also a HPI. This is based on field surveys undertaken to support the assessment.</p> <p>** assumed national importance in line with DMRB LA 108 (Ref 10).</p>			

### Invasive Species

- 4.1.8 There are no records of invasive species returned within the Desk Study Area.

## 4.2 Field survey

### Non-statutory designated sites

- 4.2.1 Two LWS and SBIs are situated within the Scheme boundary; Lower Pool and Brookfield Farm. In order to inform their assessment, the SBIs have been assessed against Guidelines for the selection of LWS in Staffordshire (Ref 3).

#### Lower Pool SBI and LWS

- 4.2.2 Located to the south of Hilton Lane and in the centre of the Scheme boundary (TN56, TN57 and TN104, Figure 8.3 [TR010054/APP/6.2], Photographs 1 – 3 in this appendix) Lower Pool comprises predominantly broadleaved plantation (5.4 ha) which consists of an extensive stand of even aged mature sycamore and other canopy species including holly *Ilex aquifolium* (LD) yew *Taxus baccata* (LD), pedunculate oak (O) rowan *Sorbus acuparia* (R), silver birch *Betula pendula* (R), Scots pine (R), European larch *Larix decidua* (R), beech *Fagus sylvatica* (R).
- 4.2.3 The understorey is dominated by *Rhododendron* sp. and the field / ground layers are species poor / absent in places and include broad buckler fern *Dryopteris dilatata* (A), bluebell *Hyacinthoides non-scripta* (LD), bramble *Rubus fruticosus* agg. (LD), Wood avens *Geum urbanum* (R), bracken *Pteridium aquilinum* (LD), male fern *Dryopteris filix-mas* (O), ivy *Hedera helix* (F), red campion *Silene dioica* (O) and foxglove *Digitalis purpurea* (R).
- 4.2.4 In addition to woodland habitat there are two large ornamental fishing lakes (TN58) comprising standing water (with approximately 50% of lake margins over-shaded by overhanging trees and rhododendron. Marginal vegetation and aquatic vegetation identified includes yellow flag iris *Iris pseudacorus* (O), soft rush *Juncus effusus* (F), lesser reedmace *Typha angustifolia* (F), yellow loosestrife *Lysimachia vulgaris* (O) yellow water lily *Nuphar lutea* (D) and Canadian pondweed *Elodea canadensis* (F).



**Photograph 1: Lower Pool SBI and LWS**



**Photograph 2: Lower Pool SBI and LWS**





**Photograph 3: Pond within Lower Pool**

- 4.2.5 Lower Pool SBI and LWS is considered to be of high distinctiveness and in good condition. However, Table 4.4 outlines the assessment of the current status of Lower Pool SBI against Staffordshire's criteria for the selection of SBIs (Ref 3) which shows that it is not currently meeting the criteria for selection. The woodland has suffered from a lack of appropriate management and a dominance of rhododendron in the understorey, limiting the diversity of the ground flora. However, together with the presence of ponds and mature trees, some of which were potentially veterans (see Appendix 7.1 Arboricultural Impact Assessment Report [TR010054/APP/6.3], the site is likely to be important to the local biodiversity resource and support a range of fauna and is therefore considered to be of County ecological importance.

**Table 4.4: Assessment of Lower Pool against the criteria for the LWS selection in Staffordshire**

SBI and BAS section criteria	
<b>Woodland</b>	
Is the woodland included in the Staffordshire AWI?	No
Broadleaved semi-natural or plantation woodland over 0.5ha that scores 11 or more on the 'Woodland Score' for SBI or 6 – 10 for a BAS	Woodland only scores 5
Semi-natural woodland or scrub over 0.5ha of a woodland National Vegetation Classification (NVC) community that is rare or uncommon in the County (0.25 – 0.5 for BAS).	No NVC communities identified
<b>Ponds</b>	
Any pond of high ecological quality: ponds classified in the top Predictive System for Multimetrics (PSYM) category for ecological quality, scoring $\geq 76\%$ * (moderate ecological quality for BAS).	Waterbodies recorded as being of "Moderate" quality as classified by PSYM (refer to Appendix 8.14 [TR010054/APP/6.3]).

SBI and BAS section criteria	
Any site which supports more than three species of amphibian or supports a good population of Great Crested Newts (More than 5 netted in the day or more than 10 counted at night). For BAS a low population of Great Crested Newt is required (between 1 and 5 netted in the day or between 1 and 10 counted at night).	Great Crested Newt surveys have scoped out or returned negative eDNA results for the Lower Pool ponds (refer to Appendix 8.11 [TR010054/APP/6.3]).
For an SBI; BAS sites consisting of three or more water bodies within 250m of each other are elevated to SBI status. Low scoring sites (against PSYM) with more than three water bodies within 250m of each other are elevated to BAS status	Dominated by one water body of "Moderate" quality as classified by PSYM (refer to Appendix 8.14 [TR010054/APP/6.3]).
Mixed habitat and structural mosaic	
Sites of 0.5ha or more in size that support a combination of two or more individual habitats that meet at least 80% of the relevant selection guidelines for the habitat types.	The site does not meet 80% of the woodland criteria

#### Brookfield Farm, Shareshill SBI and LWS

- 4.2.6 Located towards the north of the Scheme boundary TN43, TN44 & TN48, Figure 8.3 [TR010054/APP/6.2], Photographs 4 – 6 below) Brookfield Farm comprises broadleaved semi-natural woodland (c. 2.78ha) in a belt centred around the flowing Latherford Brook (Watercourse 5). The woodland has a reasonably diverse age structure and well developed understorey and ground layer with species comprising oak (D), alder (D), ash *Fraxinus excelsior* (D), holly (O), hazel *Corylus avellana* (F), elder (F), bramble (LD), nettle (D) cleavers *Galium aparine* (A), ramsons *Allium ursinum* (A), dog's mercury *Mercurialis perennis* (A), wood avens (O), red campion (O), broad buckler fern (O), red dead nettle *Lamium purpureum* (O), ivy (O), hogweed *Heracleum sphondylium* (F), cow parsley *Anthriscus sylvestris* (F), yellow pimpernel *Lysimachia nemorum* (O), garlic mustard *Alliaria petiolata* (O), bluebell (LF), herb Robert *Geranium robertianum* (O) remote sedge *Carex remota* (O), tufted hair grass *Deschampsia cespitosa* (O) foxglove (O) and wood melick *Melica uniflora* (O).
- 4.2.7 Part of the woodland (refer to Figure 8.2 [TR010054/APP/6.2]) is considered to be ancient woodland based on the existing landform and flora present.



**Photograph 4: Brookfield Farm, Shareshill LWS and SBI**



**Photograph 5: Brookfield Farm, Shareshill LWS and SBI**

- 4.2.8 Latherford Brook which the woodland surrounds is approximately 1.7 – 2.5 m wide comprising cobble / gravel substrate with shoals and a variable bank profile from shallow slope to undercut with very little vegetation cover.





**Photograph 6: Latherford Brook**

- 4.2.9 Brookfield Farm SBI and LWS is considered to be of high distinctiveness and in good condition and is considered to support W6 *Alnus Glutinosa Urtica Dioica* / W7 *Alnus glutinosa Fraxinus excelsior – Lysmachia nemorum* woodland therefore does meet the criteria for SBI selection and is therefore considered to be of county ecological importance.

#### **Ancient woodland**

- 4.2.10 There are two parcels of ancient woodland present within or adjacent to the Scheme boundary (Figure 8.2 [TR010054/APP/6.2]). Details of the area present within Brookfields Farm, Shareshill SBI are outlined above.
- 4.2.11 Oxden Leasow (Whitgreaves wood), listed on the AWI, is located within the Scheme boundary, to the south of the M54 (Figure 8.3 [TR010054/APP/6.2], TN97) and comprises broadleaved woodland (Photograph 7). The canopy is dominated by oak, ash, beech and hawthorn and in 2018 it was found to support nine plant species indicative of ancient woodland including bluebell, dog's mercury, greater stitchwort *Stellaria holostea*, hazel, holly, lords-and-ladies *Arum maculatum*, rowan, wood anemone *Anemone nemorosa* and wood-sorrel *Oxalis acetosella*. Oxden Leasow (Whitgreaves wood) is considered to be of high distinctiveness, is in moderate condition and is therefore, of County ecological importance.




**Photograph 7: Oxden Leasow**



### **Hedgerows**



- 4.2.12 The Scheme boundary contains numerous hedgerows, details of which are provided in Table 4.5.





**Table 4.5: Hedgerow summary**



Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
41	<p>Intact species rich hedge between improved grassland and horse-grazed pasture. Ditch present adjacent to hedgerow which held very limited water at the time of survey. Partially cut (faced off) in the past 1-2 years. Large spoil heap present adjacent to hedgerow.</p> <p>Species: hawthorn (D), hazel (D), rowan (O), crab apple <i>Malus sylvestris</i> (R), holly (R), pedunculate oak (R), elder (O), alder (LA) blackthorn <i>Prunus spinosa</i> (O).</p> <p>Structure: height &gt;2 m, width &gt;1.5 m</p>		High	Good	Local	Yes
80	<p>Intact species-poor hedge comprising non-native Leyland cypress <i>Cupressus x leylandii</i> only.</p>	No photograph was taken of this habitat area.	Low	Moderate	Negligible	No

Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
75	<p>Defunct unmanaged species-rich hedge containing mature trees, partially dividing two arable fields.</p> <p>Species: pedunculate oak (D), hawthorn (A), bird cherry <i>Prunus padus</i> (O), sycamore (R)</p> <p>Structure: height &gt;2 m width &gt;1.5 m.</p>		High	Moderate	Local	No
61	<p>Intact species poor hedge (hedge situated immediately to the north of access track. Appears to have been cut in the past 1-2 years.</p> <p>Species: hawthorn (D), alder (R), Leyland cypress (A) osier <i>Salix viminalis</i> (F)</p> <p>Structure: height &gt;2 m width &gt;1.5 m.</p> <p>Extends into broadleaved plantation (91).</p>		High	Moderate	Local	No



Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
65	Intact species-poor hedge between poor semi-improved pastures. Appears to have been cut in the past 1-2 years. Species: hawthorn (D), ash (R) Structure: height <2 m width >1.5 m.		High	Moderate	Local	No
29	Species poor intact hedge beside the A460, with poor semi-improved pasture to the west. Appears to have been cut in the past 1 – 2 years Species: hawthorn (D) sycamore (R) Structure: height <2 m, width > 1.5 m		High	Poor	Local	No







Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
27	<p>Contiguous with Brookfields Farm, Sharesill LWS and SBI. Intact species rich hedge with a mature tree line. Located alongside Latherford Brook (TN33).</p> <p>Consists of even aged stands of mature alder and pedunculate oak. Where present the under / mid-storey contains elder and goat willow <i>Salix caprea</i>.</p> <p>Species: alder (D), hawthorn (O), elder (O), sycamore (R), goat willow (F), pedunculate oak (D).</p>		High	Medium	Local	Yes
20	<p>Mature defunct species rich hedge between poor semi-improved and improved pasture. Appears to have been cut in the past 3-5 years.</p> <p>Species: pedunculate oak (O), hawthorn (LD), elder (O) blackthorn (A), hazel (F), holly (O).</p> <p>Structure: height &gt;2 m, width &gt;1.5 m.</p>		High	Good	Local	No

Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
22	<p>Mature defunct species rich hedge with mature trees between improved fields. Appears to have been cut in the past 3-5 years.</p> <p>Species: pedunculate oak (O), hawthorn (LD), elder (O) blackthorn (A), hazel (F), holly (O).</p> <p>Structure: height &gt;2 m, width &gt;1.5 m</p>		High	Moderate	Local	No
25	<p>Intact mature species poor hedge (dominated by mature alder and oaks); Brookfields Farm, Shareshill LWS and SBI to the south.</p> <p>Species: alder (D), pedunculate oak (A).</p>		High	Medium	Local	No







Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
14 and 31	<p>Mature intact species rich unmanaged hedge with bank and mature trees along the north side of mill lane, bordering improved field to the north.</p> <p>Species: hawthorn (D), pedunculate oak (A), wych elm (A), elder (O), blackthorn (O), dog rose <i>Rosa canina</i> (O), ash (F).</p> <p>Structure: height &gt;2 m, width &gt;1.5 m</p>		High	Good	Local	No
15	<p>Intact species-rich hedge with associated dry ditch; with arable fields to the west and improved fields to the east.</p> <p>Species: hawthorn (D), pedunculate oak (A), elder (O), hazel (O), blackthorn (R).</p> <p>Structure: height &gt;2 m, width &gt;1.5 m</p>		High	Good	Local	No

Target note (Fig 8.3)	Description	Photograph	Distinctive -ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
17	<p>Mature defunct species-poor hedge between arable and improved fields to the west of the M6 motorway. Appears to have been cut in past 1-2 years</p> <p>Species: pedunculate oak (A), hawthorn (D), elder (O) blackthorn (F), hazel (F).</p> <p>Structure: height &lt;2 m, width &gt;1.5 m</p>		High	Poor	Local	No
8	<p>Intact species poor hedge with arable wheat field to the south and semi-improved pasture to the north. Appears to have been cut in the past 2 years.</p> <p>Species hawthorn (D), elder (F), pedunculate oak (O)</p> <p>Structure: height &lt;2 m, width &gt;1.5 m</p>		High	Low	Local	No



Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
1 and 10	<p>Intact species rich hedge – Established as part of road scheme planting, bordering the A460 dual carriageway to the east and arable fields to the west.</p> <p>Species: Ash (A), blackthorn (A), dog rose (F), hawthorn(A), pedunculate oak (O), goat willow (R), bird cherry (O), gorse <i>Ulex</i> sp. (R), hazel (A).</p> <p>Structure: height &gt;2 m, width &gt;1.5 m</p>		High	Good	Local	No
5	<p>Mature defunct species rich hedge bordered by sheep grazed fields. This is an unmanaged hedge with a significant number of mature trees.</p> <p>Species: pedunculate oak (F), elder (O), goat willow (LF), hazel (F), crack willow (F), crab apple (O), blackthorn (O). Some Japanese knotweed.</p> <p>Structure: height &gt;2 m, width &gt;1.5 m</p>		High	Moderate	Local	No






Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
11	<p>Species poor intact hedge with some mature trees and scrub bordering improved fields to the west and Mill lane to the east. Appears to have been cut in the past 1-2 years.</p> <p>Species: hawthorn (D), hazel (LD), elder (F), goat willow (F), gorse (R), silver birch (A)</p> <p>Structure: height &gt;2 m, width &gt;1.5 m</p>		High	Moderate	Local	No
23	<p>Mature intact species-rich unmanaged hedge surrounded by improved pasture with occasional mature trees.</p> <p>Species: Holly (D), hawthorn (F), hazel (F), ash (R), alder (R), elder (R).</p> <p>Structure: height &gt;2 m, width &gt;1.5 m.</p>		High	Good	Local	Yes



Target note (Fig 8.3)	Description	Photograph	Distinctive -ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
34	<p>Defunct unmanaged species-poor hedge to the south of an arable field.</p> <p>Species: hawthorn (D), elder (O), goat willow (O)</p> <p>Structure: height &gt;2 m, width &gt;1.5 m</p>		High	Moderate	Local	No
35	<p>Intact species-poor hedge to the immediate west of Warstone road, with an arable field to the west. Appears to have been cut in the past 3-5 years.</p> <p>Species: hawthorn (D), elder (O), goat willow (O)</p> <p>Structure: height &gt;2 m, width &gt;1.5 m</p>		High	Moderate	Local	No



Target note (Fig 8.3)	Description	Photograph	Distinctive -ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
37	Defunct species-poor hedge between arable field and woodland embankment. Species: hawthorn (D), elder (O), goat willow (O) pedunculate oak (R)		High	Poor	Local	No
39	Intact species -poor hedge to the immediate south of the A460. Also forms the northern side of a track, parallel to A460. Species: alder (O), field maple (O), dog rose (O), hawthorn (D) pedunculate oak (O)		High	Moderate	Local	No

Target note (Fig 8.3)	Description	Photograph	Distinctive -ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
40	Intact unmanaged species - poor hedge forming a southern border for a track parallel to A460. Species: hawthorn (D) Structure: height >2 m, width >1.5 m		High	Moderate	Local	No
53	Intact species-poor hedge adjacent to access road to Brookfields leisure centre. Species: hawthorn (D), pedunculate oak (LF)	No photograph was taken of this habitat area.	High	Moderate	Local	No

Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
54	Species poor intact hedge along eastern boundary of A460. Horse paddocks beyond hedgerow to the east. Species hawthorn (D), ash (O), sycamore (O).		High	Moderate	Negligible	No
61	Intact species poor hedge (hedge situated immediately to the north of access track. Appears to have been cut in the past 1-2 years. Species: hawthorn (D), alder (R), Leyland cypress (A) osier (F) Structure: height >2 m width >1.5 m.		High	Moderate	Local	No

Target note (Fig 8.3)	Description	Photograph	Distinctive-ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
68	<p>Defunct unmanaged species-rich hedge dividing arable and poor semi-improved fields to the north of Hilton lane. Access track adjacent.</p> <p>Hawthorn (A), wych elm (LD), blackthorn (LA), elder (O)</p> <p>Structure: height &gt;2 m width &gt;1.5 m.</p>		High	Moderate	Local	No
71	<p>Intact species-poor hedge immediately to the north of Hilton lane, forming the southern border of arable field. Appears to have been cut in the past 3-5 years.</p> <p>Species: hawthorn (D) hazel (A), wych elm (LD) sycamore (F)</p> <p>Structure: height &lt;2 m width &gt;1.5 m.</p>		High	Moderate	Local	No



Target note (Fig 8.3)	Description	Photograph	Distinctive -ness	Condition	CIEEM Evaluation	Important under Hedgerow Regulations?
124, 129	No access so assumed species rich intact hedgerow with trees.	No photograph was taken of this habitat area.	High	Moderate (assumed based on other hedgerows present)	Local	Yes (assumed due to no survey)
139 and 140	Existing roadside hedgerows on the A460 not surveyed as not included in original survey area.	No photograph was taken of this habitat area.	High	Moderate (assumed based on other hedgerows present)	Local	Yes (assumed due to no survey)



### Hedgerow Evaluation and Grading System (HEGs)

- 4.2.13 For hedgerows likely to be directly impacted by the Scheme, a HEGs assessment has been undertaken to determine whether they qualify as an SBI or BAS in line with Staffordshire's criteria. The results of this are shown in Table 4.6 below along with their ecological importance and number of woody species.

**Table 4.6: HEGs results**


Target note	HEGs Score	Ecological importance	No. of woody species	Hedgerow ground flora score (
1	+3	Local	6	N/A
8	+3	Local	3	N/A
10	+3	Local	6	N/A
11	+3	Local	4	N/A
14	+2	Local	5	4
20	-2	Local	6	1
22	+3	Local	6	N/A
23	-2	Local	6	1
29	+3	Local	1	N/A
35	+3	Local	3	N/A
37	-2	Local	4	1
39	-2	Local	4	5
40	-2	Local	1	0
41	+2	Local	9	4
68	-3	Local	3	N/A
71	-3	Local	2	N/A
75	-3	Local	2	3



- 4.2.14 In line with the HEGs assessment (Ref 4), nine of the hedgerows likely to be directly impacted by the Scheme have been assessed as 2 or above and therefore of conservation priority.
- 4.2.15 None of the hedgerows scoring -2 to +1 scored enough in line with the Guidelines for the selection of LWS (Ref 3) to meet BAS or SBI criteria.



### **Other habitats**

- 4.2.16 Other habitats that are not within the designated sites or identified as ancient woodland recorded within the Survey Area are shown in Table 4.7 and on Figure 8.3 [TR010054/APP/6.2] along with associated target notes.
- 4.2.17 Hardstanding habitats have been recorded within the Scheme boundary in the form of existing roads and access routes but these have not been described in detail below due to their inherent lack of ecological importance. They are considered to have low distinctiveness, poor condition and negligible ecological importance.



**Table 4.7: Other habitats summary**

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
2	0.28	<p>Linear semi- natural woodland strip lining a trackway containing several mature trees and predominantly surrounded by sheep-grazed pasture. Encompasses former hedgerow.</p> <p>Canopy comprises pedunculate oak (D), hawthorn (LD), elder (F), holly (O), sycamore (O), hazel (O), goat willow (LD). Field / ground layer: nettle (D), red campion (O), bramble (A), hogweed (A), false oat grass <i>Arrhenatherum elatius</i> (A), cocksfoot <i>Dactylis glomerata</i> (F), perennial ryegrass (O), foxglove (R), cleavers (A), creeping buttercup (O), greater stitchwort (O), male fern (R), ivy (O), rough meadow grass <i>Poa trivialis</i> (A), broadleaved plantain <i>Plantago major</i> (O), willowherb sp. (O), red deadnettle (O).</p>		High	Good	Local



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
3	0.04	Poor semi-improved grassland at the time of survey. Sward is sheep grazed, so species not recorded, but lack of forbs still evident		Low	Poor	Negligible
4	1.71	Poor semi-improved grassland at the time of survey comprising a low sheep grazed sward. Lack of forbs still evident despite grazing.		Low	Poor	Negligible



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
6	1.00	Belt of broadleaved plantation with hedge – unmanaged woodland belt consisting of a dense stand of even aged trees, with little or no ground flora. Species: ash (D), holly (R), goat willow (F), sycamore (O), hawthorn (F), blackthorn (F), dog rose (O).		Medium	Good	Local
7	4.11	Arable - wheat crop bordered by hedgerows and highways.		Low	Poor	Negligible





Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
9	1.28	<p>Poor semi-improved grassland with hedgerow boundaries bordered by semi-improved pasture and the M6 to the west.</p> <p>Species Perennial ryegrass (D), Yorkshire fog <i>Holcus lanatus</i> (A), field thistle (F) <i>Cirsium arvense</i>, chickweed <i>Stellaria media</i> (F), catsear <i>Hyochaeris radicata</i> (O), spear thistle <i>Cirsium vulgare</i>(O), curled dock <i>Rumex crispus</i> (O).</p>		Low	Poor	Negligible
12	0.32	<p>Broadleaved semi- natural woodland bordered by Mill Lane to the south, improved fields to the north and the M6 motorway to the east– some litter / tree damage present. Canopy is uniformly aged with an understorey consisting mainly of mid-storey species such as hawthorn and elder.</p> <p>Species Canopy: sycamore (D), ash (D), field maple (F), elder (F)</p> <p>Field / ground layer: nettle (D), cleavers (A), bramble (A), herb Robert (R), red campion (O).</p>		High	Moderate	Local






Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
13	1.47	Improved grassland to the north of Mill Lane with the M6 to the east. Species: perennial ryegrass (D).		Low	Poor	Negligible
16	0.41	Arable field - barley crop bordered by hedgerows with the M6 to the north-east.		Low	Poor	Negligible

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
18	0.47	Improved grassland to the west of the M6 motorway bordered by defunct hedgerows. Species: perennial ryegrass (D)		Low	Poor	Negligible
19	2.19	Poor semi-improved grassland to the south of Mill Lane. Bordered by hedgerows and fields of similar composition. Species: cocksfoot (LD), Yorkshire fog (D), common bent <i>Agrostis capilaris</i> (F), ribwort plantain <i>Plantago semi-lanceolata</i> (O), perennial ryegrass (A), Field buttercup <i>Ranunculus acris</i> (O), dandelion <i>Taraxacum officinale</i> (F), broadleaved dock <i>Rumex obtusifolius</i> (O).		Low	Poor	Negligible



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
21	2.13	Improved grassland bordered by defunct hedgerows, with evident lack of forbs. Ground is heavily compacted by being used as a car park. Perennial rye-grass (D), broadleaved plantain (A).		Low	Poor	Negligible
24	4.85	Improved grassland field bordered by hedgerows with broadleaf woodland to the west. Evident lack of forbs. Species: perennial rye grass (D); rough meadow grass (O) broadleaved plantain (O).		Low	Poor	Negligible







Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
26	0.0007 (with Scheme boundary)	<p>Broadleaved semi-natural woodland to the south of Hadcroft farm containing a watercourse and multiple ponds.</p> <p>Species canopy: alder (D), ash (F) pedunculate oak (F), crack willow (LF), goat willow (F).</p> <p>Field / ground layer: Ivy (LD), nettle (D), cleavers (LD), red campion (F), false oat grass (O), bramble (A), Himalayan balsam (O) hogweed (O), rosebay willowherb <i>Chamaerion angustifolium</i> (F), broad buckler fern (O), red dead nettle (O), male fern (R).</p>		High	Moderate	Local
28	0.46	<p>Poor semi-improved grassland to the west of the A460, bordered by hedgerows and broadleaved woodland.</p> <p>Species: cocksfoot (LD), Yorkshire fog (D), common bent (F), ribwort plantain (O), perennial ryegrass (A), Field buttercup (O), dandelion (F), broadleaved dock (O).</p>		Low	Poor	Negligible

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
30	1.15	Poor semi-improved grassland consisting of horse grazed paddocks to the west of the M6 Junction 11 roundabout.  Species perennial ryegrass(D), field buttercup (A), self heal <i>Prunella vulgaris</i> (F), broadleaved plantain (F)		Low	Poor	Negligible
32	0.32	Narrow section of broadleaved semi-natural woodland (continuation of W21 (see TN12) to the immediate west of the M6 Junction 11 roundabout.	No photograph was taken of this habitat area.	High	Moderate	Local




Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
33	0.011	Running water (stream), partially channelised flowing east to west. Emerges from culverted channel beneath the A460.1.5 -1.7m in width, with medium flow variable depth between 10 and 45 cm over mud / cobble substrate.		-	-	Local
36	0.73	Broadleaved plantation (woodland embankment to M6 Junction 11 slip road). Bordered by arable field to the east at top of bank. Comprises dense stand of even aged trees with an absent / poorly developed ground layer / under storey.  Species Canopy: pedunculate oak (LD), beech (D) sycamore (F) Field / ground layer: bramble (D), cleavers (A), rosebay willowherb (A), nettle (F).		High	Moderate	Local

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
38	3.44	Arable - wheat crop bordered by hedgerows and highway embankment woodland to the west.		Low	Poor	Negligible
42	5.04	Improved grassland to the west of the M6, bordered by broadleaved woodland to the south.		Low	Poor	Negligible



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
45	1.75	Poor semi-improved grassland to the south of the A460, currently in use as horse pasture. Species: perennial ryegrass (D) and Yorkshire fog (A).		Low	Poor	Negligible
46	0.20	Ruderal edge to the south of broadleaved woodland, adjoining arable fields to the south. Species rosebay willowherb (D), bramble (A), bracken (LD).		-NA	-NA	Negligible







Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
47	5.59	Arable field oat crop with predominantly fence-line borders.		Low	Poor	Negligible

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
49	0.003	<p>Tall ruderal / swamp mosaic to the east of W19 broadleaved woodland, containing watercourse along northern boundary.</p> <p>Species: meadowsweet <i>Filipendula ulmaria</i> (F), common sedge <i>Carex nigra</i> (D), great willowherb <i>Epilobium hirsutum</i> (A), gypsywort <i>Lycopus europaeus</i> (F), unidentified umbellifer (A), common horsetail <i>Equisetum arvense</i> (O), spear thistle (F), angelica <i>Angelica sylvestris</i> (O) tufted hairgrass (O), alder (R), pedunculate oak (R), hard rush <i>Juncus infelixus</i> (O), soft rush (F), nettle (F), marsh bedstraw <i>Gallium palustre</i> (O), bittersweet <i>Solanum dulcamara</i> (O), birds foot trefoil <i>Lotus corniculatus</i> (R) mint sp. <i>Mentha sp.</i>(A).</p>		High	Moderate	Local





Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
50	-	Poor semi-improved grassland (not accessed) to the east of woodland copse.		Low	Poor	Negligible
51	2.56	Broadleaved semi-natural woodland (similar to W19) to the west of the M6. Species now dominated by alder (D) crack willow (LF), hawthorn (A) elder (F) sycamore (F).		High	Moderate	County


Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
52	-	<p>Standing water (fishing lake with islands) to north of access road to Brookfields leisure centre.</p> <p>Some young alder growth around lake edge (no over-shading), fish seen, marginal vegetation cover approximately 10% no aquatic macrophyte cover, turbidity (5)</p> <p>Species: alder (F) yellow flag iris (A), soft rush (A).</p>		High	Moderate	Local
55	0.28	Improved grassland horse grazed paddocks to the north of Brookfields Leisure Centre.		Low	Poor	Negligible



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive- ness	Condition	Importance
59	1.52	Arable crop sweetcorn to the east of the A460 Cannock Road. Lapwing displaying on this field.		Low	Poor	Negligible
60	1.52	Arable clover crop to the south of dark lane, separated from TN59 by access track.		Low	Poor	Negligible





Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
62	2.78	Poor semi-improved grassland field (no sp. list due to recent cut) to the south-west of the Hilton Hall grounds.		Low	Poor	Negligible
63	-	<p>Standing water (fishing lake) known locally as chub pool, located on the edge of plantation woodland W10.</p> <p>Species surrounding trees: crack willow (LD), alder (F), damson (R), Himalayan balsam (O) in car park marginal vegetation: yellow loosestrife (F), yellow flag iris (F)</p> <p>Aquatic vegetation: yellow water lily (A).</p>		High	Moderate	Local



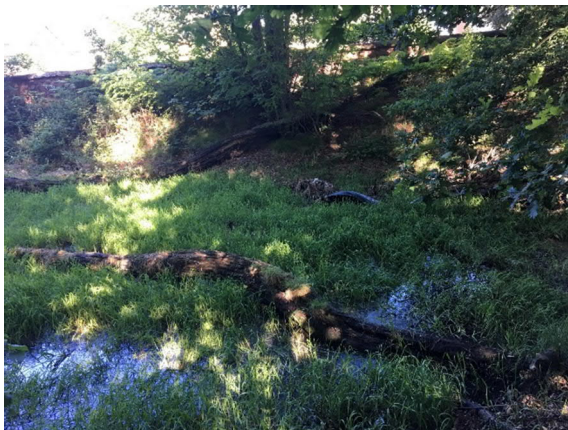

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
64	1.80	Poor semi-improved grassland predominantly bordered by plantation woodland W10. Species: Yorkshire fog (D), red fescue (D), meadow foxtail <i>Alopecurus pratensis</i> (A), germander speedwell <i>Veronica chamaedrys</i> (LD), creeping bent (O), cocksfoot (O), rough meadow grass (R), meadow vetchling <i>Lathyrus pratensis</i> (R), perennial ryegrass (R).		Low	Moderate	Negligible
66	0.51	Poor semi-improved grassland to the south of plantation woodland (species: perennial rye-grass (D), Yorkshire fog (A), cocksfoot (A)).	No photograph was taken of this habitat area.	Low	Poor	Negligible



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
67	2.55	Poor semi-improved grassland to the north of Hilton Lane (no sp. list due to hay cutting) with low numbers of forbs observed.		Low	Poor	Negligible
69	10.6	Arable – wheat crop to the north of Hilton Lane bordered by hedgerows.		Low	Poor	Negligible


Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
70	0.44 (felled woodland) 0.43 (ponds)	<p>Mixed plantation (some recently felled) surrounding a line of large fishing ponds south-east of Brooksfields Leisure Centre.</p> <p>Species: Scots pine (D), weeping willow (F), alder, goat willow (O), crack willow <i>salix fragilis</i> (O) Field / ground layer: hogweed (A), great willowherb (A), ragwort (A), curled dock (F), red campion (A), rosebay willowherb <i>Epilobium sp</i> (A), spear thistle (O), foxglove (O).</p> <p>Standing water (4 ponds) comprising of fishing ponds (casting points and signs from local angling society). Water turbid little or no aquatic vegetation apart from a few water lily. Species marginal vegetation: yellow flag iris (A), pendulous sedge (F), greater reedmace <i>Typha latifolia</i> (O) Aquatic vegetation: yellow water lily.</p>		Medium (mixed plantation) High (ponds)	Moderate  Moderate	Local


Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
72	3.07	<p>Broadleaved plantation forming a narrow strip alongside the A460 Cannock Road, to the east of Featherstone. Signs of recreational use within and contains several ponds. Canopy layer dominated by common lime with some oak of an even age structure. There is some natural regeneration (mainly ash) and sporadic holly in the understorey.</p> <p>Species canopy: common lime <i>Tilia europaea</i> (D), holly (O), ash (R), pedunculate oak (A), Field / ground layer cocksfoot (F), tufted hairgrass (A), bluebell (A), nettle (A), bracken (A), ivy (A), bramble (A), wood melick (F), creeping soft grass <i>Holcus mollis</i> (F), rough meadow grass (A), false oat grass (O), wood sorrel <i>Oxalis acetosella</i> (LA), herb Robert (O), hogweed (O), herb bennett <i>Geum urbanum</i> (O).</p>		High	Good	Local





Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
73	0.01	<p>Standing water, swamp (shaded woodland pond, choked with floating sweet grass). Water turbid and dystrophic. Located within woodland W15.</p> <p>Species marginal vegetation: Floating sweetgrass <i>Glyceria fluitans</i> (D) reed sweetgrass <i>Glyceria maxima</i> (F), soft rush (F).</p>		High	Moderate	Negligible
74	0.57	<p>Standing water within woodland (no marginal / aquatic vegetation due to over-shading trees)</p> <p>Algae or pollen cover on the surface forming a scum.</p>		High	Moderate	Negligible



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
76	14.85	Arable - barley crop to the east of W2, with an access track forming the eastern border.		Low	Poor	Negligible
77	0.025ha (pond)	<p>Improved grassland: Species perennial ryegrass.</p> <p>Standing water (pond surrounded by ruderal vegetation) within a sloping improved field. Evidence of minor poaching by sheep on northern edge of pond.</p> <p>Species: nettle (D) Japanese knotweed (O)</p> <p>Marginal vegetation: soft rush (LD), water horsetail <i>Equisetum fluviale</i> (D), greater reedmace (A), greater willowherb (F)</p> <p>Trees elder (O), silver birch (R).</p>		High (pond)	Poor	Local


Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
	5.09 (improved grassland)	Improved grassland Species: perennial ryegrass, meadow foxtail (F), red fescue (A)	No photograph was taken of this habitat area.	Low (grassland)	Poor	Negligible
78 and 89	0.49 (Pond)	Standing water (fishing pond), turbid pool with overhanging trees on west side. Species, trees: alder (D), crack willow (F), silver birch (O)		High (pond)	Moderate	Local
	0.12 (tall ruderal)	Marginal vegetation: lesser reedmace (A), greater reedmace (F) yellow flag iris (F), Tall herb / rank grass mosaic (around N side of pond) Species: false oat grass (D), nettle (A), birds-foot trefoil (O), field thistle (F), broadleaved dock (A), ragwort (O), cocksfoot (A), bee orchid <i>Ophrys apifera</i> (O), ribwort plantain (O), meadow foxtail (O), crested dogstail <i>Cynosaurus cristatus</i> (R), angelica (O) soft rush (O).		Medium (Tall Herb)	Moderate	Local


Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
79	0.24	<p>Broadleaved semi-natural woodland. The canopy layer is dominated by wet woodland species; crack willow and alder dominate and with a line of grey poplar <i>Populus x canescens</i> along the western side of pond P23. There is a sporadic mid-storey of goat willow in parts of the woodland.</p> <p>Species canopy: Grey poplar (LA), goat willow (A), sycamore (A), ash (O), crack willow (LD), alder (LD) dog rose</p> <p>Field / ground layer: bramble (D), nettle (D), cleavers (D), hedge bindweed <i>Calistegia sepium</i> (A), false oat grass (A), hogweed, broadleaved dock (A) mugwort <i>Artemisia vulgaris</i> (A), great willowherb (F)</p>		High	Moderate	Local



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
81	-	<p>Mature tree line.</p> <p>Species sycamore (D) pedunculate oak (F) horse chestnut <i>Aesculus hippocatanum</i> (R), common lime (F).</p>		Medium	Poor	Negligible
82	0.94	<p>Broadleaved plantation situated along the A460 Cannock Road. Sycamore and ash co-dominate the canopy, there is some natural regeneration of both species in the understorey and mid-storey.</p> <p>Species: sycamore (D), ash (A) holly (O),</p> <p>Field / ground layer: dog's mercury (O), cleavers (A), bramble (D), nettle (D) rough meadow grass (F), bramble nettle, ivy (O), ground elder (O), herb bennett (O), bluebell (O).</p>		High	Moderate	Local



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
83	10.6	Improved grassland (used as a show ground) Species perennial ryegrass (D).		Low	Poor	Negligible
84	2.24	Broadleaved plantation (road embankment) dense with little or no field / ground layer. The canopy is an even aged structure with little or no natural regeneration. Species canopy: field maple (D), pedunculate oak (O), sycamore (O), hazel (O), bird cherry (O), silver birch (O), ash (F) dog rose (O) crab apple (R). Field / ground layer: bramble (D), male fern (O), cleavers (F).		High	Moderate	Local

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
85	1.12	Mixed plantation Species include scots pine, ash.		Medium	Moderate	Local
86	0.99	Broadleaved plantation (sparse field / ground layer) Species canopy: ash (D) sycamore (D) Field / ground layer: bramble, cleavers	No photograph was taken of this habitat area.	High	Moderate	Local

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
87	2.12	Broadleaved plantation. The canopy is an even aged structure with little or no natural regeneration. Species canopy: ash, (D) sycamore (D) hazel (A), elder (A).		High	Moderate	Local
88	0.99	Improved grassland as for TN77.	No photograph was taken of this habitat area.	Low	Poor	Negligible
92,94,95,99,105,121	1.15	Amenity grassland associated with gardens and roundabouts.	No photograph was taken of this habitat area.	Low	Poor	Negligible
93 and 131	1.72 and 0.47	Arable field not accessible.	No photograph was taken of this habitat area.	Low	Poor	Negligible



Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
96, 98, 100, 101, 102, 103, 106 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120 122, 123, 124, 125, 135 and 137	37.94	Broadleaved woodland plantation associated with the motorway/A Road corridors.	No photograph was taken of this habitat area.	High	Moderate	Local
107	0.06	Improved grassland – not accessed.	No photograph was taken of this habitat area.	Low	Poor	Negligible

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
126	0.006	Woodland pond heavily over-shaded.		High	Moderate	Negligible
127	0.01	Pond not accessed due to landowner restrictions therefore precautionary approach taken in relation to assessment.	No photograph was taken of this habitat area.	High	Good	Local
128	0.001	Ditch, drainage feature connected to stream.		Low	Poor	Negligible

Target note (Fig 8.3)	Area (ha)	Habitat description	Photograph	Distinctive-ness	Condition	Importance
130	0.53	Woodland adjacent to Oxden Leasow ancient woodland. Information assumed based on Oxden Leasow.	No photograph was taken of this habitat area.	High	Moderate	County
132	0.08	No access so assumed scrub from information gathered during the desk based assessment.	No photograph was taken of this habitat area.	Low	Poor	Negligible
133, 136 and 138	0.37	Species-poor isolated patches of semi-improved grassland associated with the A460 roadside.	No photograph was taken of this habitat area.	Low	Poor	Negligible
134	0.01	Small area of bare ground associated with field access.	No photograph was taken of this habitat area.	Low	Poor	Negligible

### Non-native invasive plant species

- 4.2.18 Non-native invasive plant species listed on Schedule 9 of the WAC 1981 (as amended) were noted at the following locations listed in Table 4.8.

**Table 4.8: Location of invasive species**

Target note reference	Species
TN5	Japanese knotweed
TN26	Himalayan balsam
TN56	Rhododendron ponticum
TN63	Himalayan balsam
TN63	Montbretia
TN7	Japanese knotweed
TN58	Canadian waterweed



## 5 Summary

- 5.1.1 The results of the 2019 habitat surveys and necessary assumptions are taken into account to define appropriate mitigation measures. These are reported in the ES [TR010054/APP/6.1].
- 5.1.2 A data search was undertaken to identify statutory and non-statutory designated sites, ancient woodland, habitat protected and notable flora, and non-native plant species within the Desk Study Area.
- 5.1.3 Phase I habitat surveys were carried out in April and May 2018 and July 2019, both within the Scheme boundary and 50 m from the Scheme boundary. The surveys also covered habitats present within designated sites, areas of HPI, and potential ancient woodland sites. Hedgerow surveys were also undertaken both within the Scheme boundary and the area 50 m from the Scheme boundary in July 2019.
- 5.1.4 The findings of the Phase I Habitat Survey were then used to assess the condition and distinctiveness of habitats using the guidance provided in Annex B of the Chief Highway Engineer Memorandum 422/18 (Ref 7).
- 5.1.5 The importance (value) of ecological features (comprising designated sites, habitats, species assemblages and populations of species) has been assessed with reference to the CIEEM guidance (Ref 5).
- 5.1.6 One statutory designated site, and six non-statutory designated sites were identified within 2 km of the Scheme boundary.
- 5.1.7 There are multiple blocks of woodland noted as HPis within the Desk Study Area, primarily associated with the statutorily designated sites and roadside vegetation.
- 5.1.8 There are four parcels of woodland that are listed on the AWI. In addition to the woodlands listed on the AWI, a section of Brookfields Farm LWS and SBI has been confirmed through map regression, consultation with Natural England and the Phase I habitat survey as being ancient woodland.
- 5.1.9 Multiple habitats were recorded within the Scheme boundary, which include multiple hedgerows (defunct species poor to intact species-rich with trees), improved grassland, poor semi-improved grassland, broadleaved plantation, broadleaved semi-natural woodland, mixed plantation, arable, running water, standing water, tall ruderal, mature tree line, and ditches.

## 6 References

- Ref 1 Staffordshire Biodiversity Action Plan. Available online at:  
<http://www.sbap.org.uk/>
- Ref 2 JNCC, 2010. *Handbook for Phase 1 habitat survey - a technique for environmental audit*. Peterborough: Joint Nature Conservation Committee (JNCC).
- Ref 3 Bunter V, Cadman D, Glaisher A, Lawley S, Maxwell A, Slawson C, Smith J, Webb J, Weightman J, Staffordshire Wildlife Trust and Staffordshire Wildlife Sites Partnership 2017. Guidelines for the selection of Local Wildlife Sites in Staffordshire. Version 6 (December 2017). Staffordshire Ecological Record.  
[http://www.staffs-ecology.org.uk/html2015/images/1/17/Staffordshire\\_SBI\\_Guidelines.pdf](http://www.staffs-ecology.org.uk/html2015/images/1/17/Staffordshire_SBI_Guidelines.pdf)
- Ref 4 Clements, D.K. and Tofts R.J. (1992). A methodology for the Ecological Survey, Evaluation and Grading of Hedgerows. Countryside Planning and Management.
- Ref 5 CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine.
- Ref 6 Ratcliffe, D.A. (1977). A Nature Conservation Review, Cambridge University Press.
- Ref 7 Highways England (2018). Chief Highway Engineer Memorandum 422/18 - Supporting Transparency around our Biodiversity Performance.
- Ref 8 Natural England (2010). Higher Level Stewardship, Farm Environment Plan Manual.
- Ref 9 Highways England (2019) Design Manual for Roads and Bridges Sustainability and Environment Appraisal LA115 Habitats Regulations assessment.
- Ref 10 Highways England (2019) LA 108 Biodiversity. Available online at:  
<http://www.standardsforhighways.co.uk/ha/standards/dmr/vol11/section3/LA%20108%20Biodiversity-web.pdf>