

SP MANWEB

Reinforcement to the North Shropshire Electricity Distribution Network



Document Reference: 6.7.3
Environmental Statement Appendix 7.3
Ecology and Biodiversity Phase One Habitat Survey

PINS Reference: EN020021
Regulation Reference: 5(2)(a)
November 2018

Reinforcement to the North Shropshire Electricity Distribution Network

on behalf of SP Manweb

Appendix 7.3: Desk Study and Phase 1 Habitat Survey
DCO Document 6.7.3



This page is intentionally blank

The Planning Act 2008

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

Regulation 5(2)(a)

Reinforcement to the North Shropshire Electricity Distribution Network

**Environmental Statement: Appendix 7.3 – Ecology and Biodiversity Phase One
Habitat Survey**

Document Reference No.	6.7.3
Regulation No.	Regulation (5)(2)(a)
Author	Avian Ecology
Date	09 November 2018
Version	V1
Planning Inspectorate Reference No.	EN020021

SP Manweb plc, Registered Office: 3 Prenton Way, Prenton, CH43 3ET. Registered in England No. 02366937

This page is intentionally blank

CONTENTS

1	INTRODUCTION	1
2	METHODOLOGY	1
	Desk Study	1
	Extended Phase 1 Habitat Survey.....	1
3	RESULTS	2
	Desk Study	2
	Extended Phase 1 Habitat Survey.....	6

This page is intentionally blank

1 INTRODUCTION

- 1.1.1 This Appendix presents the results of desk study and Phase 1 habitat survey surveys undertaken to inform the Ecological Impact Assessment (EclA) and Environmental Statement for the Proposed Development.
- 1.1.2 The desk study and survey areas followed the route of the Proposed Development (shown as the Order Limits) across the north Shropshire countryside. The land is largely dominated by open arable and pastoral farmland with woodland copses, tree lines, hedgerow and ditch networks, rivers and a canal. The Study Areas for the Desk Study and extended Phase 1 Habitat survey (as well as for protected species surveys described in Appendices 7.4 - 7.9 (**DCO Documents 6.7.4-6.7.9**)) were identified through an iterative process, drawing upon early route corridor option studies, standing advice published by Natural England¹ and consultation engagement with Shropshire Council, Natural England, RSPB, the Canal and Rivers Trust and Shropshire Wildlife Trust.

2 METHODOLOGY

Desk Study

- 2.1.1 A desk study review of the Multi-Agency Geographic Information for the Countryside (MAGIC) website² was undertaken to identify statutory and non-statutory designated sites for nature conservation and areas of Ancient Woodland in proximity to the Proposed Development. A 5km search radius was adopted for all statutory designated sites (extended to 10km for European or Natura sites with mobile qualifying interest species), and 2km for non-statutory sites.
- 2.1.2 Biological records were obtained from Shropshire Ecological Data Network (SEDN), Shropshire Wildlife Trust, BTO and RSPB. Records included information on non-statutory designated sites within 2km and protected and notable species within a 2km radius of the proposed line routes.
- 2.1.3 Reference was also made to Ordnance Survey maps of the wider area and online aerial images (www.google.co.uk/maps) to help determine any features of nature conservation interest in the wider area.

Extended Phase 1 Habitat Survey

- 2.1.4 Extended Phase 1 habitat surveys were undertaken between April and August 2017 and updated between April-June 2018 to reflect the evolving detailed design. Surveys were undertaken by C Baldock MRes ACIEEM, T Winter BSc Grad CIEEM, A Hulme BSc, S Turner MSc and Z Hinchcliffe BSc; all of whom are suitably competent and experienced ecologists.
- 2.1.5 The extended Phase 1 survey area comprised the Order Limits of the proposed development and an approximate 100m buffer (50m either side). The survey area was extended in places by an additional 50m or more either side to encompass

¹<https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications#standing-advice-for-protected-species>

² www.magic.defra.gov.uk

features of higher ecological interest/connectivity such as ponds and watercourses or well-connected linear habitat features. The extended Phase 1 habitat survey built upon broad-scale Phase 1 habitat mapping undertaken along a 500m-wide corridor during early route corridor option studies in 2016.

- 2.1.6 More detailed botanical/vegetation surveys were undertaken at two locations where the Proposed Development lies near to designated sites (Moorfields Local Wildlife Site and Ruewood Pastures Site of Special Scientific Interest).
- 2.1.7 The survey methodology followed the UK industry standard Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology (JNCC, 2010)³, whereby all habitats within a site are mapped and described using a series of ‘target notes’ (TNs). The survey was extended to include the additional recording of specific features indicating the presence, or likely presence, of protected species and other species of conservation significance.
- 2.1.8 The extended Phase 1 habitat survey area is shown in Figure 7.2 (**DCO Document 6.14**).
- 2.1.9 For ease of reading, only common animal and plant species names are referred to within the text of this Appendix after the first reference which includes the scientific species name.

Limitations of survey

- 2.1.10 An Extended Phase 1 habitat survey does not constitute a detailed botanical survey or faunal species list nor provide a full protected species survey but enables competent ecologists to understand of the ecology of the surveyed area in order to broadly identify the nature conservation value and assess the significance of any potential impacts on habitat/species recorded. The survey visits were undertaken within the optimal period for botanical surveys (approximately April – September) and these together with the further botanical surveys are considered to have provided suitable information in relation to the objectives of the ecological impact assessment.
- 2.1.11 All private land was accessed with landowner consent. Consents were obtained for all sections of the Proposed Development with some areas viewed for additional context from publicly accessible roads and footpaths and/or from neighbouring landownerships. No significant constraints to survey coverage and habitat mapping were encountered in relation to the objectives of the survey.

3 RESULTS

Desk Study

Designated Sites

- 3.1.1 The desk study identified statutory designated sites within a 5km radius. These are detailed within **Tables 7.3.1** and **7.3.2** below. The approximate distances of the

³ JNCC (2010) Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit. Revised Print 2010. Joint Nature Conservancy Council, Peterborough

designated sites from the Proposed Development are measured from the nearest point of the Order Limits. As this is a linear development, clearly the majority of the Proposed Development would lie further away.

Table 7.3.1: Designated Sites within 5km of Line Route. LNR: Local Nature Reserve; SSSI: Site of Special Scientific Interest.

Designated Site	Distance from Line Route (nearest point)	Descriptions
Midlands Meres and Mosses Ramsar Phase 2/SSSI	1.7km North	Nationally and internationally nationally important series of open water and peatland sites
Ruewood Pastures SSSI	150m South-east	A botanically rich meadow designated for its grassland plant species
Montgomery Canal SSSI	850m South	Watercourse supporting notable aquatic macrophytes.
Brownheath Moss SSSI	1.7km North	Part of the Midlands Meres and Mosses Ramsar; an area of open water and fen and carr vegetation communities..
Sweat Mere and Crose Mere SSSI	2km North	Part of the Midlands Meres and Mosses Ramsar; a complex of open water, reedswamp, fen and woodland habitats.
Fernhill Pastures SSSI	2.8km North	Traditionally managed fen-meadows supporting a notable vegetation assemblage.

Table 7.3.2: Non-statutory Designated Sites. LWS: Local Wildlife Site, Ancient Woodland within 2km

Non-Statutory Designated Site (Local Wildlife Sites LWS, Ancient Woodland (AW))	Distance from Line Route (nearest point)	Descriptions
Moorfields LWS	100m North	Two fields which are good examples of unimproved and marshy grassland supporting areas of semi-improved and unimproved neutral grassland and areas of rush-dominated grassland.
Ruewood Pools LWS	650m South	An area of damp, unimproved pasture with silted murky pools, surrounded by encroaching alders

Halston Hall Heronry LWS	750m North	An area of deciduous woodland containing a heronry on an island within an ornamental lake
Gravenall AW	750m North	An area of ancient woodland

Protected and Notable Species

3.1.2 Biological records from a 2km radius around the Proposed Development have been provided by SEDN and Shropshire Wildlife Trust, BTO and RSPB and are referenced in the relevant species survey Appendices (Appendices 7.4 to 7.9). In summary, the following protected or notable species were recorded within the desk study area of search.

Vascular Plants

3.1.3 The data search returned records of species listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), S41 of the NERC Act or under the Habitats Regulations 2017 as well as locally scarce species. Bluebell *Hyacinthoides non-scripta* has been recorded at a number of locations. The most recent records for the other legally protected species recorded are historic; floating water plantain *Luronium natans*, dated 1917 at Rednal and along the River Roden.

Trees

3.1.4 No records of Ancient Woodland or trees covered by Tree Protection Orders (TPOs) were returned by Shropshire Council's Tree Officer.

3.1.5 Further information on trees and the findings of an arboricultural survey is provided in Appendix 7.4 (**DCO Document 6.7.4**).

Invasive Species

3.1.6 No invasive species records were returned as part of the desk study.

Birds

3.1.7 Bird records are provided in Technical Appendix 7.5 (**DCO Document 6.7.5**).

Mammals

3.1.8 Records were returned for otter *Lutra lutra*, water vole *Arvicola amphibius*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, ██████ *Meles meles*, bats, harvest mouse *Micromys minutus* and polecat *Mustela putorius* across the search area

3.1.9 Further information on bats is provided in Appendix 7.7 (**DCO Document 6.7.7**).

3.1.10 Further information on otter and water vole is provided in Appendix 7.8 (**DCO Document 6.7.8**).

Amphibians

3.1.11 Further information on amphibians is provided in Appendix 7.6 (**DCO Document 6.7.6**)

Reptiles

3.1.12 A single reptile record was returned for common lizard *Zootoca vivipara*, dating from 1997. No other reptile records have been provided.

Invertebrates

3.1.13 Relatively few invertebrate records were returned within a 2km area around the Proposed Development, reflecting a possible lack of survey data for much of the line route. A summary of notable records provided during the records search is set out in Table 7.3.3.

3.1.14 Shropshire Wildlife Trust (*SWT consultation response on biodiversity enhancement opportunities May 2018*) has indicated that 13 nationally significant invertebrate species have been recorded within the last 15 years in the wider area. The Proposed Development lies to the south of the Buglife 'North-East Wales Important Invertebrate Area'⁴ which has been established from national-scale analysis of existing invertebrate records.

3.1.15 White clawed crayfish *Austropotamobius pallipes* were recorded along sections of the River Perry in 1986 and 2002.

Table 7.3.3: Desk study records of notable invertebrate species within the 2km search corridor

Species	Scientific name
A mining bee	<i>Andrena apicata</i>
Small phoenix	<i>Ecliptopera silaceata</i>
Club tailed dragonfly	<i>Gomphus vulgatissimus</i>
Double kidney	<i>Ipimorpha retusa</i>
Wall	<i>Lasiommata megera</i>
Small purple-barred	<i>Phytometra viridaria</i>
White-legged damselfly	<i>Platycnemis pennipes</i>
White-clawed crayfish	<i>Austropotamobius pallipes</i>

⁴ <https://www.buglife.org.uk/important-invertebrate-areas-map>

Extended Phase 1 Habitat Survey

Overview of Route Habitats

- 3.1.16 This section should be read in conjunction with the Phase 1 Habitat Plans presented as Figure 7.2, Target Notes (TNs), pond, watercourse, woodland and hedgerow habitat descriptions presented in Tables 7.3.3 to 7.3.8.
- 3.1.17 A summary description of the Proposed Development and habitat survey corridor is set out below, divided for ease of reference here into sections running from Oswestry in the west to Wem in the east. Due to the length of the Proposed Development survey corridor, the descriptive text provides a broad overview, with tabulated descriptions of ecological features and accompanying figures providing further detail.

Section 1: Oswestry to the Montgomery Canal

- 3.1.18 The Proposed Development commences at Oswestry, to be constructed first as an underground section of cable route from Oswestry Substation. The underground section runs parallel to the western edge of the A5 road, routed along a cleared grassland and scrub avenue within an area of semi-mature broadleaved woodland. The wood either side of the Order Limits is dominated by oak *Quercus* sp. and ash *Fraxinus excelsior* with a species poor understorey. The underground cable route passes south-east under the A5(T) then runs south parallel to the eastern side of the A5(T) through arable land before reverting to an overhead line construction on poles (commencing at pole number 1) south-west of Long Wood (woodland W3 on Figure 7.2) near Middleton.
- 3.1.19 The proposed route of the overhead line continues eastwards across agricultural land before crossing the railway line and the Montgomery Canal which intersect the Order Limits. The River Perry and the Canal intersect just north of the Proposed Development (Figure 7.2).
- 3.1.20 The habitats within Section 1 comprised low-lying agricultural land supporting a mixture of arable leys, crops and improved pasture with low lying fields within the floodplain either side of the Montgomery Canal. Field boundaries predominantly comprised intact species-poor hedgerows dominated by hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*, with a limited number of more species-rich hedgerows also containing species such as elder *Sambucus nigra*, hazel *Corylus avellana*, dog rose *Rosa* spp., field maple *Acer campestre*. A number of fields lacked hedgerows and were divided by post-and-wire fences.
- 3.1.21 The land between Long Wood and the railway line supported scattered mature trees (mainly oak *Quercus robur*) within the field boundaries. A network of ponds was present across fields to the north and south of the Order Limits (Figures 7.1 and 7.2). Further mature trees and a tract of broadleaved plantation woodland were also present directly east of the railway line.
- 3.1.22 Several ponds and wet ditches lie close to the Proposed Development along this section.
- 3.1.23 Land between the railway line and the west bank of the Montgomery Canal were relatively open, ditch-lined pasture fields with mainly post-and-wire field

boundaries, although species poor hedgerows containing trees were also present. East of the canal, the fields became somewhat smaller and supported occasional mature trees. The Proposed Development crosses a tract of young mixed plantation woodland (between Poles 41 and 42 at W5 shown on Figure 7.2). Larger areas of broadleaved woodland (including Woodhouse Coppice) lie to the south of the Proposed Development but are separated from these by intervening arable and improved grassland fields.

3.1.24 The section of the Montgomery Canal that is crossed by the Proposed Development is not designated as SSSI and at the time of survey comprised open water with stone-filled reinforcement gabions supporting its banks. These gabions provided very limited suitability habitat for burrowing species including water voles. Aquatic plant growth was very sparse and included occasional water plantain *Alisma plantago-aquatica* and marginal plants. The canal is bordered by trees on its western bank, and the eastern bank is bordered by a tree line and a hedgerow, forming a relatively sheltered watercourse corridor.

Section 2: East of Montgomery Canal to Lower Hordley

3.1.25 Along this section the Proposed Development runs through further agricultural fields and species poor hedgerows, and crosses the River Perry at three points (Figure 7.2 (**DCO Document 6.14**)).

3.1.26 The River Perry is a small watercourse supporting a good diversity of aquatic and bankside marginal vegetation including floating-leaved, submerged and emergent macrophytes. The sections of the river lying within the survey corridor and crossed by the Proposed Development were largely lined by willow *Salix* spp. and ash trees and scrub or by dense bramble *Rubus fruticosus* spp. and nettle *Urtica dioica*.

3.1.27 Several ponds and ditches lie close to the Proposed Development within this section.

3.1.28 The Proposed Development passes through large open improved grassland fields before it crosses the River Perry for the final time. Some fields contained scattered mature trees with further trees present within hedgerows. East of the River Perry the proposed route follows a hedgerow (H41) bordering arable and improved grassland fields.

Section 3 Lower Hordley to Noneley

3.1.29 A number of ponds lie close to proposed pole locations within this section. These ponds generally lie adjacent to tree-lined field boundaries, or are surrounded by trees and scrub.

3.1.30 This section contains scattered small woodland copses (including both planted broadleaved and mixed woodland) within predominantly arable and improved grassland agricultural land, however the Proposed Development is retained within arable and improved grassland habitat and does not intersect any woodland areas.

3.1.31 The density of mature trees within the hedgerow boundaries is higher in the western part of this section, decreasing somewhat further east.

3.1.32 The eastern part of this section comprises mixed agricultural land use with a higher density of ponds present within the survey corridor.

3.1.33 West of Noneley, the Proposed Development crosses a network of improved pasture fields, approximately 100m to the south of Moorfield LWS. A number of ponds are present in the vicinity of the Proposed Development in this area.

Section 4 Noneley to Wem

3.1.34 Around Noneley the network of improved grassland and arable fields is bounded by further hedgerows, some of which were relatively species rich. A small broadleaved woodland copse (W9) containing a pond (P30) is directly intersected by the proposed route (pole 153).

3.1.35 East of Noneley, the proposed route runs across improved grassland and arable fields before crossing the River Roden. Fields either side of the river comprise are large and open, mainly bounded by a ditch network but also with some species poor hedgerows and lines of trees present.

3.1.36 The proposed route continues north east towards Wem, crossing improved grassland fields and a main road bounded by hedgerows before connecting to the Wem substation. A small area of improved grassland lies within the boundaries of the substation itself, along with hardstanding and built infrastructure.

Habitats

3.1.37 Target Notes from the Extended Phase 1 habitat survey are presented in Table 7.3.4 below. Further descriptions of the habitat features present along the route of the Proposed Development are provided in the following Tables:

- Table 7.3.5: Ponds;
- Table 7.3.6: Woodlands;
- Table 7.3.7: Hedgerows; and
- Table 7.3.8: Watercourses.

Grasslands and Agricultural Land

3.1.38 Agricultural grasslands or cultivated arable land comprise the majority of the survey corridor and surrounds. Most of the grassland was species poor and improved, dominated by species such as rye grass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, cock's foot *Dactylis glomerata*, and Timothy *Phleum pratense*, with other typical species including clover *Trifolium repens*, daisy *Bellis perennis*, greater plantain *Plantago major*, creeping buttercup *Ranunculus repens* and dock *Rumex obtusifolius*. A smaller number of more species-diverse semi-improved grassland fields are present along the proposed route, including in the area west of Noneley, and around Loppington. Although showing signs of agricultural management, these fields supported additional species such as crested dog's tail *Cynosurus cristatus* common bent *Agrostis capillaris* and meadow fescue *Festuca pratensis*. creeping buttercup, cow parsley, broad-leaved dock, common vetch.

Ponds

3.1.39 An extensive network of ponds is present across the survey corridor and in the wider landscape. The majority are field ponds and lie within cultivated fields, for

example Ponds P8 and P9 (Figure 7.3) are located centrally within a grassland field and bordered by mature oak *Quercus* sp. trees, blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna*. Several ponds were surrounded by small wooded copses and linked via a species poor (less frequently by species rich) hedgerows providing a locally valuable habitat corridors through the landscape.

3.1.40 A total of 34 ponds were subject to habitat survey, of which many lay outside the 100m survey corridor but were assessed in the context of their relationship to habitat corridors and other ponds and are summarised in Table 7.3.5. Ponds subject to further amphibian survey, specifically for great crested newts, are discussed further in Appendix 7.6 'Amphibian Surveys (DCO Document 6.7.6)).

Hedgerows Trees and Woodlands

3.1.41 Woodlands are described in Table 7.3.6. Woodlands along or adjacent to the survey corridor, are restricted to scattered areas of broadleaved or mixed plantation copses. More extensive areas of woodland are present in the wider area but are avoided by the alignment of the Proposed Development.

3.1.42 There are a number of trees present within hedgerows and also as lines of trees or individual scattered trees within fields throughout the survey area. These are described in detail within the Appendix 7.4: Arboricultural Survey. The bat roost potential of trees and tree groups likely to be affected by the Proposed Development are also described in Table AN7.7.1 of Appendix 7.7 'Bat Surveys' (DCO Document 6.7.7). Shropshire Council's Tree Officer has confirmed (email dated 08/05/2018) that there are no trees covered by Tree Protection Orders (TPOs) or areas of Ancient Woodland in the vicinity of the Proposed Development.

3.1.43 Surveyed hedgerows are described in Table 7.3.7. Habitat connectivity within the survey corridor and the immediately surrounding landscape is considered to be moderate, largely comprising intact but mainly species poor hedgerows and tree lines linking scattered small broadleaved woodland copses. There are a relatively small number of more species rich hedgerows also within or adjacent to the survey corridor.

3.1.44 The ground flora along hedgerow bases and around woodlands and tree groups typical comprised improved grassland or arable crop species (fields were mainly cultivated to their full extent with limited margins) and species such as bramble *Rubus fruticosus* agg. creeping bent *Agrostis stolonifera*, ivy *Hedera helix*, and cleavers *Galium aparine* with occasional wood avens *Geum urbanum*. Tall ruderal vegetation included horsetail *Equisitum* sp., great willowherb, and nettle *Urtica dioica*. In wetter areas meadowsweet *Filipendula ulmaria*, fools watercress *Apium nodiflorum* and redshank *Persicaria maculosa* were also occasionally present.

3.1.45 Shropshire Council's Tree Officer confirmed (email dated 24/05/2018) that the Council did not hold any record of hedgerows identified as 'Important' under the Hedgerows Regulations 1997, which are intended to protect important countryside hedges from destruction or damage. Hedgerows identified as being more species rich were surveyed in more detail to establish their potential to be classified as 'Important' and therefore protected under the Hedgerows Regulations 1997 (as amended) The criteria for determining whether a hedgerow is set out in detail as part of the Regulations, and includes factors such as the archaeological or historic context of the hedgerow. Former hedgerows which have grown up to form trees

are not covered by the Regulations. The ecological criteria used to determine whether a hedgerow was Important are summarised as follows:

- Contained protected species of birds, animals or plants listed in the Wildlife and Countryside Act 1981 (as amended) or Joint Nature Conservation Committee (JNCC) publications;
- Within an average 30m length, included:
 - at least 7 woody species
 - at least 6 woody species and has at least 3 associated features
 - at least 6 woody species, including a black poplar tree, or large leaved lime, or small leaved lime, or wild service tree; or
 - at least 5 woody species and has at least 4 associated features;

(The list of 56 woody species comprises mainly shrubs and trees and generally excludes climbers (such as clematis, honeysuckle and bramble) but includes wild roses)

- Runs alongside a bridleway, footpath, road used as a public path, or a byway open to all traffic and includes at least four woody species, on average in a 30m length and has at least two of the associated features listed below:

The associated features are:

- (i) a bank or wall supporting the hedgerow;
- (ii) less than 10% gaps
- (iii) on average, at least one tree per 50 metres
- (iv) at least three species from a list of 57 woodland plants
- (v) a ditch
- (vi) a number of connections with other hedgerows, ponds or woodland; and
- (vii) a parallel hedge within 15 metres.

3.1.46 Of the surveyed hedgerows, three (H2, H54 and H64) were considered to meet the relevant ecological criteria to be considered important under the Hedgerow Regulations 1997. A number of other hedgerows were also identified as important due to a combination of age and/or historic context (including appearing on Tithe maps which pre-date 1845)

Watercourses and Ditches

3.1.47 Watercourses are described in Table 7.3.8. The main watercourses crossed by the Proposed Development comprise the Montgomery Canal, River Perry and River Roden. There is also an associated network of ditches that border the arable and improved grassland fields throughout. The watercourses intersected by or

within the survey area of the Proposed Development provide valuable habitat features and connectivity within the managed agricultural landscape.

Invasive species

3.1.48 Overall, very few occurrences of invasive non-native species were recorded during the extended Phase 1 habitat survey. Small stands of Japanese knotweed *Fallopia japonica* were recorded at two locations; TN11 at Lower Hordley, over 100m south of the Proposed Development, and TN16 over 300m distant (Table 7.3.4).

Mammals

3.1.49 During the extended Phase 1 habitat survey, habitats suitable to support a range of mammal species were identified, including brown hare *Lepus europaeus* and hedgehog *Erinaceus europaeus*. The majority of the land crossed by the Proposed Development comprised open arable and improved grassland fields of more limited suitability for species such as polecat *Mustela putorius* which favours lowland wooded habitats and marshes. This species is however considered to be potentially present in and around the riparian corridors of watercourses, including around Noneley, Babbinswood, Loppington, the Montgomery canal, River Roden and farm complexes nearby.

3.1.50 No records for hazel dormouse *Muscardinus avellanarius* or evidence of this species was recorded during the habitat survey and examination of hedgerows. Boundary hedges were generally species-poor and dominated by species not favoured by feeding dormice. Consequently, the land crossed by the proposed development is considered to have very low potential to support hazel dormouse.

3.1.51 Bats are discussed further in Appendix 7.7 (**DCO Document 6.7.7**) and otters *Lutra lutra* and water vole *Arvicola amphibius* in Appendix 7.8 (**DCO Document 6.7.8**).

Reptiles

3.1.52 No observations of reptiles were made during any survey visits, however live sightings of reptile species during an extended Phase 1 habitat survey would be expected to be generally scarce and opportunistic. The majority of the survey corridor provided low value habitat for reptiles, comprising arable fields or grazed grasslands.

3.1.53 Arable habitats and improved grassland along the Proposed Development are intensively farmed and would not hold substantial viable reptile populations. Small extents of potentially more suitable habitat comprising narrow field margins along the bases of hedgerows, scrub and dense marginal vegetation along watercourses and ditches and woodland edges was recorded at a limited number of locations, along with refuge habitat such as log piles (typical areas of suitable habitat are illustrated in Figure 7.10 (**DCO Document 6.14**)). However, there were no extensive areas of high habitat suitability or with good connectivity to high suitability habitat in the wider area suitable to support more than small populations of or individual reptiles within the surveyed area or nearby.

3.1.54 On a precautionary basis it is considered that individuals of common species of reptile may potentially be occasionally present along the survey corridor, for

example grass snake around damp habitats especially along watercourse riparian corridors.

Table 7.3.4: Target Notes from Phase 1 Habitat Survey (see Figure 7.2 (DCO Document 6.14))

Target Note Number	Comment
TN1	Substantial ditch (D6) with c. 45 degree angle banks which are well vegetated. Habitat suitable for water vole but no signs observed during surveys.
TN2	Felled tree trunk, left to decay.
TN3	Felled tree trunk, left to decay.
TN4	Felled ash trunk with decaying wood and fungi. Used by sheep for shelter.
TN5	Crossing point of the River Perry. Willow <i>Salix</i> sp. and ash <i>Fraxinus excelsior</i> trees bordering watercourse c. 15-17m tall.
TN6	River Perry riparian corridor bordered by woodland/scrub with dense ground cover of brambles <i>Rubus fruticosus</i> .agg. and nettles <i>Urtica dioica</i> on banks. Watercourse very overgrown and relatively inaccessible in parts.
TN7	Mature oak with barn owl box.
TN8	Small stand of Japanese knotweed <i>Fallopia japonica</i> .
TN9	Brown hare <i>Lepus europaeus</i> seen in field.
TN10	Ponds 8 and 9 form a single waterbody, surrounded by a small copse-oaks, hawthorn and blackthorn isolated within a large arable field. One oak had a large cavity in a hollow trunk, providing potential for roosting bats/nesting birds.
TN11	Large stand of Japanese knotweed – well away from Proposed Development.
TN12	Old track, with overgrown hedgerows either side.
TN13	Damp semi-improved grassland around large lagoon (P28) containing great reedmace <i>Typha latifolia</i> , reed sweet-grass <i>Glyceria maxima</i> , branched bur-reed <i>Sparganium erectum</i> , marsh foxtail <i>Alopecurus geniculatus</i> .
TN14	Narrow strip of plantation broad-leaved woodland with section of hedgerow between a ditch and the embankment of the River Roden. Approx. 10m wide, 10m high, dominated by birch <i>Betula pendula</i> also oak <i>Quercus</i> sp., ash, hazel <i>Corylus avellana</i> . Understorey of field maple <i>Acer campestre</i> , holly <i>Ilex aquifolium</i> and hawthorn <i>Crataegus monogyna</i> .
TN15	A patch of common meadow rue <i>Thalictrum flavum</i> along a linear-depression (former ditch) which is no longer holding water.
TN16	Ditch with alder <i>Alnus glutinosa</i> nearby with high bat roost potential. Gap in hedgerow H125 at its northern extent, with some planted hawthorn saplings.
TN17	Log pile providing refuge for wildlife.

3.1.55 Descriptions of ponds are provided below and are shown on Figures 7.2 and 7.7 (DCO Document 6.14).

Table 7.3.5: Pond Summary

Pond (P)	Description	Within 50m of Order Limits?	Nearest Pole # Near Access?
P0a/b	P0a an oxbow shaped pond in corner of field linked to P0b, a shallow pond filled with macrophytes. Good refuge habitat of stone piles and potential hibernacula nearby.	Yes	2 Access
P1	Pond on edge of improved grassland field.	Yes	15/16
P1a	Manmade pond on edge of access track.	No	Access
P1b	Small shallow pond, no water vegetation, no bank vegetation, highly turbid and heavily poached from livestock use.	No	Access
P1c	Deeper section within ditch, not a separate pond.	Yes	Access
P2	Turbid, shallow but likely to fill regularly. Good vegetation cover.	No	26/27 Access
P3	Open, well vegetated pond. Willows, alder and oak around the perimeter but plenty of light reaching water. Marginal vegetation included flag iris <i>Iris pseudacorus</i> , branched bur-reed and spiked water milfoil <i>Myriophyllum spicatum</i>	Yes	44
P3a	Shallow field pond, dry at time of survey	Yes	45/46 Access
P4	Open pond fringed with <i>Typha</i> and rushes.	No	n/a
P5	Shaded pond surrounded by mature oaks, hawthorn, sycamore <i>Acer pseudoplatanus</i> .	No	83/84
P6/P7	Adjoining shaded ponds with a deep layer of mud and debris, overhanging scrub and alder oak and hawthorn. Water turbid and lacking macrophytes	Yes	81/82 Access
P8/P9	Two field ponds linked by channel. Bank edges were either heavily poached or steep sided. Bank vegetation comprised mainly common grasses and several large mature oaks; some scrub at margins.	Yes	86
P10	Pond surrounded by mature trees and scrub. A large percentage of the margin overhung by willow scrub. Limited macrophyte presence in water.	No	90
P11	Field pond/depression (dry by early April 2017) isolated position in arable field.	Yes	96
P11a	Heavily shaded pond in woodland surrounded by arable fields. Choked with tree branches and leaf litter, lacking emergent or aquatic vegetation.	Yes	Access
11b	Heavily shaded pond in woodland surrounded by arable fields. Choked with tree branches and leaf litter, lacking emergent or aquatic vegetation	Yes	Access
11c	Newly created pond on farm surrounded by lawn and pasture. Macrophytes (mainly reeds) present some waterfowl and fish. Not shaded.	Yes	Access

Pond (P)	Description	Within 50m of Order Limits?	Nearest Pole # Near Access?
11d	Newly created pond on farm surrounded by lawn and pasture. Macrophytes (mainly reeds) present some waterfowl and fish. Not shaded.	Yes	Access
P12	Pond situated on the field edge with dense hedgerow surrounding it, as well as tall oaks which left the entire bank in shade.	No	104
P13	An open shallow waterbody with no defined banks located centrally within an improved grassland field. The pond was heavily poached by cattle.	Yes	104
P14	Heavily shaded pond, overhung by large area of dense scrub including hazel, willow, aspen.	Yes	120/121 Access
P15	Pond in arable field. Large stand of marginal vegetation with water horsetail <i>Equisetum fluviatile</i> , willow, hawthorn shrubs around edge.	Yes	120/121
P16	Open lagoon. Marginal vegetation included water mint <i>Mentha aquatica</i> , spike rush <i>Eleocharis palustris</i> and soft rush <i>Juncus effusus</i>	No	122/123
P17	Pond surrounded by hawthorn, dog rose <i>Rosa canina</i> and ash scrub. Enclosed by vegetation but plentiful light penetration. Plentiful invertebrates including dragonflies.	Yes	123
P18	Adjacent to roadway and well shaded by oak, alder, blackthorn, ash. Pond shallow and largely lacking aquatic vegetation.	Yes	123
P19	Partially shaded pond with livestock access and surrounded by alder shrubs. Marginal vegetation included hard rush.	Yes	125
P20	Large ornamental / fishing pond in small woodland. Irregular shape with central island. Shaded with deep layer of leaf litter and limited marginal vegetation (flag iris). Trees around pond included oak, alder, ash, hazel, willow.	Yes	127/128
P21	Field pond at margin of improved grassland field adjacent hedgerow.	No	No
P22	Field pond at margin of improved grassland field adjacent hedgerow.	Yes	146 Access
P23/P24	Two ponds combined to form a large pond located on the edge of an arable field with heavily shaded areas by alder and oak. Some areas along its banks were heavily poached by cattle	Yes	147 Access
P25/P26	Two adjacent field depressions likely to fill with water only in winter/wet conditions. Dry at time of survey	Yes	148

Pond (P)	Description	Within 50m of Order Limits?	Nearest Pole # Near Access?
P27	Pond situated within an arable field with heavy poaching on one end. 2/3 of the pond is shaded by alder, hawthorn and bramble.	Yes	150
P28	Large reservoir/lagoon waterbody surrounded by improved grassland. Very little shading around its banks and very few macrophytes.	Yes	152
P29	Field pond only likely to fill in winter/very wet conditions with dense grass growth. Dry at time of survey	Yes	152/153 Access
P30	Large pond situated within dense woodland. The pond was entirely shaded by the woodland canopy.	Yes	153 Access

Table 7.3.6: Woodland Descriptions

Wood Ref: (mark on map)	Species present	SN/ P	Broadleaved/ coniferous/ mixed	Age	Height (m)	Ground flora
W1	Pine <i>Pinus</i> sp., field maple, elder <i>Sambucus nigra</i> .	P	Mixed	Semi-mature	15	Nettles <i>Urtica dioica</i> , bramble <i>Rubus fruticosus</i> agg.
W2	Cherry <i>Prunus</i> sp., willow <i>Salix</i> sp., oak <i>Quercus robur</i> , wych elm <i>Ulmus glabra</i> . Young trees, open canopy with a sparse ground flora. Older willow and ash <i>Fraxinus excelsior</i> trees present.	P	Broadleaved	Immature / semi-mature	10-15	Bramble, dock <i>Rumex obtusifolius</i> , nettle
W3	Ash, tall narrow trees.	P	Broadleaved	Immature / semi-mature	17-20	Minimal cover
W4	Oak, willow, elm, holly <i>Ilex aquifolium</i> . Bat and barn owl potential in oak with a hollow limb.	SN	Broadleaved	Mature	17	Wild garlic <i>Allium ursinum</i>
W5	Oak, guelder rose <i>Viburnum opulus</i> , field maple <i>Acer campestre</i> , ash.	P	Broadleaved	Semi-mature	18	Nettle, cleavers <i>Galium aparine</i>
W6	Oak, wych elm, hawthorn <i>Crataegus monogyna</i> shrubs.	SN	Broadleaved	Mature	12-15	Bramble, ivy <i>Hedera helix</i>
W7	Ash, willow. Tall plantation, trees with spindly trunks	P	Broadleaved			
W8	Field maple, oak, sycamore <i>Acer pseudoplatanus</i> . Hawthorn and rowan <i>Sorbus aucuparia</i> scrub/young trees.	SN	Broadleaved	Mature	<18	Cleavers <i>Galium aparine</i> , cock's-foot <i>Dactylis glomerata</i>
W9	Field maple, oak, aspen <i>Populus tremula</i> , hazel <i>Corylus avellana</i> , ash, elm <i>Ulmus</i> sp, guelder rose, rowan, elder <i>Sambucus nigra</i> , willow	SN	Broadleaved	Semi-mature	6-12	Nettles, brambles, dog's mercury <i>Mercurialis perennis</i>
W10	Sycamore, horse chestnut <i>Aesculus hippocastanum</i> , field maple. Some standing deadwood.	P	Broadleaved	Mature	12	False brome <i>Brachypodium sylvaticum</i>

W11	Ash, sycamore, crack willow <i>Salix fragilis</i> , alder <i>Alnus glutinosa</i> with wych elm, hawthorn, dog rose, oak along edge. Single pine. Trees clustered around pond P30.	SN	Broadleaved	Semi-mature	12	Nettles, brambles, cleavers, common hogweed <i>Heracleum sphondylium</i> various grasses
W12	Birch <i>Betula pendula</i> , oak, ash, hazel.	P	Broadleaved	Semi-mature	10	Yorkshire fog <i>Holcus lanatus</i> , smooth meadow grass <i>Poa pratensis</i> , common hogweed, false oat grass <i>Arrhenatherum elatius</i> , cock's-foot.
W13	Alder, spruce <i>Picea</i> sp., cherry	P	Mixed	Semi-mature	10	Sparse grasses
W14	Broad-leaved woodland around large pond. Dominant oak <i>Quercus robur</i> , frequent willow, hawthorn, hazel, ash.	SN	Broadleaved	Mature and semi-mature	Variabl e	Yorkshire fog, cock's-foot, bramble, ivy, creeping bent <i>Agrostis stolonifera</i> , wood avens <i>Geum urbanum</i> , cleavers.
W15	Tall spindly spruce trees with hazel, birch and oak on the edge.	P	Mostly coniferous	Mature	18	Pine needle carpet lacking ground flora

*SN: Semi-natural. P: Plantation

Table 7.3.7: Hedgerow Descriptions (not all mapped hedgerows are numbered). * Denotes hedgerow subject to survey during early stage design evolution, no longer within survey area for Proposed Development.

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H1	6	3	Hazel <i>Corylus avellana</i> , willow <i>Salix</i> sp., hawthorn <i>Crataegus monogyna</i> , elder <i>Sambucus nigra</i> , dog rose <i>Rosa canina</i> , crab apple <i>Malus sylvestris</i> , holly <i>Ilex aquifolium</i>	Tall & outgrown.	Rich	Yes	Intact	L – Pole 1
H2	3	2	Hawthorn, blackthorn <i>Prunus spinosa</i> , elder, hazel, field maple <i>Acer campestre</i> , dog wood <i>Cornus sanguinea</i> , dog rose.	Dense & managed.	Rich	Yes	Intact	L – Pole 2
H2a	6-10		Willow trees/scrub, hawthorn	Line of trees	n/a	n/a	n/a	A and u'ground section
H3	6	3	Hawthorn, dog rose, blackthorn.	Tall, outgrown	Poor	Yes	Intact	L – Pole 5
H3a	3	4	Blackthorn, willow, holly <i>Ilex aquifolium</i>	Trimmed & dense	Poor	Yes	Intact	L – Pole 5
H4	3	2	Hawthorn, elder, wych elm <i>Ulmus glabra</i> , hazel.	Trimmed & dense	Poor	Yes	Intact	L – Pole 8

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H4a	2	2	Hawthorn, blackthorn, dog rose.	Trimmed & dense	Poor	No	Intact	A and u'ground section
H5	2	3	Hawthorn, elm.	Trimmed & dense	Poor	No	Intact	A and L – Pole 10
H6	3	2	Hawthorn, blackthorn, dog rose	Managed	Poor	Yes	Intact	A and L – Poles 10, 11
H6a	3-5	2-3	Hawthorn, blackthorn, dog rose	Managed but southern part outgrown	Poor	Yes	Intact	L – Pole 12
H7	6	2	Hawthorn, blackthorn, hazel.	Tall & leggy	Poor	Yes	Intact	A
H8	2	2	Hawthorn, hazel, blackthorn, field maple, ground flora includes dog's mercury <i>Mercurialis perennis</i> .	Trimmed & dense	Poor	No	Intact	A and L – Pole 15
H8a	7	3	Hawthorn, blackthorn, elm, willow.	Tall and outgrown with trees	Poor	Yes	Intact	A and L – Pole 17,18
H8b	3	2	Hawthorn, blackthorn	Managed	Poor	Yes	Intact	A
H9	2	3	Hawthorn, elm.	Trimmed & dense	Poor	No	Intact	A and L- Pole 17

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H10	2	3	Blackthorn, hawthorn, dog rose.	Dense & trimmed.	Poor	Yes	Intact	A
H11	2	3	Blackthorn, hawthorn, ash, dog rose, bird cherry <i>Prunus padus</i> , honeysuckle <i>Lonicera periclymenum</i> .	Dense & trimmed with trees.	Poor	Yes	Intact	A
H12	2	2	Hawthorn, blackthorn	Managed	Poor	Yes	Intact	L – Pole 25
H13	2	4	Hawthorn, blackthorn. Understorey includes primrose <i>Primula vulgaris</i> , violet <i>Viola riviniana</i> ..	Trimmed & dense	Poor	Yes	Intact	L – Pole 29
H14	2	3	Hawthorn, elm.	Trimmed & dense	Poor	No	Intact	L – Pole 29,30
H15	3	2	Hawthorn, dog rose	Partially outgrown	Poor	Yes	Intact	A
H16*								
H17	5	2	Hawthorn, elder, rose	Tall & leggy, defunct	Poor	Yes	Defunct	A
H18	3	3	Hawthorn, blackthorn, willow	Hedgerow by line of trees	Poor	Yes	Intact	L – Pole 38

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H19	6	3	Hawthorn, blackthorn, willow, alder	Tall & trimmed	Poor	Yes	Intact	A and L – Pole 41
H20	3	3	Hawthorn, dog rose, hazel, elder	Dense & bushy	Poor	Yes	Intact	A
H21*								
H22	3	2.5	Elder, hawthorn, blackthorn	Dense & bushy	Poor	Yes	Intact	-
H23*								
H24	6	2	Hawthorn, elder, hazel	Tall & trimmed	Poor	Yes	Intact	-
H25	2	2.5	Hawthorn, hazel, blackthorn	Partially managed along side	Poor	No	Intact	A
H26	3.5	2	Blackthorn, hazel, hawthorn, elder	Outgrown, gappy	Poor	Yes	Intact	L – Pole 49
H27	3.5	2.5	Hawthorn, hazel, elder, dog rose	Dense & trimmed	Poor	Yes	Intact	A
H28*								
H29*								
H30	3.5	2.5	Hawthorn, hazel, holly, elder	Dense & trimmed	Poor	Yes	Intact	L
H31	3.6	2.5	Hawthorn, hazel	Dense, tall in places	Poor	No	Intact	L
H32*								

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H33			Line of trees and scrub					
H34	2.5	3	Blackthorn, elder, hazel, hawthorn, damson	Trimmed & dense	Poor	No	Intact	L – Pole 58
H35	2.5	3	Blackthorn, elder, hazel, hawthorn, damson <i>Prunus institia</i>	Trimmed & dense	Poor	No	Intact	A and L – Pole 58
H36	3	1	Hawthorn, blackthorn	Trimmed & dense	Poor	No	Intact	A
H37	3	1	Hawthorn, blackthorn	Trimmed & dense	Poor	No	Intact	A
H39	2	2	Hawthorn	Trimmed & dense	Poor	Yes	Intact	A
H40*								
H41	2	2	Hawthorn, elder	Managed, defunct	Poor	No	Defunct	L – pole 66, 67, 68, 69
H42	2	2	Hawthorn	Trimmed & dense	Poor	Yes	Intact	-
H43	3	3	Hawthorn, elder	Managed	Poor	No	Intact	U'ground section
H44*								
H45	6	2	Hawthorn, elm	Defunct, trimmed	Poor	No	Defunct	A
H46	3	3	Hawthorn	Managed	Poor	No	Intact	A

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H47	6	3	Hawthorn, dog rose, elm, sycamore <i>Acer pseudoplatanus</i>	Tall & trimmed	Poor	No	Intact	U'ground section
H48*								
H49*								
H50*								
H51	4	2	Hawthorn, blackthorn, hazel, field maple	Tall managed	Poor	Yes	Intact	-
H52	1.5	2.5	Hawthorn, field maple, blackthorn, hazel, holly, willow.	Managed	Rich	Yes	Intact	A
H53	2	3	Hazel, rose, hawthorn, blackthorn sycamore, eared willow	Managed	Rich	No	Intact	A and L – Pole 80, 81
H54	2.5	2.5	Hazel, dog rose, hawthorn, sycamore, willow	Managed	Rich	Yes	Intact	A and L – Pole 82
H55	2.5	2.5	Blackthorn, hawthorn, hazel, crab apple, holly, dog rose, privet <i>Ligustrum vulgaris</i> , field maple	Trimmed & dense	Rich	No	Intact	L – Pole 83
H56*								

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H57	2.5	3	Hawthorn, blackthorn, elder, oak <i>Quercus robur</i> , willow	Managed with large gap	Rich	No	Defunct	L – Pole 84
H58*								
H59/a	5	2.5 - 4	Blackthorn, hawthorn, willow, dog rose, hazel, field maple, privet	Trimmed	Poor	Yes	Intact	A and L- Pole 84
H60*								
H61	3	2.5	Hazel, hawthorn, elder, blackthorn, sycamore	Defunct, dense	Poor	Yes	Defunct	A and L – Pole 87
H61a	4	2	Hazel, field maple, rose, hawthorn, blackthorn	Trimmed & dense	Rich	No	Intact	L – Pole 87
H62	2.5	2.5	Hawthorn, blackthorn, hazel, elder, field maple, dog rose, wych elm	Trimmed & dense	Rich	No	Intact	A and L – Pole 88
H63*								
H64	2	2	Blackthorn, elder, hawthorn, field maple, oak, holly, privet, wych elm	Partly managed	Rich	Yes	Intact	A and L - Pole 90
H65	2.5	1.5	Hawthorn, field maple, elder, holly, elm, dog rose	Trimmed & dense, taller and	Rich	Yes	Intact	A

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
				bushier at end.				
H66	2	2	Hawthorn, blackthorn, hazel, elder	Trimmed & dense	Poor	No	Intact	A and L – Pole 92
H67	2	3	Hawthorn, blackthorn, elm, elder, crab apple	Trimmed & dense	Poor	Yes	Intact	A
H68	2	3	Hawthorn, blackthorn, elm, elder, crab apple	Trimmed & dense	Poor	Yes	Intact	A and L – Pole 94
H69	2	2	Hawthorn, blackthorn, hazel, elder	Trimmed & dense	Poor	Yes	Intact	-
H70	2.5	2.5	Elm, blackthorn, elder, hawthorn, field maple	Trimmed & dense	Poor	No	Intact	-
H71	6	2	Hawthorn, elder, holly	Tall trimmed	Poor	Yes	Intact	A
H72	1	2	Elder, hawthorn, alder, hazel	Managed	Poor	Yes	Intact	A and L – Pole 97
H73	2	2	Hawthorn, elder	Managed	Poor	No	Intact	A
H74	1.5	2	Elder, hazel, dog rose, hawthorn, blackthorn	Mainly dense and trimmed, becomes a line of trees in places	Rich	Yes	Intact	L – Pole 99

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H75*								
H76	3--6	2-4	Hawthorn, Blackthorn, elder	Dense bushy/trimmed	Poor	Yes	Intact	L – Pole 102
H77	6	3	Hawthorn, rose	Tall & outgrown	Poor	Yes	Intact	A
H78	2.5	4	Hawthorn, elder, blackthorn, dog rose	Tall & outgrown	Poor	Yes	Intact	L – Pole 103
H79	4-6	3	Hawthorn, blackthorn, hazel, dog rose,	Managed	Poor	Yes	Intact	-
H80	3	2	Hawthorn, blackthorn	Bushy	Poor	Yes	Intact	A and L – Pole 105
H81	6	3	Hawthorn, blackthorn, hazel, rose	Tall & trimmed	Poor	Yes	Intact	A and L – Pole 106
H82	6	3	Hawthorn, blackthorn, hazel, rose	Tall & trimmed	Poor	Yes	Intact	L - Pole 107
H83	2	2	Hawthorn, blackthorn, hazel	Managed	Poor	No	Intact	L – Pole 108
H83a	2.5	2	Hawthorn, blackthorn, hazel, dog rose	Managed	Poor	Yes	Intact	L- Pole 110
H84	2.5	2	Hawthorn, hazel, crab apple,	Managed	Poor	Yes	Intact	L- Pole 110
H85/ H86	1.5	2	Hawthorn, field maple, hazel, holly, elder	Managed	Poor	Yes	Intact	A and L – pole 112

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H87	1.5	2	Hawthorn, blackthorn, field maple, hazel, holly, elder	Managed	Poor	Yes	Intact but defunct to east	A
H88	3	3	Hawthorn, blackthorn	Outgrown	Poor	Yes	Gappy	A
H88a	4-6	3	Blackthorn, field maple, hazel, hawthorn, wych elm.	Bushy	Rich	No	Intact	A and L – Pole 123
H88b	2	2	Hawthorn, blackthorn, rose, ash, sycamore	Trimmed & dense	Poor	Yes	Intact	A and L – Pole 123
H88c	2	2	Hawthorn, blackthorn, rose, ash, sycamore	Trimmed & dense	Poor	Yes	Intact	A and L – Pole 123
H88d	2	2.5	Hawthorn, rose, elder, sycamore, oak	Trimmed & dense	Poor	Yes	Intact	A and L – Pole 125
H89	2.5	2.5	Holly, oak, field maple, blackthorn, hawthorn	Trimmed along side	Rich	Yes	Intact	-
H89a	4	2	Hawthorn, elder	Defunct, bushy	Poor	Yes	Defunct	-
H89b	2.5	2.5	Hawthorn, blackthorn	Managed	Poor	Yes	Intact	A
H90	2	2	Ash, hawthorn	Managed	Poor	Yes	Intact	A
H90c	3		Oak, hawthorn, hazel, sycamore	Defunct, managed	Poor	No	Defunct	A
H91	2.5	2.5	Holly, oak, field maple, blackthorn, hawthorn	Trimmed along side	Rich	Yes	Intact	A and L – Pole 135

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H91a	1	1.5	Hawthorn gappy	Line shrubs	Poor		Defunct	L – Pole 136
H92	6-8	5-7	Hawthorn, blackthorn, rose, oak.	Outgrown line of trees and shrubs	Line of trees			-
H93	4	3	Blackthorn, field maple, hawthorn	Bushy	Poor	No	Intact	L – Pole 137
H94	4	2	Dog rose, hawthorn, blackthorn	Trimmed & dense, recently planted	Poor	No	Intact	A
H95	6		Elder, hawthorn	Bushy, defunct	Poor	Yes	Defunct	L – Pole 141
H96	3-4	5	Hawthorn, blackthorn, elder	Bushy, defunct	Poor	Yes	Defunct	L – Pole 140
H96a	4-7	3	Field maple, dog rose, elder, hawthorn	Bushy, outgrown	Poor	Yes	Intact	L – Pole 138
H97*								
H98	2	2	Hawthorn, elm, dog rose, elder, holly	Trimmed & dense	Poor	Yes	Intact	A and L – Pole 143, 145
H99	6	4	Elder, guelder rose <i>Viburnum opulus</i> , hawthorn	Trimmed on side	Poor	Yes	Defunct	A and L – Pole 143

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H100	1.5	2.5	Alder, hawthorn, elder, blackthorn, small ash	Trimmed	Poor	No	Intact	A and L – Pole 146
H101	2-3	2	Hawthorn, blackthorn, hazel, elder	Trimmed	Rich	Yes	Intact	-
H102*								
H103	3	2.5	Hawthorn, hazel, blackthorn, dog rose, ash	Trimmed & dense	Poor	Yes	Intact	-
H104	1	2	Elder, hawthorn, alder, hazel	Managed	Poor	Yes	Intact	L- Pole 151
H105	2	2	Hawthorn, elder, blackthorn	Managed	Poor	No	Intact	-
H106	4	2.5	Blackthorn, elder, hazel, dog rose	Trimmed & dense	Poor	No	Intact	-
H107	2.5	2.5	Hawthorn, blackthorn, hazel	Defunct	Poor	Yes	Defunct	L- Pole 155
H108	2.5	2.5	Hawthorn, hazel, elder	Trimmed	Poor	Yes	Intact	L – Pole 156
H109	3	2	Hawthorn, blackthorn, ash	Managed	Poor	No	Intact	A
H110	3	2.5	Hazel, hawthorn, elder, blackthorn, sycamore	Managed, dense	Poor	Yes	Intact	A and L – Pole 158
H111	3	2.5	Alder, dog rose, hawthorn, hazel, willow	Trimmed & dense	Poor	Yes	Intact	A and L – Pole 160
H112*								

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
H113*								
H114*								
H115*								
H116*								
H117*								
H118*								
H119	3	2	Hawthorn, elder, field maple, dog rose, hazel	Trimmed and dense, partially outgrown and defunct	Poor	Yes	Intact	A and L – Pole 165, 166
H120	6	2	Hawthorn, willow, crab apple	Managed	Poor	Yes	Intact	L – Pole 167
H121*								
H122*								
H123	3	2	Hawthorn, elder	Defunct	Poor	Yes	Defunct	A and L – Pole 169
H124	3	3	Hawthorn	Trimmed and dense	Poor	Yes	Intact	A
H125	5	3	Hawthorn, dog rose, elder, blackthorn	Dense & trimmed along side	Poor	Yes	Intact	L – Pole 172
H126	6	2-6	Hawthorn, elder, willow, dog rose	Trimmed, partially bushy &	Poor	Yes	Intact	U'ground section

Hedge Label	Ht (m)	Width (m)	Hedge species	Structure	Hedge type			Intersects or adjacent to line (L) or access only (A).
					Species Rich/Poor	Trees	Defunct/Intact	
				outgrown. Defunct.				
H127	6	2-6	Hawthorn, elder, willow, dog rose	Trimmed, partially bushy & outgrown.	Poor	Yes	Intact	L – Pole 174
H128	2.5	2	Hawthorn, blackthorn, damson, alder		Poor	No	Intact	A
H129	6		Cypress	Defunct	Poor	Yes	Defunct	L
H130*								
H133	4	3	Hawthorn, elder, blackthorn, sycamore, field maple, hazel, English oak, dog rose.	Trimmed and dense	Poor	Yes	Intact	A
H134	6	4	Elder, guelder rose, hawthorn	Trimmed on side	Poor	Yes	Defunct	A

Table 7.3.8: Watercourse Descriptions (D=Ditch)

Watercourse Ref: (mark on map)	Width (m)	Depth (m)	Current	Bank profile	Disturbance / water level change?	Adjacent habitat	Aquatic vegetation	Bankside vegetation
D1	1	1		Steep	Water level change	Poor	n/a	n/a
D2	1	1		Steep	Water level change	Poor	n/a	n/a
D4, D10	1	0.5	Dry	Steep	Some water change		Species in ditches included great willowherb, soft rush, branched bur-reed, hemlock water dropwort <i>Oenanthe crocata</i> , water starwort species.	Bankside vegetation included nettle, hogweed, meadowsweet, hawthorn, willow, alder shrubs, reed canary grass <i>Phalaris arundinacea</i> .
D5	1	1		Steep	Water level change	Poor	n/a	n/a
D6	2	0.2	Mod SE	Steep	Water level change	Grassland	n/a	n/a
D7	1	1		Steep	Water level change	Poor	n/a	n/a
D9	1	0.1	Still	Steep	Some water change	Grassland	Species in ditches included great willowherb, soft rush, branched bur-reed, hemlock water dropwort, water starwort <i>Callitriche</i> sp.	Bankside vegetation included nettle, hogweed, meadowsweet, hawthorn, willow, alder shrubs, reed canary grass.
D13, D16	1	0.5	Slight N	Shallow	Some water change	Grassland	Species in ditches included great	Bankside vegetation included nettle, hogweed,

Watercourse Ref: (mark on map)	Width (m)	Depth (m)	Current	Bank profile	Disturbance / water level change?	Adjacent habitat	Aquatic vegetation	Bankside vegetation
							willowherb, soft rush, branched bur-reed, hemlock water dropwort, water starwort species.	meadowsweet, hawthorn, willow, alder shrubs, reed canary grass.
D17	2-3	Bank 1m, water 0.1m	Sluggish	Steep	Water level change	Improved grassland	Hemlock water-dropwort, flag iris, lesser pond sedge <i>Carex acutiformis</i>	
Montgomery Canal	6		Slow	Vertical-gabion reinforced banks	Water level change	Improved grassland	Water plantain <i>Alisma plantago-aquatica</i> , branched bur-reed.	Line of trees both sides, more open on western bank.
D18	2	Banks 4m water 0.1m	Sluggish/still	Very steep	Water level change	Improved grassland	Fools watercress <i>Apium nodiflorum</i> , duckweed <i>Lemna</i> sp.	Red campion, tall ruderal.
D19	1	Dry	Dry	Steep	Water level change	Arable	Duckweed	Tall ruderal overgrown into ditch
D20	1	0.1	Damp, no current	Steep	Water level change	Improved grassland and arable	Reed canary-grass, floating sweetgrass <i>Glyceria fluitans</i> .	Nettle, tall ruderal
River Perry	4.5	0.5-1	Slow	Steep	Minor, some water level change	Arable, cattle pasture	Water crowfoot <i>Ranunculus aquatilis</i> curled pondweed <i>Potamogeton crispus</i> , perfoliate pondweed <i>Potamogeton perfoliatus</i> , reed sweet grass, fools	Nettle, greater willowherb, nettles, water figwort <i>Scrophularia auriculata</i> . Dense bankside cover.

Watercourse Ref: (mark on map)	Width (m)	Depth (m)	Current	Bank profile	Disturbance / water level change?	Adjacent habitat	Aquatic vegetation	Bankside vegetation
							watercress, hemlock water dropwort, branched bur-reed. Aquatic vegetation good density of marginal emergent vegetation, floating leaved and submerged.	
D23	1.5	1	Slight N	Steep	Water level change	Grassland	Species in ditches included great willowherb, soft rush, branched bur-reed, hemlock water dropwort, water starwort species.	Bankside vegetation included nettle, hogweed, meadowsweet <i>Filipendula ulmaria</i> , hawthorn, willow, alder shrubs, reed canary grass.
D25	2	2	Sluggish	Steep	Water level, cattle	Poor/improved grassland	None.	Runs between two hedgerows supporting hawthorn, elder, hazel, dogwood, bramble.
D27	3	3	Dry	Steep	Water level change	Poor	None.	Common grasses, nettle, dog's mercury, bramble.
D34	1.5	Dry	n/a	steep	Water level change	Improved grassland (paddock)	Duckweed, field horsetail <i>Equisetum arvense</i> , fools watercress and redshank <i>Persicaria maculosa</i> growing in channel.	Tall ruderal vegetation - false oat grass, great willowherb, dock, cock's-foot, nettle, meadowsweet.
D35, D36	1	2	Dry	steep	Water level	Good (wood)	None	Common grass and ruderals
D38	0.5	0.5	Dry	steep	Water level	Poor	Willow herb and rush	Common grass and ruderals
D39	0.5	2	None	steep	Water level	Good	Grass, starwort.	Common grass and ruderals

Watercourse Ref: (mark on map)	Width (m)	Depth (m)	Current	Bank profile	Disturbance / water level change?	Adjacent habitat	Aquatic vegetation	Bankside vegetation
River Roden	3	2.5m banks 10-20cm water	Slow	Steep with muddy toe, c. 45 degrees	Water level change, otherwise fenced from livestock	Improved grassland and arable	Common reed <i>Phragmites australis</i> , reed sweetgrass, vegetation fringing water	Dense tall ruderals
D40	2	<0.5	Slow	Steep	Water level change	Improved grassland and arable	Algae, reed canary grass and floating sweetgrass.	Tall ruderal with abundant false oat grass. Occasional hawthorn, alder and rose scrub on bank top.
D42	0.5	<0.5	Slow	Steep		Hedgerow / grazing	None	Tall ruderal with hedgerow in places. Great willowherb, hawthorn, cocksfoot, blackthorn, nettle, common hogweed, cleavers. At western end no hedgerow and grass is dominant – false oat grass, cocksfoot and Yorkshire fog.