
Priory Farm Solar Array Alternative Cable Route
on behalf of Axis PED
Ecological Assessment Report



Report Verification and Declaration of Compliance

This report has been prepared with reference to best practice guidelines for Ecological Impact Assessment in the UK and Ireland, as defined by CIEEM (2022) and is provided in accordance with the provisions of British Standard 42020:2013 Biodiversity: Code of practice for planning and development and BS 8683:2021 Process for Designing and Implementing Biodiversity Net Gain - Specification.

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1. INTRODUCTION

1.1 Background and Scope

- 1.1.1 Avian Ecology Ltd. (AEL) was commissioned by Axis on behalf of AGR Solar 4 Ltd to undertake an Ecological Assessment in relation to a proposed alternative cable route for Priory Farm Solar Array ('the Proposed Development') on land in and around Little Wymondley, Stevenage at central grid reference TL 2121 2744. The study area comprised the proposed cable route, with a buffer to all aspects in order to also accommodate vehicles required to install the cable ('the Site') as shown in **Figure 1**, unless otherwise stated.
- 1.1.2 This report provides baseline information and an assessment of potential ecological effects of the Proposed Development.
- 1.1.3 The objectives of the assessment are to:
- Provide baseline information on the current habitats and ecological features both within the Site and in the immediately surrounding area;
 - Identify the proximity of any designated sites for nature conservation interest and provide an assessment of any potential effects the Proposed Development may have on these;
 - Identify the presence or potential presence of any protected species or habitats and provide an assessment of any potential effects the Proposed Development may have on these; and,
 - Provide recommendations for further pre-construction checks and / or mitigation measures, if required as well as providing an outline of proposed habitat enhancements.
- 1.1.4 The assessment has been informed by desk-based review of relevant ecological information, extended habitat survey, water vole survey, otter survey, bat ground level tree assessment and badger survey; and refers to relevant legislation, planning policy and guidance as appropriate.
- 1.1.5 Consideration has been given to the potential presence of rare, protected, or notable habitats and species, and the location of nearby features including designated sites for nature conservation.
- 1.1.6 Throughout this report, common names for species are favoured over scientific names unless there is potential for confusion and in which case scientific names are also presented.

1.2 Site Overview

- 1.2.1 The Site consists of broadleaved plantation woodland, mixed scrub, open mosaic habitat, modified grassland, lowland meadow, arable field margin, native hedgerow with trees, a watercourse and hardstanding. The Ash Brook flows through the site in two places and in proximity to the Site for the majority of its length, adjacent to a public footpath.
- 1.2.2 In the wider context, the surrounding land use is predominantly agricultural, including pasture and arable fields with a number of small villages, including Little Wymondley which the Proposed Development runs through, St Ippolyts, Titmore Green and Great Wymondley. The A1(M) lies to the east and the town of Hitchin to the west.
- 1.2.3 The Site location is illustrated in **Figure 1**.

1.3 Proposed Development

- 1.3.1 The Proposed Development is for an alternative cable route for the previously consented Priory Farm Solar Array (Planning application reference: 21/03380/FP). The Proposed alternative cable route will extend from the existing Wymondley Substation, under the Ash Brook and A602 along a public footpath, before it continues east along Stevenage Road. It then continues through agricultural fields to the southwestern corner of the main solar farm site.
- 1.3.2 The cable route has already been consented with the main solar site along the length of Stevenage Road, whereby it will be installed exclusively under existing road carriageway with negligible ecological impact. Please refer to Axis Site plans 3656-01-003a-c General Arrangement_RevA for further details of the proposed alternative cable route and section of existing consented route.
- 1.3.3 The cable will be installed at a depth of 3m by Horizontal Directional Drilling (HDD) beneath the Ash Brook and surrounding woodland in the west, and again under the Ash Brook where it is culverted underneath a roundabout a little further east where Stevenage Road meets Blakemore End Road and Arch Road.
- 1.3.4 At the eastern most extent of the cable route, broken trench techniques will be used underneath the hedgerow which connects the southern boundary of the main Priory Farm Solar Array site. This will avoid the need for hedgerow removal and retain the feature post development.

1.4 Legislative and Planning Framework

Legislation

- 1.4.1 Reference has been made to the following key pieces of legislation listed in **Table 1:1**.

Table 1:1: Key legislation

International
• Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (hereafter referred to as the 'the Ramsar Convention')¹; • Convention on the Conservation of European Wildlife and Natural Habitats 1979 (hereafter referred to as the 'the Bern Convention'²; and, • UNESCO convention on the protection of the World Cultural and Natural Heritage (1972)³..
National
• Countryside and Rights of Way Act 2000; • Infrastructure Act 2015; • Natural Environment and Rural Communities (NERC) Act (2006); • Protection of Badgers Act 1992; • Hedgerow Regulations 1997; • European protected species policies for mitigation licences (Natural England, 2022);

¹ <https://www.ramsar.org/>

² <https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/104>

³ <https://whc.unesco.org/en/convention/>

- 'Birds of Conservation Concern 5' (Stanbury et al., 2021);
- The Bat Conservation Trust – Bat Surveys for Professional Ecologists; Good Practice Guidelines (4th Ed.). (Collins et al., 2023);
- The 'Conservation of Habitats and Species Regulations 2017 (as amended);
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019⁴;
- The Environment Act 2021⁵;
- The Invasive Alien Species (Enforcement and Permitting) Order 2019⁶;
- The Town and Country Planning Act 1990; and,
- The Wildlife and Countryside Act 1981 (as amended).

1.4.2 The Conservation of Habitats and Species Regulations 2017 (as amended) remains in place following the United Kingdom's (UK's) withdrawal from the European Union (EU) with only relatively minor changes coming into force on 31st December 2020, with the 2017 regulations being transposed into national (England and Wales) legislation via the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019. They are hereafter referred to as the 'Habitats Regulations'.

Policy and Guidance

1.4.3 Reference has been made to the following key pieces of policy listed in **Table 1.2**.

Table 1.2: Key Policy

National
• Ancient woodland, trees and veteran trees: advice for making planning decisions (Natural England, 2022)⁷; • Biodiversity Net Gain. Good practice principles for development⁸; • BS 42020:2013 Biodiversity – Code of Practice for Planning and Development; • BS 8683:2021 Process for designing and implementing Biodiversity Net Gain; • European protected species policies for mitigation licences (Natural England, 2022)⁹; • Natural England European Protected Species Policies¹⁰ • The National Planning Policy Framework 2 (NPPF2, 2023)¹¹; • The United Kingdom Biodiversity Action Plan (UK BAP); and, • Wildlife licensing: comment on new policies for European protected species licence (Natural England, 2016)¹².

⁴ <https://www.legislation.gov.uk/uksi/2019/579/contents/made>

⁵ <https://services.parliament.uk/Bills/2019-21/environment.html>

⁶ <https://www.legislation.gov.uk/uksi/2019/527/introduction/made>

⁷ <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions>

⁸ <https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/>

⁹ <https://www.gov.uk/guidance/european-protected-species-policies-for-mitigation-licences>

¹⁰ <https://www.gov.uk/guidance/european-protected-species-policies-for-mitigation-licences>

¹¹ <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

¹² <https://www.gov.uk/government/consultations/wildlife-licensing-comment-on-new-policies-for-european-protected-species-licences>

Local

- North Herts Local Plan 2011-2031¹³;
- Wymondley Parish Neighbourhood plan 2015-2031¹⁴; and
- Hertfordshire Biodiversity Action Plan¹⁵.

1.4.4 The 'UK Post-2010 Biodiversity Framework' succeeds the UK Biodiversity Action Plan (UK BAP) and 'Conserving Biodiversity – the UK Approach'. The lists of priority species and habitats agreed under UK BAP still form the basis of much biodiversity work and are therefore considered within this report in the context of the objectives of the Biodiversity Framework. BAPs identify habitats and species of nature conservation priority on a UK (UK BAP) and Local (LBAP) scale. UK BAPs formed the basis for statutory lists of priority species and habitats in England under Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006, and so are also relevant in the context of this legislation.

1.4.5 This report is provided in accordance with the provisions of British Standard 42020:2013 Biodiversity: Code of Practice for Planning and Development.

2 METHODOLOGY

2.1 Desk Study

2.1.1 A desk study was undertaken to identify existing information on the presence of designated sites for nature conservation, protected and notable species and habitats within proximity to the Site as follows:

- Non-statutory designated sites for nature conservation within 2km of the Site;
- Statutory designated sites for nature conservation, within 5km of the Site, extending to 10km for internationally protected sites with mobile qualifying species; and,
- Existing records of priority habitats, protected and notable faunal species (dated within the last 10 years), within 2km of the Site.

2.1.2 The following key sources were consulted:

- Natural England and Joint Nature Conservation Committee (JNCC) websites¹⁶;
- The Multi Agency Geographic Information for the Countryside (MAGIC) website¹⁷;
- District Level Licencing Data¹⁸;

¹³ <https://www.north-herts.gov.uk/sites/default/files/2022-12/North%20Hertfordshire%20Local%20Plan%202011-2031.pdf>

¹⁴ <https://www.north-herts.gov.uk/sites/default/files/Wymondley%20NP%20Amended%20May%202019%20FINAL%20%282%29.pdf>

¹⁵ <https://www.north-herts.gov.uk/sites/northherts-cms/files/ORD4%20Hertfordshire%20Biodiversity%20Action%20Plan.pdf>

¹⁶ <http://jncc.defra.gov.uk/>

¹⁷ <https://magic.defra.gov.uk/MagicMap.aspx>

¹⁸ <https://naturalengland-defra.opendata.arcgis.com/datasets/great-crested-newts-edna-pond-surveys-for-district-level-licensing-england?geometry=-1.451%2C51.749%2C-1.002%2C51.823>

- The Natural England Open Data Geoportal¹⁹;
- The Woodland Trust Ancient Tree Inventory website²⁰; and,
- Hertfordshire Ecological Records Centre (HERC)²¹.

2.1.3 Reference was also made to Ordnance Survey maps of the wider area and online aerial images (www.google.co.uk/maps) in order to determine any features of nature conservation interest in the wider area, including potential ponds and watercourses.

2.2 Field Surveys

Extended Habitat Survey

2.2.1 An extended habitat survey was initially undertaken on the 16th, 17th and 18th April 2024 by A. Littlechild BSc (Hons) and A. Hulme BSc (Hons), suitably experienced and qualified ecologists. An update walkover survey was undertaken on 16th July 2024 by A. Littlechild BSc (Hons) following minor red line boundary changes. The surveys followed UK industry standard UKHab Methodology²² with reference to the CIEEM, guidance (2017)²³.

2.2.2 The survey covered the Site as presented in **Figure 1**.

2.2.3 Habitats were 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, invasive species and other species of conservation significance.

Ground Level Tree Assessment

2.2.4 Trees within the Site, as defined by the Site boundary (Figure 1), were assessed for their suitability to support roosting bats by way of Ground Level Tree Assessment (GLTA) in accordance with Bat Conservation Trust guidance (Collins, 2023²⁴). Suitability for roosting bats was classified as follows (from Tables 4.2 and 6.2):

- None: Either no PRF’s in the tree or highly unlikely to be any
- FAR: Further assessment required to establish if PRF’s are present in the tree
- PRF: A tree with at least one PRF present
- PRF- I: Potential Roost Feature (PRF) is only suitable for individual bats or very small numbers of bats due to size or lack of suitable surrounding habitats.
- PRF- M: PRF is suitable for multiple bats and may therefore be used by a maternity colony.

¹⁹ <https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::peaty-soils-location-england/explore?location=53.163227%2C-0.801927%2C10.71>

²⁰ <https://ati.woodlandtrust.org.uk/>

²¹ <https://www.hercinfo.org.uk>

²² <http://www.ukhab.org>

²³ CIEEM. (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

²⁴ Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edn). The Bat Conservation Trust, London.

Badger Survey

- 2.2.5 A badger survey was encompassed within the habitat survey on the 16th, 17th and 18th April 2024, which focussed within the Site and 30m buffer around this, where possible. The survey included a search for badger setts and field signs such as latrines, pathways and hair. The update survey on 16th July included additional areas of the Wymondley substation not previously assessed.

Water Vole and Otter Survey

- 2.2.6 Combined otter and water vole surveys were undertaken on the 16th, 17th and 18th April 2024, which focussed on the Ash Brook within and adjacent to the Site. The surveys included a habitat suitability assessment and a search for water vole and otter field signs. Detailed survey methodologies and full results are presented as **Appendix 2: Water Vole and Otter Survey Report**.

2.3 Biodiversity Net Gain

- 2.3.1 In order to assess the measurable biodiversity impacts associated with the proposed alternative cable route, the DEFRA Statutory Biodiversity Metric Calculator²⁵ (the 'Metric') and Statutory Metric Technical Supplement were utilised and referenced across the planning stage.
- 2.3.2 The Metric is a biodiversity accounting tool used to quantify biodiversity losses and gains using habitats as a proxy for overall biodiversity. It is recognised as an industry standard and has been developed through full and widespread consultation with stakeholders across all relevant sectors.
- 2.3.3 Data gathering and Metric calculations were undertaken according to the methodology detailed with the Statutory Metric user guide, unless otherwise stated.
- 2.3.4 The metric calculates the value of a habitat (measured as 'biodiversity units') by multiplying the area (hectares), distinctiveness (intrinsic value and rarity), condition (quality) and strategic significance (ecological value of the location) of each habitat parcel. The distinctiveness of a habitat is pre-set within the Metric and cannot be changed.
- 2.3.5 Information on habitat condition was gathered during the extended habitat survey, assessing habitats against the relevant criteria for each habitat type as set out in the Statutory Metric Technical Supplement.
- 2.3.6 For created habitats additional risk multipliers are assigned to account for the difficulty of creating a particular habitat type, time required to achieve the target condition, and where habitat creation is off site, spatial risk.
- 2.3.7 Where the value of habitats following works is greater than those at the baseline, a net gain will be predicted, or a net loss predicted where the post-works habitat value is lower than the baseline. In addition, the Metric promotes a 'no down-trading' policy within the Metric, whereby habitat loss must be compensated by habitat of the same value or higher; loss of high distinctiveness habitats such as lowland meadow and broad-leaved woodland must be compensated for on a like-for-like basis.

²⁵ [Statutory biodiversity metric tools and guides - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides)

2.4 Modular River Physical Survey

- 2.4.1 A Modular River Physical (MoRPh) module survey²⁶ is a hydro-morphological assessment method that includes many of the Environment Agency's River Habitat Survey's²⁷ components and so provides compatible information. However, it provides a number of modifications and additions that allow it to deliver a more detailed local picture of a river and its margins than the River Habitat Survey method.
- 2.4.2 The MoRPh survey was undertaken on the 16th, 17th and 18th April 2024 by A. Hulme BSc (Hons), who is certified to undertake Modular River Survey River Condition Assessments and to interpret River Corridor Assessment Indicators and Scores for baseline and post-intervention River Metric scenarios, assisted by A. Littlechild BSc (Hons).
- 2.4.3 During a MoRPh survey, information is gathered from three river units of different sizes (module, sub-reach, reach) based upon both primary field survey and secondary sources, e.g., map data. Module (MoRPh) and sub-reach (MultiMoRPh) surveys are conducted in the field using the MoRPh survey method, focusing on a single river channel and its immediate margins. The length of the MoRPh module is approximately double the width of the river channel up to a maximum 40m length. The survey module extends 10m back from the bank tops on both sides of the river to characterise the riparian zone.
- 2.4.4 For the purpose of surveying the Site, the MultiMoRPh5 methodology was chosen, this methodology allows entire reaches (in the case of the Site, three sub-reaches were studied along a section of Ash Brook within and adjacent to the Site boundary) to be surveyed using sub-reaches covering a minimum of 20% of the reach's total length, effectively balancing local sub-reach MoRPh detail with overall reach coverage. The specific survey areas are provided in **Figure 6**.
- 2.4.5 On completion of the survey, all information was entered into the Cartographer online platform²⁸, which determined the river type, and provided indicators of the condition of the sub-reaches and an overall condition score for the MoRPh5 sub-reach surveyed.
- 2.4.6 In order to appropriately assess the post-works impacts of the Proposed Development (positive or negative) upon riverine habitats where impacts would occur to the watercourse (e.g. areas requiring HDD cable drilling), these changes were modelled as a scenario within the 'Cartographer' platform and the condition forecasted input to the Metric.
- 2.4.7 Note that the Ash Brook was only subject to MoRPh survey in the western most extent of Site. It was surveyed from the western most extent of the Proposed cable route, running eastwards until the culvert which passes under Stevenage Road at the roundabout. From this point onwards, the brook is subject to substantial culverting underneath roads, residential driveways and pedestrian pathways and is heavily canalised; running adjacent to an existing road carriageway. Due to the proposed cable route works limited to existing road carriageway in this area only, MoRPh surveys were not considered necessary for this section. Furthermore, the cable route has already been consented in this area.

²⁶ https://modularriversurvey.org/wp-content/uploads/MoRPh-Manual-ver-14_Oct22.pdf

²⁷ <http://www.riverhabitatsurvey.org/>

²⁸ <https://cartographer.io/>

2.5 Limitations

2.5.1 Limitations to the desk and field surveys are discussed below.

Desk Study

2.5.2 A desk study does not identify a comprehensive account of all species and features of ecological importance within the study area, however it improves the understanding of the Site's ecological value and the likely species and habitats within the area.

2.5.3 The data search results from HERC used in this report are sourced from the documents supporting the original solar application (planning reference: 21/03380/FP), dated September 2021. All other desk study sources have been consulted with the most up to date results. As the Proposed Development is for an underground cable route with limited surface area or impacts, this is not considered to be a significant limitation to desk study.

Extended Habitat Survey

2.5.4 An extended habitat survey does not constitute a detailed botanical survey or faunal species list or provide a full protected species survey but, enables competent ecologists to ascertain an understanding of the ecology of the site in order to:

- Broadly identify the nature conservation value of a site and assess the significance of any potential impacts on habitat/species recorded; and/or,
- Confirm the need and extent of any additional specific ecological surveys that are required to identify the true nature conservation value of a site (if any).

2.5.5 The initial survey visit was undertaken in April, with an update visit undertaken in July, both within the optimal period for botanical surveys (approximately April to September) so there are no limitations with regard to survey timing.

Ground Level Tree Assessment

2.5.6 The survey visit was undertaken in April, just outside of the optimal season for GLTA surveys of around December – March²⁹. GLTA surveys are best carried out in winter whilst there are no leaves on the trees, so that any potential PRF's can be clearly seen from the ground. Whilst the survey was just outside of the optimal survey season, the majority of trees present in and around Site had only just begun to grow new leaves and as such, this is not considered a significant constraint to the survey.

Badger Survey

2.5.7 Badger surveys are best undertaken in winter, when any vegetation growth is limited and sett identification easier. The extended habitat survey visit was undertaken in April, just outside of the winter period which is not considered a significant limitation on the survey.

2.5.8 All areas within the Site were extensively searched for signs of badger, however not all areas within 30m of Site were able to be fully surveyed due to more dense vegetation such as scrub and grassland

²⁹ Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust, London.

with tall forbs located on a bankside in the west of site. This is therefore a minor limitation on the survey and is discussed in more detail within section 5 of this report.

Water Vole and Otter Survey

- 2.5.9 The optimal time for otter and water vole surveys are during breeding seasons when they are most active, between late March and October. Water vole surveys should be undertaken in two periods; one from mid-April to June and one from July to September.
- 2.5.10 Following the results of the first survey and water vole habitat assessment results, a second water vole survey was not considered necessary. The single survey visit was undertaken in mid-April, and as such, has no limitations with regards to timing.
- 2.5.11 Vegetation was found along the watercourse banks during the survey. Where it was not possible to survey from the watercourse, spot checks and searches from the bankside were employed to identify field signs and ascertain the presence or likely absence of water vole or otter within the watercourse. This is not considered a significant limitation to the survey as it is a common problem of such surveys.

MoRPh Survey

- 2.5.12 Due to access, the Ash Brook was only surveyed from one side of the bank. At the western most extent of the brook (the first Proposed HDD section location), the survey was only possible to be undertaken from the southern bank, as dense scrub was present on the northern bank. A little further east, the survey was only undertaken from the northern bank, as access was not granted for land on the southern bank, with access restricted to the public footpath along the brook. This is not considered a significant limitation as the surveyor was able to survey the opposite bank using the aid of binoculars or from within the water channel where safe to do so.

3 BASELINE

3.1 Designated Sites for Nature Conservation

Statutory Designated Sites

- 3.1.1 A review of the Natural England, JNCC and MAGIC websites confirmed that the Site is not located within any statutory designated site for nature conservation.
- 3.1.2 The search identified seven statutory designated sites within a 5km radius of the survey boundary, described in **Table 3:1** and locations are presented in **Figure 2**. No internationally designated sites lie within 10km of the Site.

Table 3:1. Statutory Designated Sites

Site Name	Distance and Direction from Site	Reason for designation
Purwell Meadows LNR	2.4km north west	Wildflower lowland meadows with the River Purwell flowing through the site joining the River Hiz further downstream. Kingfishers are present in the area.
Wain Wood SSSI	2.5km south west	Ancient semi-natural oak/hornbeam woodland, approaching the northern limit of its natural range. It represents an example of a habitat now much reduced in extent nationally through woodland clearance or felling and restocking with conifers.
Oughtonhead Lane SSSI	3.97km north west	Important site for quaternary (fossil) studies, this site is designated for geology purposes rather than ecology and will not be discussed further in this report.
Knebworth Woods SSSI	4.2km south	Nationally rare but well represented type of woodland in Hertfordshire. Almost all ancient in origin and ecologically diverse with rides, ponds and small areas of both acidic and neutral grassland.
Oughtonhead Common LNR	4.2km north west	Supports a wide variety of wildlife habitats, including lowland meadows and deciduous woodland. The River Oughton also flows along the common.
Norton Common LNR	4.4km north	Priority habitat deciduous woodland, bird assemblage, wildflower grassland and mineral rich springs feeding the Pix Brook.
Weston Hill LNR	4.5km north east	Rare and valuable calcareous grassland rich in wildflower and butterfly species. Priority habitat deciduous woodland which supports numerous bird species.

Key

SSSI: Site of Special Scientific Interest

LNR: Local Nature Reserve

- 3.1.3 The review of MAGIC identified that the Site is located within the SSSI Impact Risk Zone (IRZ) of the surrounding statutory designated sites: Oughtonhead Lane SSSI, Knebworth Woods SSSI and Wain Woods SSSI. The IRZ system sets the criteria for development whereby a Local Authority (Council) would be required to consult with Natural England regarding potential risks to the SSSIs posed by the Proposed Development on Site.

- 3.1.4 The Proposed Development however, does not meet the criteria (aviation proposals, quarries, livestock and poultry units, slurry lagoons or manure stores) whereby the Local Authority would be required to consult with Natural England regarding potential risks to the SSSIs posed by the proposed developments on Site.

Non-Statutory Designated Sites

- 3.1.5 A review of data provided by HERC shows the Site forms part of a non-statutory designated site for nature conservation (Wymondley Transforming Station Local Wildlife Site). The search identified eight non-statutory designated sites, all local wildlife sites (LWS), within 2km of the Site. These are described in **Table 3:2** and locations are presented in **Figure 3**.
- 3.1.6 Almshoe Bury Swallowhole is also designated as a Regionally Important Geological Site (RIGS), however this is not considered further in this report as it does not concern ecology matters.

Table 3:2 Non-statutory Designated Sites

Site Name	Distance and Direction from Site	Description
Wymondley Transforming Station LWS	Onsite	Old gravel pit landscaped to form grounds of transforming station. Poor stony substrate on chalk, with very few grasses recorded. Raised banks support coarse calcareous grassland with scrub invading slowly from the edges.
Sperberry Hill House Meadow LWS	545m south west	Meadow of unimproved neutral-calcareous grassland to the east of Ippollitts Brook. There are old hedges and scattered trees.
Purwell Railway LWS	690m north	Railway embankment supporting species-rich neutral/calcareous grassland and scrub on the south-west facing side. A variety of grasses and herbs have been recorded. A diversity of butterfly species has also been recorded.
Foy Alder Swamp LWS	690m west	An old semi-natural Alder woodland with neutral/acid fen and marshy grassland remnants bordering Ippollitts Brook. A system of spring seepages is present plus an old, pollarded Hornbeam hedge borders the eastern side. The site supports a rich higher plant flora.
St Ibbs Bush LWS	990m south west	Building and environs important for protected species.
Margaret's Wood & Spoil Bank Wood, Todds Green LWS	715m south	Ancient semi-natural broadleaved woodland bisected by a railway, which supports a reasonably diverse flora.
Lucas Wood LWS	1.15km south	Ancient semi-natural woodland of oak/ hornbeam coppice. Damper in the north where there is an excavated pond and wet ride. The woodland supports a moderately diverse flora.
Vicar's Grove LWS	1.39km south west	Infilled gravel pit, originally excavated on the site of an ancient oak/ hornbeam coppice woodland. A small remnant of the wood remains around the site boundary. Locally important flower-rich banks occur along the south-west margin of the site plus areas of secondary scrub and ruderals are present.
Fishers Green Wood LWS	1.48km south	A review of open source data reveals the site supports priority habitat deciduous woodland.

Key

LWS: Local Wildlife Site

3.2 Priority habitats

3.2.1 Information on priority habitats within the Site and within 2km of the Site is presented in **Table 3:3** below. Where numerous records of a particular habitat were recorded, only the closest record to the Site has been provided.

Table 3:3: Priority Habitats

Priority habitat name	Designation	Distance from site
Hedgerows	NERC S.41, UKBAP	Within Site
Deciduous woodland		Within site
Traditional orchards		105m south
Ancient and Semi-natural Woodland		670m south
Lowland Fens		1.75km north
Coastal and Floodplain Grazing Marsh		1.82km north

Key

NERC S41: Natural Environment and Rural Communities (NERC) Act (2006)

UKBAP: UK Biodiversity Action Plan Priority Habitat

3.2.2 In addition to the above, woodland, wetlands, heathland and acid grassland, neutral grassland, chalk grassland, and farmland (mosaic of farmland, hedgerows, fragments of woodland, grassland and river corridors) are all listed as priority habitats within the Hertfordshire local BAP (LBAP).

3.3 Ancient and Irreplaceable Habitats

3.3.1 No ancient woodland as shown on the Ancient Woodland Inventory is present within 500m of the Site.

3.3.2 No areas of woodland with ancient woodland indicators, or trees showing ancient or veteran features were observed within the Site during the extended habitat survey.

3.4 Habitats and Vegetation

3.4.1 This section should be read in conjunction with the UKHab Habitat Plan presented as **Figure 5**, descriptions are provided in Table 3:4, following the cable route from west to east. Target notes presented in

3.4.2 Table 3:5 and photographs presented in **Appendix 1**.

Table 3:4: UKHab habitats summary

Habitat Code	Descriptions	Photo No
<i>u1d.80</i>	<i>Suburban mosaic of developed and natural surface- open mosaic habitats on previously developed land</i>	<i>1, 2, 3</i>

	This habitat dominates the substation land outside the operation areas and is the key component of the Local Wildlife Site status. It consists of a species rich mosaic habitat, largely on a disturbed substrate of gravel and earth. It appears from the species composition present that the site is relatively low in nutrient level and slightly calcareous, but not strongly. The area is dominated with a mix of bryophytes and herbs, with some areas of locally frequent grasses, generally providing continuous coverage. There are some sparse areas with bare soil showing, and an access tracks are present within the red line boundary. Scattered areas of grass and tall ruderal vegetation are present, in addition to scattered scrub, with more extensive areas of scrub present upslope towards the outer perimeter where plantation woodland is present. Evidence of scrub management was present within the west of the red line boundary within the substation, from dogwood being cut back near pylon bases. Scattered planted semi-mature ash trees are present on the upslope areas, all showing signs of ash dieback. Calcareous indicator species present across the site include fairy flax, ladies bedstraw, wild basil, pyramidal orchid, common agrimony, yellow-wort, wild strawberry, yellow feather-moss, big shaggy-moss and sweet-brier. A single bee orchid was also recorded on the outskirts of the LWS, immediately adjacent to a permissive footpath in the north of site, near to the cable route red line boundary. Bryophytes are dominated by pointed spear moss and neat feather moss. Herbs and grasses include frequent wild strawberry, common century, smooth hawksbeard, birds foot trefoil, sheep's fescue and creeping cinquefoil; occasional selfheal and perforate St John's wort; with rare betony and lesser stitchwort. Taller forb species included frequent ox eye daisy, willowherbs sp. and ragwort; occasional teasel and rare mullein. Scrub included bramble, willow sp., hawthorn and brier rose with birch sp. and ash saplings. Key species of note include occasional pyramidal orchid and rare bee orchid, plus wild strawberry, which is listed as Near Threatened in on the England Red Data List³⁰.	
w1g.29	<i>Other broadleaved woodland- plantation</i> This habitat is also present within the LWS boundary, lying between the open mosaic habitat as described above and the Ash Brook. It is a young, planted woodland more reminiscent of mixed scrub, with only saplings and semi mature specimens present. Individual shrubs and trees are planted densely so crown growth restricted and lots of dead branches on ground. Species comprised of dominant hawthorn; frequent privet; with occasional blackthorn, elder, dogwood, maple and holly. Ground flora was sparse, with exception of frequent moss species, occasional lords and ladies and ground ivy; with rare wood forget me knot. A public footpath lies within this habitat type, with additional species recorded along the woodland path edges- frequent wood forget me knot, dandelion, garlic mustard, hogweed, creeping buttercup, common nettle, broad leaved dock and cleavers; occasional cow parsley and Yorkshire fog; plus rare greater stitchwort.	2, 3, 4
h3h	<i>Mixed scrub</i>	5

³⁰ Stroh, P.A., Leach, S.J., August, T.A., Walker, K.J., Pearman, D.A., Rumsey, F.J., Harrower, C.A., Fay, M.F., Martin, J.P., Pankhurst, T., Preston, C.D. & Taylor, I. 2014. *A Vascular Plant Red List for England*. Botanical Society of Britain and Ireland, Bristol.

	This habitat continues north from the woodland as described above, the other side of the public footpath and present lining the Ash Brook watercourse on both sides. Species comprised of abundant hawthorn, frequent elder, occasional ash, with rare hazel and blackthorn. Ground flora was sparse, with exception of frequent moss species, occasional lords and ladies and ground ivy; with rare wood forget me knot.	
r2b	<i>Other rivers and streams</i> A flowing stream, the Ash Brook runs through the cable route in two places. It is comprised of earth banks and areas of sand/ gravel bed, with water levels low at time of survey, on average c.5cm. A public footpath is present within 5m of the bank top along the majority of the Ash Brook entire length in the western half of the proposed alternative cable route. The earth banks were sparsely vegetated where heavily shaded by adjacent scrub and trees where the cable route crosses, but the banks become more open offsite and to the east where grass and tall ruderal vegetation increases. Within the entire watercourse within and adjacent to the cable route, emergent and marginal vegetation was limited to a single patch of fools' watercress. Bank vegetation was limited to forb and grassland species typical of disturbed ground such as abundant common nettle, however rare wood avens was also present. Water quality appeared good, although litter was recorded along its length. The cable route also crosses the brook further east at the Stevenage Road roundabout, whereby it is culverted under the round and continues east along Stevenage Road, where over 50% is culverted and some areas canalized. Between the two areas where the cable route crosses the brook, it is also canalized under a road, with vertical concrete edges.	8
g3a.10.16	<i>Lowland meadows- scattered scrub, tall forbs</i> This habitat is present within one field which lies adjacent to the Ash Brook. The grassland was originally assessed as g3c other neutral grassland after the initial April survey, however it was noted as being only two indicator species away from being classed as lowland meadows instead. The update survey confirmed the presence of additional indicator species so was updated as such. A public footpath cuts across the field in two different places, one adjacent to the Ash Brook, the other along the top of the field which the cable route largely follows. The path itself has reduced species variation and sward height, however it mostly still vegetated with minimal areas of bare ground. Species composition was more varied in the southern part of the field during the April survey, with the northern third more typical of nutrient enriched ground with common nettle locally abundant in this area. The July survey found a good spread of indicator species across the entire field. Species recorded in the April survey comprised of abundant Yorkshire fog and red fescue; frequent yarrow, annual meadow grass and cocksfoot; occasional perennial ryegrass, ribwort plantain, St John's wort, early forget me knot, creeping cinquefoil, cut leaved cranesbill, red clover, hogweed, red dead nettle, germander speedwell, moss sp., wild strawberry and ox Eye daisy; with rare bedstraw sp., greater stitchwort, wood avens, birds foot trefoil, dandelion, white clover, broad leaved plantain, common nettle, cleavers, white dead nettle, ragwort, common daisy, hedge woundwort, teasel, bristly oxtongue, spear thistle, oak and sycamore saplings and ground ivy.	6, 7

	The update July survey also found the following species present; frequent selfheal, knapweed sp., ox eye daisy and common century; occasional scabious sp., common mallow, yarrow and marsh woundwort; with rare pyramidal orchid, meadowsweet, puff ball mushroom, mugwort, common toadflax, meadow vetchling, agrimony, crosswort and lady's bedstraw. Indicator species for lowland meadows include birds foot trefoil, meadowsweet, agrimony, lady's bedstraw, ox-eye daisy, meadow vetchling and orchid species. Scattered scrub was also present as frequent rose sp., occasional bramble and rare dogwood.	
g4.510.839	Modified grassland- bare ground, track This habitat was present along the public footpath which lies adjacent to the Ash Brook, continuing from the field described above east until Stevenage Road. The path was bare in the central track, with common grass and forb species at the edges. Species comprised frequent perennial ryegrass, broad leaved dock, broad leaved plantain, creeping buttercup, annual meadow grass, dandelion, common nettle and cock's foot.	9, 10, 11, 12
u1b.839	Developed land; sealed surface- track This habitat was present under an underpass, comprising of a concrete base which ran underneath the underpass and a short distance either side. The public footpath continues along this feature and the Ash Brook lies adjacent to it, canalized with vertical concrete edges.	9
u1b.800	Developed land; sealed surface- road The cable route includes a section of Stevenage Road, including a roundabout. The Ash Brook is culverted underneath the roundabout feature from the south west to the north east. Surfaces comprised largely of asphalt, with some areas of concrete.	N/A
g4.16	Modified grassland- tall forbs A small parcel of this habitat was present between Stevenage Road and pastoral field in the east of the cable route. No grass species were recorded here, but tall forbs comprised of frequent common nettle, garlic mustard, hogweed and white dead nettle; plus occasional blue alkanet, borage and burdock.	13
g4.100	Modified grassland- grazed Pastoral field grazed by sheep at the time of survey. Sward height only 3cm, with sporadic patches of taller nettle and thistles throughout. Species comprised of dominant perennial ryegrass; abundant white clover; frequent dandelion and annual meadowgrass; occasional spear thistle, germander speedwell, chickweed, yarrow and moss sp.; with rare cat's ear.	14

c1a	Arable field margin Pastoral field edge approximately 2m wide and fenced off from the rest of the field, with a sward height ranging from 5-30cm. Species present were indicative of other neutral grassland but is suspected to be under the agricultural stewardship scheme, and as such has been allocated as arable field margin instead. Species comprised of abundant perennial ryegrass, frequent red fescue, cut leaved cranesbill, hogweed and common nettle; occasional Yorkshire fog, false oat grass, dandelion, cleavers, spear thistle and scattered bramble saplings; with rare ox eye daisy, sweet vernal grass, common vetch and hedge woundwort.	15
h2a.11	Native hedgerow- with trees Native hedgerow with trees is present at the eastern most extent of the cable route, measuring approximately 2m tall and 1.8m wide. Species comprise of dominant hawthorn; frequent bramble; occasional blackthorn and elm; with rare elder. Trees present along the feature including occasional oak with rare sycamore and ash. The understory was common nettle dominant, with frequent cleavers, lords and ladies, bristly ox tongue and hogweed.	15

Table 3:5: Target Notes

Target Note	Comment	Photo No.
TN1	Multi stemmed ash tree, PRF- I	16
TN2	Gnarled old hawthorn, PRF- I	17
TN3	Rabbit warren, a few holes within 3m radius and droppings nearby	18
TN4	Maple tree PRF- I, cracked stem	19
TN5	Mammal holes in bank, could be disused old badger sett, none of the holes look active with lots of leaf litter except one which was considered to be in use by fox	20
TN6	Group of maple trees, four PRF- I	21
TN7	Dead tree PRF- I, lots of features such as woodpecker hole, cracked/ split limbs and stem but exposed generally upward facing or exposed features which limits suitability	22
TN8	Badger sett on woodland bank, distanced from development footprint	N/A
TN9	Willow PRF- I, cracks and holes in stem	23
TN10	Mature sycamore PRF- I, thick ivy stem clad trunk	24
TN11	Mature sycamore, PRF- I. No PRF's visible but likely to support some due to size, can only view from one side	25
TN12	Mature sycamore PRF- M, lots of pruning and knot holes, plus wounds in stem	26
TN13	Two adjacent mature trees PRF- I, thick ivy stems covered trunk	27

3.5 Protected and Notable Species

3.5.1 Species relevant to the Proposed Development are referenced in the sections below.

Birds

- 3.5.2 HERC returned 5877 records of bird within 2km of the Site, representing a typical farmland bird assemblage. Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) that may breed within the Site (i.e., species recorded during the breeding season and typical UK breeding species) included barn owl, firecrest, hobby, peregrine, merlin, osprey, red kite and kingfisher. A number of Birds of Conservation Concern 5 red and amber listed bird species were also present within the desk study records.
- 3.5.3 Tree sparrow, bittern, stone-curlew, black-necked grebe and song thrush are also listed as priority species within the Hertfordshire LBAP.
- 3.5.4 The Site provides no existing breeding/nesting value for any WCA Sch.1 protected species such as barn owl, though in a wider context the landscape offers favourable hunting value.
- 3.5.5 Whilst no direct evidence of nesting birds was encountered, woodland, mixed scrub, hedgerow and surrounding trees present provides nesting value to a host of breeding birds. The lowland meadows, arable field margin and modified grassland on Site provide some value to ground-nesting species, however the area of the red line boundary is small in size, active management of pastoral grassland and the presence of a public footpath through the lowland meadow is likely to have deterred any ground nesting species vulnerable to development, such as lapwing or skylark, from nesting over recent years.

Bats

- 3.5.6 The desk study revealed only four records of bats within 2km of Site in the past 10 years, these comprise of common pipistrelle and brown long eared bats. The records are field records that signify these species are present and roosting the in surrounding landscape, however no significant roosts were recorded.
- 3.5.7 Results from a search of MAGIC returned three European Protected Species (EPS) licenses granted within 2km of the Site in relation to bats:
- 2009 licence c. 745m south west of Site for common pipistrelle and brown long eared bats, allowing the destruction of a breeding site and resting place (EPSM2009-533);
 - 2017 licence c. 1.05km south west of Site for common pipistrelle bats, allowing the impact on a breeding site, destruction of a breeding site and destruction of a resting place (2017-32120-EPS-MIT); and
 - 2017 licence c. 925m south of Site for common and soprano pipistrelle bats, allowing the destruction of a resting place (2017-32115-EPS-MIT).
- 3.5.8 Seven bat species in the UK are listed as species of principal importance for the purpose of conserving biodiversity under Section 41 of the Natural Environment and Rural Communities Act 2006 (the “NERC Act”). Natterer’s bat is also listed as priority species within the Hertfordshire LBAP.

Roosting Bats

- 3.5.9 The Site itself is absent of any buildings or trees that could provide a bat roost, however numerous trees were recorded on or around the proposed cable route red line boundary with bat roost potential.
- 3.5.10 A total of thirteen mature shrubs and trees along the Ash Brook which are close to the proposed cable route have been assessed as having bat roost potential. Twelve trees are assessed as having PRF-I potential, with one mature sycamore tree was assessed as having PRF-M bat potential, suitable to support larger bat roosts due to numerous pruning, knot and wound holes in the trunk.
- 3.5.11 Trees with bat roost potential are detailed in **Table 3.5** and shown in **Figure 4**.

Foraging and Commuting Bats

- 3.5.12 The majority of the proposed cable route is comprised by grazed modified grassland field and areas of road, which provide limited to negligible opportunities for foraging and commuting bats. However, the pastoral grassland field boundaries of modified grassland with tall forbs, arable field margin and native hedgerow with trees, are considered to offer more suitable habitat types due to the prey items they support.
- 3.5.13 In the west of the proposed cable route, open mosaic habitat, woodland, mixed scrub and lowland meadow is more favourable habitats for foraging and commuting bats due to the species diversity and structure present in these areas. The Ash Brook and boundary habitats of mature, semi natural woodland provide optimal foraging and commuting habitat for bats and all habitats in the west of Site are also currently subject to no or very low light disturbance.
- 3.5.14 Overall, the habitats within and adjacent to the Site were considered to most closely fit the description for land of 'high' interest for foraging and commuting bats in accordance with Bat Conservation Trust (BCT) guidance, with 'continuous habitat connected to the wider landscape that could be used for commuting such as lines of tree and scrub. Habitat that is connected to the wider landscape that could be used by foraging such as trees, scrub, grassland and watercourses.

Badger

- 3.5.15 Badger records are sensitive data, due to historical and present persecution of the species by the human hand. The data search from HERC however, does identify several records of badger within 2km of Site, predominantly from dead individuals due to road traffic collisions on roads.
- 3.5.16 The majority of the Site itself hosts limited value to this species given its dominance of hardstanding, modified grassland public footpath and grazed modified grassland. However, in the west of Site, habitat suitability for badger is greatly increased.
- 3.5.17 Woodland and scrub within the Site offer suitable habitat for badger foraging, commuting and sett creation, whilst the lowland meadow and other areas of grassland also provide possible foraging and commuting habitat. No setts were observed in the woodland or scrub parcels within the Site boundary, and none within a 30m buffer of Site, although it is noted that some areas of dense scrub and tall forb vegetation within the 30m was not able to be surveyed in full detail.
- 3.5.18 No evidence of recent activity or any field signs of badgers were encountered within the Proposed cable route red line boundary during the habitat survey. Two potential badger setts were identified within the wider area, however both were located well over 30m from the red line boundary and as such, do not pose a constraint to the development.

Otter and Water Vole

- 3.5.19 One record of otter was provided by HERC, a 2020 record nearly 2km north of Site. HERC also provided four records of water vole within 2km of the Site from the past decade, three between 2015 and 2017 from the same location 1.8m north of Site and one from 2016 1.45km north.
- 3.5.20 All otter and water vole records were located at least 1.45km away from Site, where Ippollitts Brook and Ash Brook interconnect, close to adjoining the River Purwell. Further historical records exist for water vole along Ippollitts Brook, at least 1.25km north west of Site.
- 3.5.21 No European Protected Species (EPS) licenses have been granted for water vole or otter within 2km of the Proposed Development³¹. Both species are priority species within the Hertfordshire LBAP.
- 3.5.22 The Ash Brook itself is unsuitable for otters, due to sluggish flowing water, low water levels and lack of prey items. It does have some limited suitability for water vole, although the Ash Brook was assessed as having sub-optimal habitat present for the species due to a lack of aquatic and marginal vegetation, low water levels which limits means of escapes from predators and levels of disturbance.
- 3.5.23 No evidence of otter or water vole activity was recorded during the habitat surveys, otter and water vole survey or MoRPh assessment. It is considered that the survey area does not support any population of either species. Full survey results are provided within the *Water vole and Otter Report (Appendix 2)*.

Amphibians

- 3.5.24 No records for amphibians were returned from the HERC data search. One historic EPS licence was returned from the MAGIC search for great crested newt (GCN) within 2km of Site. This licence allowed for the damage and destruction of a resting place, c.145m south of Site in 2014 (ref: 2014-1797-EPS-MIT). One record was also present for a GCN class survey licence return, c.320m south of Site from 2015.
- 3.5.25 Great Crested Newt (GCN) and common toad are UKBAP species, whilst GCN is also a priority species within the Hertfordshire LBAP.
- 3.5.26 Habitats present within the red line boundary such as lowland meadow, mosaic of open habitats, arable field margin, mixed scrub, native hedgerow with trees and woodland could provide suitable terrestrial habitat for GCN and other amphibians, including refuges and hibernation opportunities.
- 3.5.27 No ponds are present within the site, but four were identified from OS mapping and aerial imagery within 250m of the red line boundary, see **Figure 4**. None of these ponds were able to be assessed during the habitat survey as they lie on private land but lie a minimum of 100m from the Proposed cable route boundary.
- 3.5.28 The Ash Brook is also present within and adjacent to site, however it is considered unsuitable for GCN and other amphibians due to its flowing water and lack of aquatic vegetation.

³¹ <https://magic.defra.gov.uk/MagicMap.aspx> (accessed May 2024)

Reptiles

- 3.5.29 The 2km data search supplied by HERC provided no reptile records, though reptiles are often under-recorded and absence of reptile records in data searches should never be solely relied upon during an ecological appraisal process.
- 3.5.30 The Site has varied suitability for reptiles. The hardstanding and grazed modified grassland have negligible suitability for the species, but other habitats present such as open mosaic habitat, lowland meadow, Ash Brook, modified grassland, hedgerow with trees, mixed scrub and woodland provide more suitable habitat for reptiles. These areas of open habitats are also present on areas of varying topography, which could provide good hunting, rest and basking opportunities, whilst the hedgerow and woodland could provide refuge and hibernation opportunities.

Hazel dormouse

- 3.5.31 No records of hazel dormouse were provided by HERC. Hazel dormouse are a priority species within the UKBAP and Hertfordshire LBAP.
- 3.5.32 The majority of site is unsuitable for the species as hardstanding or grassland habitats. The woodland and mixed scrub in the west of site, plus native hedgerow with trees in the east of site could provide habitat suitable for dormice, as they provide a variety of potential food sources.
- 3.5.33 However these areas are small in size, lack connectivity to optimal dormouse habitat in the wider area such as ancient woodland and the woodland lacked an understorey, reducing the likelihood of dormice being present.

Other Protected and Notable Species

- 3.5.34 HERC returned records for the following UKBAP species within 1km of Site; five records of European hedgehog as recently as 2019 and one record of polecat from 2015. No evidence was gathered during the extended habitat survey to suggest the likely presence of notable mammal species; however, it is considered that habitats located within the Site may potentially support European hedgehog.
- 3.5.35 The habitats within and adjacent to the Site include a mix of grassland habitats, mixed scrub, plantation broadleaved woodland, mosaic of open habitat and watercourses; all likely to provide suitable habitats for a variety of invertebrate species typical of the habitats and the location. Invertebrate species stag beetle, grizzled skipper, chalkhill blue, purple emperor and white clawed crayfish are listed as priority species within the Hertfordshire LBAP.
- 3.5.36 HERC also returned 22 recent records of notable flora including bluebell, hoary plantain, valerian, marsh valerian, field scabious, corn spurrey, ragged-robin, welsh poppy and wood vetch. Plant species great pignut, cornflower, river water-dropwort and pasqueflower are all listed as priority species within the Hertfordshire LBAP.
- 3.5.37 Key floral species of note include occasional pyramidal orchid, recorded both within the lowland meadow field and open mosaic habitat within the LWS. Rare bee orchid and frequent wild strawberry

were also recorded within the open mosaic habitat, the latter of which is listed as Near Threatened in on the England Red Data List³². All other plant species recorded are listed as least concern.

3.6 Invasive Non-native Species

- 3.6.1 HERC provided nine records of invasive non-native plant species (INNS) listed on Schedule 9 of the Wildlife and Countryside Act (1981, as amended. Records included Himalayan balsam, Japanese knotweed, variegated yellow archangel, montbretia, Virginia creeper and rhododendron.
- 3.6.2 No INNS were observed within the red line boundary during the extended habitat surveys, although three species; buddleia, tutsan and pale yellow eyed grass, were present offsite within the wider LWS in very low numbers with limited spread.
- 3.6.3 Two records for signal crayfish were returned, both from 2015 c. 1km from Site.

3.7 The Modular River Physical (MoRPh) Survey Results

- 3.7.1 The Ash Brook, which originates from a waterbody at Coreys Mill, Stevenage, flows into the River Ivel to the north, which is a tributary of the River Great Ouse. Adjacent to the Site, the surveyed sections of brook was bounded by a mix of scrub, woodland, grassland and scattered trees on the left bank (when facing downstream) for much of its length and is bounded by grassland and agricultural land for much of the right bank.
- 3.7.2 The bank-tops, bank-faces and channel bed mainly comprised natural materials; with artificial features recorded within two surveyed modules within section B. Arable land dominates the bank tops of the right bank. The bank-faces are generally steep and consist of earth, scrub, trees, tall/short grasses and tall/short herbs; with aquatic vegetation very rare. The channel bed consists of predominantly of sand and gravel-pebble, with the addition of notable silt sedimentation within sections of the channel.
- 3.7.3 The MoRPh survey concluded that Ash Brook is a type H watercourse - straight/sinuuous; the coarsest bed material size class is gravel/pebble, and the average is sand.
- 3.7.4 The Ash Brook, in its current condition (i.e. baseline condition) returned a preliminary condition score of 1.255 and a final condition score of Moderate.
- 3.7.5 No impacts as a result of the proposed cable route are expected to the watercourse. The cable route works are either beyond 10m of the watercourse or being drilled beneath using HDD. As a result, no change to the preliminary condition score and final condition score are expected.
- 3.7.6 Raw MoRPh results are included within the Raw Data Excel Spreadsheet which accompanies this document in **Appendix 3** (provided as a separate document).

³² Stroh, P.A., Leach, S.J., August, T.A., Walker, K.J., Pearman, D.A., Rumsey, F.J., Harrower, C.A., Fay, M.F., Martin, J.P., Pankhurst, T., Preston, C.D. & Taylor, I. 2014. *A Vascular Plant Red List for England*. Botanical Society of Britain and Ireland, Bristol.

4 ASSESSMENT

4.1 Overview

- 4.1.1 This section seeks to identify the potential for effects to occur on habitats and protected and notable species which could be considered as reasonably likely to occur as a result of the Proposed Development.
- 4.1.2 The Site's proximity to statutory and non-statutory designated sites and potential effects on their qualifying interests is discussed. Measures are proposed for the protection of sensitive habitats and species, and recommendations are made for further pre-construction surveys and mitigation, if required.
- 4.1.3 Consideration of ecological impacts and subsequent effects arising from the development has been undertaken with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' (CIEEM, 2018)³³.
- 4.1.4 The Proposed Development has been designed to minimise the potential for effects on sensitive ecological features; thereby ensuring existing wildlife corridors and habitat connectivity are maintained.

4.2 Statutory Designated Sites

- 4.2.1 The Site does not form part of any statutory designated site for nature conservation, though falls within the SSSI Impact Risk Zones (IRZ's) relating to surrounding SSSI sites; Oughtonhead Lane SSSI, Knebworth Woods SSSI and Wain Woods SSSI. The Proposed Development however, does not meet the criteria whereby the Local Authority would be required to consult with Natural England regarding potential risks to the SSSIs posed by the proposed developments on Site.
- 4.2.2 Due to the distances involved between the Proposed Development and statutory sites, no direct impacts are anticipated as a result of land take, habitat loss or associated construction activities in relation to statutory designated sites or their qualifying species. In addition, indirect impacts resulting from disturbance or pollution are considered negligible due to the small, temporary area of land take required and the presence of existing baseline levels of disturbance from public use of the Site.
- 4.2.3 Precautionary standard good practice pollution prevention and runoff control measures will be implemented throughout the program of works to avoid impacts on any statutory designated sites, habitats and species present in the wider environment.

³³CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.

4.3 Non-Statutory Designated Sites

- 4.3.1 The Site is located within 2km of eight non-statutory designated sites, most notably Wymondley Substation LWS, which lies within the Sites red line boundary. The LWS is designated for grassland indicators associated with a poor, stony substrate on chalk.
- 4.3.2 Works to be carried out in this area include laying a new cable from the exiting substation across the LWS via open trench techniques (900mm wide and 1m deep) and then under the perimeter woodland via HDD. No permanent, above ground infrastructure is required.
- 4.3.3 The use of HDD avoids direct potential impacts on the woodland aspect of the LWS and impacts upon open mosaic of habitats will be short term, mitigated for via the implementation of a soil management plan. These are both discussed in more detail in the habitats section below, although overall it is considered that considering the small size of the cable work and the implementation of a soil management plan, the Proposed Development will have no long term, significant impacts on the LWS or the species for which it is designated. The soil management plan can be conditioned and required to be submitted to the local planning authority prior to commencement of works within Wymondley Transforming station LWS.
- 4.3.4 In terms of the remaining sites, there will be no direct effect on habitats or land take within any non-statutory designated sites in the wider landscape. Notwithstanding the above assessment, standard good practice pollution prevention and runoff control measures will be implemented throughout the program of works to avoid impacts on any non-statutory designated sites, habitats and species present in the wider environment.

4.4 Habitats

- 4.4.1 Habitats within the Site comprise largely of hardstanding, grazed modified grassland and a modified grassland public footpath, which have negligible to low ecological value.
- 4.4.2 Also present to a lesser extent in the eastern half of site are arable field margin, modified grassland with tall forbs and native hedgerow with trees. Within the western half of Site are open mosaic habitats, broadleaved plantation woodland, mixed scrub, lowland meadow and a watercourse, the Ash Brook. These all provide higher ecological value at a local scale.
- 4.4.3 Hertfordshire Biodiversity Action Plan (LBAP) lists woodland, neutral grassland and hedgerows and as LBAP habitats.
- 4.4.4 The installation of an underground cable generally requires very low levels of direct and permanent land take. Direct loss of habitats on Site is therefore considered to be small in size and scale.
- 4.4.5 Works to be carried out in areas of hardstanding and modified grassland across the Site are considered to have negligible impacts on Site diversity. For the remaining habitats on Site with higher biodiversity value, impacts have been designed to be avoided or mitigated for, so that all impacts are temporary and should be able to reach baseline habitat type and condition again within two years post development.

- 4.4.6 HDD will be employed underneath two sections of the Site; one in the western extent of the cable route, underneath broadleaved woodland, mixed scrub and the Ash Brook, with the other located underneath the Ash Brook where it is culverted under Stevenage Road.
- 4.4.7 The section of HDD at a depth of 3m underground ensures that impacts on the broadleaved woodland is avoided as much as possible on the perimeter of the LWS. The cable is being installed below the rhizosphere of woodland, ensures no trees will have to be removed to facilitate the cable and other ground level impacts are nil. Any possible impacts within the woodland would be limited to minor root damage and overall it is considered the woodland would have no significant impact.
- 4.4.8 The use of HDD also results in no significant impacts on the area of mixed scrub and the relevant sections of the Ash Brook, avoiding any direct or indirect impacts to the watercourse, including potential pollution run off during the course of the works.
- 4.4.9 With regards to the remainder of the cable route that crosses higher value habitats of open mosaic of habitats, lowland meadows and arable field margins, direct impacts cannot be completely avoided, however they have sought to be mitigated for via the implementation of a soil management plan.
- 4.4.10 This will briefly involve removing the soil in layers and storing each layer separately so that when the trench is backfilled the soil can be replaced in the same order in which it was excavated. This will ensure that the topsoil and seedbank within remains close to the surface and that soil conditions, including PH and nutrient levels, remain unchanged. This will allow for the natural colonisation of the soil by species already present and contained within the seedbank in the topsoil.
- 4.4.11 The soil management plan must be implemented for the length of the trench within these habitat types, plus the areas of HDD launch/receive pits, which will measure 3m by 2m by 1.2m deep.
- 4.4.12 The proposed cable route is adjacent to the offsite section of Ash Brook for a large portion of the route, however it will be restricted to the public footpath that is present along its length. The public footpath lies within 5m of the brooks bank top and as such, is already subject to disturbance and nutrient enrichment.
- 4.4.13 The appropriate EA consents will be obtained prior to any works within 10m of the Ash Brook watercourse and suitable measures implemented to prevent any pollution events into the watercourse. This will include silt fencing on the downgradient side of the trenching, cut off drains on the upgradient side and any stockpiling of excavated material to be away from the watercourse. With these measures implemented, no long-term adverse impacts to the Ash Brook are anticipated.
- 4.4.14 Standard good practice construction methods including pollution prevention and control along the entire length of the cable route will ensure that there are no indirect effects on the watercourse or other adjacent offsite habitats.
- 4.4.15 Where the cable route crosses hedgerow with trees at the eastern most extent of the cable route, broken trench techniques will be used underneath the hedgerow which will connect to the southern boundary of the main Priory Farm Solar Array site. This technique involves using hand dug pits either side of the hedge and installing the cable by hand beneath the hedge roots. This will avoid the need for minor (900mm) hedgerow removal, result in minimal indirect impacts and retain the feature post development.

- 4.4.16 Retained hedgerow, woodland and trees will be protected during construction following British Standards BS5837:2012 *Trees in relation to design, demolition and construction*, with measures including root zone protection and clear instructions on the location of materials storage areas away from trees and their root protection zones. Standard measures to protect wildlife such as covering excavations overnight must also be implemented, in line with the above standards.
- 4.4.17 Standard good practice measures to ensure runoff control and pollution prevention (such as dust mitigation measures) will be implemented across the entire length of the cable route; these measures will safeguard habitats within the Site and protect off-site habitat which might otherwise be affected.
- 4.4.18 Overall, direct land take required for the Proposed Development is small, and with the above avoidance and mitigation measures, it is considered that the development will not have any significant negative, long term effects on any of the LBAP or other habitats within or adjacent to the red line boundary.

4.5 Biodiversity Net Gain

- 4.5.1 The proposed cable route has been innovated through early-stage liaison with ecologists and other consultants to ensure that priority habitats are retained and protected as much as possible, and to include mitigation measures around higher ecological habitats to ensure that any loss of habitat units will be sufficiently minimised.
- 4.5.2 The woodland, mixed scrub and sections of Ash Brook will be retained and protected via the use of HDD. Hedgerow with trees will be retained and protected via the use of broken trench technique.
- 4.5.3 All areas of modified grassland were assessed as having 'poor' condition as per Statutory Biodiversity Metric condition assessments sheets. Thin lengths of modified grassland loss to facilitate the development will easily recolonise post development, with the metric stating this baseline habitat type and condition should be reached within one year.
- 4.5.4 Works within areas of open mosaic habitat, lowland meadow and arable field margin will be subject to a soil management plan. The soil management plan will ensure the seed bank is replaced and as areas of removal are surrounded by more of the same habitat type, some natural re-colonisation may also occur. It is expected that these habitat types will be able to reach baseline habitat type and condition within two years post development.
- 4.5.5 The Statutory Biodiversity Metric User Guide³⁴ states on page 34 that "*you do not need to record a habitat as lost when there are temporary impacts to a habitat*", defined as where the area can be restored to both the baseline habitat type and condition within two years of the initial impact.
- 4.5.6 With regards to watercourses and BNG, impacts within 10m from the top of the bank top must be recorded as part of the 'riparian zone'. As the Site is located within 10m of the Ash Brook bank top, it was subject to a MoRPh survey, which assessed it as 'moderate' condition. However, cable route works are either beyond 10m of the watercourse or being installed underground and as a result, post

³⁴ <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides>

development modelling revealed no change to the preliminary condition score and final condition score.

- 4.5.7 The User Guide also states on page 41 that established footpaths are exempt if recorded in the baseline. The Proposed cable route strictly follows the public footpath when adjacent to the brook, and as such is considered exempt from the watercourse BNG requirements.
- 4.5.8 As such, due to all habitats being classed as retained within the Biodiversity Metric, it is proposed the Proposed Development is exempt from BNG through the 'de minimis' exemption as the habitats within the cable route will not be "*degraded in such a way (e.g. a change in habitat type, extent, or condition) that there is a decrease in the biodiversity value as determined by the statutory biodiversity metric*" and so not impacted, as defined by the Biodiversity Net Gain Planning Practice Guidance³⁵.

4.6 Protected and Notable Species

Birds

- 4.6.1 All wild birds, their nests and eggs are, with few exceptions, protected under the Wildlife and Countryside Act 1981 (as amended). Over eighty species or groups of species are listed under Schedule 1 of the Act, which confers special protection with increased penalties for offences committed on species such as barn owl.
- 4.6.2 Additionally, a further forty-nine bird species are listed under Section 41 of the NERC Act 2006 and are therefore, a material consideration within the planning process.
- 4.6.3 No species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are considered likely to nest within the Site due to the negligible amount and nature of suitable habitat and the availability of more suitable habitat in the wider area.
- 4.6.4 The Proposed Development will have minimal impacts on the majority of bird nesting habitat, with woodland, mixed scrub, hedgerow with trees and offsite trees being retained and protected as per Site plans.
- 4.6.5 Smaller areas of arable field margin, grassland and open mosaic habitats will be impacted by construction works that may impact ground nesting birds, however those areas on Site are considered highly unlikely to support nesting birds due to their small size, proximity to linear features and high levels of disturbance from substation works and the presence of a public footpath along the cable route.
- 4.6.6 Nesting and foraging habitat availability is maintained across the adjacent and surrounding land for all bird species.
- 4.6.7 Depending on the timing of construction, there is potential for individual breeding birds nesting within the open habitats as above and on the periphery of habitat features including hedgerow and offsite woodland to be affected by the construction of the development due to disturbance.

³⁵ <https://www.gov.uk/guidance/biodiversity-net-gain>

- 4.6.8 This will not have a detrimental impact on local bird populations, however as a precautionary measure and in the interests of best practice, to avoid impacts on nesting birds and to ensure compliance with the provisions of the Wildlife and Countryside Act 1981 (as amended), Site clearance should take place outside of the bird breeding season (March-August inclusive).
- 4.6.9 If vegetation works are necessary during the breeding season, suitable nesting habitat should be subject to a visual check by the Ecologist prior to any works commencing. This should also include the woodland canopy which is above the public footpath as it joins Stevenage Road. Only when the ecologist is satisfied that no offence will occur under the legislation will works be permitted to proceed.
- 4.6.10 If active nests are located by the ecologist then any works which may affect them would have to be delayed until the young have fledged and the nest has been abandoned naturally; this can be aided, for example, via implementation of appropriate buffer zone(s) around the nest area in which no work causing disturbance is permitted until the nest is no longer in use. This would have to be coordinated through the professional judgement of the ecologist and measures will be species specific.
- 4.6.11 The operational phase will not have an effect on local breeding bird populations in any way, being an underground cable confined to a small footprint.

Bats

- 4.6.12 All species of British bat are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Bats are further protected under the Habitats Regulations 2019. The Act and Regulations make it an offence to:
- kill, injure or take any wild bat;
 - damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection; and
 - intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection.
- 4.6.13 Seven bat species in the UK are also listed as species of Principal Importance for the purpose of conserving biodiversity under Section 41 of the NERC Act 2006 and Natterer's bat is also listed as priority species within the Hertfordshire LBAP.

Roosting bats

- 4.6.14 The survey identified no buildings or trees with bat roost potential within the Proposed cable route red line boundary, however it did identify a total of thirteen mature shrubs and trees along the boundaries of Site that may offer bat roost potential.
- 4.6.15 All bat roost potential trees will be retained and protected throughout works. Due to the nature of the development, it is not anticipated that any works would cause damage to potential roosting habitats or cause disturbance to roosting bats. Overall, no significant impacts are anticipated on roosting bats and they do not pose a constraint to the development.

Foraging and commuting bats

- 4.6.16 Linear features such as the Ash Brook and hedgerow with trees will be retained and protected during Site works and as such, no potential commuting routes will be severed.
- 4.6.17 Open habitats with suitability for commuting and foraging bats such as open woodland, mixed scrub, arable field margin and lowland meadows will either be retained, or impacts to be temporary in nature and restricted to a strip of 900m wide. The modified grassland across site provides negligible suitability for foraging bats. Overall, no significant negative impacts are anticipated on foraging or commuting bats in the locality.
- 4.6.18 Lighting is not expected during the construction period, however if required it will be restricted and directed away from boundary habitats (including the Ash Brook) to maintain dark corridors for foraging and commuting. No lighting will be required for the operational period. Light spill can be avoided in a number of ways, including the use of low-level lighting and use of hoods and careful selection of lighting; further information is available in *Bats and Artificial Lighting at Night Guidance Note GN08/23, Bat Conservation Trust and Institute for Lighting Engineers*³⁶. As long as lighting is designed and implemented in a sensitive manner, no discernible effects are anticipated on foraging/commuting bats.

Badger

- 4.6.19 Badgers are protected under the Protection of Badgers Act 1992; this makes it an offence to kill, injure or take a badger, intentionally or recklessly damage or destroy a badger sett, or obstruct access to it or disturb a badger when occupying a sett.
- 4.6.20 It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the sett is not damaged or destroyed. Where an activity is likely to result in an offence under the Protection of Badgers Act 1992 a licence from Natural England is required.
- 4.6.21 No setts were identified on Site but it is acknowledged that not all areas within 30m of the red line boundary was able to be extensively searched due to dense vegetation. Two potential badger setts were identified within the wider area however these were well over 30m from the red line boundary and as such, are beyond the area in which impacts could occur and they do not pose a constraint to the development.
- 4.6.22 The Site will remain open to mammal usage during and post construction, other than the existing substation which provides negligible value for this species.
- 4.6.23 Standard measures to protect foraging and commuting badgers must be implemented, in line with British Standards BS5837:2012 *Trees in relation to design, demolition and construction*. This includes covering excavations overnight or fitting with a ramp.
- 4.6.24 Badger activity can show seasonal patterns of use and badgers can quickly establish new setts, or re-use setts previously thought to be inactive. Considering not all areas within 30m was able to be extensively searched, plus the highly mobile nature of badgers and the seasonality of their activity, as

³⁶ Institution of Lighting Professionals & the Bat Conservation Trust. (2023). *Guidance Note 08/23: Bats and Artificial Lighting at Night*
Priory Farm Solar Array Alternative Cable Route
Ecological Assessment Report

a precaution, a pre-construction survey should be undertaken prior to works commencing on Site by a suitably qualified ecologist. The survey will check for any newly constructed setts in and surrounding the Site. Should badger presence be confirmed, suitable protection, avoidance or mitigation measures will be implemented under the advice of a suitably competent ecologist.

Otter and Water Vole

4.6.25 Otters are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); they receive further protection under the Habitats Regulations 2019. The Act and Regulations make it an offence to:

- Deliberately capture, injure, or kill an otter
- Damage or destroy a breeding site or resting place
- Deliberately disturb an otter, particularly in a way which is likely to:
 - to impair their ability to survive, breed or reproduce, rear or nurture young, or;
 - to significantly affect the local distribution or abundance of the species.

4.6.26 Water vole and its habitats receive full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

4.6.27 Otter and water vole are listed under Section 41 of the NERC Act 2006 and both are also listed as a priority species within the Hertfordshire LBAP. They are therefore a material consideration within the planning process.

4.6.28 The Ash Brook is considered unsuitable for otter and has sub optimal habitat suitability for water vole, with the results of the water vole survey revealing it does not support a population of water vole.

4.6.29 Sections of the Ash Brook within the red line boundary will be retained and protected via HDD so there will be no direct impacts on water vole or their burrows, even if present. Standard pollution prevention measures will be employed to ensure runoff control and pollution prevention to protect the off-site brook sections lay nearby the Site and adjacent to the public footpath (and indirect impacts on water vole, in unlikely event they are present). Overall, no significant impacts are anticipated.

Amphibians and Reptiles

4.6.30 GCN and natterjack toads are protected by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017 and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

4.6.31 Great crested newt, natterjack toad and common toad are also listed as priority species in England under Section 41 of the NERC Act 2006. Great crested newt is also listed as a priority species within the Hertfordshire LBAP.

4.6.32 GCN are known to be present within the wider area. There is suitable terrestrial habitat present on Site but no aquatic habitats suitable for the species. Four ponds are present between 100m and 250m buffer of the red line boundary, however the areas of on-site habitat nearest to these ponds are dominated by hardstanding which has negligible value for the species.

- 4.6.33 At a worst-case scenario, presuming that all of the ponds identified in **Figure 4** support breeding GCN, the results of Natural England's Rapid Risk Calculator reveals that the Proposed cable route development will have no significant impact on the species. As such, the Proposed cable route is not constrained by GCN.

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
		Maximum:
		0.1
Rapid risk assessment result:		GREEN: OFFENCE HIGHLY UNLIKELY

- 4.6.34 Widespread reptile species namely the common lizard, slow-worm, grass snake and adder are protected against killing, injuring and sale under the Wildlife & Countryside Act 1981 (as amended). These species are also listed as priority species under Section 41 (England) of the NERC Act 2006. Species such as sand lizard are granted further protection which protects them from disturbance, capture, killing, injury and death, including rest/shelter/breeding sites they use.
- 4.6.35 Open habitats on Site with suitability for reptiles to be impacted during construction include open mosaic habitat, lowland meadow and modified grassland. The modified grassland however, is along a public footpath with areas of bare earth and high disturbance. Any above ground works will be short term and temporary in nature, with the area of land being directly impacted small in size. As such, no impacts to reptiles are anticipated.
- 4.6.36 As a precaution, Reasonable Avoidance Measures (RAM's) should be undertaken in the areas of suitable habitat with longer vegetation if works commence in spring or summer. This involves clearing areas of longer vegetation in a two-stage cut; first to a height of 100-150mm above ground level, then to ground level prior to construction works commencing. This will encourage any potential reptiles and amphibians to move away from the works area to safety.

Hazel Dormouse

- 4.6.37 Hazel dormice are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations. Additionally, the hazel dormouse is listed as priority species under Section 41 of the NERC Act 2006 and Hertfordshire LBAP.
- 4.6.38 Dormice are now rare within Hertfordshire and are only found in discrete localities, one of which is Stevenage. Stevenage is approximately 3.5km from the Site but is separated by the A1, it is therefore considered that the species is not likely to be present on Site.
- 4.6.39 Even if they were present on Site, no areas of suitable habitat are to be impacted and as such, the species do not pose a constraint to the development.

Other Species

- 4.6.40 Hedgehog are listed as a priority species under Section 41 of the NERC Act 2006 and there is a record within 1km from Site. Hedgerow, scrub and woodland habitats could be used by hedgehogs, though

these habitats will be retained and protected during construction. The small loss of grassland should be removed under RAMs as above for potential reptile and amphibian species.

- 4.6.41 Standard measures to protect a variety of wildlife such as covering excavations overnight must also be implemented, in line with British Standards BS5837:2012 *Trees in relation to design, demolition and construction*.
- 4.6.42 The small, temporary removal of habitat such as lowland meadow, arable field margin and mosaic of habitat will not have a significant impact on invertebrate species already present and will continue to provide suitable habitat within two years of the development. The retention of woodland, mixed scrub, Ash Brook and hedgerow with trees onsite will likely continue to support a variety of invertebrate species.
- 4.6.43 Wild strawberry present within open mosaic habitat is listed as Near Threatened, however it is recorded on a frequent basis within the habitat, and individual plant translocation from the cable route is not considered necessary, as the soil management plan should serve to protect the species in areas due for temporary removal.

4.7 Invasive Non-native species

- 4.7.1 Section 23 of the Infrastructure Act 2015 amended the Wildlife and Countryside Act 1981 (as amended) by inserting a new Schedule 9A to introduce a statutory regime of species control agreements and orders. This schedule ensures that, landowners act on Schedule 9 invasive species, or permit others to enter the land and carry out those operations, to prevent their establishment and spread.
- 4.7.2 It is an offence to plant or otherwise cause to grow in the wild species listed within Schedule 9; this includes allowing the species to grow/spread, spreading the species or transferring polluted ground material from one area to another. Any waste containing these species can only be removed from site under appropriate waste management documentation (under the Environmental Protection Act 1990).
- 4.7.3 No INNS species were recorded on Site during the habitat survey and as such, is not subject to any further survey. If any INNS are encountered within or immediately surrounding the Site during construction, the advice of a suitably qualified ecologist should be sought, and the appropriate measures taken to prevent the inadvertent introduction or spread of such plants

5 SUMMARY - ECOLOGY PRIORITY MATRIX

5.1.1 **Table 5:1** summarises the ecological constraints and opportunities associated with the Proposed Development and makes recommendations for pre-construction survey work and/or mitigation measures as required.

Table 5:1: Ecological Constraints and Opportunities

Feature		Details
Statutory and Non-statutory Designated Sites for Nature Conservation	Constraints & Opportunities	a. The survey area does not form part of any statutory designated sites. b. No direct or indirect impacts on statutory designated sites for nature conservation are anticipated by virtue of separation distance, the restricted scale and nature of the proposed development and lack of functionally linked land. c. The survey area does contain one non-statutory designated site; Wymondley Substation Local Wildlife Site. d. Direct impacts are anticipated at Wymondley Substation LWS to facilitate the new cable installation, however the impact is small in size and will be mitigated for via the implementation of a soil management plan.
	Protection Measures	e. A soil management plan will be implemented along the cable route in the areas of Wymondley substation LWS, to protect and retain the seed bank within the top soil. f. The implementation of standard good practice pollution prevention and runoff control measures will suitably protect the designated sites.
Habitats & Flora	Constraints & Opportunities	g. The majority of the Site is open mosaic habitat, hardstanding and grazed modified grassland. Smaller areas of woodland, mixed scrub, lowland meadow, modified grassland, arable field margin and hedgerow with trees are also present. h. The Ash Brook is present within the red line boundary in two locations, and runs adjacent to it for a long section, however in this area, a public footpath is also present. i. HDD is to be implemented underneath areas of the Ash Brook, woodland and mixed scrub, avoiding any impacts on these habitats. Broken trench technique will be implemented underneath the hedgerow with trees, avoiding the requirement for any hedgerow removal. j. The Proposed cable route is considered exempt from BNG requirements due to the temporary nature of any impacts and the presence of a public footpath along the Ash Brook.
	Protection Measures	k. A soil management plan will be implanted in areas of open mosaic habitat, lowland meadow and arable field margin, to mitigate impacts on these habitat types. l. Standard measures to protect retained trees, ensure runoff control and pollution prevention will be implemented; these measures will safeguard habitats on and immediately surrounding the Site. m. Relevant EA consents to be obtained prior to works within 10m of the Ash Brook.
Birds	Constraints & Opportunities	n. The majority of bird nesting habitat of woodland, mixed scrub and hedgerow will be retained. o. There is some limited potential for ground nesting birds nesting within the open mosaic habitat, lowland meadow and arable field margins to be affected by the construction of the development, however these areas are small in size.
	Legislative Compliance – WCA**	p. Vegetation works should be undertaken outside of the bird breeding season (01 March to 31 August inclusive). If vegetation works are necessary during the breeding season, suitable nesting habitat should be inspected by a suitably experienced ecologist prior to works commencing. Only when the ecologist is satisfied that no offence will occur under the legislation will works be permitted to proceed.

Feature		Details
Bats	Constraints & Opportunities	q. Numerous trees with potential bat roosting habitat were identified on or near the Site boundary, however no trees are to be removed to facilitate site works and they will be protected during construction. Construction works are extremely unlikely to cause any significant disturbance to bat roosts that may be present in nearby trees. r. All land being lost to the proposals is temporary in nature and will have negligible impacts on foraging and commuting bats. s. Valuable bat habitats including mature trees, hedgerows and the Ash Brook beyond the Site boundaries will be retained and protected during construction.
	Legislative Compliance – WCA**, HR***	t. Any lighting required during construction and/or operation of the alternative cable route should be directed away from boundary features (further information is provided in Bats and Artificial Lighting at Night Guidance Note GN08/23, Bat Conservation Trust and Institute for Lighting Engineers).
Badger	Constraints & Opportunities	u. No setts were identified within or immediately adjacent to the Site, however not all areas within 30m of the red line boundary was able to be extensively searched.
	Legislative Compliance – PBA****	v. A pre-construction badger survey should be completed by a suitably qualified ecologist immediately prior to the commencement of development to check for any newly constructed setts surrounding the Site. w. If an active badger sett is identified within proximity to development, then a mitigation strategy will be produced and if necessary, works in proximity to a sett will only proceed under a licence from Natural England.
Otter and water vole	Constraints & Opportunities	x. The Ash Brook provides sub optimal habitat for foraging and/ or commuting water vole and no presence was identified in an April water vole survey. y. Works surrounding the brook will be done by HDD, therefore in the unlikely event water vole is present, impacts would be negligible. z. The Ash Brook also has negligible suitability for otter due to sluggish flowing water, low water levels and lack of prey items.
	Legislative Compliance – WCA**, HR***	aa. Standard pollution prevention measures will be employed to ensure runoff control and pollution prevention to protect the off-site brook sections (and consequential indirect impacts on water vole) which lie adjacent to Site.
Amphibians & Reptiles	Constraints & Opportunities	bb. GCN are known to be in the wider area. No ponds are located within the red line boundary, however four are within 250m. No ponds will be affected by the proposals and Natural England's Rapid Risk Calculator shows that an offence is highly unlikely to occur due to the size of the Proposed cable route. cc. The site does support some reptile suitable habitat, however no records were returned in the data search and the areas of habitat to be affected is small.
	Legislative Compliance - WCA*, HR**	dd. As a precaution, RAM's will be undertaken in the areas of longer suitable habitat if works commence in spring or summer. This involves mowing areas of longer vegetation in a two stage cut; first to a height of 100-150mm above ground, then down to ground level prior to construction works, which will encourage any potential reptiles and amphibians to move away from the works area to safety.
Hazel dormouse	Constraints & Opportunities	ee. Small amounts of suitable habitats are present on site, however HDD is being used underneath woodland and mixed scrub, and broken trench techniques underneath native hedgerow with trees.
	Legislative Compliance – WCA**	ff. No further measures are necessary concerning hazel dormouse.
Other Species	Constraints & Opportunities	gg. The majority of hedgehog suitable habitat will be retained and protected. Longer areas of grassland should initially be removed under RAMs.

Feature		Details
		hh. Wild strawberry present within open mosaic habitat is listed as Near Threatened, however it is recorded on a frequent basis within the habitat, and individual plant translocation from the cable route is not considered necessary.
		ii. RAMs should be implemented in areas of hedgehog suitable habitat as above for reptiles and amphibians. jj. Standard measures to protect a variety of wildlife such as covering excavations overnight must also be implemented.
Invasive Non-native Species	Constraints & Opportunities	kk. No invasive non-native plant species listed under Schedule 9 of The Wildlife & Countryside Act 1981 (as amended) were recorded along or around the cable route during the survey.
	Legislative Compliance – WCA**	ll. Should any invasive species be encountered on Site prior to or during construction, the advice of a suitably qualified ecologist should be sought and the appropriate measures taken.

Legislative Compliance Key

* The Hedgerows Regulations 1997

**Wildlife & Countryside Act 1981 (as amended)

***The Conservation of Habitats and Species Regulations 2017 (as amended)

****Protection of Badgers Act 1992

Figure 1:Site Location Plan



Figure 2: Statutory Designated Sites Plan

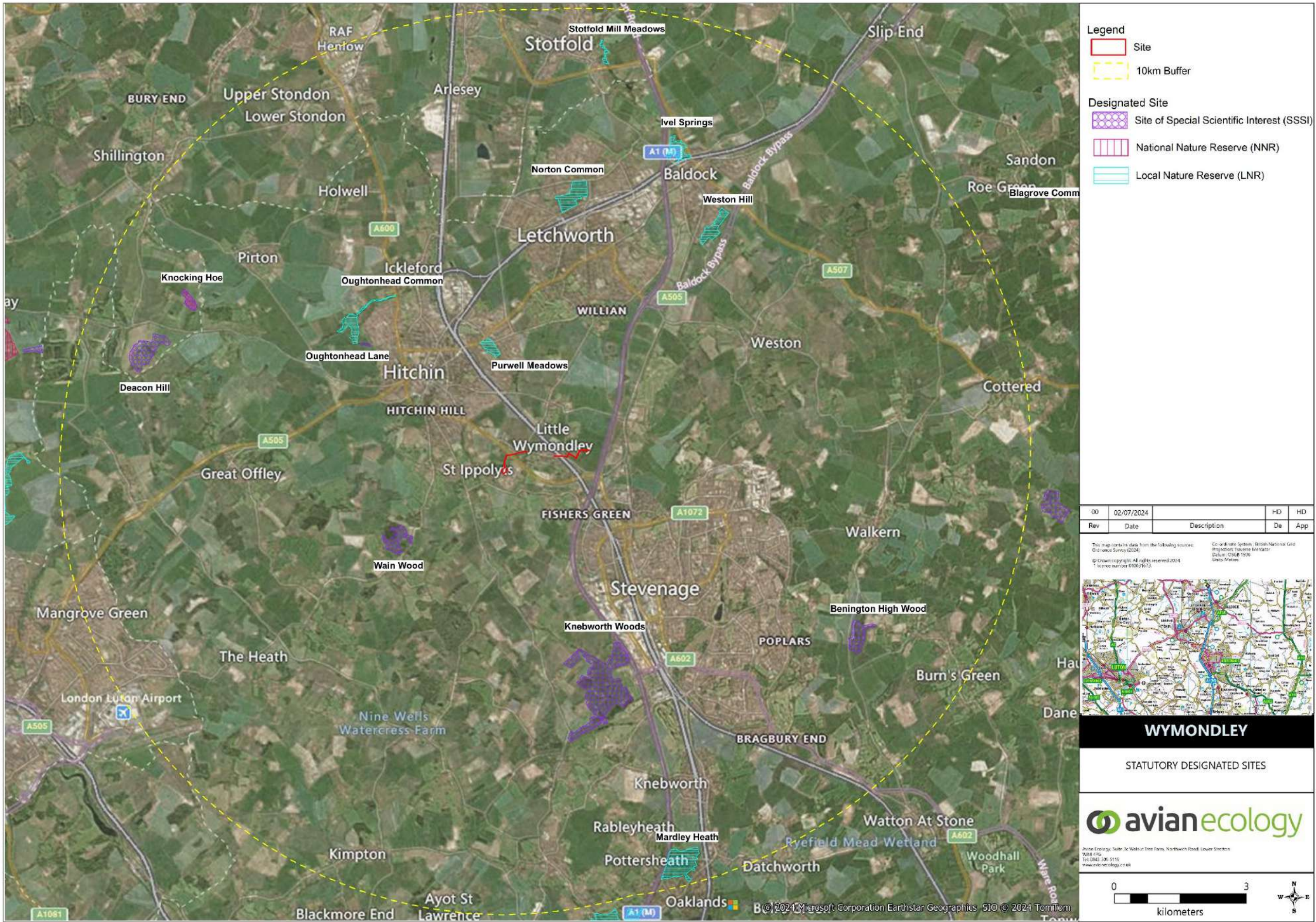


Figure 3: Non-statutory Designated Sites Plan

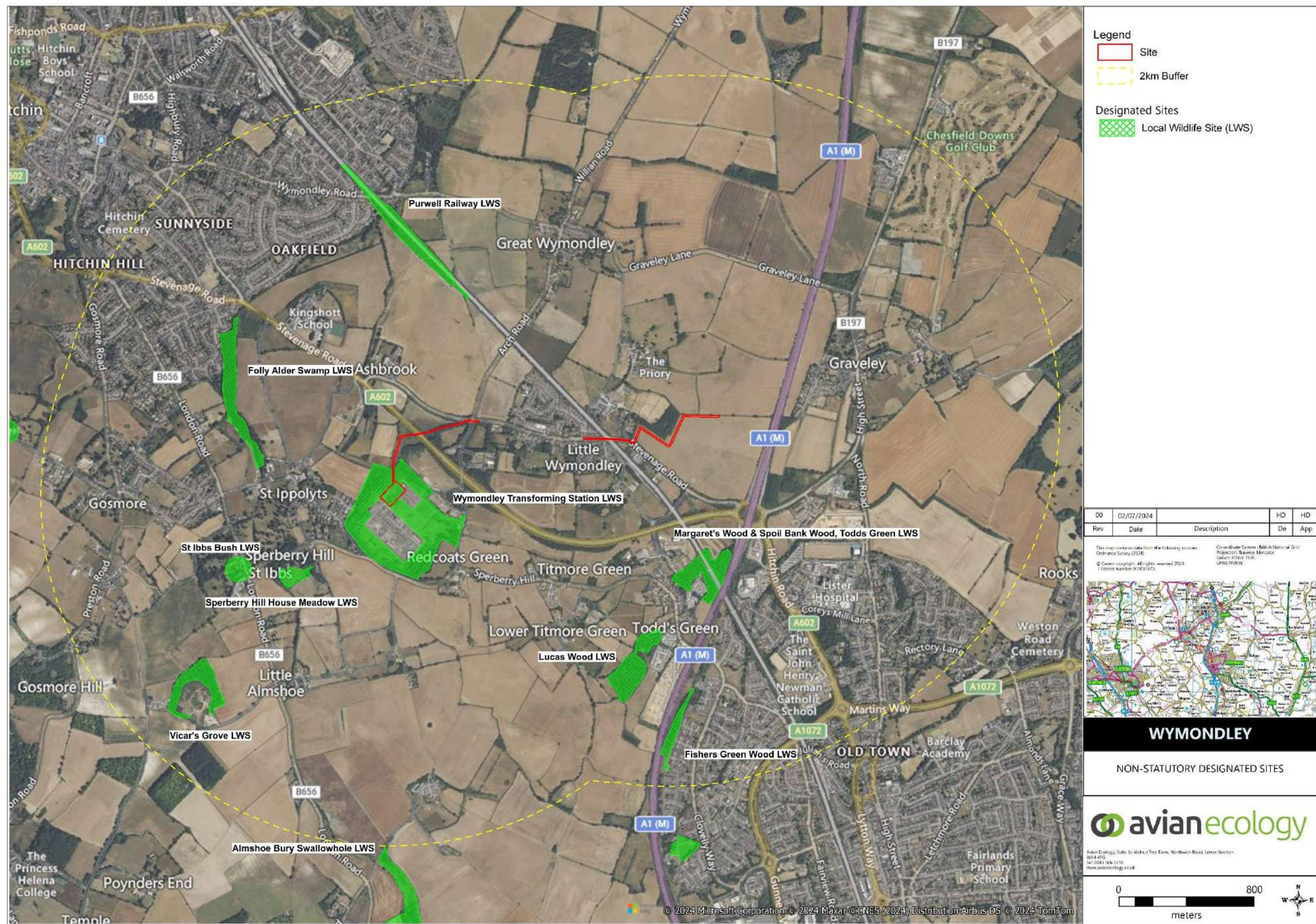


Figure 4: Pond Plan

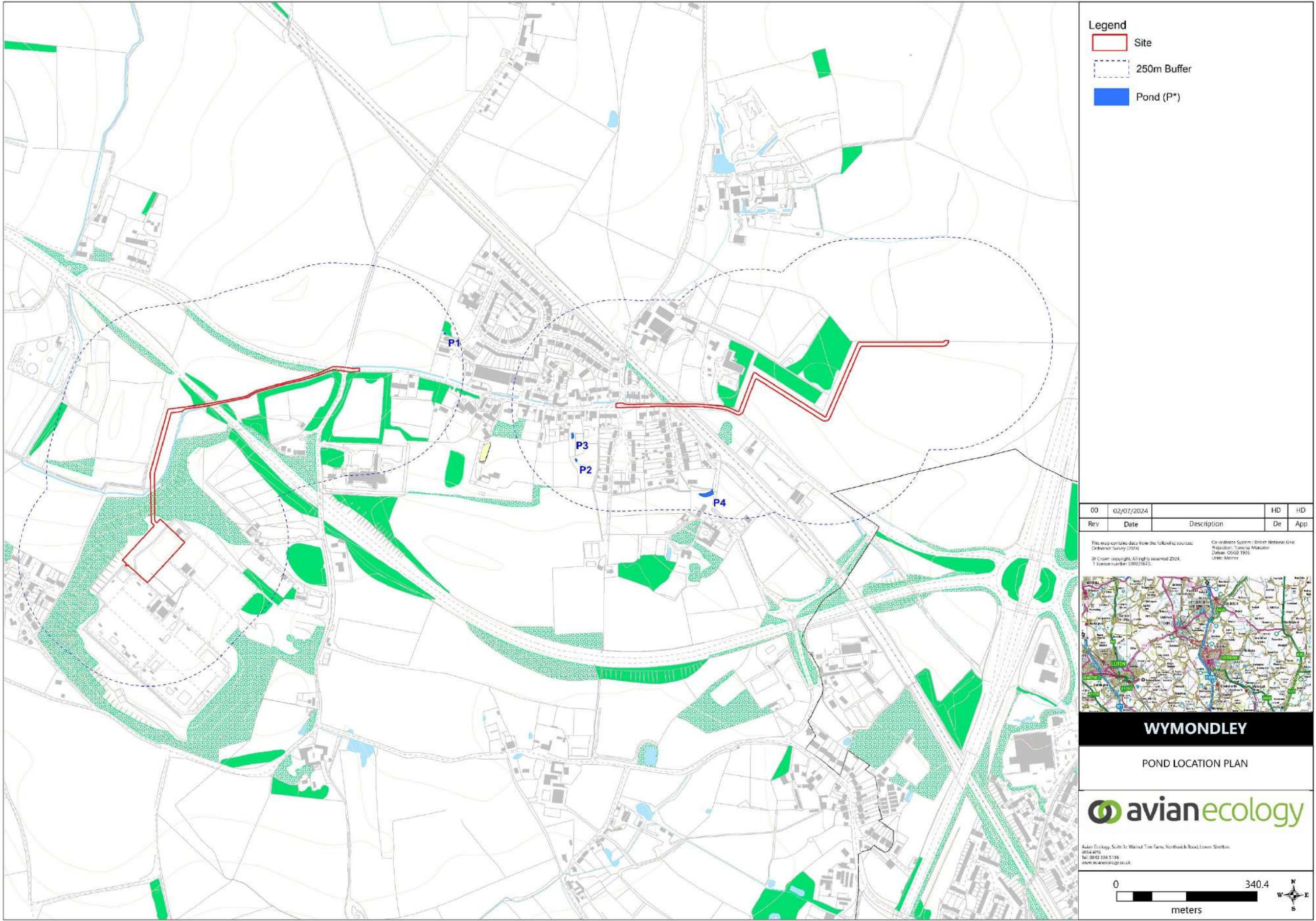


Figure 5: Habitat Plan

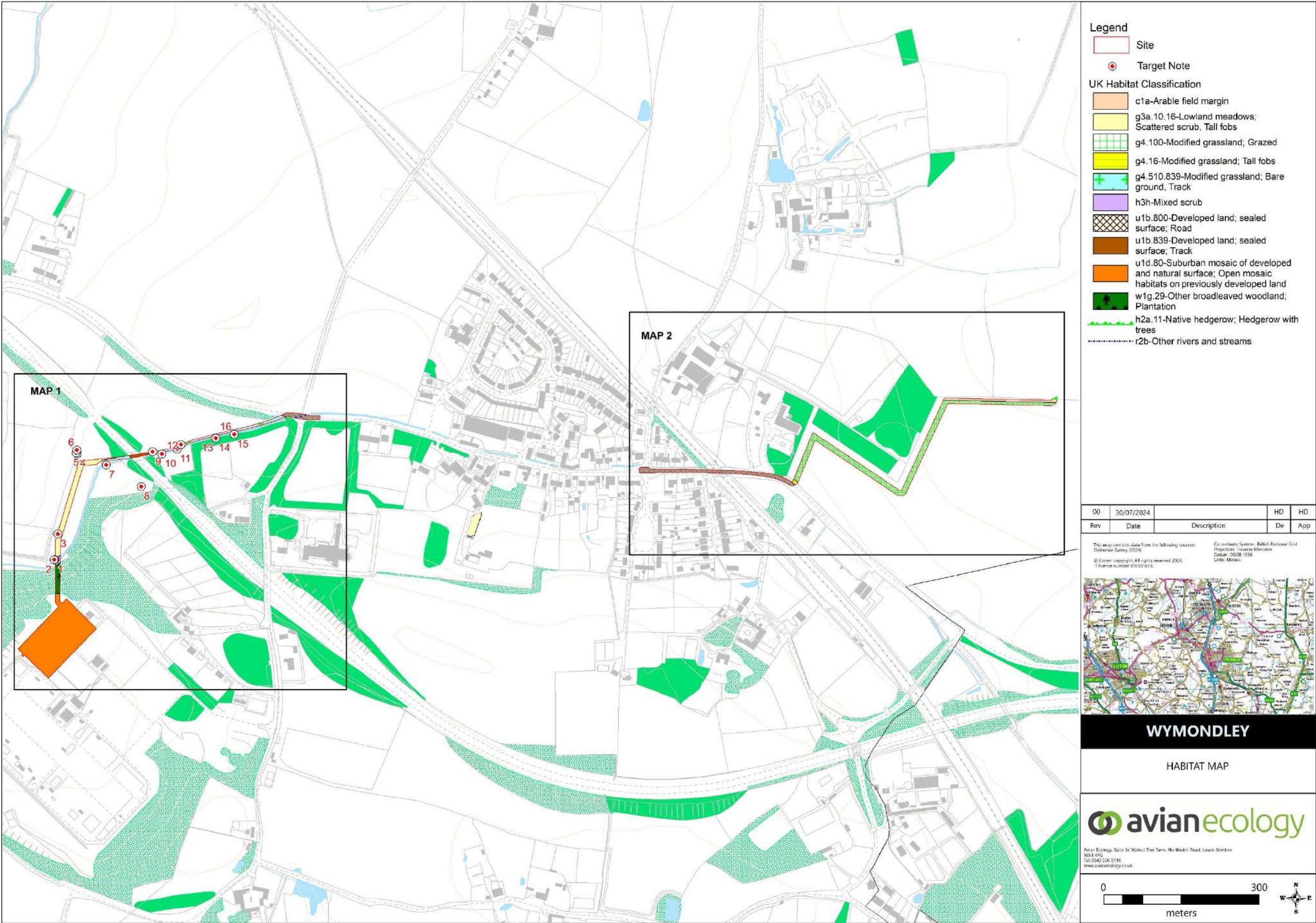
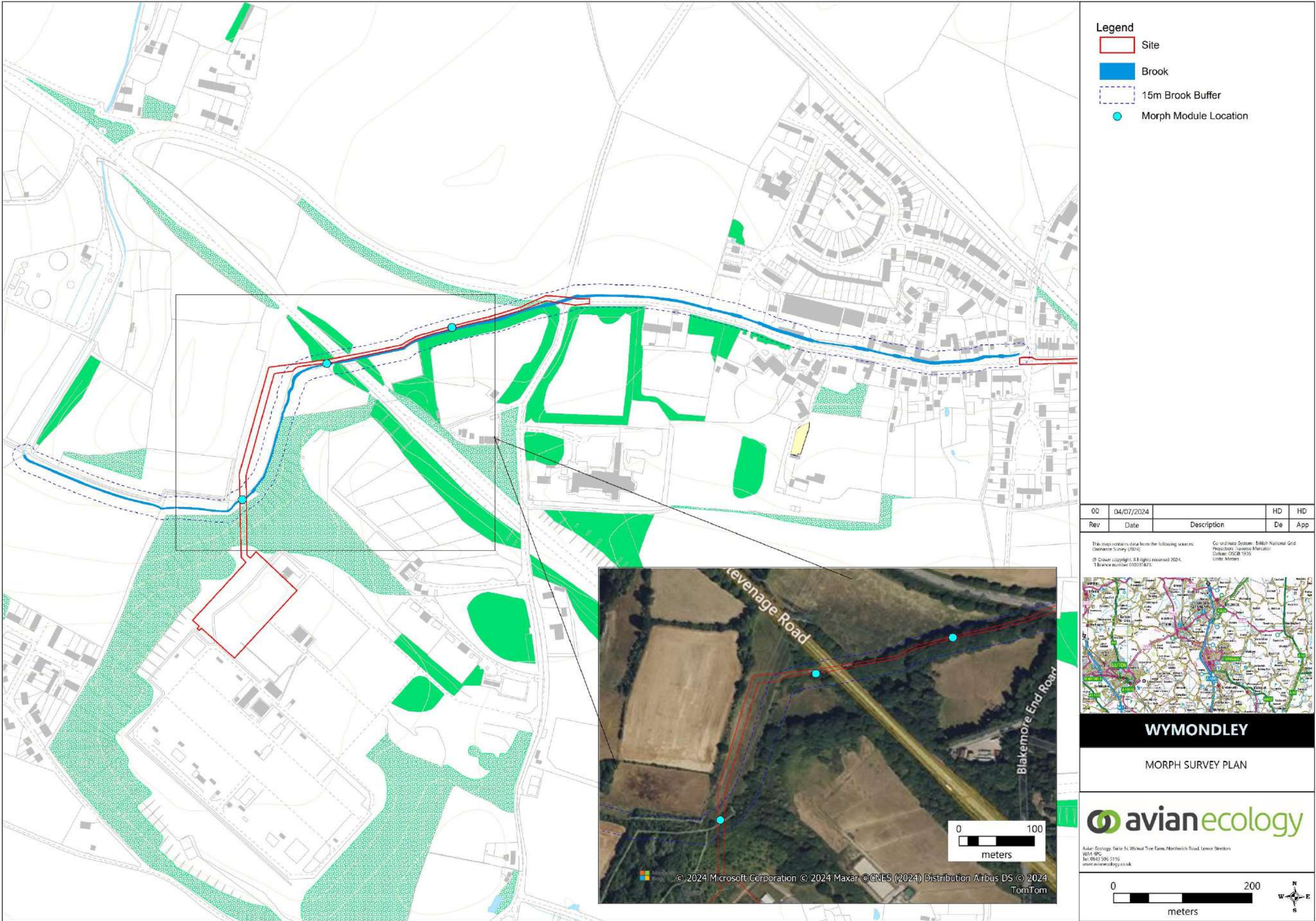




Figure 6: Modular River Physical Survey Plan



Appendix 1

Photographs

Photo no.	Photographs	Description
1		Wymondley Substation LWS, where the proposed cable will connect to the substation in the distance, showing open mosaic habitat it will cross
2		Showing LWS open mosaic habitat and plantation woodland, area within the Site red line boundary

Photo no.	Photographs	Description
3		Showing LWS open mosaic habitat and perimeter plantation woodland, where the cable route will be drilled underneath
4		Plantation woodland within the LWS, showing sparse understory
5		Mixed scrub and lowland meadows with scattered scrub and tall forbs adjacent to the Ash Brook, where the Proposed cable route will be drilled underneath

Photo no.	Photographs	Description
6		Lowland meadow field in the west of the cable route. Also showing offsite defunct hedgerow that border the field.
7		Lowland meadow in west of Site, showing mown public footpath in the west of the field, which the cable route largely follows. Offsite defunct hedgerow and plantation woodland also shown bordering the field
8		Showing section of Ash Brook to the west of the underpass

Photo no.	Photographs	Description
9		Area of concrete underpass and public footpath with bare earth and modified grassland. The Ash Brook lies to the south (left of this photo)
10		Modified grassland track with bare earth, with adjacent Ash Brook and trees, some with bat potential
11		Continuation of track with bare earth and modified grassland, bordered by offsite modified grassland to the north plus the Ash Brook with woodland to the south

Photo no.	Photographs	Description
12		Continuation of track with modified grassland towards Stevenage Road, through surrounding offsite woodland and adjacent Ash Brook
13		Modified grassland with tall forbs adjacent to Stevenage Road in the eastern half of the cable route
14		Pastoral, grazed modified grassland in the east of the cable route

Photo no.	Photographs	Description
15		Showing hedgerow with trees on the eastern most extent of the cable route. Also showing arable field margin around the edges of the field, fenced off to a width of approximately 2m
16		TN1- Multi stemmed ash tree, PRF- I
17		TN2- Gnarly mature hawthorn, PRF- I

Photo no.	Photographs	Description
18		TN3- Rabbit Warren, a few holes within 3m radius and droppings nearby
19		TN4- Maple tree PRF- I, cracked stem
20		TN5- Mammal holes in bank, could be disused old badger sett, none of the holes look overly active with lots of leaf litter except one which is suspected to be used by fox

Photo no.	Photographs	Description
21		TN6- Group maple trees, four with PRF- I
22		TN7- Dead tree PRF- I, lots of features such as woodpecker hole, cracked/ split limbs and stem but exposed generally upward facing or exposed features which limits suitability
23		TN9- Willow PRF- I, cracks and holes in stem

Photo no.	Photographs	Description
24		TN10- Mature sycamore PRF- I, thick ivy stem clad trunk
25		TN11- Mature sycamore, PRF- I. No PRF's visible but likely to support some due to size, can only view from one side

Photo no.	Photographs	Description
25		TN12- Mature sycamore PRF- M, lots of pruning, knot holes, wounds in stem
27		TN13- Two adjacent mature trees PRF- I, thick ivy stems covered trunk

Appendix 2

Water Vole and Otter Report (Provided as a separate document)

Appendix 3

Modular River Physical Survey Data Sheets (provided as a separate document)

