AECOM

Bicker Fen Solar Farm

Preliminary Ecological Appraisal

Low Carbon

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Quality information

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1. Introduction

1.1 Background

1.1.1 AECOM was instructed by Low Carbon to undertake a Preliminary Ecological Appraisal (PEA) for the proposed Bicker Fen Solar Farm (the 'Proposed Scheme'). This PEA was commissioned in March 2022 to identify whether there are known or potential ecological receptors (nature conservation designations, protected and notable habitats and species and scheduled invasive non-native species) that may constrain or influence the design and implementation of the Proposed Scheme.

1.1.2 The assessment of ecological receptors has been undertaken with reference to current good practice and forms part of the technical information commissioned by Low Carbon in connection with the Proposed Scheme. The approach applied when undertaking this PEA accords with the Guidelines for Preliminary Ecological Appraisal published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017) (Ref 7-1). The PEA addresses relevant wildlife legislation and planning policy as summarised in Section 2 of this report and is consistent with the requirements of British Standard 42020:2013 Biodiversity. Code of Practice for Planning and Development (Ref 7-2).

1.1.3 This PEA report (PEAR) is intended to provide a high-level appraisal in respect of the Proposed Scheme design, site layout and / or site investigation. Preliminary high-level recommendations are made on potential options for the avoidance, mitigation or compensation of the potential impacts of the Proposed Scheme (where known) on the identified ecological receptors and of potential enhancements to the biodiversity to achieve an overall gain. Further ecological surveys and / or ecological impact assessment (including detailed mitigation measures) are likely to be required in connection with a planning application or to contribute to an Environmental Impact Assessment (EIA) once the scheme proposals have been finalised and any required surveys have been completed (to inform the EIA).

1.2 Purpose of this PEAR

1.2.1 In order to deliver the PEA, a desk study and an extended Phase 1 Habitat Survey were undertaken by appropriately experienced ecologists, to identify ecological features relevant to the Proposed Scheme and occurring within the wider potential zone of influence. The potential zone of influence was defined with reference to the red line boundary (the 'Site') as shown on **Figure 1** (Appendix A) and the type of development, as detailed in section 1.3. Additional details on the methods used are provided in Section 3.

1.2.2 The purpose of the PEA is to provide a high-level ecological appraisal of the Site, specifically to:

- establish baseline conditions and determine the presence of Important Ecological Features (IEFs) (or those that could be present), as far as is possible;
- to identify potential ecological constraints to the Scheme and make initial recommendations to avoid impacts on IEFs, where possible;
- to identify requirements for mitigation, where possible, including mitigation measures that will be required and those that may be required (depending on results of further surveys or final scheme design);
- to establish any requirements for more detailed surveys; and
- to identify any opportunities offered by the Proposed Scheme to deliver biodiversity enhancements.

1.3 Proposed Scheme

1.3.1 The Bicker Fen Solar Farm (see **Figure 1**, Appendix A) is a proposed new solar energy farm, co-located with battery storage. The proposals include grid infrastructure to connect the solar farm to the National Grid. The Proposed Scheme would export or import up to 500MW of electricity to and from the National Grid. The proposed generation capacity of the Proposed Scheme means it is a Nationally Significant Infrastructure Project (NSIP) and as such would require a Development Consent Order (DCO).

1.4 Site Description

1.4.1 The Proposed Scheme is located on two sites (termed the 'northern site' and 'southern site' hereafter where referring to specific locations). The northern site is located to the east of the villages of Howell and Ewerby Thorpe (Ordnance Survey (OS) grid reference TF145474) and the southern site is located in the vicinity of Thorpe Latimer (OS grid reference at TF122404). The location of the Proposed Scheme is presented in **Figure 1** (Appendix A). Both sites are within the district of North Kesteven.

1.4.2 Both sites are dominated by arable fields with game crop strips, hedgerows, woodland blocks, numerous mature trees and small wooded copses. The Site is surrounded by mainly arable and improved grassland livestock fields.

1.4.3 Details of any grid connections between sites and to substations were unknown at the time of writing this PEA and an assessment of such areas does not form part of the commissioned scope reported in this PEA report.

2. Legislation and Policy Context

2.1 Legislative Context

2.1.1 The following wildlife legislation was considered when undertaking this PEA:

- Wildlife and Countryside Act (WCA) 1981 (as amended) (Ref 7-3);
- Countryside and Rights of Way (CRoW) Act 2000 (Ref 7-4);
- Natural Environment and Rural Communities (NERC) Act 2006 (Ref 7-5);
- The Conservation of Habitats & Species Regulations 2017 (as amended) (the Habitats Regulations) (Ref 7-6) and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (Ref 7-7);
- The Protection of Badgers Act 1992 (Ref 7-8);
- The Hedgerow Regulations 1997 (Ref 7-9);
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017(Ref 7-10);
- Invasive Alien Species (Enforcement and Permitting) Order 2019 (Ref 7-11); and
- The Environment Act 2021 (Ref 7-12).

2.1.2 Compliance with the above legislation may require the attainment of relevant protected species licences prior to the implementation of the Proposed Scheme.

2.1.3 Further information on the requirements of the above legislation is provided in Appendix B.

2.2 National and Local Planning Policy

National Planning Policy Framework

2.2.1 The National Planning Policy Framework (NPPF) (Ref 7-13) states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

2.2.2 It specifies the obligations that Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for certain types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

2.2.3 The NPPF is clear that pursuing sustainable development includes moving from no net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

2.2.4 The latest revision of the NPPF came into being in July 2021. Section 15 of the NPPF relates specifically to 'Conserving and Enhancing the Natural Environment'. Relevant sections of the NPPF are included in Appendix B.

National Planning Policy Statements

2.2.5 The following National Policy Statements (NPSs) are relevant to solar developments and these NPSs were 'designated' in 2011 and as far as they are applicable, are considered to be matters that will be important and relevant to the Secretary of State's decision as to whether to grant planning permission for the Proposed Scheme. These NPSs are, as of September 2021, in the process of being updated and therefore, relevant sections of the draft NPSs are also included below, where relevant.

2.2.6 Overarching National Policy Statement for Energy (EN-1) (2011) (Ref 7-14), with particular reference to paragraphs 4.2.2 and 4.2.3, which provide national policy on what an Environmental Statement (ES) for a Nationally Significant Infrastructure Project (NSIP) project should contain; paragraph 4.3.1 which states what the Secretary of State must, under the Conservation of Habitats and Species Regulations 2017 (Ref 7-6) consider when granting a Development Consent Order (DCO); and part 5 section 5.3 which sets out guidance on generic impacts relating to biodiversity for the applicant's assessment and decision-making on the application. The Draft Overarching National Policy Statement for Energy (EN-1) (Ref 7-15) (2021) includes guidance for biodiversity net gains in paragraphs 4.5.1 to 4.5.3 and generic impacts on biodiversity in Part 5.4 and that guidance has also been considered.

2.2.7 The Draft National Policy Statement for Renewable Energy EN-3 (2021) (Ref 7-16) now includes sections 2.47 to 2.54 (inclusive) which set out policy requirements specific to solar generation and these have also been considered within this report.

2.2.8 Part 2.7 of the National Policy Statement for Electricity Networks Infrastructure (EN-5) (2011) (Ref 7-17) sets out generic impacts concerning biodiversity, although these are more relevant to considerations for birds and overhead lines. However, the draft EN-5 (2021) (Ref 7-18) details biodiversity considerations when choosing an underground electricity line. This includes the environmental consequences, as underground cables can disturb sensitive habitats.

Local and Regional Plans

2.2.9 Local Planning policies that are relevant to the biodiversity for the Proposed Scheme are:

- Central Lincolnshire Local Plan 2012-2036 (Ref 7-19), adopted 24 April 2017, specifically Policies LP19: Renewable Energy Proposals, LP20: Green Infrastructure Network and Policy LP21: Biodiversity and Geodiversity.

2.2.10 There are no other local plans, such as for North Kesteven District Council, relevant to biodiversity.

Central Lincolnshire Local Plan 2012-2036

2.2.11 Policy LP19: Renewable Energy Proposals states that: "*Proposals for non-wind renewable technology will be assessed on their merits, with the impacts, both individual and cumulative, considered against the benefits of the scheme, taking account of the following*:

- *Ecology and diversity*

  Proposals will be supported where the benefit of the development outweighs the harm caused and it is demonstrated that any harm will be mitigated as far as is reasonably possible."

  Policy LP20: Green Infrastructure Network states that: *"The Central Lincolnshire Authorities will aim to maintain and improve the green infrastructure network in Central Lincolnshire by enhancing, creating and managing multifunctional green space within and around settlements that are well connected to each other and the wider countryside.*

  Development proposals which are consistent with and help deliver the opportunities, priorities and initiatives identified in the latest Central Lincolnshire Green Infrastructure Study and Biodiversity Opportunity Mapping Study, will be supported. Proposals that cause loss or harm to this network will not be permitted unless the need for and benefits

of the development demonstrably outweigh any adverse impacts. Where adverse impacts on green infrastructure are unavoidable, development will only be permitted if suitable mitigation measures for the network are provided.

Development proposals should ensure that existing and new green infrastructure is considered and integrated into the scheme design from the outset. Where new green infrastructure is proposed, the design should maximise the delivery of ecosystem services and support healthy and active lifestyles.

Development proposals must protect the linear features of the green infrastructure network that provide connectivity between green infrastructure assets, including public rights of way, bridleways, cycleways and waterways, and take opportunities to improve such features.

Development will be expected to make contributions proportionate to their scale towards the establishment, enhancement and on-going management of green infrastructure by contributing to the development of the strategic green infrastructure network within Central Lincolnshire, in line with guidance set out in LP12".

Policy LP21: Biodiversity and Geodiversity states that: "*All development should: protect, manage and enhance the network of habitats, species and sites of international, national and local importance (statutory and non-statutory), including sites that meet the criteria for selection as a Local Site; minimise impacts on biodiversity and geodiversity; and seek to deliver a net gain in biodiversity and geodiversity.*

Development proposals that will have an adverse impact on a European Site or cause significant harm to a Site of Special Scientific Interest, located within or outside Central Lincolnshire, will not be permitted, in accordance with the NPPF.

Planning permission will be refused for development resulting in the loss, deterioration or fragmentation of irreplaceable habitats, including ancient woodland and aged or veteran trees, unless the need for, and benefits of, the development in that location clearly outweigh the loss or harm.

Proposals for major development should adopt an ecosystem services approach, and for large scale major development schemes (such as Sustainable Urban Extensions) also a landscape scale approach, to biodiversity and geodiversity protection and enhancement identified in the Central Lincolnshire Biodiversity Opportunity Mapping Study.

Development proposals should create new habitats, and links between habitats, in line with Biodiversity Opportunity Mapping evidence to maintain a network of wildlife sites and corridors to minimise habitat fragmentation and provide opportunities for species to respond and adapt to climate change. Development should seek to preserve, restore and re-create priority habitats, ecological networks and the protection and recovery of priority species set out in the Lincolnshire Biodiversity Action Plan and Geodiversity Action Plan.

Where development is within a Nature Improvement Area (NIA), it should contribute to the aims and aspirations of the NIA.

Development proposals should ensure opportunities are taken to retain, protect and enhance biodiversity and geodiversity features proportionate to their scale, through site layout, design of new buildings and proposals for existing buildings.

Any development which could have an adverse effect on sites with designated features and / or protected species, either individually or cumulatively, will require an assessment as required by the relevant legislation or national planning guidance.

Where any potential adverse effects to the biodiversity or geodiversity value of designated sites are identified, the proposal will not normally be permitted. Development proposals will only be supported if the benefits of the development clearly outweigh the harm to the habitat and/ or species.

In exceptional circumstances, where adverse impacts are demonstrated to be unavoidable, developers will be required to ensure that impacts are appropriately mitigated, with compensation measures towards loss of habitat used only as a last resort where there is no alternative. Where any mitigation and compensation measures are required, they should be in place before development activities start that may disturb protected or important habitats and species".

2.3 Other Guidance

2.3.1 Additional guidance has been reviewed for its relevance to the Proposed Scheme and is summarised below.

The 25 Year Environment Plan

2.3.2 In early 2018, the Government published its 25 Year environment plan (Ref 7-20) to provide guidance on its new approach to managing the environment. The plan promotes a natural capital approach that recognises the wider value of the environment and its contribution, such as food, clean water and air, wildlife, energy, wood, recreation and protection from hazards. The plan seeks to embed a net environmental gain principle for development to deliver environmental improvements locally and nationally.

Natural England and Department for Environment, Food and Rural Affairs (Defra) Standing Advice (protected species)

2.3.3 Standing advice from Natural England and Defra (Ref 7-22) provides guidance on protected and notable species and includes reference to the best practice approaches to survey, mitigation and compensation. Guidance is also provided on the procedure for obtaining protected species licences.

2.3.4 This advice informs the planning of surveys and the approach to mitigating impacts upon protected species, including where necessary the requirement for Natural England mitigation licences.

UK Post-2010 Biodiversity Framework

2.3.5 The UK Biodiversity Action Plan (UKBAP) was launched in 1994 and established a framework and criteria for identifying species and habitat types of conservation concern. From this list, action plans for priority habitats and species of conservation concern were published and have subsequently been succeeded by the UK Post-2010 Biodiversity Framework (July 2012) (Ref 7-23). The UK list of 943 priority species and 56 habitats, however, remains an important reference source and has been used to help draw up statutory lists of priority habitats and species in England, Scotland, Wales and Northern Ireland. For the purpose of this assessment, the UKBAP is still used as one of the criteria to assist in assigning national value to an ecological receptor.

2.3.6 The UK Post-2010 Biodiversity Framework is relevant in the context of Section 40 of the NERC Act 2006 (Ref 7-5), meaning that Priority Species and Habitats are material considerations in planning. These habitats and species are identified as those of conservation concern due to their rarity or a declining population trend.

2.4 Local Biodiversity Action Plan

2.4.1 The Site(s) are located within the county of Lincolnshire. In Lincolnshire, a Local Nature Recovery Strategy (Ref 7-24) is proposed to update and replace the Lincolnshire BAP, however, details of this are still emerging and for the purposes of this PEA, the Lincolnshire BAP is used to provide context on local priority habitats and species.

2.4.2 The Lincolnshire Biodiversity Action Plan (3rd edition) (Ref 7-25) sets out action plans for 51 species (divided into 12 groups) and 26 habitat types (see Appendix C) and provides the local nature conservation strategy for identifying threats to species and habitats within the county and context to inform identification of threatened or uncommon species within Lincolnshire. The plan also identifies priorities for conservation and enhancement but confers no particular

legislative or policy protection to the species identified, however in some cases this is provided through related legislation and local planning policy.

3. Methods

3.1 Desk Study

3.1.1 A desk study was undertaken to identify nature conservation designations and protected or notable habitats and species potentially relevant to the Proposed Scheme.

3.1.2 A stratified approach was taken when defining the desk study area, based on the likely zone of influence of the Proposed Scheme on different ecological receptors; and, an understanding of the maximum distances typically considered by statutory consultees. Accordingly, the desk study identified any international nature conservation designations within 10km of the Site boundary (as well as any Special Areas of Conservation (SACs) within 30km where bats are noted as the, or one of the, qualifying features); other statutory nature conservations designations within 2km of the Site boundary; and, local non-statutory nature conservation designations and protected or notable habitats and species within 2km of the Site boundary.

3.1.3 The desk study was carried out using the data sources detailed in Table 3-1. Protected and notable habitats and species include those listed under Schedules 1, 5 and 8 of the WCA (Ref 7-3); Schedules 2 and 4 of the Habitats Regulations (Ref 7-6); species and habitats of principal importance for nature conservation in England listed under Section 41 (S41) of the NERC Act (Ref 7-5); and other species that are Nationally Rare, Nationally Scarce or listed in national or local Red Data Lists and Biodiversity Action Plans.

3.1.4 Only records up to ten years old were considered within the assessment, as any records older than ten years are unlikely to be still representative of species presence in the local area.

Table 3-1 Desk study data sources

Data Source	Accessed	Data Obtained
Multi-Agency Geographic Information for the Countryside (MAGIC) website (Ref 7-26)	May 2022	International statutory designations within 10km of the Site boundary. Other statutory designations within 2km of the Site boundary. Ancient woodlands and notable habitats within 2km of the Site boundary.
Ordnance Survey 1:2500 Pathfinder maps and aerial photography	May 2022	Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of potential protected and notable species constraints.
Lincolnshire Environmental Records Centre (LERC)	May 2022	Sites designated for their nature conservation value, such as County Wildlife Sites (CWS), Local Nature Reserves (LNRs) and Local Wildlife Sites (LWS) within 2km of the Site boundary. Protected and notable species within 2km of the Site boundary (records for the last ten years only).

3.2 Field Survey

Phase 1 Habitat Survey

3.2.1 The Phase 1 Habitat survey was undertaken in accordance with the standard survey method, developed by the Joint Nature Conservation Committee (JNCC) (Ref 7-27). Phase 1 Habitat survey is a standard method of environmental audit. It involves categorising different habitat types and habitat features within a survey area. The information gained from the survey can be used to determine the likely ecological value of a site, and to direct any more specific survey work which may need to be carried out prior to the submission of a planning

application. The standard Phase 1 Habitat survey method can be 'extended' to record target notes on protected, notable and invasive species.

Appraisal of the Potential Suitability of Habitats for Protected and Notable Species

3.2.2 An appraisal was made of the potential suitability of the habitats present to support protected and notable species of plants or animals (as defined by legislation and planning policy in Section 2 of this report). Field signs, habitat features with potential to support protected species and any sightings or auditory evidence were recorded when encountered, but no detailed surveys were carried out for any particular species.

3.2.3 In addition, attention was given to identifying invasive non-native plant species that are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (Ref 7-3) and those "widespread species" listed in the Invasive Alien species (Enforcement and Permitting) Order 2019 (Ref 7-11). Locations of plants or stands of any such invasive non-native plant species, if found, were recorded.

3.3 Desk Study and Field Survey Limitations

3.3.1 The aim of a desk study is to help characterise the baseline context of a scheme and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular habitat or species does not necessarily mean that the habitats or species do not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Proposed Scheme.

3.3.2 Where habitat boundaries coincide with physical boundaries recorded on OS maps, the resolution is as determined by the scale of mapping. Elsewhere, habitat mapping is as estimated in the field and/or recorded by hand-held Samsung tablets using Collector software. Where areas of habitat are given, they are approximate and should be verified by measurement on-site where required for design or construction. While indicative locations of trees are recorded, this does not replace requirements for detailed specialist arboriculture survey to British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction (Ref 7-2).

3.3.3 There were no other limitations to the desk study or habitat survey.

4. Results

4.1 Nature Conservation Designations

Statutory Designations

4.1.1 The desk study did not identify any sites that are statutorily designated for their nature conservation value and within the study areas as set out in Section 3.1 of this report.

Non-statutory Designations

4.1.2 The desk study identified five sites non-statutorily designated for nature conservation within 2 km of the Site (as per the method in Section 3.1 of this report). These are presented in **Figure 2** (Appendix A). These sites have been designated as Local Wildlife Sites (LWS) for their biodiversity value at a county level and are known to have supporting value to a wide variety of protected and ecologically important species and/or habitats. These sites are detailed in **Table 4-1** and are listed in ascending order of distance from the Site.

Table 4-1 Non-Statutory Designated Sites within 2km of the Site

Non-Statutory Site Name and Designation	Description	Approximate Distance (metres (m) and km) and direction from closest point of the Site
Beacon Hill Railway Cutting LWS	The south-facing slope of this railway cutting supports a good calcareous grassland flora. The sward is dominated by Tor-grass *Brachypodium pinnatum* with smaller areas of Crested Dog's-tail *Cynosurus cristatus*, Red Fescue *Festuca rubra* and Quaking grass *Briza media* and occasional Glaucous Sedge *Carex flacca*. Flowering plants of a typical calcareous grassland are abundant, including Yarrow *Achillea millefolium*, Common Knapweed *Centaurea nigra*, Common Centaury *Centaurium erythraea*, Dwarf Thistle *Cirsium acaule*, Lady's Bedstraw *Galium verum*, Meadow Vetchling *Lathyrus pratensis*, Ox-exe Daisy *Leucanthemum vulgare*, Fairy Flax *Linum catharticum*, Bird's-foot Trefoil *Lotus corniculatus*, Mouse-ear Hawkweed *Pilosella officinarum* and Cowslip *Primula veris*. The north-facing slope appears to be less diverse however it does support a large quantity of Tor-grass and Quaking grass. Small Toadflax *Chaenorhinum minus* is frequent along the vegetation boundary with the bare railway ballast. Scrub including Hawthorn *Crataegus monogyna*, Ash *Fraxinus excelsior* and Blackthorn *Prunus spinosa* threatens to invade the site. Hound's-tongue *Cynoglossum officinale* is present with Tor grass on the bridge on Mount Lane to the west of the site.	Approximately 0.3 km to the north of the southern site
Ewerby Pond LWS	A flooded borrow pit bordered by small areas of fen and a hedgerow. The open water appears to support little other than a thin covering of Common Duckweed *Lemna minor* and Amphibious Bistort *Persicaria amphibia*. The main interest of the LWS is its marginal/fen habitat which is dominated by Greater Bulrush *Typha latifolia*, Lesser Bulrush	Approximately 0.6 km to the north of the northern site

Non-Statutory Site Name and Designation	Description	Approximate Distance (metres (m) and km) and direction from closest point of the Site
	Typha angustifolia, Reed sweet-grass *Glyceria maxima*, Blunt-flowered Rush *Juncus subnodulosus* and Greater Pond-sedge *Carex riparia*. Typical fen herbs are frequent throughout including Gypsywort *Lycopus europaeus*, Purple-loosestrife *Lythrum salicaria*, Greater Spearwort *Ranunculus lingua*, Bittersweet *Solanum dulcamara* and Common meadow-rue *Thalictrum flavum*. Creeping Jenny *Lysimachia nummularia* is naturalised in a small area in the north-eastern corner. The boundary hedge is largely of Hawthorn with occasional Elder *Sambucus nigra*, Blackthorn and Field Rose *Rosa arvensis* as well as occasional Alder *Alnus glutinosa* and Crack Willow *Salix fragilis* trees. The ground flora of the boundary is of coarse grasses, predominantly False Oat-grass *Arrhenatherum elatius* and Creeping Thistle *Cirsium arvense*.	
Cobbler's Lock and Reed beds LWS	An area of tall scrubby fen, with some more open areas grading into wet woodland, damp grassland and dry reedbed. The ditch to the west is shaded by Hawthorn dominated scrub, or choked by Lesser Pond-sedge *Carex acutiformis* and Greater Pond sedge. Wet woodland on the site is centred around the pools in the north-east. The canopy is dominated by Crack Willow while Tufted Forget-me-not *Myosotis laxa* and Water Forget-me-not *Myosotis scorpioides* dominate the field layer. Much of the LWS's interest is concentrated in the areas of wet Grey Willow *Salix cinerea* and Goat Willow *Salix caprea* scrub where the field layer is comprised of a dense layer of pond-sedges, with various herbs such as Meadowsweet *Filipendula ulmaria*, Yellow Flag Iris *Pseudacorus*, Marsh Bedstraw *Galium palustre*, Gypsywort *Lycopus europaeus*, Purple Loosestrife *Lythrum salicaria*, Water Chickweed *Myosoton aquaticum* and Water Figwort *Scrophularia auriculata*. Hop *Humulus lupus* is abundant, climbing into the canopy of the scrub. Some areas of reed had recently been harvested.	Approximately 0.75 km to the north of the northern site
Everdon Wood LWS	A semi-natural woodland apparently of ancient origin now dominated by Ash with Sycamore *Acer pseudoplatanus* and Pedunculate Oak *Quercus robur*, of which there are a few veteran individuals. The hybrid oak *Quercus x rosacea* and Turkey Oak *Quercus cerris* are occasional. Hawthorn, hybrid hawthorn *Crataegus x media*, Honeysuckle *Lonicera periclymenum* and Wych Elm *Ulmus glabra* are frequent in the shrub layer. Some fine specimens of Midland Hawthorn *Crataegus laevigata* are present along the southern edge of the wood. Ground flora is quite good in places with Scaly Male Fern *Dryopteris affinis ssp. cambrensis*, Broad Buckler Fern *Dryopteris dilatata*, Male Fern *Dryopteris filix-mas*, Tall Fescue *Festuca arundinacea*, Common Figwort *Scrophularia nodosa*,	Approximately 1.85 km to the west of the northern site

Non-Statutory Site Name and Designation	Description	Approximate Distance (metres (m) and km) and direction from closest point of the Site
	hairy St John's wort *Hypericum hirsutum* and Early Dog Violet *Viola reichenbachiana*. Ditches and limited areas of damp rides around the site also support a good flora including Water Plantain *Alisma plantago-aquatica*, False Fox-sedge *Carex otrubae*, Carnation Sedge *Carex panicea*, Meadowsweet *Filipendula ulmaria*, Strawberry *Fragaria vesca*, Jointed Rush *Juncus articulatus*, Creeping Jenny *Lysimachia nummularia*, Cowslip, Watercress *Rorippa nasturtium-aquaticum* and Smooth Tare *Vicia tetrasperma*. Various common fungi and mosses were recorded including *Laccaria laccata*, *Agaricus bisporus*, *Coprinus disseminates*, *Atrichum undulatum*, *Plagiomnium undulatum* and *Fissidens dubius*.	
Flower Pot Brick Pits LWS	This old brick pit is now flooded and is used as a private fishing lake. The edges are dominated by Ash woodland with frequent Pedunculate Oak and occasional Silver Birch *Betula pendula* and Downy Birch *Betula pubescens*. Field Maple is frequent in the shrub layer. Some Walnut *Juglans regia* and Copper Beech *Fagus sylvatica* ssp. *purpurea* trees have been planted. The shrub layer is dense in places and is dominated by Hawthorn with hybrid Hawthorn and occasional Red-osier Dogwood *Cornus sericea*. The ground flora includes occasional Enchanter's Nightshade *Circaea lutetiana*, Foxglove *Digitalis purpurea*, Wild Strawberry *Fragaria vesca*, Dog Violet *Viola riviniana* and Early Dog Violet *Viola reichenbachiana*. Areas of wet woodland with scattered small pools and dominated by Goat Willow scrub occur across the eastern part of the LWS. The ground flora includes occasional Tufted Hair-grass, Broad Buckler Fern, Male Fern and Water Mint *Mentha aquatica*. Hornwort *Ceratophyllum demersum* is present in the large main lake. Dry grassland species in the lighter areas of the LWS include Cowslips, Teasel, Common Knapweed and Common Centaury. The bryophyte flora includes frequent *Plagiomnium undulatum* and *Atrichum undulatum*. This LWS is good for fungi, with species including Laughing Mushroom *Gymnopilus junonius*, Aniseed Cap *Clitocybe odora*, Common Earthball *Scleroderma citrinum*, Deceiver *Laccaria laccata*, Amethyst Deceiver *Laccaria amethystina*, Jelly ear *Auricularia auricula-judae*, Charcoal Burner *Russula cyanoxantha* and Many-zoned Polypore *Trametes versicolor*. Common Toad *Bufo bufo*, Badger *Meles meles* and reptiles all occur.	Approximately 1.97 km to the west of the southern site

4.1.3 Additionally, there is an area of ancient woodland (Old Wood), approximately 0.9 km to the north-east of the northern site.

4.2 Habitats

4.2.1 The area surveyed (the survey area) encompassed all safely accessible parts of the Site and adjacent habitats to a maximum distance of 50m, where access permission had been granted in advance of survey, or this land was visible from within the Site boundary or from public rights of way, or other publicly accessible areas.

4.2.2 Typical and notable plant species were recorded for different habitat types and reflect the conditions at the time of survey. This was not intended to be a detailed inventory of the plant species present in the survey area, as this is not required for the purposes of Phase 1 Habitat survey.

4.2.3 The Phase 1 Habitat survey was undertaken between 21st and 25th March 2022 by suitably qualified AECOM ecologists who recorded and mapped all habitat types present within the Site, along with any associated relevant ecological receptors observed. Where relevant ecological receptors were present, target notes were recorded (see Appendix D) and the positions of these, where recorded, are presented on **Figure 3** (Appendix A).

4.2.4 The broad habitat types present within the Site (southern site and northern site) are presented in **Table 4-2**. The approximate extent and distribution of these habitats recorded are presented on **Figure 3** (Appendix A) and a summary of plant species recorded follows **Table 4-2**.

Table 4-2 Broad habitat types within the Site

Habitat	Area (ha) / length (km)	
	Southern Site	Northern Site
A1.1.1 - Broadleaved woodland - semi-natural	1.0 ha	3.1 ha
A1.1.2 - Broadleaved woodland - plantation	5.1 ha	3.1 ha
A1.2.2 – Coniferous woodland - plantation	0.3 ha	-
A1.3.2 - Mixed woodland - plantation	0.9 ha	-
A2.1 - Scrub - dense/continuous	2.9 ha	0.3 ha
A2.2 - Scrub - scattered	0.1 ha	-
B2.2 – Neutral grassland – semi-improved	-	0.8 ha
B4 – Improved grassland	80.4 ha	1.8 ha
B5 - Marsh/marshy grassland	-	0.4 ha
B6 - Poor semi-improved grassland	5.8 ha	9.9 ha
C3.1 - Other tall herb and fern - ruderal	1.3 ha	1.2 ha
G1 - Standing water	0.4 ha	1.1 ha
G2 – Running water	2.5 ha / 10.30 km	6.6 ha / 16.42 km

Habitat	Area (ha) / length (km)	
	Southern Site	Northern Site
Hardstanding	2.7 ha	2.0 ha
J1.1 - Cultivated/disturbed land - arable	399.4 ha	481.8 ha
J1.2 - Cultivated/disturbed land - amenity grassland	0.2 ha	0.3 ha
J2.6 – Dry ditch	0.3 ha	0.8 ha
J3.6 - Buildings	0.2 ha	0.3 ha
J4 - Bare ground	1.4 ha	1.3 ha
J5 - Other habitat – game cover crop	8.3 ha	3.8 ha
J5 - Other habitat	1.8 ha	1.2 ha
A2.2 Scrub – scattered	0.01 km	-
A3.1 - Broadleaved parkland/scattered trees	0.34 km	-
Hedgerows – intact and defunct	16.97 km	3.09 km
Hedgerows with trees	1.43 km	1.68 km
J2.4 - Fence	3.48 km	1.30 km
J2.6 - Dry ditch	3.39 km	3.35 km

Woodland - Broad-leaved semi-natural and broad-leaved plantation

4.2.1 There are small areas of semi-natural and plantation woodland on the Site, species within these include Ash *Fraxinus excelsior* along with Hawthorn *Crataegus monogyna*, Blackthorn *Prunus spinosa*, Field Maple *Acer campestre* and Elder *Sambucus nigra*.

Woodland - Coniferous and mixed plantation

4.2.2 There are small areas of this habitat in the southern site, species including Scot's *Pinus sylvestris*.

Scrub

4.2.3 There are a number of small areas of dense and scattered scrub throughout the Site with short lengths of continuous scrub bordering field margins, species include many areas of dense Bramble *Rubus fruticosus agg*. along with Hawthorn and Blackthorn.

Neutral semi-improved and poor semi-improved grassland

4.2.4 There is a small area of semi-improved neutral grassland habitat in the northern site and poor semi-improved grassland is located within some of the arable fields across the Site. Species present include Common Knapweed, Cowslip, Rough Meadow Grass *Poa trivialis*, Smooth Meadow Grass *Poa pratensis*, *Epilobium* sp., Creeping Cinquefoil *Potentilla reptans*, Dandelion *Taraxacum officinale*, Yorkshire Fog *Holcus lanatus* and Cocksfoot *Dactylis glomerata*.

Improved grassland

4.2.5 Improved grassland, grazed and un-grazed (cut for hay), are predominantly within the southern site and species include Perennial Rye-Grass *Lolium perenne*, Creeping Bent *Agrostis stolonifera*, Oxeye Daisy *Leucanthemum vulgare* and Dandelion.

Marshy grassland

4.2.6 There is a small area of marshy grassland present in the northern site, along the edge of a woodland, with Soft Rush *Juncus effusus*, Hard Rush *Juncus inflexus*, Yorkshire Fog, Creeping Bent *Agrostis stolonifera* and Great Willowherb *Epilobium hirsutum*. This habitat has the potential to support reptiles.

Tall ruderal

4.2.7 This habitat is scattered across the Site and contains species including Cocksfoot *Dactylis glomerata*, Yorkshire Fog, Hemlock *Conium maculatum*, Hedge Mustard *Sisymbrium officinale*, Hogweed *Heracleum sphondylium*, Broad-leaved Dock *Rumex obtusifolius*, Curled Dock *Rumex crispus*, Common Nettle *Urtica dioica* and False Oat Grass *Arrhenatherum elatius*.

Standing water

4.2.8 There are 19 water bodies within the Site and 27 water bodies within 500m from the Site, species within the on-site water bodies include Watercress *Nasturtium officinale* and Sedge *Cyperaceae*. Some of the ponds have potential to support Great Crested Newt *Triturus cristatus*, although it is likely that the majority of ponds on the Site dry out within the summer months.

Running water

4.2.9 There are numerous water-filled ditches across the Site, some of which are wider drainage channels.

Arable

4.2.10 The predominant habitat within the southern site is used as arable farmland, including Oil-seed Rape *Brassica napus*, Linseed *Linum usitatissimum* and Wheat *Triticum aestivum*. There are arable field margins associated with these crops, throughout.

Hedgerows

4.2.11 There are many hedges across the Site from species poor to species rich, the woody species recorded in the hedges included Ash, Hawthorn, Blackthorn, Dog Rose *Rosa canina agg*., Field Maple, Elder and Dogwood *Cornus sanguinea*.

4.3 Notable Habitats

4.3.1 **Table 4-3** provides a summary of notable habitats recorded within the Site, based on the results of the Phase 1 Habitat survey and with reference to guidance for the recognition of NERC Act S41 (Ref 7-5) and the relevant LBAP, as detailed in section 2.4 of this report. Further surveys may also be required to investigate the value of habitats, as detailed in Section 5 of this report.

Table 4-3 Notable habitat types within the Site

Habitat	Priority Habitat (NERC Act)	Lincolnshire BAP	Supporting Comments
Ancient and/or species rich hedgerows	✓	✓	Hedgerows are present across the Site. Impacts to hedgerows should be avoided, where practicable and the Proposed Scheme can be designed to avoid potential impacts to hedgerows. However, further

			investigation would be required to determine the value of hedgerows if impacts are likely.
Running Water	✓	✓	There are numerous water-filled ditches and drainage ditches across the Site. Indirect impacts to species using riparian habitats may occur and it is recommended that watercourses are avoided, leaving a minimum 10m buffer as part of the embedded mitigation.
Standing Open Waters/ Ponds	✓	✓	There are a number of waterbodies within 500m of the Site and further investigation will be required to determine their value. Indirect impacts to species using water bodies such as Great Crested Newts may occur. It is recommended that waterbodies are avoided if possible. Where not possible, suitable buffer zones (>20m) would be part of the embedded mitigation.
Arable Field Margins	✓	✓	Field margins associated with arable areas on the Site may fulfil the criteria for this priority habitat type and further investigation will be required to determine their value and inform on any appropriate mitigation, such as areas to avoid and retain.
Lowland Mixed Deciduous Woodland	✓	✓	Broad-leaved woodlands is present within the Site and further investigation will be required to determine their value. However, no woodland is likely to be affected by the Proposed Scheme.
Neutral Grassland	✓	-	A small extent of this habitat is located in the northern site. Whilst this habitat is unlikely to fulfil any criteria for being considered as a priority habitat, further investigation will be required to determine its value.
Improved Grassland	✓	-	Although, improved grassland is recognised as a UK BAP broad habitat, the habitat found on Site does not qualify as a UK BAP priority habitat due it being neither coastal or floodplain grazing marsh. No further investigation is required to determine the habitats value in consideration of impacts.
Marshy grassland	✓	-	A small area of marshy grassland is located on the northern site and although small in extent, this habitat does add value in the context of the wider area. Therefore, it is recommended that this habitat is retained and avoided.

4.4 Protected and Notable Species

4.4.1 **Table 4-4** provides a summary of potentially relevant species identified through a combination of desk study and field survey. The table summarises the conservation status of each species and provides comment on the likelihood of presence.

4.4.2 Where species are identified in **Table 4-4** as likely or possible, they are likely to represent legislative constraints or may be material to determination of the planning application. Further surveys will or may be required to determine presence or probable absence of species (see Section 5).

Table 4-4 Protected or notable species within the Site

Species (or species group)	Supporting Comments
Flora / plants	The desk study did not identify any records of protected or notable plants occurring within 2km of the Site. The field survey did not record any notable or protected plant species, although the Phase 1 survey was undertaken outside of the optimal period for recording flowering plants (April to September). Arable field margins present throughout the Site have the potential to support notable arable plant species.
Terrestrial Invertebrates	The data search returned only one record of terrestrial invertebrate species within 2km of the Site and within the last ten years – a White-Letter Hairstreak *Satyrium w-album* approximately 100m west of the northern site. There are grassland margins, hedgerows and scrub habitats present across the Site that may support protected and notable invertebrate species.
Aquatic Invertebrates	The data search returned no records of aquatic invertebrates. There are aquatic habitats present with the Site (*e.g.* ponds and watercourses) with potential to support notable aquatic invertebrate species and assemblages.
Amphibians	The desk study identified three amphibian species (Great Crested Newt *Triturus cristatus*, Common Frog *Rana temporaria*, and Common Toad) occurring within the study area. The closest record of Great Crested Newt, occurring within 2km of the Site and within the last ten years was from April 2021 approximately 1.5km south of the northern site. Further investigation of ponds relevant to the Proposed Scheme will be required to determine their potential suitability for Great Crested Newt and other amphibians.
Reptiles	The data search returned no records of reptiles within 2 km of the Site. Reptile habitat is limited across the Site, but small pockets of habitat suitable for reptiles do exist comprising uncropped field margins, hedgerows, woodland edge habitats, marshy grassland and ditches.
Breeding birds	The desk study identified at least 29 bird species within the study area, including Peregrine *Falco peregrinus*, Hobby *Falco subbuteo*, Barn Owl *Tyto alba*, Cetti's Warbler *Cettia cetti*, Kingfisher *Alcedo atthis* and Red Kite *Milvus milvus*. The habitats on Site are likely to support nesting birds during the breeding season, including species of conservation concern such as Skylark *Alauda arvensis* and Lapwing *Vanellus vanellus*.
Non-breeding (wintering and passage) birds	Trees, scrub and arable fields occurring within the Site have the potential to support birds during the non-breeding season, including those of conservation concern, such as Linnet *Linaria cannabina*, Yellowhammer *Emberiza citrinella* and Golden Plover *Pluvialis apricaria.*
Bats	The data search returned records of at least six bat species (Brown Long-eared *Plecotus auritus*, Common Pipistrelle *Pipistrellus pipistrellus*, Noctule *Nyctalus noctule*, Barbastelle *Barbastella barbastellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Daubenton's bat *Myotis daubentonii*, and *Myotis* sp).

Species (or species group)	Supporting Comments
	Habitats on site and in the surrounding area includes trees and woodlands which are likely to support roosting bats. The habitat within the Proposed Scheme also provides low suitability for commuting and foraging bats.
Badger	The data search returned several records of Badger within 2km of the Site. Badger activity was recorded within the Site during the survey.
Otter *Lutra lutra*	The data search returned several records of Otter within the study area and some of the watercourses occurring on the Site have the potential to support Otter.
Water Vole *Arvicola amphibius*	The data search returned several records of Water Vole within 2km of the Site and some of the watercourses and waterbodies occurring on the Site have the potential to support Water Vole.
Invasive Non-native Species (INNS)	The data search did not return any records of invasive non-native species from within 2km of the Site and the last ten years. No invasive non-native species were recorded within the Site during the survey. However, there is potential for invasive non-native species to be present within the Site.
Brown Hare *Lepus europaeus*	The data search returned records of Brown Hare within the study area. The species was recorded on Site during the survey.
West European Hedgehog *Erinaceus europaeus*	The data search returned records of Hedgehog occurring within the study area. The species has the potential to occur across the Site within the grassland and scrub habitats.

Species present on site are those for which recent direct observation or field signs confirmed presence. Species which are possibly present are those for which there is potentially suitable habitat based on the results of the Phase 1 Habitat survey, or this combined with desk study records.

Legally protected species are those listed under Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended); and Schedules 2 and 4 of The Conservation of Habitat & Species Regulations 2017 (as amended).

Species of Principal Importance as those listed under Section 41 of the NERC Act. Planning Authorities have a legal duty under Section 40 of the same Act to consider such species when determining planning applications.

Other notable species include native species of conservation concern listed in the LBAP (except species that are also of Principal Importance), those that are Nationally Rare, Scarce or Red Data List, and non-native controlled weed species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

5. Identification of Ecological Constraints and Recommendations

5.1 Approach to the Identification of Ecological Constraints

5.1.1 Relevant ecological receptors that may represent constraints to the Proposed Scheme, or that provide opportunities to deliver ecological enhancement in accordance with planning policy, are identified in Section 4 of this report.

5.1.2 The NPPF (see Appendix B) and local planning policy (summarised in Section 2 of this report) specify requirements for the protection of features of importance for biodiversity. Planning policy is a material consideration when determining planning applications.

5.1.3 Compliance with planning policy requires that the Proposed Scheme considers and engages the following mitigation hierarchy where there is potential for impacts on relevant ecological receptors:

1. Avoidance - actions taken to avoid causing impacts to the environment prior to beginning development (for example, moving the development to a different location).
2. Minimisation - measures taken to reduce the duration, intensity, extent and/or likelihood of the unavoidable environmental impacts caused by development (for example, adapting the development design to minimise impacts).
3. Restoration or rehabilitation - actions taken to repair environmental degradation or damage following unavoidable impacts caused by development.
4. Offsets - measures taken to compensate for any adverse environmental impacts caused by development which cannot be avoided, minimised and/or restored (*e.g.* including habitat creation to offset losses and/or by providing suitable habitats elsewhere (whether in the control of Low Carbon or otherwise legally enforceable through planning condition).

5.1.4 This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted should lower levels be considered. The rationale for the proposed mitigation and/or compensation should be provided with planning applications, including sufficient detail to show that these measures are feasible and would be provided.

5.1.5 In pursuance of the objectives within the NPPF and Environment Act of providing net gains in biodiversity, consideration should be given to the scope for enhancement as part of the Proposed Scheme. This should represent biodiversity gain over and above that achieved through mitigation and compensation. Enhancement could be achieved on and/ or off the Site.

5.1.6 The likelihood of the relevant ecological receptors constraining the Proposed Scheme has been assessed with reference to the scale described in **Table 5-1**. The higher the importance of the ecological receptor for the conservation of biodiversity at national and local scales, the more likely it is to be a material consideration during determination of the planning application for the Proposed Scheme.

5.1.7 There may be scope for ecological enhancement where existing habitat features could be improved or enhanced within the Proposed Scheme as designed, or with only minor amendment to the design of the Proposed Scheme. Ecological enhancement may not be possible where there is little scope to accommodate enhancement within the Proposed Scheme, *e.g.* due to a lack of utilisable space, or where land is required for essential mitigation. Consideration could be given to enhancing biodiversity in the vicinity of the Site.

Table 5-1 Scale of Constraint to Development

Likelihood	Definition
High	An actual or potential constraint that is subject to relevant legal protection and is likely to be a material consideration in determining the planning application (*e.g.* statutory nature conservation designations and European/nationally protected species). Further survey likely to be required (as detailed in this report) to support a planning application.
Medium	An actual or potential constraint that is covered by national or local planning policy and, depending on the level of the potential impact as a result of the Proposed Scheme, may be a material consideration in determining the planning application. Further survey may be required (as detailed in this report) to support a planning application.
Low	Unlikely to be a constraint to development or require further survey prior to submission of a planning application. Mitigation is likely to be covered under Construction Environmental Management Plan (CEMP) or precautionary working method statement (*e.g.* generic requirements for the management of nesting bird risks).

5.2 Constraints and Requirements for Further Survey: Designations

Statutory Designated Sites

5.2.1 The desk study did not identify any statutory sites for nature conservation within the study areas set out in Section 3.1.

5.2.2 Therefore, the Proposed Scheme will not result in any direct (*i.e*. through habitat loss) or indirect impacts (*i.e.* lighting, noise or air quality) to statutory designated sites. Whilst no sites are located within 10km of the Site and no impacts are predicted, suitable management plans will need to be prepared (such as a Construction and Environmental Management Plant (CEMP)) to ensure best practice guidance is followed during all phases (*e.g.* construction, operation and decommissioning) of the Proposed Scheme.

Non-statutory Sites

5.2.3 The desk study identified 11 non-statutory sites designated for nature conservation within the study area set out in Section 3.1 of this report and presented in **Table 4-1**. The closest of these is Beacon Hill Railway Cutting LWS, which is 0.3 km from the Site.

5.2.4 Given the distance between LWS's and the Site, no direct (*i.e.* habitat loss) or indirect impacts (*e.g*. from lighting, noise or air quality) are likely to impact upon any LWS identified within 2km of the Site, during all phases (*e.g.* construction, operation and decommissioning) of the Proposed Scheme, with appropriate mitigation (such as dust suppression, directional lighting) formalised into a CEMP to ensure best practice guidance is followed.

5.3 Constraints and Requirements for Further Survey: Habitats

5.3.1 Notable habitats within the Site, potentially affected by the Proposed Scheme include arable field margins, marshy grassland and woodland as identified in **Table 4-3**. Further investigation of these habitats is required to determine their quality and extent and whether they meet the relevant criteria to qualify as suitable priority habitats. As such, further surveys (*e.g.* of hedgerows and arable flora / arable field margins) will need to be undertaken across the Site to help determine this and within areas where impacts cannot be avoided. The Proposed Scheme should seek to avoid, protect and retain notable habitats, where practicable and include offsets of at least 15m from existing boundary features (woodlands, individual trees and trees occurring within hedgerows) and a minimum of 5 m from hedgerows without trees. A minimum offset of 10m from the banks of the watercourses will be required (as per Environment Agency guidelines and to protect riparian habitats) and at least 20m from water bodies (such as ponds) to protect aquatic habitats.

5.3.2 Furthermore, tree Root Protection Zones will need to be erected around retained trees, in line with British Standard BS 5837: Trees in relation to design, demolition and construction – Recommendations (BSI, 2012).

5.3.3 A Landscape and Biodiversity Management Plan (or similar document) and Biodiversity Net Gain (BNG) Assessment will be required to integrate green infrastructure and biodiversity into the Proposed Scheme to meet requirements under the NPPF and Local Planning Policy.

5.4 Constraints and Requirements for Further Survey: Species

Flora

5.4.1 Some habitats within the Site have the potential to support protected or notable flora species, such as those associated with arable field margins. Further investigation of these habitats is required to determine the presence of notable plant species. As such, further Phase 2 botanical surveys should be undertaken across the Site to identify species and any areas of notable flora communities.

Terrestrial Invertebrates

5.4.2 The Site comprises habitats that may support protected and notable terrestrial invertebrates or invertebrate communities. Based on the habitats on site and species recorded during the desk study (White-letter Hairstreak), any potentially important habitats (*i.e*. woodland, woodland edge, hedgerows and arable margins) that are likely to support notable species or assemblages of terrestrial invertebrates are unlikely to be impacted by the Proposed Scheme (through retention of such habitats) and would be suitably buffered to avoid impacts to terrestrial invertebrates.

5.4.3 Whilst the majority of habitats will be retained and buffered, a scoping survey to determine the potential for protected or notable terrestrial invertebrate species or communities to be present should be undertaken by a specialist entomologist. This scoping survey will determine the requirement for any further targeted surveys to establish the presence of particular species or hotspots for terrestrial invertebrate assemblages.

Aquatic Invertebrates

5.4.4 There are some aquatic habitats present on site (such as ponds and ditches) that have the potential to support notable aquatic invertebrate species and assemblages.

5.4.5 Further investigation of watercourses and water bodies should therefore be undertaken to determine the presence of notable aquatic invertebrate species and assemblages.

Amphibians

5.4.6 The desk study identified 46 water bodies within 500m of the Site (see **Figure 4**, Appendix A). The data search returned a small number of records of Great Crested Newt and other amphibian species occurring within 2km of the Site.

5.4.7 Further investigation of the waterbodies that are within or close to (within 250m of) the Site will be required where potential impacts are likely as a result of the Proposed Scheme in relation to Great Crested Newt. In the first instance, a Habitat Suitability Index (HSI) assessment will be undertaken to categorise the suitability of the waterbodies for Great Crested Newt. Following this, where water bodies are identified as being suitable to support Great Crested Newt, then further surveys (eDNA presence / absence surveys) of those water bodies will be required to determine presence or absence of Great Crested Newt. eDNA surveys can only be undertaken between mid-April and the end of June. If presence of Great Crested Newt is confirmed in water bodies through eDNA, then further surveys will be needed to determine the size of the population present and inform the assessment of the potential impacts of the Proposed Scheme on Great Crested Newt. Such surveys can only be undertaken between early April and June, however, two surveys must be undertaken on each water body between mid-April and mid-May (the peak season for Great Crested Newt).

Reptiles

5.4.8 The data search did not return any records of reptiles within 2 km of the Site and within the last ten years.

5.4.9 Habitat potentially suitable to support reptiles was recorded on Site, including streams and ditches for Grass Snake and grassland areas including marshy grassland, suitable for other reptile species (such as Common Lizard *Zootoca vivipara*) (see target note 01, 11, 41). Therefore, further surveys, following standard guidelines[1], are recommended to determine the presence or absence of reptiles. Depending on the outcomes of these surveys, mitigation may be required to avoid injuring or harming reptiles.

Birds

5.4.10 The desk study returned numerous records of specially protected (Ref 7-3) and notable bird species (Ref 7-5) occurring within 2km of the Site.

5.4.11 Trees, scrub and arable fields on site are likely to support nesting birds during the breeding season and wintering birds, including those of conservation concern. Barn Owl boxes were also recorded on site (see Target Notes 12, 43).

5.4.12 The Proposed Scheme has the potential to result in the direct loss of habitat used by protected and notable bird species. Further surveys of the general breeding bird assemblage, including targeted surveys for Barn Owl, will be required to determine the magnitude of impacts of the Proposed Scheme on the breeding bird assemblage and help define appropriate mitigation.

5.4.13 Surveys of the non-breeding (wintering) assemblages are also required to determine the species and assemblages using the Site, the results of which will be used to determine appropriate mitigation.

Bats

5.4.14 The data search returned of bat records of at least six species within 2 km of the Site.

5.4.15 The field survey identified numerous trees that have suitable features to support bat roosts as well as woodland blocks within the Site with suitable roosting habitats. It is recommended that a minimum buffer of 15m is created between the Proposed Scheme and these habitats, concordant with the requirements for avoidance of woodland habitats. Further surveys (a preliminary roost assessment (PRA)) to determine the presence of potential roost features should be undertaken and if any trees or woodlands are impacted by the Proposed Scheme, then presence / absence surveys (between May and September) will also be required to determine whether such features support roosting bats. The findings of these surveys will inform any mitigation requirements for roosting bats. Buffer zones around roosts or potential roosts is also recommended (>15m from the roost feature as per recommendations for offsets from woodland and trees).

5.4.16 Bat activity transect surveys for a low suitability site should be undertaken (one survey per season, spring, summer and autumn) to determine species and flight paths across the Site to assess potential impacts of the Proposed Scheme on foraging and commuting bats. If key bat flight lines are identified, these should be retained or mitigated for (if lost).

Badger

5.4.17 The field survey recorded Badger activity within the Site.

5.4.18 Owing to legislative provisions under the Protection of Badger Act 1992, further surveys (following standard guidelines[2]) are required to determine the full extent of Badger presence across the Site and in the wider zone of influence (up to 30m from the Site). The findings of these surveys will determine the potential constraints and whether mitigation and/ or relevant licences are required to avoid impacts to Badgers or their setts.

Otter and Water Vole

[1] Gent T and Gibson S (2003). Herpetofauna Workers Manual. JNCC, Peterborough.

[2] http://www.mammal.org.uk/wp-content/uploads/2016/04/Surveying_Badgers_Mammal_Society.compressed.pdf

5.4.19 The data search returned several records of Otter within 2 km of the Site. During the Phase 1 survey, signs of Otter were recorded in the northern site (see target note 08).

5.4.20 The watercourses and water bodies on site have the potential to support both Water Vole and Otter. The Proposed Scheme should seek to avoid drainage ditches and any other watercourses on Site, leaving a minimum working distance of 10m from the edges of watercourses (or water bodies) to avoid disturbance to Otter and Water Vole and to protect riparian habitats.

5.4.21 To ensure adequate baseline information on the presence, or otherwise, of Otter and Water Vole occurring on the Site, further surveys of all water bodies and watercourses within the Site for Water Vole and Otter, along with the potential for Mink *Neovison vison* should be undertaken. The results of these surveys will identify whether mitigation is required should the Proposed Scheme result in direct loss of habitats used by riparian mammals or indirect impacts to these species (if present).

Non-native Invasive Species

5.4.22 The data search did not return any records of invasive non-native species (INNS) and none were recorded on the Site during the Phase 1 survey. No formal surveys for invasive species are recommended, but any presence should be noted during other ecological surveys of the Site. If found to be present, biosecurity measures will need to be put in place during construction to prevent the spread of INNS into and away from the Proposed Scheme. An INNS management plan should also be produced to establish the approach to management and eradication of INNS found to be present.

Other priority species

5.4.23 Records of Brown Hare and Hedgehog were received during the data search and Brown Hare was recorded on the Site. Brown Hare and Hedgehog receive limited legal protection but are Species of Principal Importance on S41 of the NERC Act (Ref 7-5).

5.4.24 No formal surveys are recommended, but it is recommended that the Proposed Scheme is planned to take account of likely mitigation requirements for these species. This will include timing of any site clearance (*e.g.* during construction) to avoid Brown Hare during their breeding season. This is concordant with the requirements for nesting birds. As such, it is recommended that site clearance and preparatory works would be undertaken over the autumn / winter period between September and February.

6. Conclusions

6.1.1 Overall, the PEA identified notable habitats and species as detailed in Sections 4.2 and 4.3 of this report.

6.1.2 A summary appraisal of ecological constraints and the recommended further requirements is presented in **Table 6-1** below.

Table 6-1 Summary appraisal of features of Ecological constraints and recommended further requirements

Receptor	Scale of constraint	Further requirements	Number of survey visits required	Survey period	Driver	When is action likely to be required?		
						To inform design	Before planning applicatio	Pre-constructi on
Designated Sites	High	No direct impacts (habitat loss) or indirect impacts would occur to designated sites. However, appropriate mitigation for the avoidance of indirect impacts will need to be formalised into a CEMP.	N/A	N/A	Habitat Regulations (2017) WCA 1981,	✓	✓	✓
Habitat – condition assessment, River Morph surveys to inform Biodiversity Net Gain Assessment	Medium / High	A survey to determine the condition of habitats and any other assessments required (such as River Morph surveys) to inform the BNG Assessment.	Initially one survey visit to each water body	May to August	Environment Act 2021	✓	✓	✓
Habitat / Plants / Phase 2 survey / Hedgerow	Medium / High	A Phase 2 botanical survey and arable plant survey to identify the presence and extent of any potential notable habitats and protected/notable plant species. The surveys will focus on potential priority habitat within the Proposed Scheme. Arable plant surveys will involve walking field boundaries and comparable areas of marginal habitat only. Hedgerow surveys required where impacts are likely to occur.	Two survey visits	May to July (flora) May to September (hedgerows)	WCA 1981, LBAP, UKBAP, NERC Act 2006	✓	✓	✓
Aquatic Habitats / macrophytes / macroinvertebrates / fish	Medium	A scoping assessment of any aquatic habitats potentially directly or indirectly affected by the Proposed Scheme. This will include an assessment of the potential for aquatic habitats to support protected/notable species. Surveys of selected field ponds and	Initially one survey visit followed by targeted species surveys, where required	Any time of year, but April to May for scoping in advance of any further surveys that may be required between	LBAP, UKBAP, NERC Act 2006	✓	✓	✓

Receptor	Scale of constraint	Further requirements	Number of survey visits required	Survey period	Driver	When is action likely to be required?		
						To inform design	Before planning applicatio	Pre-constructi on
		the River Trent are likely to be required and will be determined following the scoping survey		May and September				
Terrestrial Invertebrates	Medium / High	A scoping survey to assess the potential of areas within the Site boundary to support protected or notable invertebrate species and assemblages (Depending on the outcomes of these surveys further targeted survey may be required).	One survey visit	April to May	WCA 1981, NERC Act 2006	✓	✓	✓
Great Crested Newt	High	Undertake Habitat Suitability Index (HSI) assessment of all waterbodies within 500m (where accessible) for their suitability to support Great Crested Newt. Following this, surveys to determine presence or absence of Great Crested Newt within suitable waterbodies (either by eDNA or four survey visits at night) that are within 250m of the Site. Depending on the outcomes of these surveys further surveys are required to determine the population size and evidence of breeding may be required).	One survey visit for HSI assessment and, where required, followed by presence/absence survey (eDNA or four survey visits) and then up to a total of six survey visits for population survey (where required).	HSI - anytime of year eDNA / population surveys – April to June	Habitat Regulations (2017), WCA 1981, NERC Act 2006, UKBAP, LBAP	✓	✓	✓
Reptiles	Medium	Surveys to identify the presence or absence of reptile species across suitable habitats within the Site.	One survey visit to place the reptile refugia followed by seven survey visits to check for reptiles.	April to June and / or September to October.	WCA 1981, LBAP, UKBAP, NERC Act 2006	✓	✓	✓
Breeding birds	High	Surveys required to determine the breeding bird assemblage across the	Six survey visits for a territory mapping survey and to determine presence, or	March to June (breeding bird assemblage); April	Birds Directive, WCA 1981, LBAP,	✓	✓	✓

Receptor	Scale of constraint	Further requirements	Number of survey visits required	Survey period	Driver	When is action likely to be required?		
						To inform design	Before planning applicatio	Pre-constructi on
		Proposed Scheme, including species listed on WCA Sch. 1.	absence, of species listed on Schedule 1 of the WCA.	to August (*e.g.* Barn Owls).	UKBAP, NERC Act 2006			
Non-breeding birds	Medium / High	Surveys required to determine the non- breeding (wintering) bird assemblage across the Proposed Scheme.	Six survey visits.	October to March.	Birds Directive, WCA 1981, LBAP, UKBAP, NERC Act 2006	✓	✓	✓
Bats - roosting	High	Surveys to identify potential features on trees and buildings that may support bat roosts. Depending on the findings of this survey and risk to these features, further surveys may be required to determine whether bats are present.	One survey visit to undertake preliminary roost assessment across the Proposed Scheme.	Anytime for PRA (ideally when trees not in leaf, January to February). May to September for roost characterisation (if required)	Habitat Regulations (2017), WCA 1981, LBAP, UKBAP, NERC Act 2006	✓	✓	✓
Bats - foraging	Medium / High	Transect surveys and deployment of static detectors to identify important areas across the Proposed Scheme used by commuting and foraging bats.	Bat activity surveys, one visit in spring, summer and autumn, including the deployment of static detectors.	April to October	Habitat Regulations (2017), WCA 1981, LBAP, UKBAP, NERC Act 2006	✓	✓	x
Otter	Medium / High	Undertake a presence / absence survey on watercourses that may be affected by the Proposed Scheme.	At least two survey visits	Spring is best, but the survey can be undertaken at any time of year	WCA 1981	✓	✓	✓
Water Vole	Medium / High	Undertake a presence / absence survey on watercourses that may be affected by the Proposed Scheme.	Two survey visits	April to June and July to September	WCA 1981	✓	✓	✓

Receptor	Scale of constraint	Further requirements	Number of survey visits required	Survey period	Driver	When is action likely to be required?		
						To inform design	Before planning applicatio	Pre-constructi on
Badger	High	Survey to record all evidence of Badger activity across the Proposed Scheme to identify setts to avoid or that require mitigation.	One survey visit.	Any time of year, ideally when vegetation not in leaf (November to February)	Protection of Badger Act 1992	✓	✓	✓
Invasive Non-native Species	Medium / High	No further investigation is required. If located a management plan should be produced to manage and eradicate where required.	Ongoing.	April to September	WCA 1981, Invasive Alien Species Order 2019	✓	✓	✓
Hedgehog and Brown Hare	Low	No further survey required, but mitigation and enhancement delivered as part of the Proposed Scheme should look to avoid disturbance to these species, retain habitats and ensure that connectivity is maintained throughout the Proposed Scheme and into the wider area. All species are likely to benefit from a reduction in intensively managed agricultural land.	N/A	-	NERC Act 2006	✓	✓	✓

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Appendix A: Figures

Revision: 0 Drawn: BF Checked: MC Approved: XX Date: 2022-05-24

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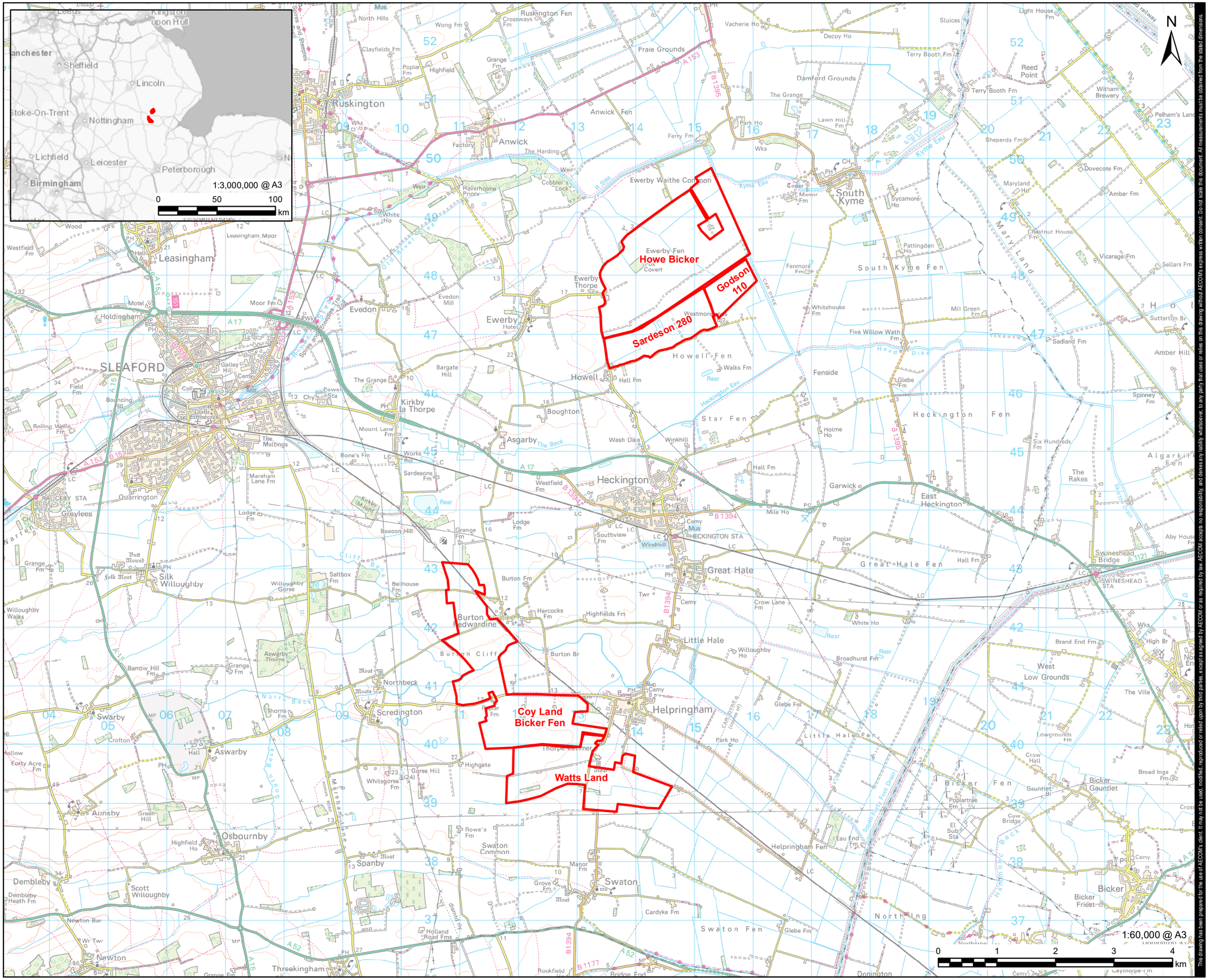

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LEGEND

Site Boundary

NOTES

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ISSUE PURPOSE

FOR INFORMATION

PROJECT NUMBER

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FIGURE TITLE

SITE LOCATION

FIGURE NUMBER

FIGURE 1

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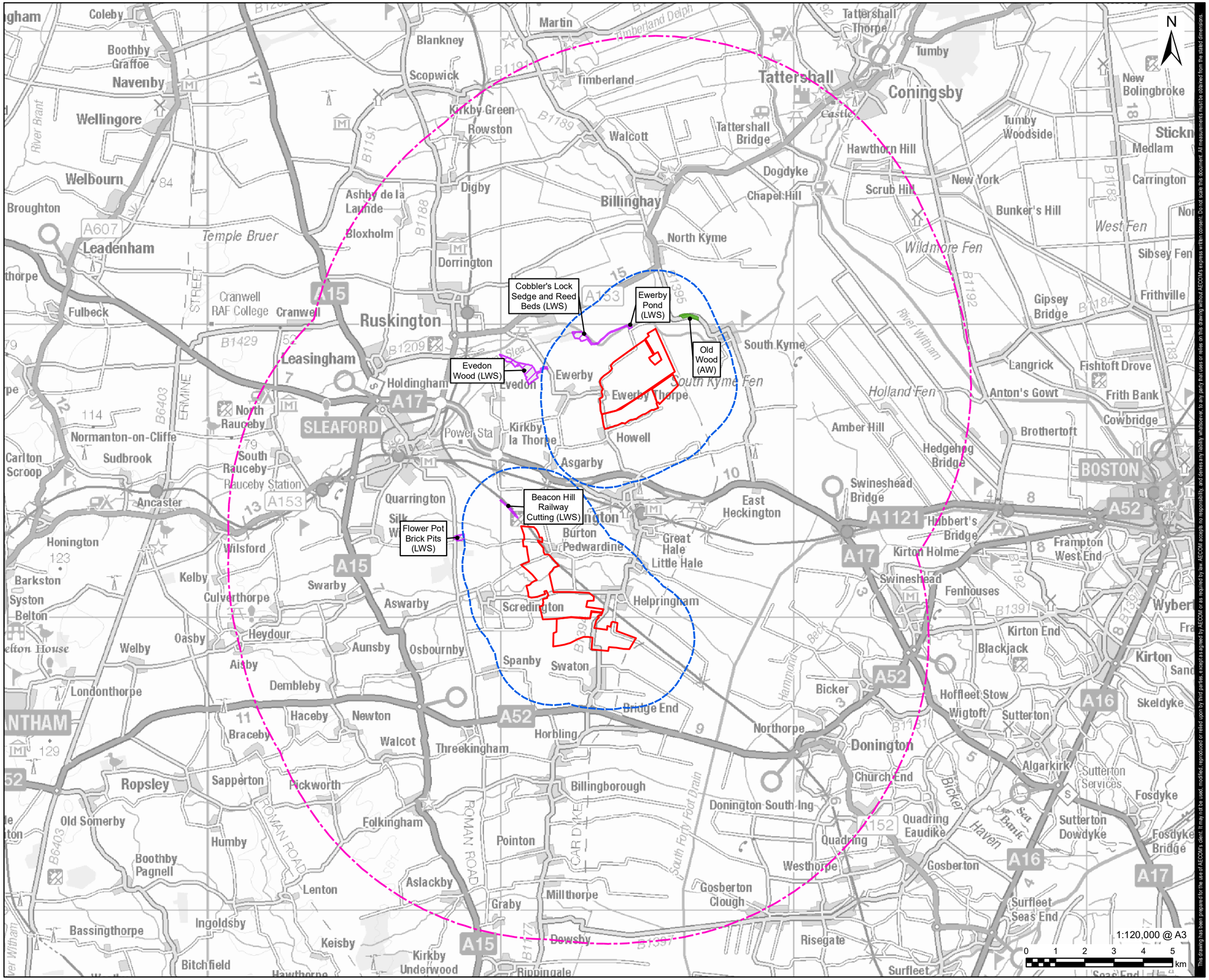

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LEGEND

- Site Boundary
- Study Area
- 10km Study Area for International Nature Conservation Sites
- 2km Study Area for Other Statutory and Non-Statutory Sites

Non Statutoru Sites within 2km Study Area

- Local Wildlife Site
- Ancient & Semi-Natural Woodland

NOTES

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ISSUE PURPOSE

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PROJECT NUMBER

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FIGURE TITLE

SITES STATUTORILY AND NON STATUTORILY DESIGNATED FOR NATURE CONSERVATION VALUE

FIGURE NUMBER

FIGURE 2

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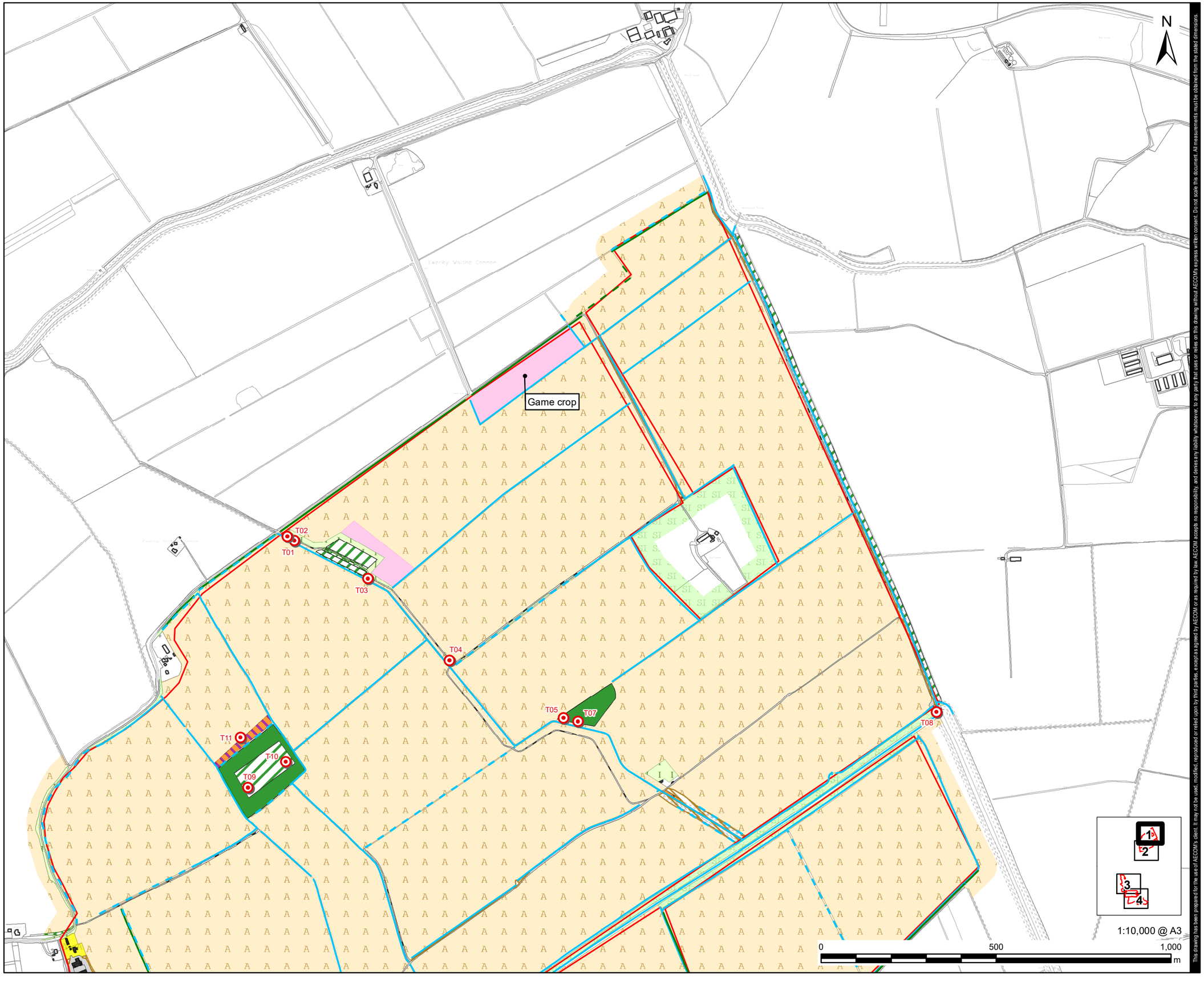

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LEGEND

- Site boundary

Phase 1 Habitat

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland - plantation
- A2.1 - Scrub - dense/continuous
- B2.2 - Neutral grassland - semi-improved
- B4 - Improved grassland
- B5 - Marsh/marshy grassland
- B6 - Poor semi-improved grassland
- C3.1 - Other tall herb and fern - ruderal
- G1 - Standing water
- Hardstanding
- J1.1 - Cultivated/disturbed land - arable
- J1.2 - Cultivated/disturbed land - amenity grassland
- J3.6 - Buildings
- J4 - Bare ground
- J5 - Other habitat
- G2 - Running water
- J2.1.2 - Intact hedge - species-poor
- J2.2.2 - Defunct hedge - species-poor
- J2.4 - Fence
- J2.6 - Dry ditch
- Target note

NOTES

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ISSUE PURPOSE

FOR INFORMATION

PROJECT NUMBER

60644715

FIGURE TITLE

PHASE 1 HABITAT - HOWE BICKER, SARDESON 280, GODSON 110
PAGE 1 OF 4

FIGURE NUMBER

FIGURE 3.1

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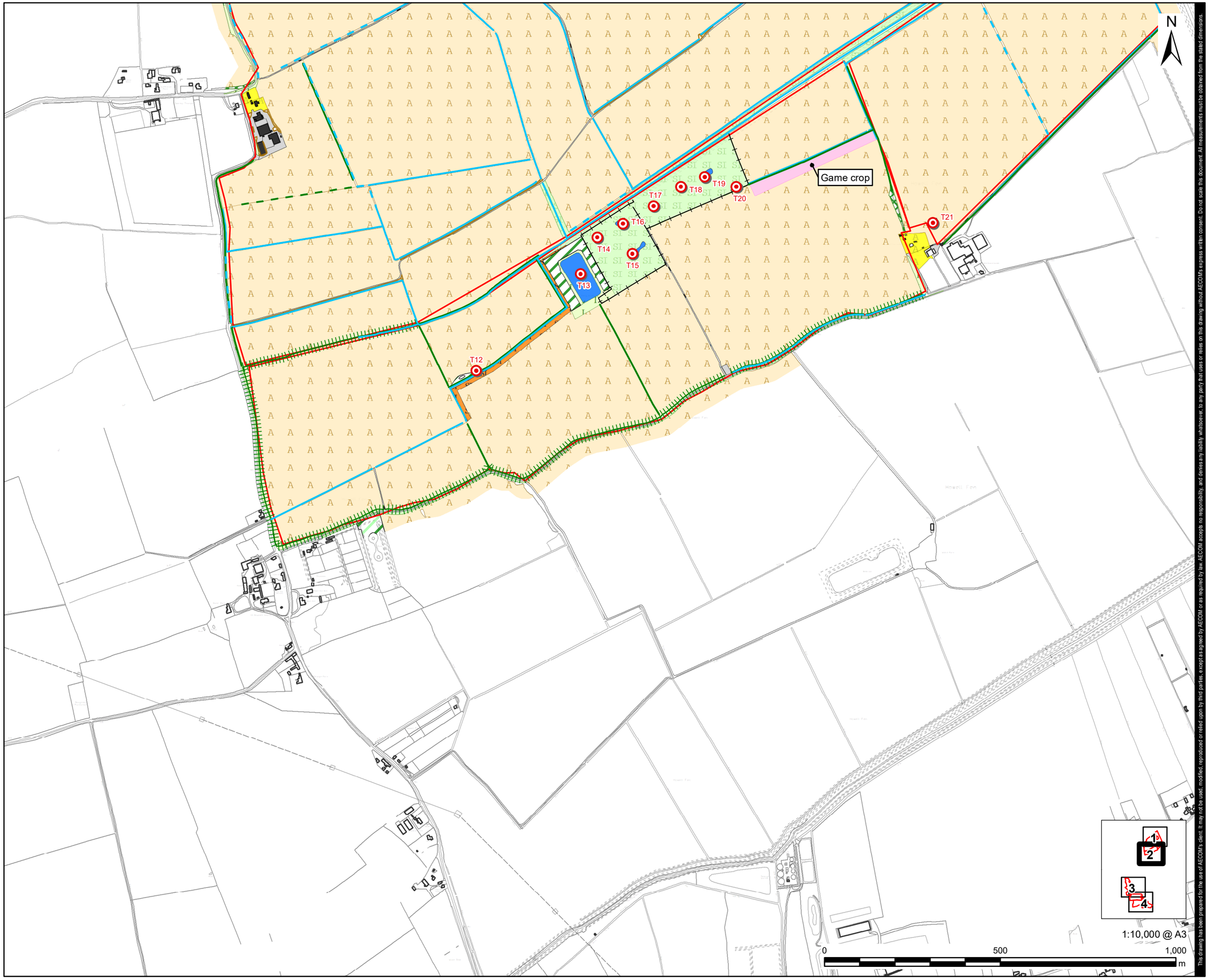

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LEGEND

- Site boundary

Phase 1 Habitat

- A1.1.2 - Broadleaved woodland - plantation
- A1.3.2 - Mixed woodland - plantation
- A2.1 - Scrub - dense/continuous
- B2.2 - Neutral grassland - semi-improved
- B4 - Improved grassland
- B6 - Poor semi-improved grassland
- C3.1 - Other tall herb and fern - ruderal
- G1 - Standing water
- Hardstanding
- J1.1 - Cultivated/disturbed land - arable
- J1.2 - Cultivated/disturbed land - amenity grassland
- J3.6 - Buildings
- J4 - Bare ground
- J5 - Other habitat
- G2 - Running water
- J2.1.2 - Intact hedge - species-poor
- J2.2.2 - Defunct hedge - species-poor
- J2.3.2 - Hedge with trees - species-poor
- J2.4 - Fence
- J2.6 - Dry ditch
- Target note

NOTES

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FIGURE TITLE

PHASE 1 HABITAT - HOWE BICKER, SARDESON 280, GODSON 110
PAGE 2 OF 4

FIGURE NUMBER

FIGURE 3.2

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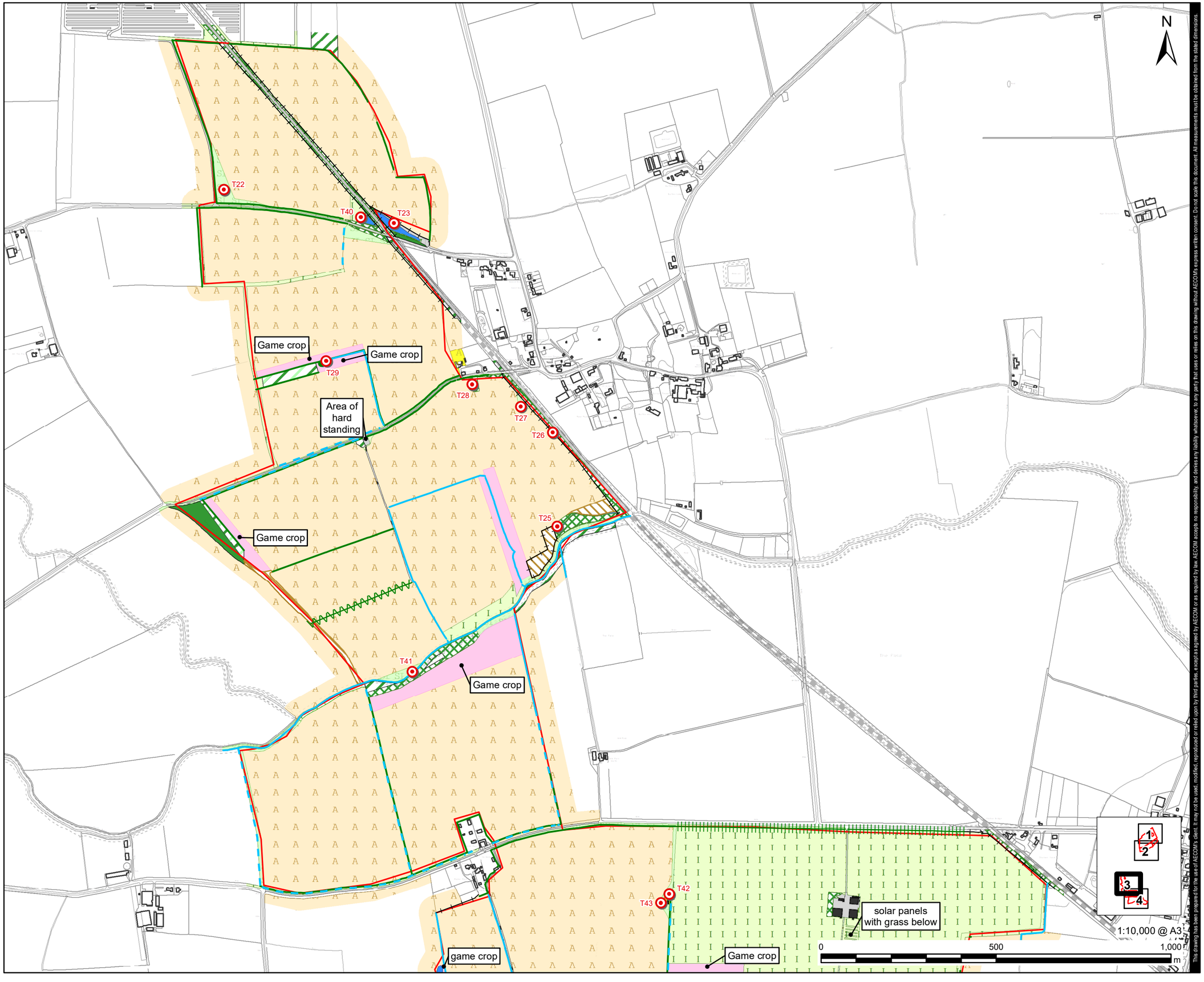

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LEGEND

- Site boundary

Phase 1 Habitat

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland - plantation
- A1.3.2 - Mixed woodland - plantation
- A2.1 - Scrub - dense/continuous
- A2.2 - Scrub - scattered
- B4 - Improved grassland
- B6 - Poor semi-improved grassland
- C3.1 - Other tall herb and fern - ruderal
- G1 - Standing water
- Hardstanding
- J1.1 - Cultivated/disturbed land - arable
- J1.2 - Cultivated/disturbed land - amenity grassland
- J3.6 - Buildings
- J4 - Bare ground
- J5 - Other habitat
- G2 - Running water
- J2.1.1 - Intact hedge - native species-rich
- J2.1.2 - Intact hedge - species-poor
- J2.2.2 - Defunct hedge - species-poor
- J2.3.2 - Hedge with trees - species-poor
- J2.4 - Fence
- J2.6 - Dry ditch
- A3.1 - Broadleaved tree
- Target note

NOTES

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ISSUE PURPOSE

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FIGURE TITLE

PHASE 1 HABITAT - COY LAND
BICKER FEN, WATTS LAND
PAGE 3 OF 4

FIGURE NUMBER

FIGURE 3.3

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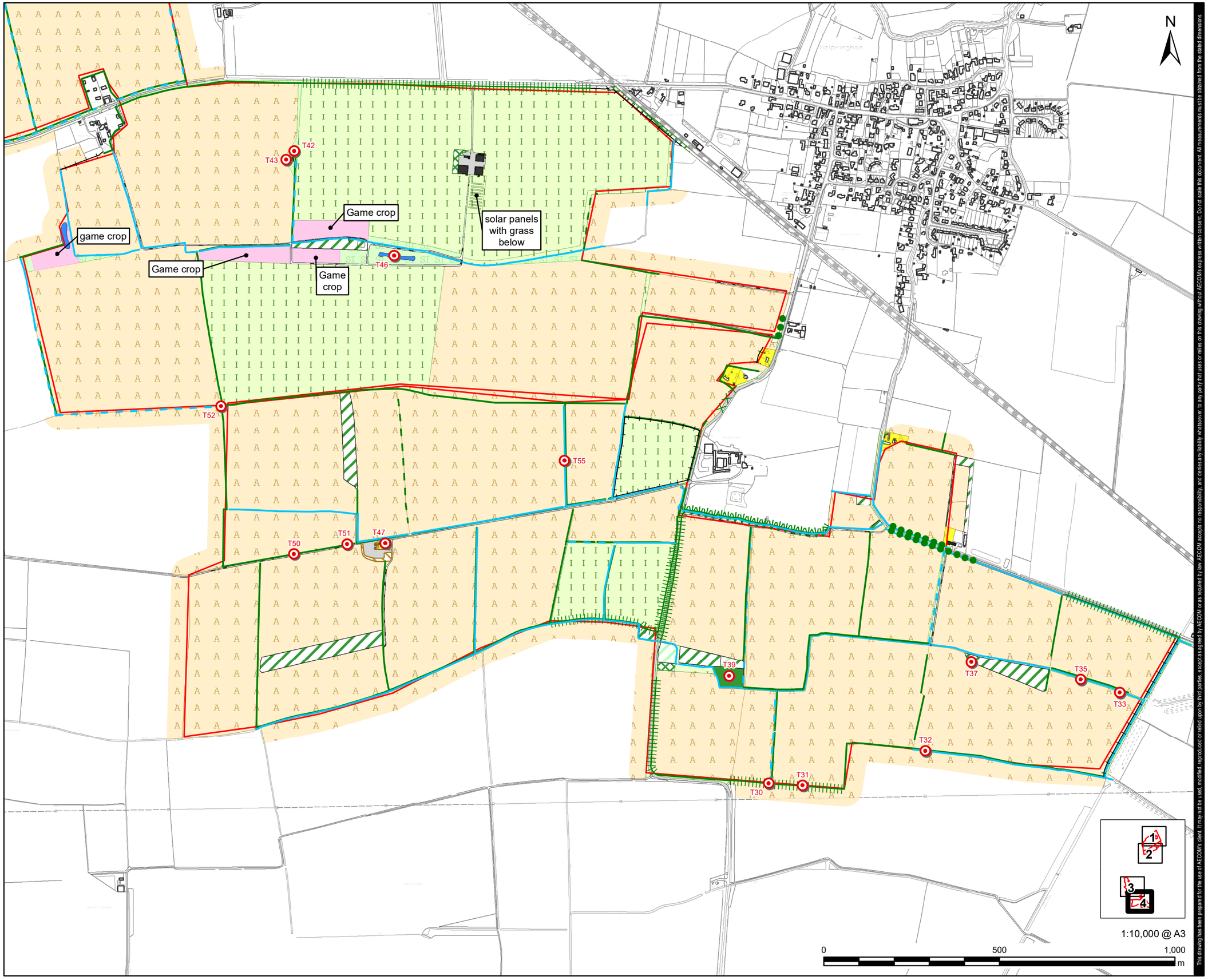

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LEGEND

- Site boundary

Phase 1 Habitat

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland - plantation
- A1.2.2 - Coniferous woodland - plantation
- A1.3.2 - Mixed woodland - plantation
- A2.1 - Scrub - dense/continuous
- B4 - Improved grassland
- B6 - Poor semi-improved grassland
- C3.1 - Other tall herb and fern - ruderal
- G1 - Standing water
- Hardstanding
- J1.1 - Cultivated/disturbed land - arable
- J1.2 - Cultivated/disturbed land - amenity grassland
- J3.6 - Buildings
- J4 - Bare ground
- J5 - Other habitat
- A2.2 - Scrub - scattered
- A3.1 - Broadleaved parkland/scattered tree line
- G2 - Running water
- J2.1.2 - Intact hedge - species-poor
- J2.2.2 - Defunct hedge - species-poor
- J2.3.1 - Hedge with trees - native species-rich
- J2.3.2 - Hedge with trees - species-poor
- J2.4 - Fence
- J2.6 - Dry ditch
- Target note

NOTES

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FIGURE TITLE

PHASE 1 HABITAT - COY LAND
BICKER FEN, WATTS LAND
PAGE 4 OF 4

FIGURE NUMBER

FIGURE 3.4

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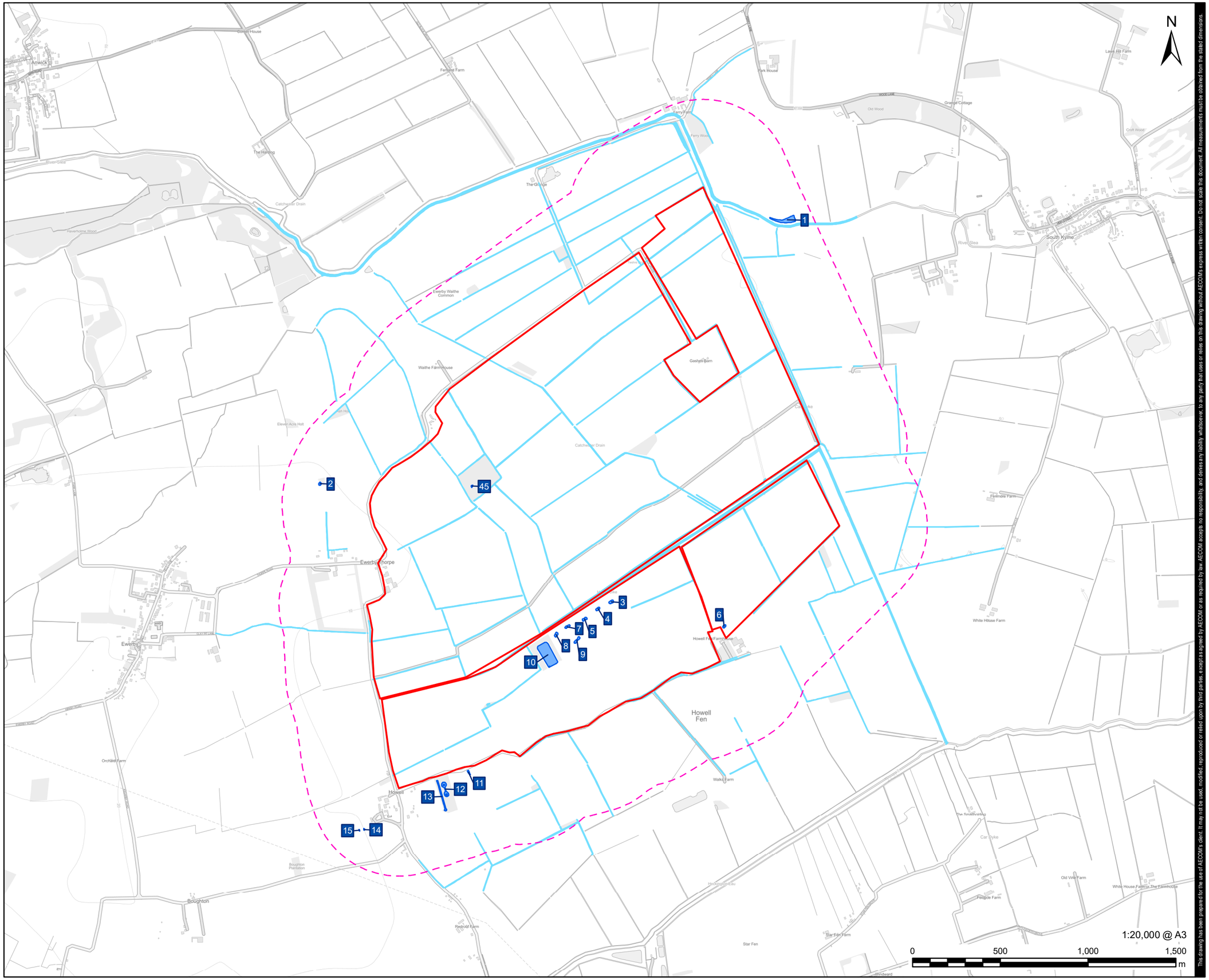

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LEGEND

- Site boundary
- Study Area (500m Site Buffer)
- Waterbody/Watercourse for study
- Other watercourses

PAGE LAYOUT

1

2

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ISSUE PURPOSE

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PROJECT NUMBER

60644715

FIGURE TITLE

WATERBODIES WITHIN 500M OF THE PROPOSED SCHEME; HOWE BICKER, SARDESON 280, GODSON 110

FIGURE NUMBER

FIGURE 4.1

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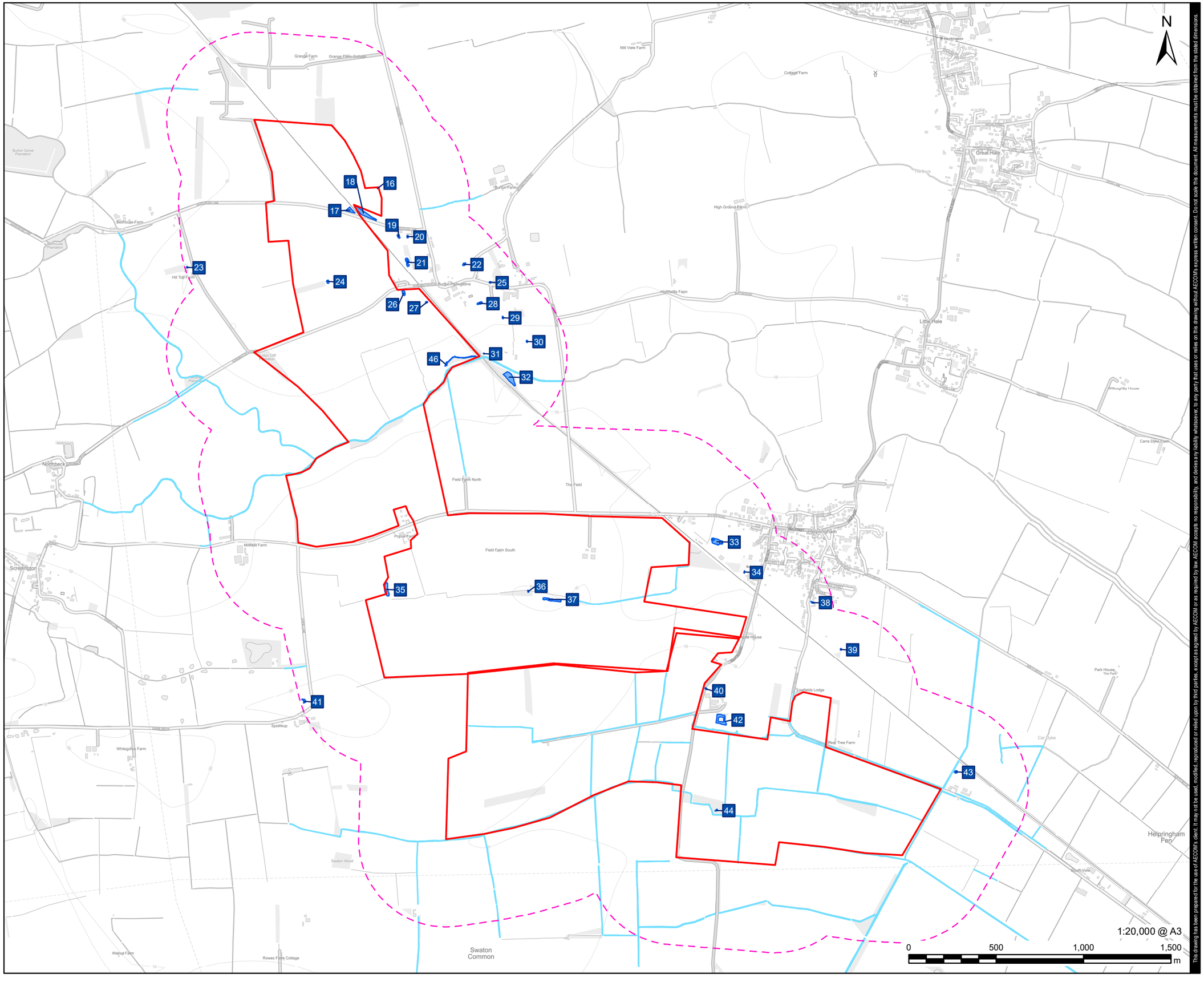

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LEGEND

- Site boundary
- Study Area (500m Site Buffer)
- Waterbody/Watercourse for study
- Other watercourses

PAGE LAYOUT

1

2

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ISSUE PURPOSE

FOR INFORMATION

PROJECT NUMBER

60644715

FIGURE TITLE

WATERBODIES WITHIN 500M OF THE PROPOSED SCHEME; COY LAND BICKER FEN, WATTS LAND

FIGURE NUMBER

FIGURE 4.2

Appendix B: Legislation and Policy

The Conservation of Habitats & Species Regulations 2017 (as amended)

The Habitats Regulations consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations came into force on 30th October 1994. In Scotland the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the 1994 Regulations. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

From 1st January 2021 changes have been made to the Conservation of Habitats and Species Regulations 2017 (as amended) “the 2017 Regulations”. The changes are made by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 “the 2019 Regulations”. Most of these changes involved transferring functions from the European Commission to the appropriate authorities in England and Wales. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant. The obligations of a competent authority in the 2017 Regulations for the protection of sites or species do not change.

The 2017 Regulations (Regulation 9(1)), as amended by the 2019 Regulations, require the Secretary of State and Welsh Ministers to secure compliance with the requirements of the Habitats Directives. Any new powers in the 2019 Regulations must be exercised in line with the Directives and retained EU case law up to 1 January 2021.

The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Under the Regulations, competent authorities i.e. any Minister, Government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the EC Habitats Directive.

The Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I and II of the Habitats Directive respectively) to the European Commission. Once the Commission and EU Member States have agreed that the sites submitted are worthy of designation, they are identified as Sites of Community Importance (SCIs). The EU Member States must then designate these sites as Special Areas of Conservation (SACs) within six years. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs) classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). These sites form a network termed Natura 2000.

The Regulations enable the country agencies to enter into management agreements on land within or adjacent to a European site, in order to secure its conservation. If the agency is unable to conclude such an agreement, or if an agreement is breached, it may acquire the interest in the land compulsorily. The agency may also use its powers to make byelaws to protect European sites. The Regulations also provide for the control of potentially damaging operations, whereby consent from the country agency may only be granted once it has been shown through Appropriate Assessment that the proposed operation will not adversely affect the integrity of the site. When considering potentially damaging operations, the country agencies apply the precautionary principle' i.e. consent cannot be given unless it is ascertained that there will be no adverse effect on the integrity of the site.

In instances where damage could occur, the appropriate Minister may, if necessary, make special nature conservation orders, prohibiting any person from carrying out the operation. However, an operation may proceed where it is or forms part of a plan or project with no alternative solutions, which must be carried out for reasons of overriding public interest. In such instances the Secretary of State must secure compensation to ensure the overall integrity of the Natura 2000 system. The country agencies are required to review consents previously granted under the Wildlife and Countryside Act 1981 for land within a European site, and may modify or withdraw those that are incompatible with the conservation objectives of the site.

The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

The Regulations make special provisions for the protection of European marine sites, requiring the country agencies to advise other authorities of the conservation objectives for a site, and also of the operations which may affect its integrity. The Regulations also enable the establishment of management schemes and byelaws by the relevant authorities and country agencies respectively, for the management and protection of European marine sites.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 is the major domestic legal instrument for wildlife protection in the UK, and is the primary means by which the following are implemented:

- The Convention on the Conservation of European Wildlife and Natural Habitats ('the Bern Convention'); and The Council Directive 79/409/EEC on the Conservation of Wild birds (the 'Bird Directive')

Wild Birds

The Act makes it an offence (with exception to species listed in Schedule 2) to intentionally:

- kill, injure, or take any wild bird,
- take, damage or destroy the nest of any wild bird while that nest is in use or being built (also [take, damage or destroy the nest of a wild bird included in Schedule ZA1] under the Natural Environment and Rural Communities Act 2006), or
- take or destroy an egg of any wild bird.

Special penalties are available for offences related to birds listed on Schedule 1, for which there are additional offences of disturbing these birds at their nests, or their dependent young. The Secretary of State may also designate Areas of Special Protection (subject to exceptions) to provide further protection to birds. The Act also prohibits certain methods of killing, injuring, or taking birds, restricts the sale and possession of captive bred birds, and sets standards for keeping birds in captivity.

Other Animals

The Act makes it an offence (subject to exceptions) to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Flora, Fungi and Lichens

The Act makes it an offence (subject to exceptions) to intentionally) pick, uproot or destroy:

- any wild plant listed in Schedule 8, or
- unless an authorised person, to intentionally uproot any wild plant not included in Schedule 8,
- to sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Non-native Species

The Act contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule

9 in England and Wales. It also provides a mechanism making any of the above offences legal through the granting of licences by the appropriate authorities.

Countryside and Rights of Way (CRoW) Act 2000

The Countryside and Rights of Way Act 2000 applies to England and Wales only. Part III of the Act deals specifically with wildlife protection and nature conservation.

The Act places a duty on Government Departments and the National Assembly for Wales to have regard for the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.

Schedule 9 of the Act amends the SSSI provisions of the Wildlife and Countryside Act 1981, including increased powers for their protection and management of SSSIs. The provisions extend powers for entering into management agreements; place a duty on public bodies to further the conservation and enhancement of SSSIs; increase penalties on conviction where the provisions are breached; and include an offence whereby third parties can be convicted for damaging SSSIs.

Schedule 12 of the Act amends the species provisions of the Wildlife and Countryside Act 1981, strengthening the legal protection for threatened species. The provisions make certain offences 'arrestable', include an offence of reckless disturbance, confer greater powers to police and wildlife inspectors for entering premises and obtaining wildlife tissue samples for DNA analysis, and enable heavier penalties on conviction of wildlife offences.

Natural Environment and Rural Communities (NERC) Act 2006

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 41 (S41) of the Act required the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list was drawn up in consultation with Natural England, as required by the Act.

The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Fifty-six habitats of principal importance are included on the S41 list. These are all the habitats in England that were identified as requiring action in the (now withdrawn) UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. They include terrestrial habitats such as upland hay meadows to lowland mixed deciduous woodland, and freshwater and marine habitats such as ponds and subtidal sands and gravels.

There are 943 species of principal importance included on the S41 list. These are the species found in England which were identified as requiring action under the (now withdrawn) UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework. In addition, the hen harrier has also been included on the list because without continued conservation action it is unlikely that the hen harrier population will increase from its current very low levels in England.

Protection of Badgers Act 1992

Badgers and their setts (burrows) are protected under the Act. This makes it an offence to kill or take a badger, to cruelly ill-treat a badger, or to interfere with a badger sett, including disturbing a badger while it is occupying a sett.

Licences to permit otherwise prohibited actions can be granted under section 10 of the Act for various purposes. This includes licences to interfere with a badger sett for the purpose of development as defined by section 55(1) of the Town and Country Planning Act 1990.

Licences may be granted in order to close down setts, or parts of setts, prior to development or to permit activities close to a badger sett that might result in disturbance. A licence will be required if a sett is

likely to be damaged or destroyed in the course of development or if the badger(s) occupying the sett will be disturbed.

Licences can be applied for at any time, but a licence for development will not normally be issued unless full planning permission has been granted. The closure of setts under licence is normally only permitted during July to November, inclusive.

The Hedgerow Regulations 1997

The intention of the Act is to protect important countryside hedges from destruction or damage. The Act does not apply where planning permission has been granted. There are various other exemptions under the Act, including:

- To make a new opening in substitution for an existing one that gives access to land. For example, a gate. However, the old opening must be filled in within 8 months;
- To obtain access to land where other means are not available or are only available at disproportionate cost;
- For the proper management of the hedgerow. This means real management, such as coppicing. But if the hedgerow is deliberately 'over-managed' this might qualify as removal.

If the proposed works are not exempt or subject to a current planning permission then the landowner must serve a Hedgerow Removal Notice in writing on their local planning authority. The authority then has 42 days (which period can be extended if the applicant agrees) to determine whether or not the hedge is considered 'important' under the regulations, and if so, whether or not to issue a Hedgerow Retention Notice. The local authority does not have to issue a Retention Notice, even if the hedgerow counts as important. If they do not issue a notice for an important hedge this is often on condition that certain things are done, e.g. reinstatement or replanting to a certain standard, or creation of an equivalent boundary elsewhere.

Water Framework Directive (WFD) 2017

The Water Framework Directive (WFD) (2000/60/EC) introduced a comprehensive river basin management planning system to help protect and improve the ecological health of our rivers, lakes, estuaries and coastal and groundwaters. This is underpinned by the use of environmental standards to help assess risks to the ecological quality of the water environment and to identify the scale of improvements that would be needed to bring waters under pressure back into a good condition.

National Planning Policy Framework

Paragraph 174 states that '*Planning policies and decision should contribute to and enhance the natural and local environment by:*

- *protecting and enhancing valued, landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*
- *recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
- *maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*
- *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, where possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*

- *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate'.*

Paragraph 175 states that 'Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintain and enhancing networks of habitats and green infrastructure; and plan for the enhancement of a natural capital at a catchment or landscape scale across local authority boundaries.'

Paragraph 179 states that '*To protect and enhance biodiversity and geodiversity, plans should:*

- *identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*

- *promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity'.*

Paragraph 180 states that 'When determining planning application, local planning authorities should apply the local planning authorities should apply the following principles:

- *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*

- *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly*

- *outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*

- *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*

- *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate'.*

Paragraph 181 states that: 'The following should be given the same protection as habitats sites':

- *potential Special Protection Areas and possible Special Areas of Conservation;*

- *listed or proposed Ramsar sites; and*

- *sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites'.*

Paragraph 182 states that '*The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site'.*

Appendix C: LBAP Habitats and Species

Habitats

Habitat Group	Habitat Action Plans
Coastal and Marine	Coastal sand dunes
	Peat and clay exposures
	Sabellaria spinulosa reefs
	Saline lagoons
	Saltmarsh
Farmland and Grassland	Arable field margins
	Grazing marsh
	Hedgerows and hedgerow trees
	Lowland calcareous grassland
	Lowland meadows
Heathland and peatland	Heathland and peatland
	Lowland dry acid grassland
Rivers and Wetlands	Chalk streams and blow wells
	Fens
	Ponds, lakes and reservoirs
	Reedbeds and Bitten (*Botaurus stellaris)*
	Rivers, canals and drains
	Springs and flushes
Trees and Woodland	Lowland mixed deciduous woodland
	Traditional orchards
	Wet woodland
	Wood pasture and parkland
Urban	Brownfield
	Churchyard and cemeteries
	Gardens and allotments
	Parks and open spaces

Species

Action Plan Group	Common Name	Scientific Name
Bats	Whiskered Bat	*Myotis mystacinus*
	Brandt's Bat	*Myotis brandti*
	Natterer's Bat	*Myotis natterer*
	Daubenton's Bat	*Myotis daubentonii*
	Noctule Bat	*Nyctalus noctula*
	Leisler's Bat	*Nyctalus leisler*
	Common Pipistrelle	*Pipistrellus pipistrellus*
	Soprano Pipistrelle	*Pipistrellus pygmaeus*
	Nathusius' Pipistrelle	*Pipistrellus nathusii*
	Barbastelle Bat	*Barbastella barbastellus*
	Brown Long-Eared Bat	*Plecotus auritus*
Commercial fish (marine)	Plaice	*Pleuronectes platessa*
	Sole	*Solea solea*
	Edible Crab	*Cancer pagurus*
	Lobster	*Homarus gammarus*
Farmland Birds	Grey Partridge	*Perdix perdix*
	Lapwing	*Vanellus vanellus*
	Yellow Wagtail	*Motacilla flava*
	Skylark	*Alauda arvensis*
	Corn Bunting	*Miliaria calandra*
	Linnet	*Carduelis cannabina*
	Yellowhammer	*Emberiza citronella*
	Reed Bunting	*Emberiza scheoeniclus*
	Turtle Dove	*Streptopelia turtur*
	Bullfinch	*Pyrrhula pyrrhula*
	Starling	*Sturnus vulgaris*
	Tree Sparrow	*Passer montanus*
	Snipe	*Gallinago gallinago*
	Curlew	*Numenius arquata*
	Redshank	*Tringa totanus*

	Barn Owl	*Tyto alba*
Freshwater Fish	European Eel	*Anguilla anguilla*
	Spined Loach	*Cobitis taenia*
	Sea Lamprey	*Petromyzon marinus*
	River Lamprey	*Lampetra fluviatilis*
	Smelt	*Osmerus eperlanus*
	Brown Trout	*Salmo trutta*
	Sea Trout	*Salmo trutta*
	Atlantic Salmon	*Salmo salar*
Greater Water-Parsnip	Great Water-Parsnip	*Sium latifolium*
Natterjack Toad	Natterjack Toad	*Epidalea calamita*
Newts	Great Crested Newt	*Triturus cristatus*
	Palmate Newt	*Lissotriton helveticus*
	Smooth Newt	*Lissotriton vulgaris*
Seals	Common Seal	*Phoca vitulina*
	Grey Seal	*Halichoerus grypus*
Urban Birds	Swift	*Apus apus*
	Song Thrush	*Turdus philomelos*
	House Sparrow	*Passer domesticus*
Water Vole	Water Vole	*Arvicola amphibius*
White-Clawed Crayfish	White-Clawed Crayfish	*Austropotamobius pallipes*
Invasive non-native species	Generic – covering a number of species	

Appendix D: Target Notes

Target Notes	Target Note Information
1	Water filled ditch, with potential for Water Vole, Grass Snake, aquatic flora and invertebrates
2	Tall ruderal vegetation on bankside
3	Small section of semi-improved grassland, including Cowslip and Common Knapweed,
4	Badger latrine
5	Badger latrine
7	Ash with knot holes and woodpecker hole, also other Ash trees in woodland with bat roost potential
8	Otter spraint on concrete of outflow
9	Small pond in woodland, potential for Great Crested Newt
10	Small shaded pond in woodland
11	Marshy grassland potential for reptiles
12	Barn Owl box
13	Small lake, clear water, fish present, possible Great Crested Newt suitability
14	Shallow pond with potential for Great Crested Newt
15	Shallow pond with Great Crested Newt potential
16	Very shallow pond limited potential for Great Crested Newt
17	Very shallow pond, probably dries in summer limited potential for Great Crested Newt
18	Shallow pond with potential for Great Crested Newt
19	Shallow pond with potential for Great Crested Newt
20	Barn Owl box lacking roof
21	Pond heavily shaded with willow, potential for Great Crested Newt
22	Rough grassland with potential for reptiles
23	Large fish lake, limited potential for Great Crested Newt
25	Small pond with watercress and sedge potential for Great Crested Newt
26	Badger latrine
27	Pond with potential for Great Crested Newt
28	Large pond with potential for Great Crested Newt

29	Pond with lot of suspended silt, potential for Great Crested Newt
30	Large Ash tree with broken branches, woodpecker holes and fungus with potential for roosting bats
31	Remains of Badger cub
32	Badger latrine
33	Badger footprints, track of them along field edge southern side of hedge/stream
35	5 badger latrine, one very fresh along edge of field
37	3 badger latrines
39	Small woodland pond, very shaded, potential for Great Crested Newt
40	Pond at edge of field, lots of suspended silt in water.
41	Watercourses with potential for Water Vole and Grass Snake
42	Potential reptile habitat and refugia
43	Barn owl box in old barn, lots of recent pellets and droppings, also dead Barn Owl on floor. Alive adult Barn Owl also present, occupied site.
46	Long large pond with good quality water, potential for Great Crested Newt. Toads calling from pond.
47	Brick farm buildings with potential for bats and Barn Owl. Little Owl pair present.
50	Three badger latrines
51	Four badger latrines
52	Badger hair on bottom of trunk, possible scratching post
55	Badger latrine

Notes – Target Notes relating to the location of Badger setts have been removed from the table and Figure 3, owing to the confidentiality surrounding the reporting of locations of Badger setts