Appendix 6.3

Preliminary Ecological Appraisal – Grid Connection Corridor

Springwell Solar Farm

Grid Connection Corridor – Preliminary Ecological Appraisal Report

November 2023 Rev00
Springwell Energyfarm Ltd

Quality information:

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Executive Summary

This report presents the results of a preliminary ecological appraisal (PEA) of an area of land near Navenby, Lincolnshire which has been added to the proposed Springwell solar farm site boundary. This area, referred to as the 'site', is proposed for installation of a connecting cable route to a new National Grid Navenby substation, referred to as the 'Grid Connection Corridor', which would eventually link to the proposed Springwell solar farm. The exact cable route is still to be confirmed, therefore this report presents a broad assessment of the wider area within which the cable route is to be situated.

The site is comprised of arable fields intersected by hedgerows and dry stone walls with a mixed plantation woodland, Gorse Hill Covert, bordering the site to the south west.

No impacts to any statutory designated sites are expected on account of their absence in proximity to the site. However, four non-statutory local wildlife sites run within or immediately adjacent to the site. Measures to protect these sites during construction should be outlined in a construction and environmental management plan (CEMP) to ensure that the proposed works will not have any significant impacts on them, or where impacts cannot be avoided how these will be mitigated.

No notable or invasive plant species were recorded within the survey area, however the survey was completed outside the optimal time period for these surveys and as such findings should be interpreted with caution.

Further surveys to determine the extent of potential ecological constraints are recommended, including:

- a detailed hedgerow survey to determine if any of the affected hedgerows are classified as 'important' under the criteria outlined in the Hedgerow Regulations 1997 and to determine species composition for re-planting;
- a pre-construction update badger survey within six months of start of works to check for any new badger activity on the site;
- bat roost surveys – aerial inspections or emergence activity surveys of any trees suitable for roosting bats if any will be impacted by the proposed development;
- targeted botanical surveys, such as National Vegetation Classification (NVC), if any sections of calcareous grassland road verges (which are designated as Local Wildlife Sites), need to be disturbed.

Mitigation measures to be outlined in a CEMP include:

- measures to protect local wildlife sites and priority habitats;
- nesting bird and breeding brown hare checks by an ecologist prior to commencement of works;
- precautionary working methods to protect reptiles, hedgehogs, badgers and other nocturnal species;
- habitat retention and protection in line with relevant guidance; and
- implementation of a sensitive lighting strategy to avoid disturbance to foraging bats, if any artificial lighting is required.

1. Introduction

1.1. Purpose of this report

1.1.1. This report presents the results of a preliminary ecological appraisal (PEA), comprising a background data search and a UK habitat survey, with assessment for protected or otherwise notable species, of an additional area of land for the proposed Springwell solar farm development, east of Navenby, Lincolnshire (central National Grid Reference TF018574).

1.1.2. This area, referred to as the 'site', is proposed for installation of a connecting cable route to a new National Grid Navenby substation, referred to as the 'Grid Connection Corridor', which would eventually link to the proposed Springwell solar farm. The exact cable route is still to be confirmed, therefore this report presents a broad assessment of the wider area within which the cable route is to be situated. The Grid Connection Corridor site is shown in Figure 1.

1.1.3. The PEA included a ground-level assessment of trees (GLTA) potentially suitable for roosting bats within the site and along the site boundaries and a badger survey.

1.1.4. The survey of the site was carried out on 2nd and 3rd of November 2023.

1.1.5. The majority of the rest of the proposed Springwell solar farm site was previously surveyed in the spring of 2022. An area to the north of Thompson's Bottom (central National Grid reference - TF 01735 55991) and area at Brauncewell (central National Grid Reference TF042528), were added to the scheme in late 2022 and surveyed in January 2023. Also a PEA survey of an additional four fields, to the west of RAF Digby, was carried out in June 2023. The results of these PEA surveys are presented in two separate reports, one for the majority of the site (RSK Biocensus 2023A[1]) and a separate report for the land near Brauncewell (RSK Biocensus 2023B[2]).

1.1.6. This report identifies ecological constraints relevant to the project, specifies any further survey or mitigation requirements, gives recommendations for avoidance and protection through design changes, and suggests opportunities for ecological enhancement. The appraisal was carried out on behalf of EDF.

1.2. Landscape context

1.2.1. The c. 139 ha site is located c. 2 km east of the village of Navenby in the district of North Kesteven, Lincolnshire. The site is dominated by agricultural fields bordered by hedgerows and dry stone walls with a mixed woodland plantation to the south west, bordering fields A and B. The A15, a major connecting road to Lincoln, lies on the sites eastern boundary.

[1] RSK Biocensus (2023A) *Springwell Solar Farm – Preliminary Ecological Appraisal Report*. Rev02. July 2023. 2483765: RSK Biocensus, Coventry.
[2] RSK Biocensus (2023A) *Springwell Solar Farm: Land at Brauncewell – Preliminary Ecological Appraisal Report*. Rev00. February 2023. 2483765: RSK Biocensus, Coventry.

There were no ponds or wet ditches within the site boundary, or within 500m of the site boundary based upon aerial imagery.

1.2.2. The surrounding landscape is largely arable, comprising a mosaic of arable fields and interconnecting hedgerows, with Navenby village to the west. A large woodland plantation lies c. 740 m to the north on the eastern side of the A15.

1.3. Development proposals

1.3.1. The assessment is based on the red line boundary of the site as shown in Figure 1. The specific development proposals are not currently known but are anticipated to involve the construction of a new National Grid Navenby substation and a connecting cable route which will be used to connect the Springwell solar farm to the National Grid. The cable route is expected to include a 25m easement, however the route has still to be confirmed.

1.3.2. This report only covers the Grid Connection Corridor and not the proposed location for the National Grid Navenby substation which is anticipated to be situated in one of the three fields to the west of the site. These fields have been included within the red line boundary but have not been surveyed as access permission has not yet been obtained. It is anticipated that this remaining area will be surveyed once the substation proposals have been confirmed and the correct permissions are in place.

1.4. Validity of data

1.4.1. According to Chartered Institute of Ecology and Environmental Management (CIEEM) advice (CIEEM 2019[3]), survey data are valid for a period of 12 to 18 months from the date of the survey. The report highlights any circumstances where data may be valid for less than 18 months. Between 18 months and three years a professional ecologist will need to undertake a site visit and may also need to update desk study information (effectively updating the PEA) and then review the validity of the report.

[3] Chartered Institute of Ecology and Environmental Management (2019), *Advice Note on the Lifespan of Ecological Reports & Surveys*. CIEEM, Winchester, Hampshire.

2. Methods

2.1. Overview

2.1.1. The PEA was undertaken in line with guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017[4]); it therefore included:

- a desk study (here called a background data search (BDS)), which included a review of aerial photographs; obtaining information from the DEFRA and JNCC websites, and the local authority website; requesting data from the local records centre; and
- a field survey that informed habitat mapping, an assessment of the possible presence of protected or priority species and the likely importance of habitat features.

2.1.2. The PEA report includes an ecological description of the site and information about species that may occur there. Notes and mapping of any incidental sightings of invasive non-native plant species and protected or priority fauna species are also provided.

2.1.3. The survey of the Site was carried out on November 2nd and 3rd 2023 by Joseph Mould of RSK Biocensus. Joseph is a suitably qualified and experienced ecological consultant, with two years' experience in ecological consultancy.

2.2. Background data search

2.2.1. A search was made in November 2023 for relevant reference materials. A list of sources is given in Table 1.

Table 1: Data sources

Information obtained	Available from
Protected and noteworthy species-records	Greater Lincolnshire Nature Partnership
Designated site locations and citations	Natural England website
Designated site locations and citations	Joint Nature Conservation Committee (JNCC) website
Designated site locations and citations	Greater Lincolnshire Nature Partnership
Designations and legal protection of noteworthy species	Joint Nature Conservation Committee (JNCC) website
Areas / Habitats of Strategic Significance	Lincolnshire biodiversity action plan

[4] Chartered Institute of Ecology and Environmental Management (2017), *Guidelines for Preliminary Ecological Appraisal*. Technical Guidance Series, www.cieem.net/gpea.asp.

Areas / Habitats of Strategic Significance	National Habitat Networks https://www.data.gov.uk/dataset/0ef2ed26-2f04-4e0f-9493-ffbdbfaeb159/habitat-networks-england
Areas / Habitats of Strategic Significance	National Priority Focus Areas https://www.data.gov.uk/dataset/c20a40c5-c975-43e1-9abd-d1257aa58432/natural-england-national-priority-focus-areas
Areas / Habitats of Strategic Significance	Nature Improvement Areas https://www.data.gov.uk/dataset/a19c95e3-9657-457d-825e-3d2f3993b653/nature-improvement-areas

2.2.2. A search was made for the following international and national statutory designated sites of ecological importance within 10km of the site boundary: Ramsar sites, Special Areas of Conservation (SAC) , Special Protection Areas (SPA) , and for Sites of Special Scientific Interest (SSSI), including consideration of SSSI risk zones, within 2km.

2.2.3. A search was also made for non-statutory designated (often important in a local context) within 2 km of the site boundary and any ancient woodland sites within 1km of the site boundary.

2.2.4. The BDS also included a search for records within 2 km of the site boundary of noteworthy species, which might pose a constraint to the proposed development. Species included in the search were:

- European protected species (listed on Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017 (as amended));
- nationally protected species under Schedules 1, 5 and 8 of The Wildlife & Countryside Act 1981 (as amended) and The Protection of Badgers Act 1992;
- species listed as critically endangered, endangered or vulnerable based on the IUCN Red List Categories and Criteria 2001;
- all species listed on the RSPB's Birds of Conservation Concern 5 (Stanbury et al., 2021[5]) as red' or 'amber';
- nationally rare or nationally scarce species;
- notable invertebrates; and
- species of principal importance listed under The Natural Environment and Rural Communities (NERC) Act 2006 or priority species under the relevant local biodiversity action plan.

[5] Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. & Win, I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747.].

2.3. Plants and habitats

UK Habitat (UKHab) survey

2.3.1. The field survey was based on the UK habitats (UK Hab) survey methodology (Version 2.0; UKHab Ltd 2023[6]). The UK Hab classification system is the habitat classification that underpins the DEFRA Biodiversity Metric and is therefore the favoured habitat classification to use when surveys need to inform a Biodiversity Net Gain Calculation. This field survey was undertaken in line with CIEEM 2017 and involved the following elements:

- descriptions of the broad and dominant vegetation types;
- habitat mapping using a set of standard colour codes to indicate habitat types (Figure 2); and
- additional notes relating to numbered locations on Figure 2, called 'target notes'.

2.3.2. Vascular plant species were recorded during the survey, although no attempt was made to produce an exhaustive species list (additional species would almost certainly be found during more detailed surveys or repeat surveys at various times of the year).

2.3.3. Plant nomenclature in this report follows Stace (2019[7]) for native and naturalised species of vascular plant, and mosses and liverworts follow Hill *et al*. (2008[8]). Introduced species and garden varieties were identified using relevant Floras. Plant names in the text are given with common names with the scientific name (in italics) immediately following the first time it is mentioned. Capital letters are used for common plant names.

Invasive non-native species (INNS)

2.3.4. UK habitat survey does not involve exhaustive surveying for individual plant species, and various invasive species may be little in evidence at various times of year (depending on the species). A survey seeking to identify habitat types cannot therefore be relied upon to provide firm information about the presence or extent of any INNS. However, any INNS, if encountered during the habitat survey would be noted, such as Japanese Knotweed (*Reynoutria japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Himalayan Balsam (*Impatiens glandulifera*), as well as any invasive non-native species of animals.

[6] UKHab Ltd (2023). UK Habitat Classification Version 2.0 (at https://www.ukhab.org)
[7] Stace, C.A. (2019), *A New Flora of the British Isles* (4th edition). C & M Floristics, Middlewich Green.
[8] Hill, M.O., Blackstock, T.H., Long, D.G. & Rothero, G.P. (2008), *A Checklist and Census Catalogue of British and Irish Bryophytes*. British Bryological Society, Middlewich.

2.4. Protected and notable animals

General

2.4.1. The site was assessed for its suitability to support protected or otherwise notable animals that are likely to occur in the area. Some species could be ruled out through review of existing records, species distribution, geographic location, ecological connectivity and broad habitat types. Taking into account connectivity to natural habitats in the wider landscape, the nature and extent of habitats at the site, specific assessment was also carried out for the species/species groups outlined below.

Invertebrates

2.4.2. The site was assessed for its suitability to support notable species and/or assemblage of invertebrates, but no specific surveys were undertaken. The habitat requirements of particular invertebrates are often species-specific, so consideration was given to the presence of features and habitats that might be suitable for the notable species identified in the BDS.

Great crested newts

2.4.3. Although standing water is essential for their breeding, great crested newts (*Triturus cristatus*) are terrestrial for most of the year and have been recorded up to 500 m from their breeding ponds. Ordnance Survey maps and aerial imagery was reviewed to identify any ponds within 500 m of the site boundary, and the site was assessed for its suitability for both terrestrial and breeding great crested newts. Optimal breeding ponds tend to be well-vegetated, relatively clean and unpolluted, free of fish and wildfowl, and retentive of water throughout most summers (but not necessarily all). Highly suitable terrestrial habitats include woodland, scrub and tussocky grassland, although great crested newts can be found in a broad range of sub-optimal habitats as well. Habitat suitability for other amphibians was similarly assessed.

2.4.4. Water features were assessed to determine whether they were suitable for great crested newts using the habitat suitability index (HSI) methodology developed by Oldham et al. (2000). This comprises a numerical index, where 0 indicates unsuitable habitat and 1 represents optimal habitat.

2.4.5. There is a positive correlation between HSI scores and presence and abundance of great crested newts in ponds. Generally, ponds with high HSI scores are likely to support larger populations. However, the relationship is not sufficiently precise to conclude that any pond with a high HSI will support newts in high populations, or that any pond with a low score will support low numbers of newts or no newts at all.

Reptiles

2.4.6. The site was assessed for its suitability for the four most widespread reptile species, with particular attention given to those features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (e.g. rough grassland and scrub).

2.4.7. Specific habitat requirements differ between species. Common lizards (*Zootoca vivipara*) and slow-worms (*Anguis fragilis*) favour rough grassland. Grass snakes (*Natrix helvetica*) have broadly similar requirements, with a greater reliance on ponds and wetlands. Adders (*Vipera berus*) use a range of fairly open habitats with some cover but are most often found in dry heath.

Birds

2.4.8. Birds nest, forage and roost in a wide variety of habitats including scrub, woodland, hedgerows and trees, wetland, arable and pastoral farmland and rough grassland. Some species also use open bare ground and man-made structures.

2.4.9. The site was assessed for its suitability to support diverse assemblages and/or uncommon species of breeding and non-breeding birds, with an emphasis on those species that are listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended), the red and amber lists of the RSPB's Birds of Conservation Concern 5 (Stanbury et al., 2021) and other notable species recorded in the BDS, including any species that are qualifying features of nearby designated sites. Consideration was given to the site's connectivity to landscape features that are likely to be of particular importance to birds, such as extensive areas of semi-natural woodland or wetlands. The presence of nests or signs of nest building were recorded, and buildings were surveyed for their suitability for barn owls and other species, with signs including nesting sites, feathers, droppings and pellets.

Bats

2.4.10. Habitats were assessed for their suitability for foraging and commuting bats, in line with guidance provided in Collins (2023[9]). Areas of particular interest vary between species, but generally include sheltered areas and habitats with good numbers of insects, such as woodland, scrub, rivers and species-rich or rough grassland.

2.4.11. Trees were noted if they had potential suitability for roosting bats (Collins 2023). This involved identifying features that roosting bats may favour (e.g. holes, cracks and cavities that might be used as bat access-points or roost sites).

2.4.12. Each tree's suitability to support roosting bats was then categorised as follows:

[9] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London.

- PRF-I – Roosting features have the potential to support only individual or small numbers of bats.
- PRF-M – Roosting features have the potential to support multiple bats and which may therefore be suitable for use by a maternity colony.

Badgers

2.4.13. An initial assessment was carried out to identify areas that might be used by badgers (*Meles meles*) for foraging or sett building within 30 m of all areas potentially affected by works (where access was possible). The area was systematically searched for signs of badgers including setts, foraging signs, paths (runs) and latrines where possible, and the category of sett and levels of activity visible at each sett was recorded.

Species of principle importance

2.4.14. The UK countries of England, Wales, Scotland and Northern Ireland are obliged by their individual laws to maintain lists of species and habitats of principal importance for biodiversity conservation. In England, this obligation derives from the Natural Environment and Rural Communities (NERC) Act 2006. An assessment of the suitability and likelihood of the site supporting such species was made - for example, brown hare (*Lepus europaeus).*

2.5. Limitations

2.5.1. Less conspicuous plant species (including INNS) may have been missed as a result of the survey being undertaken outside of the ideal survey season. However, the majority of plants present were confidently identified, and the survey was sufficient to make a broad assessment of the habitats present on the site.

2.5.2. This preliminary appraisal as to whether protected or otherwise notable species might occur on the site is based on the suitability of habitat, the known distribution of relevant species in the local area (from online sources and desk study), and any signs of the relevant species. It does not constitute a full and definitive survey of any protected species group.

2.5.3. Field signs for protected and valuable species are often difficult to find or absent from a site. The survey conducted was not intended to be a comprehensive presence/absence survey for all species, but rather to provide an indication of the likely presence of such species based on the field signs found, and the nature of the habitats present.

2.5.4. Access was not made to adjacent land without access permission, and therefore it remains possible that a badger sett (or other evidence of protected or notable species) beyond the site boundary could have been missed.

2.5.5. Trees within the woodland area to the south west of the site were not assessed individually for their suitability for roosting bats, since they are outside of the site red line boundary. If any of these trees are to be

impacted directly or the cable route is anticipated to pass in close proximity to this area further survey may be required.

2.5.6. The roadside verges either side of the A15 were not surveyed in detail for safety reasons due to high speed traffic along this stretch of road, however it is considered likely that these verges will not be impacted by the proposals and therefore this is not considered a significant constraint.

2.5.7. Several hedgerows were noted to have been flailed prior to the survey, as such there was little vegetation by which to identify species with confidence and therefore only a rough estimation of relative species richness could be made.

2.5.8. All recommendations made in this report are based on the information provided by EDF. A detailed layout of the proposed cable route is not available at this time. If the development plans change significantly or extend outside of the survey area, then an ecologist must be consulted and further surveys may be required.

3. Results

3.1. Background data search

Formal local biodiversity action plans and strategies

3.1.1. The latest Lincolnshire local biodiversity action plan (LBAP) lists 26 habitat action plans (HAPs) and 11 species or species group action plans (SAPs). The local HAPs and SAPs that are relevant to the proposed development are:

Habitats

- Arable field margins
- Hedgerows and hedgerow trees
- Lowland calcareous grassland
- Lowland mixed deciduous woodland

Species

- Bats
- Farmland birds

Statutory designated sites

3.1.2. There are no international statutory designated sites within 10 km of the site boundary.

3.1.3. There are no national statutory designated sites within 2km of the site boundary. The site does not intersect with any Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ) buffers. Statutory designated sites are therefore not considered any further.

Non-Statutory sites

3.1.4. There are ten non-statutory designated sites within 2 km of the site boundary, all of which are Local Wildlife Sites (LWS). The designated sites present within the study area are listed in Table 2, along with their proximity to the site.

Table 2: Non-statutory designated sites within 2km of the Site

Site name and reason for designation	Designation	Distance and orientation (m)
A15, Green Man Road to Cuckoo Lane – Calcareous grassland habitat	LWS	Immediately adjacent – E
Gorse Lane – Unimproved calcareous grassland, woodland, dense scrub and bracken.	LWS	Immediately adjacent – W

Navenby Heath Road Verges – Calcareous grassland	LWS	Within site boundary
Green Man Lane – Calcareous grassland	LWS	107m N
Gorse Hill Lane Verges – Calcareous grassland	LWS	Adjacent to site boundary
Navenby, Green Man Road Verges – Calcareous grassland	LWS	329m N
High Dike, Long Lane to Navenby Verges – Calcareous grassland	LWS	1412m W
Wellingore Heath Road Verges – Calcareous grassland	LWS	1564m SW
Boothby Graffoe Road Verge – Calcareous grassland	LWS	1630m N
St. John the Baptist Churchyard, Temple Bruer – Calcareous grassland (unimproved and semi improved)	LWS	1889m S

Ancient woodlands

3.1.5. There are no areas of ancient woodland (over 0.5ha) recorded within 1 km of the site boundary.

Informal strategies to identify ecologically desirable areas

3.1.6. The site is not within any national priority focus or nature improvement areas. National priority focus areas are typically designated where Natural England (NE) are targeting more than one delivery programme, and as such, are key areas where NE are targeting most effort. Nature improvement areas comprise 12 sites selected across England, with the aim of creating ecological networks at a landscape scale. These areas are partnerships between local authorities, communities and private landowners supported by funding from DEFRA and NE.

3.1.7. The site lies partially within a Network Enhancement Zone 1 and a Network Expansion Zone, for primary habitat Lowland calcareous grassland and associated habitat 'PHI_Other habitat networks'.

3.1.8. A 'Network Enhancement Zone 1' is 'land connecting existing patches of primary and associated habitats, which is likely to be suitable for creation of the primary habitat. Factors affecting suitability include: proximity to primary habitat; land use (urban/rural); soil type; slope and proximity to coast. Action in this zone to expand and join up existing habitat patches and improve the connections between them can be targeted here' (Magic

2023[10]). A 'Network Expansion Zone' is 'land beyond the Network Enhancement Zones with potential for expanding, linking/joining networks across the landscape i.e. conditions such as soils are potentially suitable for habitat creation for the specific habitat in addition to Enhancement Zone 1. Action in this zone to improve connections between existing habitat networks can be targeted here (Magic 2023[11]).

3.1.9. Any associated habitat that does not have an individual habitat network map (as outlined above) and all other priority habitat is shown on the combined habitat network map as 'PHI_Other' (Natural England 2020[12]).

Protected and notable species

3.1.10. Records of at least 28 protected species are recorded within 2km of the site. Records in excess of 30 years old have been excluded from discussion here, however a full list of species recorded is provided in Appendix. These included: 15 species of bird; 2 species of reptile (including grass snake and common lizard); water vole (*Arvicola amphibius*); badger and 6 species of bat, including the nationally rare western barbastelle (*Barbastella barbastellus*).

3.1.11. At least 38 noteworthy species are recorded within 2 km of the site boundary. Some noteworthy species include species of principal importance that are listed under Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006, such as common toad (*Bufo bufo*), hedgehog (*Erinaceus europaeus*) and brown hare (*Lepus europaeus*).

3.1.12. Other noteworthy species include: 19 bird species, 13 invertebrate species, and one plant species Purple milk-vetch (*Astragalus danicus*). Species of relevance to the site and the current proposals are discussed later in this report.

3.2. Plants and habitats

UK Habitat (UKHab) survey

3.2.1. The UK habitat map is provided as Figure 2 and shows the location of the target notes referred to in the text below. A full description for each of the target notes is given in Appendix D. The site comprises the following:

- Other neutral grassland (g3c)
- Calcareous grassland (g2)
- Bracken (g1c)
- Line of trees (w – secondary code 33)
- Hedgerow (priority habitat) (h2a)

[10] Magic (2023) *Magic Interactive Map Application,* DEFRA https://magic.defra.gov.uk/magicmap.aspx
[11] Magic (2023) Magic Interactive Map Application, DEFRA https://magic.defra.gov.uk/magicmap.aspx
[12] Natural England (2020) National Habitat Network Maps – User Guidance v.2 https://magic.defra.gov.uk/Metadata_for_magic/Habitat%20Network%20Mapping%20Guidance.pdf

- Bramble scrub (h3d)
- Mixed scrub (h3h)
- Cropland (c1)
- Temporary grass and clover leys (c1b)
- Non cereal crops (c1d)
- Built linear features (u1e)

Other neutral grassland (g3c)

3.2.2. Uncultivated field margins of species-poor grassland c. 1 m-1.5 m wide bound all of the fields within the Site. These varied in their condition with some evidence of damage arising from minor herbicide spray drift and some minor damage from farm machinery.

3.2.3. Broadly all of these margins were species poor, frequently dominated by species typically associated with high levels of soil fertility, including Cleavers (*Galium aparine*) Common Nettle (*Urtica dioica*), Cow Parsley (*Anthriscus sylvestris*), Creeping Thistle (*Cirsium arvense*), Hogweed (*Heracleum sphondylium*), Mugwort (*Artemisia vulgaris*), Red dead-nettle (*Lamium purpureum*), Sow Thistle (*Sonchus sp.*) and Spear Thistle (*Cirsium vulgare*). Wood Avens (*Geum urbanum*), White Campion (Silene latifolia) and Violet (*Viola sp.*) were also noted relatively frequently at the base of hedges. Grass species included False oat-grass (*Arrhenatherum elatius*), Cock's-foot (*Dactylis glomerata*), Yorkshire Fog (*Holcus lanatus*), Red Fescue (*Festuca rubra*), Rough meadow-grass (*Poa trivialis*), Perennial rye-grass (Lolium perenne) and Brome (*Bromus sp.*).

Calcareous grassland

3.2.4. Grassland road verges alongside the A15, Navenby Heath Road (TN8, Appendix B, Photograph 8) and farm tracks along the southern and western boundaries are designated as Local Wildlife Sites for calcareous grassland. Lowland calcareous grassland is a priority habitat of importance. However it was not possible to carry out a detailed botanical survey of these grassland verges during the PEA survey (to determine whether they qualify as lowland calcareous grassland priority habitat) due to road safety concerns and because the PEA survey was undertaken in November – which is a sub-optimal time of year for botanical survey as herbs are not as abundant or may not be visible.

Bracken (g1c)

3.2.5. Bracken (*Peteridium aquilinum*) dominated open ground along the western boundary of Field C which adjoins Gorse Lane LWS, accompanied by large stands of Common Nettle, scattered Bramble (*Rubus fruticosus*) and other tall herbaceous vegetation including Rosebay Willowherb (*Chamaenerion angustifolium*) and Great Willowherb (*Epilobium hirsutum*) (TN4, Appendix B, Photograph 4).

Line of trees (w – secondary code 33)

3.2.6. A line of semi mature trees lies on the southern boundary of Field A adjacent to the main field entrance, comprising mainly Sycamore (*Acer pseudoplatanus*) with Beech (*Fagus sylvatica*), Field Maple (*Acer campestre*) and Hawthorn (*Crataegus mongyna*).

Hedgerow priority habitat (h2a)

3.2.7. Many of the fields within the site are bordered by hedgerows, either fully or partially. These were found to comprise several native tree and shrub species, though most often dominated by Hawthorn with perhaps 3 or 4 other species appearing occasionally. Other species noted included Ash (*Fraxinus excelsior*), Blackthorn (*Prunus spinosa*) Elder (*Sambucus nigra*), Elm (*Ulmus sp.*), Rose (*Rosa sp.*), and Wild Privet (*Ligustrum vulgare*).

3.2.8. Several of the hedgerows incorporated a mixture of young semi mature and mature standard trees, typical species were Ash, Beech and Sycamore. A number of these trees were in poor condition with several either fully dead or in decline, of which the majority were Ash. Many Ash showed signs of infection with the bracket fungus (*Inonotus hispidus*) with visible evidence of decay including numerous cavities also noted.

3.2.9. The hedgerows around the site are subject to regular management, with several having been recently flailed prior to the survey (TN7, Appendix B, Photograph 7). This has resulted in some wounding and damage to several hedgerow trees, typically where lower overhanging limbs have been broken off, or contact has been made with the main stem of trees.

Bramble (h3d)

3.2.10. Several patches of Bramble dominated scrub were noted along field boundaries within the site. A raised bank in the south eastern corner of Field A is the most apparent example of this (TN12, Appendix B Photograph 12). Bramble is also dominant along the woodland edge on the western boundaries of Field A and Field B.

Mixed scrub (h3h)

3.2.11. In several areas there are pockets of mixed scrub, most notably along the western field boundaries of Fields B and C (TN3, Appendix B, Photograph 3. These areas of scrub comprised several woody species including Hawthorn, Blackthorn, Elder, Ash, Wild Privet, Bramble, Elm and infrequently Common Gorse (*Ulex Europaeus*) and Wild Cherry (*Prunus avium*).

Cropland (c1)

3.2.12. Field C comprised bare recently cultivated soil.

Temporary grass and clover leys (c1b)

3.2.13. Fields A, F and G were comprised of temporary sown grass leys with a uniform length sward of poor species richness dominated by fast growing grasses, mainly Perennial rye-grass (*Lolium perenne*), with a few scattered forbs including Ribwort Plantain (*Plantago lanceolata*), Field Speedwell (*Veronica agrestis*) and Sow Thistle (*Sonchus sp.*).

Non cereal crops (c1d)

3.2.14. Field B comprised a winter Brassica cover crop with Fields D and E comprising recently harvested sugar beet.

Built linear features (u1e)

3.2.15. The site is bordered to the east by the A15 a single carriageway main road. A smaller minor road connecting Navenby village to the A15 separates Fields D and E and has a narrow grass verge c.1-1.5 m wide on each side. As the road is narrow, traffic passing has resulted in erosion and compaction of the roadside verge, with a strip of bare ground on each side of the carriageway surface. As described above, the A15 and Navenby Road roadside verges are comprised of calcareous grassland which are designated as Local Wildlife Sites. To the south of Field A lies a farm track, this comprises crushed stone rather than a sealed tarmac surface.

3.2.16. Dry stone walls in varying states of repair border many of the field edges on the site. In many cases the walls have collapsed or partially collapsed, with the majority of the remaining stone overgrown by vegetation, it was therefore difficult to determine the exact extent of these walls. However some remain in relatively good condition, for example along the boundary between Fields F and G (TN11, Appendix B, Photograph 11).

Invasive non-native plant species

3.2.17. No invasive non-native plant species were identified within the Site, however as the survey was completed outside the main growing season, it is possible that evidence of invasive species may have been missed particularly if occurring at low density. However it is considered unlikely that some such perennial species are present given the absence of any residual evidence, for example dead stems, which remain distinctive in species such as Japanese Knotweed (*Reynoutria japonica*).

3.3. Protected and notable animals

3.3.1. Figure 2 shows the location of the target notes referred to in the text below, which show the location of particular features with suitability for protected and notable animals. A full description for each of the target notes is given in Appendix A, site photographs are provided in Appendix B.

Invertebrates

3.3.2. The BDS returned records of 13 species of invertebrates, almost entirely comprising species of Lepidoptera (moths and butterflies) and a single species of bumblebee, large garden bumblebee (*Bombus ruderatus*).

3.3.3. Most of the habitats on Site were considered likely to support only a common assemblage of invertebrate species, typical of hedgerows, scrub, mixed broadleaved woodland and species-poor grasslands. However there are several local wildlife sites either within the site (Navenby Heath Road Verges LWS and Gorse Lane LWS) or on the boundaries (A15 Green Man Road to Cuckoo Lane LWS and Gorse Hill Lane LWS). The majority of these sites have been designated for their calcareous grassland communities, which may be capable of supporting more varied invertebrate communities.

Great crested newts and other amphibians

3.3.4. The BDS returned four records of great crested newts, however these were not recent records dating back to 1976 and were only recorded to 10 km grid square accuracy.

3.3.5. There were no ponds within the survey area and a review of aerial imagery indicates there are no ponds within 500 m of the site. The closest visible waterbody is a large farm reservoir situated c. 650 m east of the site, which is considered likely unsuitable for great crested newt. Furthermore the Site is separated from this reservoir by a busy main road, the A15, a significant barrier to any potential dispersal from the east.

3.3.6. Great crested newts are considered likely absent from the site and are therefore not considered any further.

3.3.7. Given the habitat on Site being mostly arable and absence of nearby waterbodies for breeding, the presence of other amphibian species such as common frog and common toad is also considered unlikely, however several of the dry stone walls along the field boundaries do offer potential resting places and foraging opportunities for these species.

Reptiles

3.3.8. The BDS returned records of four reptile species including slow worm, grass snake, adder and common lizard. The records of slow worm and adder were not recent records dating back to 1976. Grass snake was most recently recorded in 2009 to the north of the site on land between Green Man Road and Heath Lane. Common lizard was last recorded in 2021 in both Navenby to the west of the site and Scopwick Heath to the east, close to RAF Digby.

3.3.9. The site comprises mostly arable cropland and therefore is generally of poor suitability for reptiles. However there are some areas of Bracken, Bramble scrub, and rough grassland particularly within Gorse Lane LWS, on the western Site boundary, which offer suitable habitat for reptiles, with connectivity to the area of woodland immediately south west of the site. The dry stone walls lining several of the fields offer potential hibernation

opportunities and serve as potential habitat corridors, as many follow hedge lines or are on less frequently disturbed grass margins.

Birds

3.3.10. The BDS returned records of 15 protected and 19 notable bird species. This included a mix of species frequently associated with farmland habitats such as skylark (*Alauda arvensis*), quail (*Coturnix coturnix*), corn bunting (*Emberiza calandra*), yellowhammer (*Emberiza citrinella*), linnet (*Linaria cannabina*), yellow wagtail (*Motacilla flava*), tree sparrow (*Passer montanus*), grey partridge (*Perdix perdix*), turtle dove (*Streptopelia turtur*), starling (*Sturnus vulgaris*), redwing (*Turdus iliacus*), fieldfare (*Turdus pilaris*), barn owl (*Tyto alba*) and lapwing (*Vanellus vanellus*).

3.3.11. The habitats within the site boundary offer opportunities for both foraging roosting and nesting. Boundary hedgerows offer winter feeding opportunities for migrant thrushes such as redwing and fieldfare with several flocks noted during the survey, particularly where hedges have not yet been flailed. Dense vegetation at hedgerow bases and along field margins also offers potential nesting opportunities for ground nesting species such as skylark, grey partridge, and quail.

3.3.12. Large stick nests likely associated with corvid species were noted both within the canopy of several hedgerow trees but also in some cases within internal cavities in the trees themselves.

3.3.13. Dry stone walls along field boundaries where partially overgrown by vegetation offer potentially suitable sheltered nesting cavities, for species such as robin (*Erithacus rubecula*) and wren (*Troglodytes troglodytes*).

Bats

3.3.14. The BDS returned records of 6 different bat species including:

- Western barbastelle (*Barbastella barbastellus*)
- Natterer's bat (*Myotis nattereri*)
- Noctule bat (*Nyctalus noctula*)
- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Brown long-eared bat (*Plecotus auritas)*

3.3.15. Most of the site being arable is of low suitability for foraging and commuting bats. The habitat within the site was assessed as having low suitability for bats, though the area close to Gorse Hill Covert has higher suitability due to the presence of mature trees, several of which along the perimeter of the site were noted to have potential for roosting bats. Throughout the remainder of the site, the hedgerows and areas of scrub provide moderately suitable foraging and commuting habitat, though several of the hedgerows are broken or discontinuous and do not extend along the entirety of the field boundaries.

3.3.16. The edge of Gorse Hill Covert woodland borders the site to the south west. Trees along the woodland boundary were not individually assessed for bat roosting potential, however several mature Ash at the woodland edge were found to contain suitable potential bat roosting features, including several large knot hole and wound features.

3.3.17. Individual trees within and on the perimeter of the site were assessed for bat roosting potential. Six trees were categorised as PRF-I, possessing roosting features suitable for individual or small numbers of bats. A further eight trees were assessed as PRF-M, making them potentially suitable for multiple bats and therefore for potential use by a maternity colony. The results of the ground level tree assessment are shown in Figure 3.

Badgers

3.3.18. The BDS returned two records of badger, including one of a deceased badger in 2007 on the A15 close to its junction with Navenby Lane to the south of the site. A further more recent record in 2023 was from land immediately north of Green Man Lane c. 830m north of the site.

3.3.19. Evidence of badger activity was recorded within the Site including a fresh latrine at the base of a hedge on the western boundary. This was traced via a well-worn path to a three hole badger sett located just outside of the site boundary. This was considered likely to be a subsidiary sett (Photograph 5, Appendix B). The exact location of the sett is not provided for confidentiality reasons.

3.3.20. This sett was clearly recently active with a large mound of freshly excavated sandy spoil outside the largest entrance and fresh latrines nearby. Further evidence in the form of snuffle holes and latrines were noted along the base of the hedgerows within the site.

Other species

3.3.21. A complex of three burrows, which appeared inactive were noted beneath the hedgerow and within the field margin separating Fields A and B towards the western end close to Gorse Hill Covert woodland. Several of these burrows were partially blocked and there was no recent evidence of excavation, due to their small size it is thought likely that these were rabbit (*Oryctolagus cuniculus*) burrows (TN2, Appendix B, Photograph 2).

3.3.22. A second complex of four burrows was noted along the hedgerow separating Field B and C. The area surrounding these burrows showed no signs of significant recent activity, however given the small size of these burrows it is thought that they are linked to rabbit activity (TN6, Appendix B, Photograph 6).

3.3.23. Multiple rabbit burrows forming an extensive warren were noted beneath the hedgerow along the western boundary of Field F (TN9, Appendix B, Photograph 9).

A sighting of a single brown hare was recorded in Field G, when an single individual was disturbed from a resting place (form).

4. Evaluation and recommendations

4.1. Designated sites

Non-statutory designated sites

4.1.1. There are four non-statutory designated Local Wildlife Sites (LWS) either within or immediately adjacent to the site, these include Gorse Lane LWS on the western site boundary, Gorse Hill Lane LWS on the southern boundary, Navenby Heath Road Verges LWS, which runs across the site between Fields D and E and A15 Green Man Road to Cuckoo Lane LWS on the eastern boundary. These sites with the exception of Gorse Lane LWS are calcareous grassland roadside verges. Gorse Lane LWS incorporates unimproved calcareous grassland, dense scrub, woodland and Bracken.

4.1.2. Measures should be taken to protect these LWS's from direct physical damage or pollution, such as fuel and chemical run-off or dust deposition. Dependent upon the access routes chosen construction traffic may result in dust and pollution impacts to these roadside verges. Impacts to these sites will be assessed and measures to protect them will be documented within the CEMP.

4.2. Habitats and plants

4.2.1. The site comprises arable fields of low ecological value, with most plant species found within the site boundary being common and/or widespread and generally limited to perimeter habitats including field margins, hedgerows and scrub.

4.2.2. The hedgerows on Site are priority habitats which were generally of low to moderate species-richness with the majority of plant species present being common and/or widespread. The arable field margins were species-poor grassland and therefore do not qualify as 'arable field margin habitats of principal importance'. A full assessment of the calcareous grassland along several roadside verges could not be effectively surveyed due to the timing of the survey. Therefore if any sections of these roadside verges are to be impacted by the cable installation they should be subject to a detailed botanical survey ideally between May and August.

4.2.3. Hedgerows, hedgerow trees and calcareous grassland road verges (LWS's) should be retained as far as is possible, protected through the implementation of a CEMP, and enhanced where possible through appropriate landscaping design.

4.2.4. Once the cable route has being determined, any sections of hedgerow which are to be removed to facilitate the cable installation should be subject to a detailed hedgerow survey. This should be completed between late April and August, ideally between May and August, in order to determine if the affected hedgerows are classified as 'important' under the criteria outlined in the Hedgerow Regulations 1997 and to determine species for re-planting after works.

4.2.5. Retained woodland and individual trees should be protected in line with BS5837:2012 – Trees in relation to design, demolition and construction. This should consider potential impacts on trees and outline mitigation measures, such as the establishment of tree root protection zones (TPZ's) The details of this may be included within a site Construction Environmental Management Plan (CEMP).

4.2.6. No invasive species were recorded during the survey, however due to suboptimal timing of the survey. An additional survey should be carried out prior to commencement of construction, with the results informing mitigation measures to be implemented as part of the CEMP. This may be completed concurrently with either the hedgerow surveys or further botanical surveys.

4.3. Protected and other notable species

Reptiles

4.3.1. The dry stone walls which border several of the fields on the site offer potentially suitable habitat corridors and hibernacula for reptile species. There are recent records of both grass snake and common lizard within 2km of the site and some boundary habitats, particularly the scrubby grassland and Bracken corridor which forms Gorse Lane LWS on the sites western boundary, offers potentially suitable foraging, resting and basking opportunities for reptiles. However, if present, reptiles are considered likely to be at low population density, detailed reptile population surveys are therefore not recommended as it is unlikely that large areas of suitable habitat will be impacted by the proposals.

4.3.2. To minimise the risk of potential injury or harm to reptiles occurring during vegetation clearance of small areas of suitable habitat such as grass field margins, hedgerows and scrub, work should follow an appropriate precautionary working method statement. This should include a two stage cut whereby suitable vegetation is reduced in height, firstly to 15cm allowing time for reptiles to disperse, before finally reducing vegetation to ground level. Details of these methods should be outlined within the CEMP.

4.3.3. Any sections of dry stone wall which require removal should be dismantled above ground by hand under the supervision of an ecological clerk of works (ECoW), once below ground level the remaining stone should be removed by excavator and checked by the ECoW.

Birds

4.3.4. The hedgerows, and scrub within the survey area and adjacent woodland provide suitable habitat for birds, whilst the grassland and arable fields provide suitable habitat for ground nesting species including skylark and lapwing.

4.3.5. Works should avoid the breeding bird season (March to August inclusive) where possible. If work is to take place within the bird breeding season precautionary measures will be required. This should include pre-works

nesting bird checks by a suitably qualified ecologist within 48 hours of vegetation clearance taking place in areas of suitable nesting habitat.

4.3.6. If a section of dry stone wall is to be removed within the breeding season this should again be subject to a nesting bird check within 48 hours of removal. This will supplement precautionary measures outlined above to protect reptiles.

Bats

4.3.7. Most of the site, being arable, offers low suitability for foraging and commuting bats. However features around the site boundary such as Gorse Hill Covert woodland and the adjoining hedgerow network running across the site provide suitable habitats for foraging and commuting bats. Undergrounding of the cable will require removal of sections of hedgerow. Gaps in hedgerows can impact bats as some species have been found to avoid gaps of 10m or more (Gunnell *et al.* 2012[13]). However, it is anticipated that hedgerow removal will be minimised as much as possible and therefore should be relatively small in scale. All hedgerow gaps should be replanted in the next appropriate season after works with similar species so any adverse effect would be temporary.

4.3.8. To avoid impact to foraging and commuting bats, working at night should be avoided. If lighting is required then this should be directed downwards if possible or appropriately shrouded and directed away from hedgerows, or woodland edge habitats.

4.3.9. Six trees within the site were assessed as PRF-I meaning they are likely suitable only for individual or small numbers of bats. Trees identified as PRF-I should be considered for their value within a wider context including the presence of suitable habitat, and alternative favourable potential roosting sites. The presence of several mature trees with potential bat roosting features along the edge of Gorse Hill Covert woodland, indicates potential for further suitable roosting resource within the woodland itself. More isolated hedgerow trees with smaller and less valuable features in context are therefore potentially less likely to be chosen for roosting sites.

4.3.10. Trees assessed as PRF-I should not require further survey, however in accordance with the latest guidance, appropriate compensation for all PRF-I's which would be impacted by the cable installation should be provided in advance and works should follow an appropriate precautionary working method statement (PWMS) (Reason & Wray 2023[14]).

4.3.11. Eight trees within the site were assessed as PRF-M, as they are potentially suitable for multiple bats or a maternity roost.

4.3.12. Trees identified as PRF-M which are to be impacted by the proposed cable installation should be subject to three aerial climbing inspections,

[13] Gunnell K., Grant G. and Williams C. (2012) *Landscape and Urban Design for Bats and Biodiversity*. Bat Conservation Trust.
[14] Reason, P.F. and Wray, S. (2023). *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats*. Chartered Institute of Ecology and Environmental Management, Ampfield.

where safe to do so, between May and September (with at least two of these surveys between May and August) to determine feature suitability and presence or likely absence of bats (surveys should be at least three weeks apart). If features are found to be unsuitable by aerial inspection then further surveys would not be required. If aerial inspections are not possible then three emergence surveys using night vision aids (NVAs) would be required instead as per timings above (Collins 2023).

Badgers

4.3.13. The subsidiary sett is located just outside of the western boundary, and it is considered possible that a main sett may be present within Gorse Hill Covert woodland. Evidence including snuffle holes and latrines indicates that badgers are also active within the site, using the nearby field margins and hedgerows for foraging.

4.3.14. A works buffer of at least 30 m should be maintained from any active badger setts. It is recommended that a pre-construction badger survey is undertaken within 6 months of the commencement of work to identify any new badger activity on and within 30 m of the final proposed cable route inclusive of the 25 m easement. Badgers are highly mobile and regularly move territories, open up old setts or dig new ones. Vigilance should therefore be maintained for any new badger activity within the site boundary prior to works commencing.

4.3.15. If an active sett is discovered within 30 m of the working area, works should stop and advice should be obtained from a suitably qualified ecologist. If work within 30 m of an active sett cannot be avoided and destruction or disturbance of the sett is likely to occur then a licence to close or damage the sett may be required (depending on distance and works impact). Licences are only issued between 1 July and 30 November.

4.3.16. In order to safeguard any badgers that may be active in the area, working at night should be avoided and it is also good practice to cover any excavations overnight to prevent badgers (and other animals) from becoming trapped. If it is not possible to cover excavations a ramp should be provided to allow animals to escape.

Other species

4.3.17. The site provides suitable habitat for brown hare and hedgehog, therefore precautionary measures are required during the works to prevent any negative impacts on these species. Brown hares make a small depression in the ground in tall grassland known as a form. In the breeding season, between February and September, checks for young hares (leverets) should be conducted in suitable vegetation prior to works. If any young hares are found, care should be taken to avoid these areas. Similarly potential hedgehog hibernation sites, particularly amongst dense vegetation should be subject to a pre-works inspection if clearance is to take place between October and March.

4.3.18. Rabbit burrows were noted beneath several of the hedgerows on the site, particularly along the western boundary of Field F but also between fields

A and B and B and C. Whilst rabbits receive no formal protection under the Wildlife & Countryside Act 1981 (as amended), if a section of hedgerow is to be removed which contains a rabbit burrow(s), efforts should be made to displace rabbits from these burrows prior to excavation in order to comply with the Animal Welfare Act (2006) which prohibits causing unnecessary suffering to an animal.

Summary of further required surveys

4.3.19. The following surveys are likely to be required based upon the findings of this PEA:

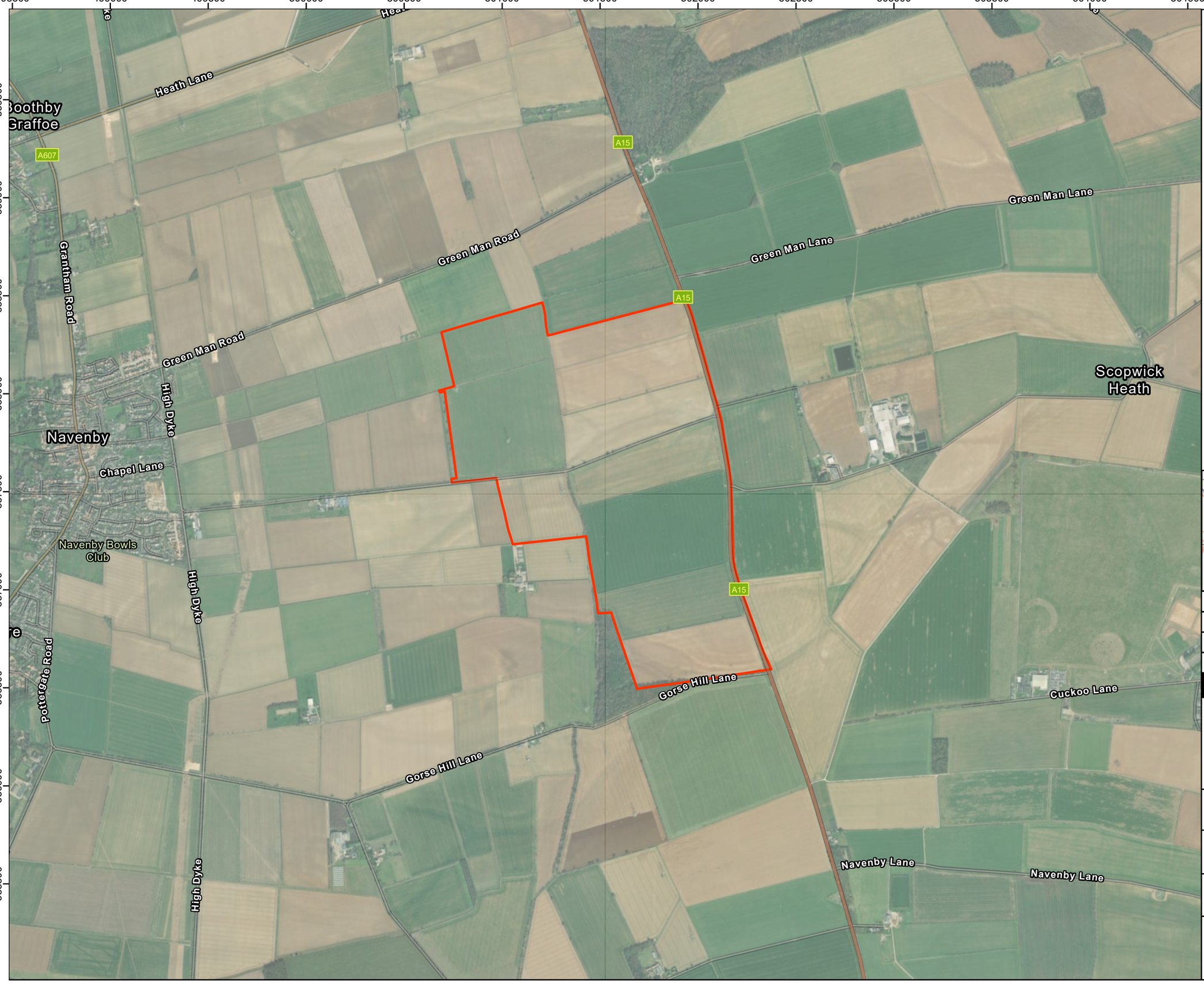
- a detailed hedgerow survey (between late April and August) to determine if any of the affected hedgerows are classified as 'important' under the criteria outlined in the Hedgerow Regulations 1997 and to determine species composition for re-planting;
- a pre-construction update badger survey within six months of start of works to check for any new badger activity on the site.

4.3.20. The following surveys may be required depending upon the expected impact of the works once the cable route has been determined:

- bat roost surveys – aerial inspections or emergence surveys of any trees suitable for roosting bats that will be impacted by the proposed development;
- targeted botanical surveys such as National Vegetation Classification (NVC) if any sections of roadside verge, recorded as calcareous grassland need to be disturbed.

Figure 1

Site Location



LEGEND:

- Site Boundary

Rev	Date	Description	Drn	Chk	App
00	17/11/2023	First Draft	RS	SP	JM

Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:
SPRINGWELL SOLAR FARM

TITLE:
SITE LOCATION PLAN
CABLE CORRIDOR EXTENSION

FIGURE NUMBER:
1

0 135 270 540
Metres
Scale: 1:20,000 @ A3

REV 00

Path: C:\Users\rebekah.smyth\IRSK Group\IRSK Biocensus - 06 GIS - 2483765 - EDF Solar Springwell (aka Acre Lane)\03 - APRX\2483765 - Springwell Solar - EDF - Fig 1 - Site Location Plan - Cable Corridor Extension.aprx[empty]

Figure 2

'UKHab' Habitat Plan

500200 500400 500600 500800 501000 501200 501400 501600 501800

358400 358200 358000 357800 357600 357400 357200

Field G
Field F
Field E
Field D
Field C

TN10 TN11 TN9 TN8 TN7 TN6

16 67 17,67 10,16 10,70 111 10 73

LEGEND:

- Site Boundary

UKHab Habitats

- Cropland
- Temporary Grass and Clover Leys
- Non-Cereal Crops
- Bracken
- Lowland Calcareous Grassland
- Other Neutral Grassland
- Mixed Scrub
- Built Linear Features
- No Access
- Native Hedgerow
- Native Hedgerow with Trees
- Built Linear Feature
- Target Note
- Secondary Code

Secondary Code	Description
10	Scattered scrub
11	Scattered Trees
16	Tall herb
17	Ruderal/ Ephemeral
67	Dry Stone Wall
70	Hedgebank
73	Bare Ground
111	Road
190	Hedgerow With Trees

Rev	Date	Description	Drn	Chk	App
00	20/11/2023	First Draft	RS	EC	JM

Springwell Solar Farm

DOCUMENT:
SPRINGWELL SOLAR FARM

TITLE:
UKHAB HABITAT SURVEY
CABLE CORRIDOR EXTENSION

FIGURE NUMBER:
2
PAGE 1 OF 5

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Field G

Field F

Field E

Field D

TN10 TN11 TN9

16 67 16,67 10,16 10,11,16 17,67 67 10,16 16 16 16 10,16 10,16,67

LEGEND:

- Site Boundary

UKHab Habitats

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Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:
SPRINGWELL SOLAR FARM

TITLE:
UKHAB HABITAT SURVEY
CABLE CORRIDOR EXTENSION

FIGURE NUMBER:
2
PAGE 2 OF 5

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501300 501400 501500 501600 501700 501800 501900 502000 502100 502200

358100 358000 357900 357800 357700 357600 357500 357400

Field G
TN9
Field F
Field E
TN8
Field D
TN7
TN6
Field C

10,16 16 16 16 10,16 10,16,67 16 111 10,16 10,70 10 16 16 16 16 10,16,67

LEGEND:

- Site Boundary

UKHab Habitats

- Cropland
- Temporary Grass and Clover Leys
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Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:
SPRINGWELL SOLAR FARM

TITLE:
UKHAB HABITAT SURVEY
CABLE CORRIDOR EXTENSION

FIGURE NUMBER:
2
PAGE 3 OF 5

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357600 357500 357400 357300 357200 357100 357000 356900

Field E
Field D
Field C
Field B
Field A

TN7
TN6
TN4
TN3

16
10,16,67
73
111
10,11

LEGEND:

- Site Boundary

UKHab Habitats

- Cropland
- Temporary Grass and Clover Leys
- Non-Cereal Crops
- Bracken
- Lowland Calcareous Grassland
- Other Neutral Grassland
- Built Linear Features
- Broadleaved, Mixed and Yew Woodland
- No Access
- Native Hedgerow
- Native Hedgerow with Trees
- Built Linear Feature
- Target Note
- Secondary Code

Secondary Code	Description
10	Scattered scrub
11	Scattered Trees
16	Tall herb
17	Ruderal/ Ephemeral
67	Dry Stone Wall
70	Hedgebank
73	Bare Ground
111	Road
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Rev	Date	Description	Drn	Chk	App
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Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:
SPRINGWELL SOLAR FARM

TITLE:
UKHAB HABITAT SURVEY
CABLE CORRIDOR EXTENSION

FIGURE NUMBER:
2
PAGE 4 OF 5

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Metres
Scale: 1:3,000 @ A3

REV 00

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357100 357000 356900 356800 356700 356600 356500 356400

Field C

Field B

Field A

TN1 TN2 TN3 TN4 TN12

16 10,16 10,11 11,16 67 16,67,190

venby

gore

LEGEND:

- Site Boundary

UKHab Habitats

- Cropland
- Temporary Grass and Clover Leys
- Non-Cereal Crops
- Bracken
- Lowland Calcareous Grassland
- Other Neutral Grassland
- Mixed Scrub
- Built Linear Features
- Broadleaved, Mixed and Yew Woodland
- Native Hedgerow
- Native Hedgerow with Trees
- Line of Trees
- Built Linear Feature
- Target Note
- Secondary Code

Secondary Code	Description
10	Scattered scrub
11	Scattered Trees
16	Tall herb
17	Ruderal/ Ephemeral
67	Dry Stone Wall
70	Hedgebank
73	Bare Ground
111	Road
190	Hedgerow With Trees

Rev	Date	Description	Drn	Chk	App
00	20/11/2023	First Draft	RS	EC	JM

Springwell Solar Farm

Springwell Solar Farm

DOCUMENT:
SPRINGWELL SOLAR FARM

TITLE:
UKHAB HABITAT SURVEY
CABLE CORRIDOR EXTENSION

FIGURE NUMBER:
2
PAGE 5 OF 5

0 30 60 120
Metres
Scale: 1:3,000 @ A3

REV 00

Path: C:\Users\rebekah.smyth\RSK Group\RSK Biocensus - 06 GIS - 2483765 - EDF Solar Springwell (aka Acre Lane)\03 - APRX\2483765 - Springwell Solar - EDF - Fig 2 - UKHAB - Cable Corridor Extension.aprx\[empty]

Figure 3

Ground Level Tree Assessment (for bat roost potential)

500400 500600 500800 501000 501200 501400 501600 501800 502000 502200 502400 502600 502800

358400 358200 358000 357800 357600 357400 357200 357000 356800 356600 356400

13 14 10 11 12 9 7 8 6 5 1 3 2 4

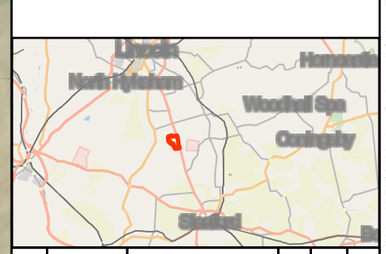
LEGEND:

Site Boundary

Tree Suitability

PRF-I

PRF-M



Rev	Date	Description	Drn	Chk	App
00	21/11/2023	First Draft	RS	SP	JM

Springwell Solar Farm

DOCUMENT:
SPRINGWELL SOLAR FARM

TITLE:
GROUND LEVEL TREE ASSESSMENT
CABLE CORRIDOR EXTENSION

FIGURE NUMBER:
3

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Metres

Scale: 1:8,000 @ A3

REV 00

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Appendix A

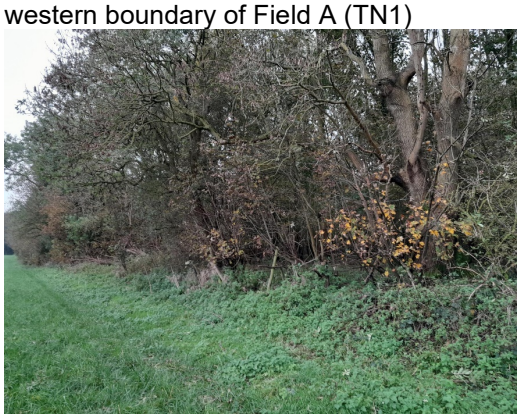
Target Notes

Target note number	Description
TN1	Gorse Hill Covert a mixed deciduous woodland on the south western boundary of the site. Several trees with bat roosting potential were noted in mature Ash trees along the woodland edge.
TN2	Three mammal burrows under hedge separating Fields A and B, considered likely to be rabbit burrows. Partially abandoned as debris blocking one of the burrow entrances.
TN3	Mixed scrub on western boundary of Field B comprising Elder, Blackthorn, Wild Privet, Bramble, Rose and Gorse.
TN4	Dense bracken and tall herb vegetation on western boundary of Field C where the site borders the Gorse Lane LWS, potential suitability for reptiles.
TN5	(*Removed from UK Hab plan Figure 2 for confidentiality*). Three entrance badger sett, likely to be a subsidiary sett, with fresh spoil and latrines nearby.
TN6	Four mammal burrows beneath hedgerow separating Fields C and D, considered likely to be rabbit burrows based on size, no recent evidence of use.
TN7	Recently flailed hedgerow on western boundary of Field D, showing extent of adjoining scrub.
TN8	Navenby Heath Road LWS, roadside verges designated for calcareous grassland habitat, noted to be heavily eroded either side of carriageway.
TN9	Rabbit warren comprising multiple burrows beneath hedge on western boundary of Field F, very active, well-worn vegetation surrounding burrows.
TN10	Large Ash stump within hedgerow on northern boundary of Field G, deadwood feature with potential for invertebrates.
TN11	Largely in-tact dry stone wall separating Fields F and G with potential as amphibian and reptile refugia and nesting birds.
TN12	Dense bramble scrub in south eastern corner of Field A with suitability for breeding birds.

Appendix B

Photographs

Photograph 1:
Edge of Gorse Hill Covert woodland on the western boundary of Field A (TN1)



Photograph 2:
Mammal burrow beneath hedgerow separating Fields A and B (TN2).

Photograph 3:
Mixed scrub on western boundary of Field B (TN3)

Photograph 4:
Dense bracken and tall herb vegetation on the western boundary of Field C (TN4)

Photograph 5:
Badger sett within Gorse Lane LWS close to the sites western boundary (TN5)

Photograph 6:
Complex of mammal burrows beneath hedgerow separating Fields C and D (TN6)

Photograph 7:
Recently flailed hedgerow and field margin on western boundary of Field D (TN7)

Photograph 8:
Navenby Heath Road LWS roadside verges (TN8)

Photograph 9:
Active rabbit warren on western boundary of Field F (TN9)

Photograph 10:
Large dead Ash stump on northern boundary of Field G (TN10)

Photograph 11:
Dry stone wall separating Fields F and G (TN11)

Photograph 12:
Dense bramble scrub in south east corner of Field A (TN12)

Appendix C

Local Wildlife Sites within or immediately adjacent to the site

On following pages

A15, Green Man Road to Cuckoo Lane

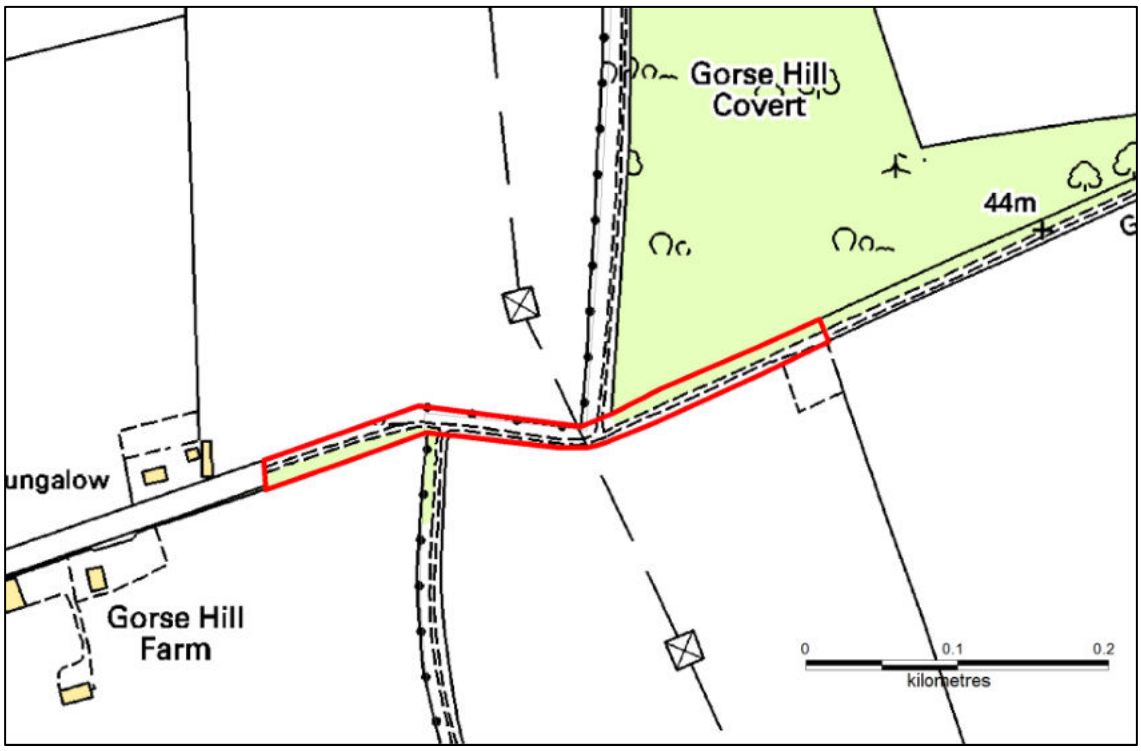
Grid ref: **TF017590 – TF025560**
Length: **3.2 km**
Survey: **2011/12**
Surveyor: **LotV**

Main habitat: Calcareous grassland

This site was surveyed as part of the Lincolnshire Wildlife Trust's Life on the Verge project.

Criteria passed: CG1, Mos2
Selected as a Local Wildlife Site: 18 March 2013

Gorse Hill Lane Verges



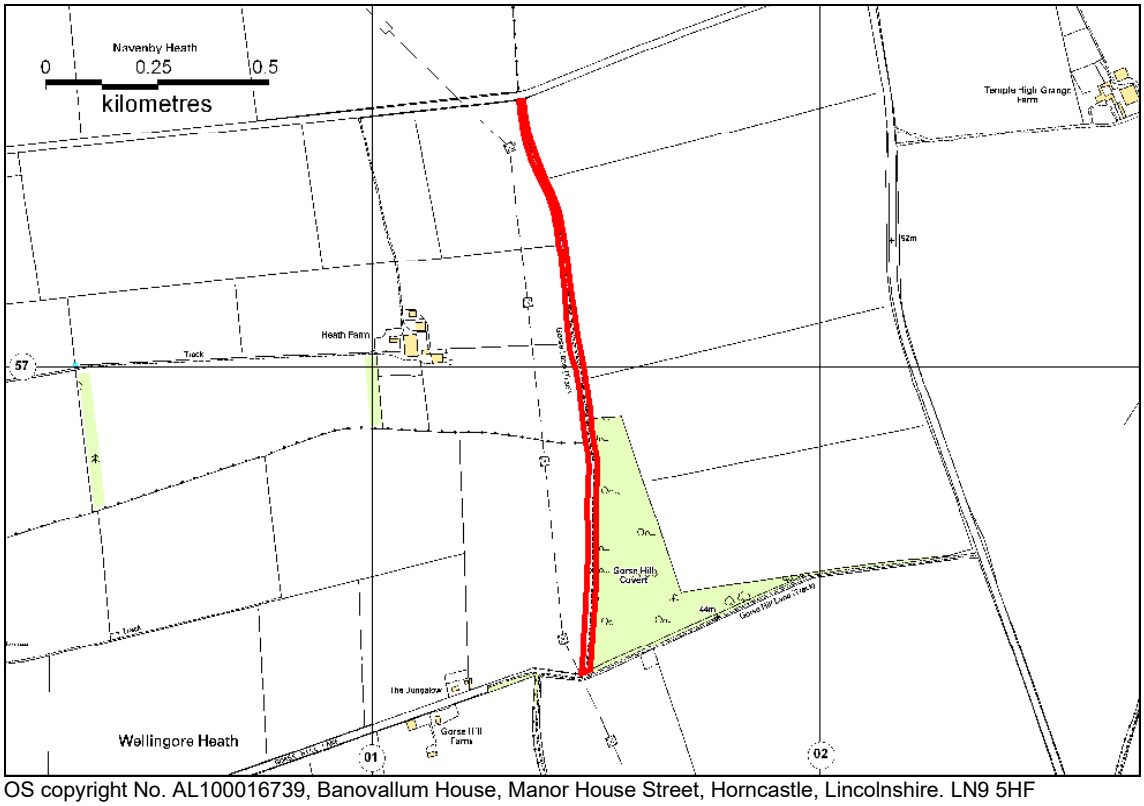
Grid ref: **TF012562 – TF016563** **Survey:** **2010**
Length: **0.4 km** **Surveyor:** **LotV**

Main habitat: Calcareous grassland

This verge was identified and surveyed as part of the Lincolnshire Wildlife Trust's Life on the Verge Project.

Criterion passed: CG1
Recommended as a Local Wildlife Site: 1 April 2011

Gorse Lane



Grid ref:	**TF014563 – TF013576**	**Survey:**	**26 June 2008**
Area:	**2.2 ha**	**Surveyor:**	**T.Inskipp**

Main habitat: **Unimproved calcareous grassland, woodland, dense scrub, bracken**

Additional features: **Tussocky vegetation, species-rich hedgerows**

A narrow lane, 1.3 km long, running north from Gorse Hill Lane (TF014563), east of Wellingore, to a minor road (TF013576) connecting Navenby to the A15. It forms the border to three parishes: Navenby in the north-west, Wellingore in the south-west, and Temple Bruer with Temple High Grange in the east.

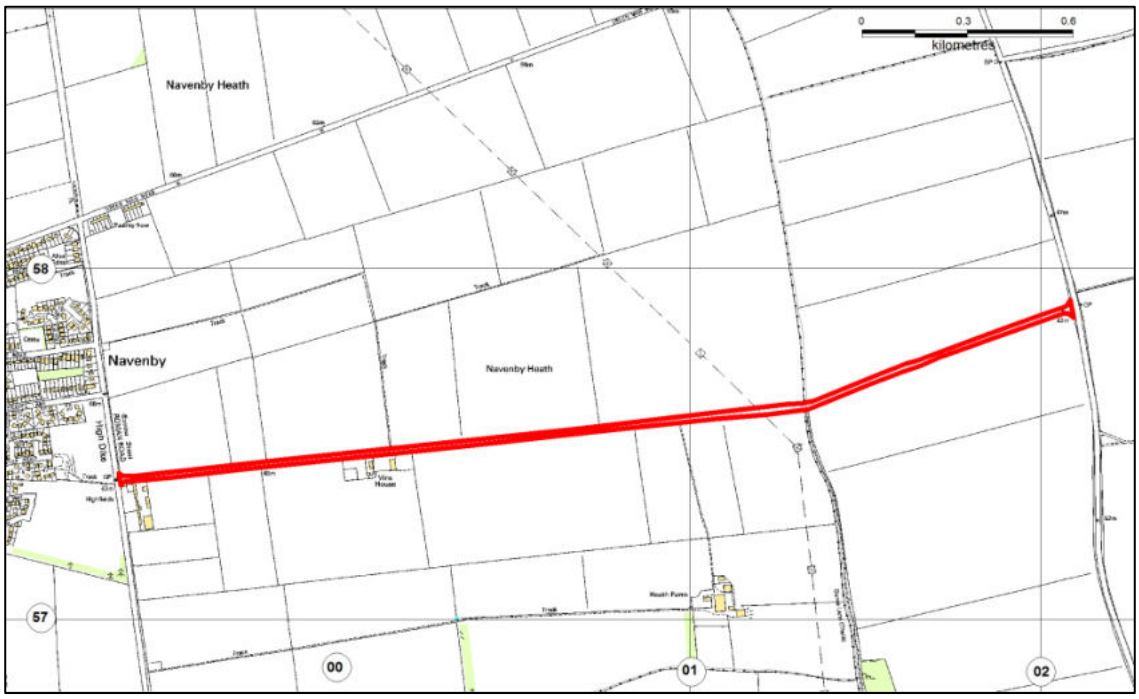
It is separated from arable fields on the west side by a thick, apparently unmanaged hedge. On the east side, the southern half merges into Gorse Hill Covert, a small mainly deciduous wood, and the northern half is separated from arable fields by a hedge along most of its length. In places a stone wall further marks its outer boundary.

Since it was last surveyed in 1983 the lane has become overgrown with dense areas of bramble, bracken and scrub. A total of 91 plant species were recorded, including 11 woody species in the hedges, but no large areas of calcareous grassland remained and none of the significant species recorded previously (pyramidal orchid, quaking grass, dropwort, rockrose, small scabious, burnet saxifrage, wild parsnip and restharrow) was found. However, 12 indicator species of calcareous grassland were found: tor-grass, upright brome, common knapweed, greater knapweed, lady's bedstraw, field scabious, common bird's-foot trefoil, red bartsia, hoary plantain, wild mignonette, bladder campion and yellow oat grass; however, all of these species were in very small numbers and mainly in gaps in the hedge where there was a field entrance. Some of the fields margins on the east side held small numbers of calcicolous plants, including woolly thistle (TF014574). At the southern end, under the trees on the east side of the lane, were 35 plants of wall lettuce, a rare species in this part of Lincolnshire.

At the time of the visit there were heavy blustery showers so little was recorded in the way of fauna. Only two species of butterflies were noted: meadow brown and speckled wood, and only 12 species of birds were recorded within the confines of the lane: singing blackcap, chiffchaff, song thrush, robin, chaffinch, yellowhammer and wood pigeon; a whitethroat alarming; also green woodpecker and bullfinch, with house martins feeding over the lane.

Criterion passed: CG1
Recommended as a Local Wildlife Site: 8 December 2009

Navenby Heath Road Verges



Grid ref: **SK993573 – TF020578** **Survey:** **2010**
Length: **2.8 km** **Surveyor:** **LotV**

Main habitat: Calcareous grassland

This verge was identified and surveyed as part of the Lincolnshire Wildlife Trust's Life on the Verge Project.

Criteria passed: CG1, Mos2
Recommended as a Local Wildlife Site: 1 April 2011

Springwell
Solar Farm

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