
Coopers Lane Substation, Kirkby
on behalf of Axis PED
Ecological Assessment Report



Report Verification and Declaration of Compliance

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

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This report has been prepared in accordance with the terms and conditions of appointment [on request]. Avian Ecology Ltd. (6839201) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

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1 INTRODUCTION

1.1 Background and Scope

- 1.1.1 Avian Ecology Ltd (AEL) was commissioned by Axis PED to undertake an Ecological Assessment in relation to the development of a proposed Battery Energy Storage System (BESS) and associated infrastructure (the 'Proposed Development') on land off Coopers Lane, east of the Knowsley Industrial Estate, Knowsley, Merseyside (the 'Site') as identified in **Figure 1**.
- 1.1.2 The Site was previously included in a submitted application for a 49.5MW gas engine plant which was granted planning permission by Knowsley Council (application number: 19/00147/FUL), however, this development has not been built, however a material start has been made and as such, the permission has been secured in perpetuity.
- 1.1.3 This report provides baseline information and an assessment of potential ecological effects of the Proposed Development.
- 1.1.4 The objectives of the Assessment presented in this Report are to:
- Provide baseline information on the current habitats and ecological features both within the Site and immediate surrounding area;
 - Identify the proximity of any designated sites for nature conservation interest and provide an assessment of any potential effects the Proposed Development may have on these;
 - Identify the presence or potential presence of any protected species or habitats and provide an assessment of any potential effects the Proposed Development may have on these; and,
 - Provide recommendations for further pre-construction checks and / or mitigation measures, if required, and provide an outline of proposed habitat enhancements, if applicable.
- 1.1.5 This report is based on a desk-based review previously incorporated in the granted gas engine plant planning application. The reports basis also includes a recent extended habitat survey, with reference to relevant legislation, planning policy and guidance as appropriate.
- 1.1.6 This Ecological Assessment Report should be read in conjunction with the *Landscape and Visual Appraisal* produced by Axis PED; which details the proposed site layout and landscape proposals. Reference should also be made to the *Kirkby Gas Engines Ecological Assessment Report*¹ produced by AEL, as well as the granted Kirkby Gas Engines Planning Application².
- 1.1.7 Consideration has been given to the potential presence of rare, protected, or notable habitats and species, and the location of nearby features including designated sites for nature conservation. Mitigation and enhancement measures are also proposed.
- 1.1.8 Throughout this report, common names for species are favoured over scientific names unless there is potential for confusion and in which case scientific names are also presented.

¹Avian Ecology Ltd. (2019) *Kirkby Gas Engines, Ecological Assessment Report*.

²https://epa.knowsley.gov.uk/PublicAccess_LIVE/SearchResult/RunThirdPartySearch?FileSystemId=DC&FOLDER1_REF=19/00147/FUL

1.2 Site Overview

- 1.2.1 The Site comprises of a parcel grassland (approximately 0.4ha) surrounded by a mosaic of woodland, scrub and grassland to the south, with Knowsley Brook located approximately 50m from the southern Site boundary. A large National Grid electricity sub-station is situated immediately to the north. The Site is located immediately east of Coopers Lane (A5208) and adjacent to the expansive Knowsley Industrial Estate (to the west, north-west and south-west). The dual-carriageway of the East Lancashire Road (A580) is located approximately 190m south of the Site.

1.3 Legislative and Planning Framework

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

Table 1:1: Key legislation

International
• Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (hereafter referred to as the 'the Ramsar Convention'); • Convention on the Conservation of European Wildlife and Natural Habitats 1979 (hereafter referred to as the 'the Bern Convention'; and, • UNESCO convention on the protection of the World Cultural and Natural Heritage (1972).
National
• Countryside and Rights of Way Act 2000; • Hedgerow Regulations 1997; • Infrastructure Act 2015; • Natural Environment and Rural Communities (NERC) Act (2006); • Protection of Badgers Act 1992; • The 'Conservation of Habitats and Species Regulations 2017 (as amended);; • The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019;; • The Environment Act 2021;; • The Invasive Alien Species (Enforcement and Permitting) Order 2019; • The Town and Country Planning Act 1990; and, • The Wildlife and Countryside Act 1981 (as amended).

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

Policy

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

Table 1.2: Key Policy

National
• Ancient woodland, ancient trees and veteran trees: advice for making planning decisions (Natural England. 2022); • BS 42020:2013 Biodiversity – Code of Practice for Planning and Development; • European protected species policies for mitigation licences (Natural England. 2022); • National Planning Policy Framework 2 (NPPF, 2021); • The United Kingdom Biodiversity Action Plan (UK BAP); and, • Wildlife licensing: comment on new policies for European protected species licence (Natural England, 2016).
Local
• North Merseyside Biodiversity Action Plan (LBAP)³ • Knowsley Local Plan Core Strategy⁴ • Local Plan Policies Map⁵

1.3.4 The 'UK Post-2010 Biodiversity Framework'⁶ succeeds the UK Biodiversity Action Plan (UK BAP) and 'Conserving Biodiversity – the UK Approach'. The lists of priority species and habitats agreed under UK BAP still form the basis of much biodiversity work and are therefore considered within this report in the context of the objectives of the Biodiversity Framework. BAPs identify habitats and species of nature conservation priority on a UK (UK BAP) and Local (LBAP) scale. UK BAPs formed the basis for statutory lists of priority species and habitats in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, and so are also relevant in the context of this legislation.

³ North Merseyside Biodiversity Action Plan <http://www.merseysidebiodiversity.org.uk/> (accessed in March 2023).

⁴ <https://localplanmaps.knowsley.gov.uk/documents/knowsley-local-plan-adopted-core-strategy.pdf>

⁵ <https://localplanmaps.knowsley.gov.uk/>

⁶ <http://jncc.defra.gov.uk/page-6583>

2 METHODOLOGY

2.1 Desktop Study

2.1.1 A desk study was undertaken to identify existing information on the presence of designated sites for nature conservation, protected and notable species and habitats within proximity to the Site's central grid reference (SJ 43649 97134) as follows:

- Non-statutory designated sites for nature conservation within 2km of the Site;
- National statutory designated sites for nature conservation within 5km of the Site;
- International statutory designated sites for nature conservation within 10km of the Site, extended to 20km for sites with mobile qualifying interest species (e.g. wintering waterfowl); and,
- Existing records of protected and notable faunal species, within 2km of the Site (dated within the last 10 years (i.e. 2013)).

2.1.2 The following key sources were consulted:

- Natural England and Joint Nature Conservation Committee (JNCC) websites⁷;
- The Multi Agency Geographic Information for the Countryside (MAGIC) website⁸;
- The Natural England Open Data Geoportal⁹;
- The Woodland Trust Ancient Tree Inventory website¹⁰;
- National Biodiversity Network (NBN) Atlas¹¹; and,
- Merseyside Biobank¹².

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

2.2 Field Survey

Extended Habitat Survey

2.2.1 An extended habitat survey of the Site was undertaken on the 9th May 2023 by K Love *BSc (Hons)*, a suitably qualified and experienced ecologist.

2.2.2 The survey followed the methodology outlined in the UK Habitat Classification Use Manual (V1.1) (UKHab, 2020¹³) with reference to the Chartered Institute of Ecology and Environmental Management

⁷ <http://jncc.defra.gov.uk/>

⁸ <https://magic.defra.gov.uk/MagicMap.aspx>

⁹ Natural England Open Data Geoportal <https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::peaty-soils-location-england/explore?location=53.163227%2C-0.801927%2C10.71>

¹⁰ Woodland Trust Ancient Tree Inventory <https://ati.woodlandtrust.org.uk/>

¹¹ NBN Atlas <https://nbnatlas.org/>

¹² Merseyside Biobank <https://merseysidebiobank.org.uk/>

¹³ Butcher, B., Carey, P., Edmonds, R., Norton, L., and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at www.ukhab.org

(CIEEM), Technical Guidance Series *Guidelines for Preliminary Ecological Appraisal – Version 2* (CIEEM, 2017¹⁴).

- 2.2.3 All habitats were mapped and described using a series of 'target notes' (TNs) to the highest level of UK habitat classification as possible, with each individual habitat feature being assigned to a primary habitat and then described with secondary codes if applicable. The survey was extended to include the additional recording of specific features indicating the presence, or likely presence, of protected species, invasive species and other species of conservation significance.
- 2.2.4 The extended habitat survey comprised an area based on a larger layout. The survey covered land within the redline area. The extent of the Site is detailed in **Figure 1**, with habitats located within the Site and wider survey area provided in **Figure 4**. Accompanying photographs are included in **Appendix 1**.

Preliminary Bat Roost Assessment

- 2.2.5 Trees located directly adjacent to the Site boundary were assessed for their suitability to support roosting bats by way of Preliminary Roost Appraisal (PRA). Suitability for roosting bats was classified as follows (from Collins *et al.*, 2016¹⁵, Table 4.1):
- **Negligible:** Negligible habitat features on site likely to be used by roosting bats.
 - **Low:** A tree of sufficient size and age to contain potential roost features but with none seen from the ground or with only very limited potential.
 - **Moderate:** A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
 - **High:** A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

2.3 Limitations

Desk Study

- 2.3.1 The desk-based review is based on that previously included in the submitted application for a 49.5MW gas engine plant that was granted planning permission by Knowsley Council (application number: 19/00147/FUL)¹⁶. This is not considered to be a notable limitation to the Assessment.

Extended Habitat Survey

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

¹⁴ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal – Second Edition - <https://cieem.net/resource/guidance-on-preliminary-ecological-appraisal-gpea/>

¹⁵ Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)*. The Bat Conservation Trust, London.

¹⁶ <https://planapp.knowsley.gov.uk/online-applications/applicationDetails.do?activeTab=externalDocuments&keyVal=PO9DTVIXH2X00>

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

2.3.3 The extended habitat survey visit was undertaken in May 2023 and therefore within the optimal period for botanical surveys (approximately April to September).

3 BASELINE

3.1 Designated Sites for Nature Conservation

Statutory Designated Sites

- 3.1.1 A summary of designated sites within 5km are presented in **Table 3.1** and locations are presented in **Figure 2**.
- 3.1.2 A review of MAGIC confirmed that the Site is not located within or immediately adjacent to any statutory designated sites for nature conservation.
- 3.1.3 The review of MAGIC identified that the Site is not located within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ), whereby the Local Authority would be required to consult with Natural England.

Table 3.1: Statutory designated sites.

LNR: Local Nature Reserve; SPA: Special Protection Area

Designated site	Distance and direction	Details
Acornfield Plantation LNR	0.4km north	Predominantly mature broadleaf woodland of birch, oak and sycamore. The centre of the site has a lowland basin mire dominated by <i>sphagnum</i> moss and soft rush <i>Juncus effusus</i> . Other habitats include a pond, stream, drainage channels, acidic and neutral grasslands, bracken and rhododendron thickets.
Croxteth LNR	2.6km south-west	Woodland, rough grassland and pasture, several ponds and is bounded by the River Alt. A variety of birds breed in the woodland.
Ribble and Alt Estuaries SPA, Ramsar	12.4km west	The SPA is designated for the following qualifying features: • Bewick's swan (Non-breeding); • Whooper swan (Non-breeding); • Pink-footed goose (Non-breeding); • Common shelduck (Non-breeding); • Eurasian wigeon (Non-breeding); • Eurasian teal (Non-breeding); • Northern pintail (Non-breeding); • Eurasian oystercatcher (Non-breeding); • Ringed plover (Non-breeding); • European golden plover (Non-breeding); • Grey plover (Non-breeding); • Red knot (Non-breeding); • Sanderling (Non-breeding);

Designated site	Distance and direction	Details
		• Dunlin (Non-breeding); • Ruff (Breeding); • Black-tailed godwit (Non-breeding); • Bar-tailed godwit (Non-breeding); • Common redshank (Non-breeding); • Lesser black-backed gull (Breeding); • Common tern (Breeding); • Waterbird assemblage¹⁷; and, • Seabird assemblage¹⁸. The site is designated under Ramsar criterion 2, 5 and 6. Criteria 5: The site supports international important numbers of waterfowl (222,038 - 5 year peak mean 1998/99-2002/2003). Criteria 6: The site supports the following species/populations occurring at levels of international importance; black-tailed godwit, common redshank, dunlin, grey plover, red knot, ringed plover, sanderling, bar-tailed godwit, Eurasian oystercatcher, Eurasian teal, Eurasian wigeon, northern pintail, pink-footed goose, tundra swan and whooper swan.
Martin Mere SPA, Ramsar	16.6km north	The SPA is designated for the following qualifying features: • Bewick's swan (Non-breeding); • Whooper swan (Non-breeding); • Pink-footed goose (Non-breeding); • Eurasian teal (Non-breeding); • Northern pintail (Non-breeding); and, • Waterbird assemblage. The site is designated under Ramsar criterion 5 and 6. Criteria 5: The site supports international important numbers of waterfowl (25306 - 5 year peak mean 1998/99-2002/2003). Criteria 6: The site supports international important numbers of pink-footed goose, tundra swan, whooper swan, Eurasian wigeon and northern pintail.

Non-statutory designated sites

3.1.4 The Site is not located within or immediately adjacent to any non-statutory designated Sites.

3.1.5 Ten non-statutory designated Local Wildlife Sites (LWS) and two Nature Improvement Areas (NIAs) were identified within 2km of the Site. Sites are listed in **Table 3.2** and locations are presented in **Figure 3**.

¹⁷In the non-breeding season, the area regularly supports 323,861 individual waterbirds (5 year peak mean 1993/94 - 1997/98), including cormorant, Bewick's swan, whooper swan, pink-footed goose, shelduck, wigeon, teal, pintail, scap, common scoter, oystercatcher, ringed plover, golden plover, grey plover, lapwing, knot, sanderling, dunlin, black-tailed godwit, bar-tailed godwit, whimbrel, curlew and redshank.

¹⁸ The area regularly supports 29,236 individual seabirds (count period ongoing), including black-headed gull, lesser black-backed gull and common tern.

- 3.1.6 Review of the Knowsley Local Plan Core Strategy and Local Plan Policies Map identifies the Site to be within a 'Sustainable Urban Extension' area, whereby land has been allocated for meeting Knowsley's future urban development requirements. Directly north, east and south of the Site is Knowsley Estate which is allocated as a 'Green Belt' area, whereby inappropriate urban development is restricted.

Table 3.2: Non-statutory Designated Sites.

LWS: Local Wildlife Site; NIS: Nature Improvement Areas.

Designated site	Distance and direction	Details
Acornfield Plantation LWS	0.4km north	Broadleaf woodland, basin mire habitat supporting dragonflies and damselflies.
Knowsley and St Helens Mossland NIA (focus area)	0.4km north	Lowland bog, woodland, wetland and heathland priority habitats, with multiple linear ditch and river networks. Area supports pink footed goose; water vole; red squirrel; brown hare and farmland birds (e.g. grey partridge, skylark and lapwing).
Knowsley Park LWS	0.6km south-east	Ancient parkland and estate on a mix of acidic (peat) and neutral soils with sandstone exposures along the brooks. Supports bats, water vole and red squirrel.
Otis Meadow LWS	1km west	A mix of damp and dry grasslands with developing scrub.
Charley Wood LWS	1.1km north	Broadleaf woodland on acid peat soils. High invertebrate interest.
River Alt and M57 Corridor NIA (focus area)	1.2km south-west	Priority Habitats include wood-pasture parkland, grassland, woodland, wetland, rivers, brooks, canal and hedgerows. Supports water vole, red squirrel, bats, dragonflies/damselflies, brown hare, lesser spotted woodpecker and farmland birds (e.g. grey partridge, skylark and lapwing).
Kraft Operation Land LWS	1.2km west	Wetland and grassland habitats.
Knowsley Brook LWS	1.2km south-west	Watercourse supporting water vole.
Howard's Pits LWS	1.9km south-west	Mature broadleaf woodland with ponds and drainage ditches.
Meakin's Pits LWS	1.9km south-west	Mixed plantation woodland.
Mosslands West of Johnson's Cottage, Kirkby LWS	2km north-east	Raised mire with birch-dominated woodland and rhododendron.
Moss Plantation and Brown Birches LWS	2km north-east	A coniferous plantation on peat with much rhododendron and relict raised bog vegetation.

3.2 Priority habitats

- 3.2.1 Review of the MAGIC website, together with information sourced aerial imagery and the extended habitat survey identified no habitats of Principal Importance (also known as priority habitat) under Section 41 of the NERC Act 2006, and/or listed on the UKBAP, within the Site.
- 3.2.2 Information on priority habitats within 2km of the Site is presented in **Table 3.2**. Where numerous records of a particular habitat were recorded, only the closest record to the Site has been provided, in order to provide context for the Site and surrounding area.
- 3.2.3 Review of the Woodland Trust Ancient Tree Inventory identified one notable tree within 500m of the Site. This includes a notable common beech tree (Tree ID: 191729) situated approximately 410m north of the Site. Review of the Natural England Open Data Geoportal identified no peaty soil habitat within the Site or within 500m of the Site boundary.

Table 3.3: Priority Habitats

Priority habitat name	Designation	Distance from site
Urban grassland	LBAP	Within the Site
Deciduous woodland	NERC S41; LBAP	Directly adjacent to the south-western Site boundary.
Urban trees	LBAP	38m west
Rivers and streams	NERC S41	50m south (Knowsley Brook)
Hedgerows	NERC S41	275m north
Ponds	NERC S41; LBAP	380m south-east
Open mosaic habitat on previously developed Land	NERC S41	430m west
Lowland fen	NERC S41	595m north
Lowland raised bog	NERC S41; LBAP	595m north
Conifer woodland	LBAP	910m south-east
Wood-pasture parkland	NERC S41; LBAP	1.1km south-east
Lowland acid grassland	NERC S41; LBAP	1.25km north-east

Key

NERC S.41: Natural Environment and Rural Communities (NERC) Act Section 41

UKBAP: UK Biodiversity Action Plan Priority Habitat

LBAP: North Merseyside Local Biodiversity Action Plan

3.3 Habitats and Flora

- 3.3.1 This section should be read in conjunction with the Habitat Plan presented as **Figure 4** and photographs presented in **Appendix 1**. The survey focused on the Site, and habitats within the vicinity.
- 3.3.2 The habitats on Site are dominated by neutral grassland, tall ruderal and plantation woodland habitats, with areas of scattered scrub, bracken, tall herb, rushes and bare ground also present. The

wider survey area includes woodland, neutral grassland and urban habitats, with Knowsley Brook situated 50m south.

Site

Neutral grassland (UKHab Code: g3c.10.14.16.73)

- 3.3.3 Neutral grassland with scattered scrub is the dominant habitat within the Site (G1; Photograph 1). The grassland comprises red fescue, Yorkshire fog, creeping bent and moss, with occasional soft rush, horsetail, coltsfoot, dandelion, bristly oxtongues, ribwort plantain, docks, sorrel, creeping thistle, willowherb, spear thistle, creeping buttercup, white clover, oxeye daisy, common chickweed and ragwort. The grassland contains an abundance of scattered goat willow and alder scrub measuring 2m to 4m tall, as well as areas of bare ground disturbed from vehicles.

Woodland (UKHab Code: w1g.10.12.16.36.52; w1g.10.16.36.52)

- 3.3.4 Directly south of the neutral grassland is a deciduous broadleaved woodland plantation that partially lies within the Site (W1; Photograph 2). The woodland primarily comprises semi-mature and immature trees measuring on average at 7m to 8m tall. The woodland is heavily shaded and shows some signs of historic coppice management. Species present include downy birch, silver birch, goat willow, hazel, ash, English oak, bird cherry, alder and white poplar. The woodland ground flora comprises nettle with scattered bracken and bramble.

Urban (UKHab Code: u1c; u1e.111; u1e.1232)

- 3.3.5 Access to the Site is from the west via Coopers Lane A5208. This comprises a non-permeable road (U3; Photograph 3) that leads to an extensive open area directly north of the Site comprising stone and earth (U2; Photograph 4). A small area of U2 lies within the Site, although most borders the Site's northern boundary.

Wider Area

Woodland (UKHab Code: w1g.10.12.16.36.52; w1f7.10.16.37.38)

- 3.3.6 A linear strip of woodland lies adjacent to the Site at the western Site boundary (W2; Photograph 5). The woodland comprises a plantation strip directly adjacent to Coopers Lane A5208. The woodland includes semi-mature trees measuring on average at 7m tall, with similar signs of historic coppicing. Trees present include English oak, alder, downy birch, silver birch, hazel, goat willow, willow, ash, rowan and hawthorn. The ground flora is dominated by nettle, cleavers and bramble.
- 3.3.7 Several woodland parcels lie north and east of the Site. Woodland W3 is the same as woodland W1, however woodlands W4 and W5 comprise other lowland mixed deciduous woodland. Woodland W4 lies north-east of the Site and includes semi-natural woodland that has a secondary woodland border. The semi-natural woodland contains horse chestnut, willow, goat willow, sycamore, hornbeam and hazel, with mature trees present and scattered bramble. The southern edge of the woodland comprises a strip of immature, secondary willow measuring approximately 6m tall.
- 3.3.8 North-west of the Site lies woodland W5, which is a semi-natural woodland. The broadleaved woodland comprises silver birch, ash, English oak, lime *Tilia* sp., sycamore, alder, hazel, osier, hawthorn, horse chestnut, bird cherry and elder. The highly shaded ground flora is dominated by nettle, with scattered common bluebell and bramble.

Tall ruderal g4 (UKHab Code: g4.10.12.16)

- 3.3.9 Between woodlands W1 and W2 lies a 5m wide linear strip of dense tall ruderal (TR1; Photograph 5). The area is used as a footpath and contains bare ground where vehicle tracks have been created. The

vegetated areas between the track marks comprise a dense sward of nettle and cleavers, with bramble, spear thistle, common chickweed, docks, willowherb, bracken, white dead-nettle and scattered saplings similar to the assemblage of woodland W2.

Neutral grassland (UKHab Code: g3c.10.15.121)

- 3.3.10 An area of waterlogged neutral grassland lies between woodlands W4 and W5 (G2). This patch of grassland has a similar grass species assemblage to grassland G1 but is dominated by soft rush and lesser celandine, with scattered willow saplings.

Freshwater (UKHab Code: r2a)

- 3.3.11 Knowsley Brook lies 50m south of the Site and is surrounded by steep earth banks that are covered in dense bracken, with scattered bramble, willow and alder scrub (Photograph 6). The banksides also contains scattered soft rush, Spanish bluebell, nettle, cleavers, meadowsweet and red currant. The stream is approximately 0.5m wide, with shallow water less than 30cm deep. The clear water flows south-west and enters a culvert. The stream is primarily open, although small areas of water star-wort and water dropwort are present.

3.4 Protected and Notable Species

Birds

- 3.4.1 A review of MAGIC shows that the Site is not allocated as an Important Bird Area (IBA), with no IBAs within 10km of the Site. The closest IBAs are the Ribble and Alt Estuary IBA, Mersey Estuary IBA and Martin Mere IBA, which are respectively located approximately 12.4km west, 12.9km south-west and 16.6km north of the Site.
- 3.4.2 The data search returned no bird records within 2km of the Site from within the last 10 years.
- 3.4.3 The habitats within the Site are considered unlikely to support nesting Schedule 1 species, although kingfisher may potentially utilise habitats along the nearby Knowsley Brook for nesting and foraging purposes. It is considered that the Site and wider farmland habitats may support hunting/foraging barn owl and quail.
- 3.4.4 The Site, consisting of 0.4ha in size is considered unsuitable for nesting skylark or other ground nesting species. Skylark require open aspects and for fields surrounded by woodland or trees are unsuitable unless they are over 10ha in size¹⁹. During the extended habitat survey, no ground nesting species were observed breeding within the Site.
- 3.4.5 The mosaic of habitats within the wider survey area includes a more diverse range of ground and arboreal nesting habitats potentially of value to local bird populations. There is potential for these areas to support a wider range of nesting bird species, potentially including species of principal importance.
- 3.4.6 The Site is located within Merseyside Environmental Advisory Service's (MEAS) pink-footed goose impact zone²⁰ and within the known foraging range for this species (NatureScot, 2016); however, the Site does not provide suitable opportunities to support pink-footed goose, or any other species associated with the aforementioned designated sites; the Site consists of a small field sheltered by mature woodland and urban hard standing. Habitats do not provide suitable foraging resources or the

¹⁹ <https://farmwildlife.info/how-to-do-it/farmed-area/skylark-plots/>

²⁰ https://ww2.rspb.org.uk/Images/Spatial%20planning%20guide%20onshore%20wind_tcm9-194518.pdf (accessed January 2019)

large open aspects these species require. Surrounding farmland in the wider area has greater potential to act as suitable habitat for these species. As a result, the Site is not considered to be either functionally linked to the designated sites, or regularly used by pink footed geese.

Bats

- 3.4.7 Seven bat records from within 2km of the Site were returned dated in the last ten years; two common pipistrelle, one Daubenton's bat, one noctule bat and three unknown bat species. No bat records were located within the Site itself, with records primarily located >500m west in the neighbouring industrial park. Of these, only one included a potential roost location, which comprised an unknown bat species approximately 590m south-west of the Site.
- 3.4.8 Review of the Magic website identified no EPS licences awarded by Natural England within 2km of the Site boundaries.
- 3.4.9 Following Bat Conservation Trust (BCT) guidance (Collins, 2016)²¹, the habitats on Site and wider survey area, comprising a mosaic of woodland, scrub, grassland, tall ruderal habitats and a stream, are considered to have potentially high potential as commuting and foraging habitat for local bat populations. This is however in general contrast with the wider area beyond, with significant areas of built up and industrial use to the west, and large scale open arable fields with more limited woodland, scrub and hedgerow corridors to the east.
- 3.4.10 There were no trees or structures with bat roost potential within or immediately adjacent to the Site.

Badger

- 3.4.11 No records of badger were received within 2km of the Site.
- 3.4.12 Habitats within the Site and wider survey area (such as grassland, woodland, scrub and farmland) are considered to be suitable to support badger setts and/or foraging badgers. However, no badger setts were recorded within the Site or within at least 30m, and no badger field signs, such as tracks, well-worn badger paths, latrines, hairs etc. were recorded during the survey.
- 3.4.13 Although evidence of badger presence is not confirmed within the Site or immediate surrounding area, it is considered that the habitats present do provide opportunities for foraging, commuting and sett excavation.

Otter & Water Vole

- 3.4.14 No records of otter or water vole were returned within 2km of the Site.
- 3.4.15 Review of the Magic website identified no EPS licences granted by Natural England for otter within 2km of the Site.
- 3.4.16 The Site has no suitable aquatic or terrestrial habitats to support otter or water vole, with the nearest feature consisting of the Knowsley Brook, 50m south of the Site.
- 3.4.17 The Knowsley Brook is considered to offer suitable opportunities for both species, although none were found during field survey (e.g. tracks, well-worn paths, spraints, hairs, feeding remains, droppings or burrows etc.). Due to the separation distance between the Site and the Knowsley Brook and the Site these species are not considered further in the report.

²¹ Collins. J (ed). (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd ed). The Bat Conservation Trust, London.

Red Squirrel

- 3.4.18 Six records dated since 2013 were returned within 2km of the Site. No records were returned within the Site itself, with most occurring in woodland habitats c.1.5km south-east in Knowsley Park Estate.
- 3.4.19 Non-statutory designated sites that detail red squirrel in the surrounding area include the Knowsley and St Helens Mossland NIA (focus area), the Knowsley Park LWS and the River Alt and M57 Corridor NIA (focus area) (see **Table 3.2** and **Figure 3**).
- 3.4.20 According to the data provided by Merseyside Biobank, the Site is located in close proximity (0.4km) from a designated *Grey Squirrel Control Zone* thereby indicating that habitats within the wider environment may potentially provide important red squirrel refuges.
- 3.4.21 The Site itself is considered mostly unsuitable for red squirrel, being dominated by grassland habitat. Woodland habitats occupy a small area of the Site, however this plantation is not considered to be suitably mature to support a resident red squirrel population, due to the limited number of older mature trees and conifers present. Furthermore, it is considered that the East Lancashire Road (A580) located between the Site and Knowsley Park Estate presents a potential barrier to red squirrel movements between the Site and Knowsley Park and their presence is unlikely and not considered further within this report.

Amphibians

- 3.4.22 Nine amphibian records were returned within 2km of the Site: one great crested newt, four smooth newt and four common frog. None are located within the Site, with the great crested newt record identified c.600m south-west.
- 3.4.23 Review of the Magic website identified no EPS licences granted by Natural England or Great Crested Newt Class Survey Licence Returns within 2km of the Site.
- 3.4.24 No ponds are located within the Site, with the only pond within 500m consisting of one located 400m east of the Site, separated by the Site by Hewitts Lane, a watercourse, a further road and other built developments; which present significant physical barriers to dispersal onto the Site.
- 3.4.25 The habitat mosaics located within the Site provide suitable terrestrial habitats for amphibian foraging/hibernation purposes. However, the lack of aquatic features within 500m of the Site indicate great crested newt are unlikely to be present.

Reptiles

- 3.4.26 No records of reptile within 2km of the Site were returned.
- 3.4.27 The Site habitats are considered suitable to provide favourable habitats for reptile species. The mosaic of grassland and scrub could potentially support widespread reptile species such as grass snake, common lizard and slow worm.

White-clawed Crayfish

- 3.4.28 No records of white-clawed crayfish within the 2km were returned. Further review of the NBN Atlas database also returned no records for the species in the search area, with the closest record being located 7.5km north-east in 1991.
- 3.4.29 Knowsley Brook located 50m south of the Site is considered potentially suitable to support this species, although records for the species is geographically absent from the Knowsley metropolitan borough.

3.4.30 This species is not considered further.

Other Notable Species

Flora

3.4.31 Seventy-one records of native plant species were returned within 2km. None were from within the Site or immediate surrounding area. Records received included three species that receive protection under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended), five species listed under Section 41 of the NERC Act 2006, sixteen red listed species and a single North Merseyside BAP species.

3.4.32 The majority of notable records related to species commonly associated with arable field margin habitats, marginal/aquatic habitats and raised bog habitats, therefore it is considered unlikely (due to lack of suitable habitat) that they will occur within the Site, however some marginal/aquatic species may occur within Knowsley Brook located 50m south.

3.4.33 No notable plants were recorded within the Site during the extended habitat survey, and the habitats present did not suggest the likely presence of notable species. A limited quantity of common bluebell however was recorded in woodland W5 outside the Site boundary. Common bluebell is listed under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) and North Merseyside BAP.

Terrestrial Mammals

3.4.34 Records for hedgehog were returned within 2km of the Site.

3.4.35 The Site and directly adjacent habitats have potential to support notable species such as brown hare and hedgehog in habitats such as tall ruderal, grassland, scrub and woodland.

Invertebrates

3.4.36 A range of invertebrate species records were received including; white-letter hairstreak, small heath butterfly and multiple dragonfly and damselfly species records. It is considered likely that the wider area supports a range of invertebrate species, including dragonfly/damselfly species associated with riparian habitats along Knowsley Brook. However, due to the lack of habitat diversity within the Site boundary, it is considered unlikely that the Site supports important invertebrate assemblages.

Invasive Non-native Species

3.4.37 Recent records for Japanese knotweed, Himalayan balsam, rhododendron and water fern were returned within 2km of the Site. Nearest records were from within Acornfield Plantation LWS/LNR (0.4km to the north).

3.4.38 No invasive non-native species were recorded during the extended habitat survey.

4 ASSESSMENT

4.1 Overview

- 4.1.1 This section seeks to identify the potential for effects to occur on habitats and protected and notable species which could be considered as reasonably likely to occur as a result of the Proposed Development. The Site's proximity to statutory and non-statutory designated sites and potential effects on their qualifying interests is discussed. Measures are proposed for the protection of sensitive habitats and species, and recommendations are made for further pre-construction surveys and mitigation, if required.
- 4.1.2 The development has been designed to minimise the potential for effects on sensitive ecological features; thereby ensuring existing wildlife corridors and habitat connectivity are maintained and enhanced. A series of biodiversity enhancements have also been adopted.

4.2 Statutory Designated Sites

- 4.2.1 The Site is not located within or adjacent to any nationally or internationally designated site.
- 4.2.2 The nearest designated site is Acorfield Plantation LNR, which is located approximately 0.4km north of the Site. The locations of statutory designated sites are provided in **Figure 2**.
- 4.2.3 Internationally designated sites; Ribble and Alt Estuary SPAs/Ramsar (12.4km to the west) and the Martin Mere SPA/Ramsar site (16.6km to the north) are designated for numerous qualifying interests, including mobile qualifying species such as pink footed goose. The Site is located on the southern edge of a pink-footed goose Impact Zone, indicating that the species may likely occur on farmland habitats in the wider environment.
- 4.2.4 It is considered that the Site is unsuitable to support qualifying pink footed geese associated with the aforementioned designated sites, and the Proposed Development would have no likely significant effect on other areas of functionally linked land due to the following factors:
- Habitats are dominated by tall ruderal, scrub, woodland and neutral grassland interspersed with scattered scrub; all of which do not offer the expansive open habitats required to attract roosting/foraging pink footed geese. As a result, the Site and wider survey area is unsuitable for this species;
 - Due to scrub, woodland and existing urban development, there are no visual 'sightlines' between the Site and the surrounding farmland to the east, north-east and south-east that may cause disturbance effects on qualifying interest species if using these more distant fields. Hence the Proposed Development does not have the potential to indirectly affect functionally linked land and their usage in the wider landscape; and,
- 4.2.5 The Site is not located within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ) whereby the Local Authority would be required to consult with Natural England.
- 4.2.6 The Air Quality Assessment provided with the Application has concluded that there would be no significant impacts on sensitive ecological receptors as a result of the Proposed Development that would require further detailed assessment.
- 4.2.7 For the reasons set out above, no impacts to statutory designated sites are anticipated as a result of the Proposed Development.

- 4.2.8 Standard good practice pollution prevention and runoff control measures will be adhered to throughout construction of the Proposed Development.

4.3 Non-statutory Designated Sites

- 4.3.1 The Site is not located within or adjacent to any non-statutory designated site and therefore there will be no direct effect on habitats or land take within any non-statutory designated sites in the wider landscape.
- 4.3.2 The Air Quality Assessment has concluded that there would be no significant impacts on sensitive ecological receptors as a result of the Proposed Development that would require further detailed assessment.
- 4.3.3 Similarly to statutory designated sites above, through virtue of spatial separation and due to the absence of any clear impact pathways, no impacts to non-statutory designated sites are anticipated as a result of the Proposed Development.

4.4 Habitats

- 4.4.1 Habitats within the Site comprise neutral grassland with scattered scrub and a limited area of deciduous woodland plantation, which is a widespread habitat of moderate ecological value. Boundary features include scrub, deciduous woodland and tall ruderal. Knowsley Brook is located 50m south of the Site.
- 4.4.2 The proposed Site access will utilise existing access points from Coopers Lane (A5208) with no additional land-take required.
- 4.4.3 Standard pollution prevention and runoff management measures will also be implemented during the construction and operation of the Proposed Development to safeguard adjacent habitats and their associated species, including Knowsley Brook. Such measures would include;
- Standard measures to prevent pollutants and sediment produced during and after construction entering Knowsley Brook located 50m south of the Site (at its closest point).
 - Standard measures to protect wildlife such as covering excavations overnight and protecting trees at the Site boundaries in line with BS 5837:2012 *Trees in relation to design, demolition and construction*.

4.5 Protected and Notable Species

Birds

- 4.5.1 All wild birds, their nests and eggs are, with few exceptions, protected under the Wildlife and Countryside Act 1981 (as amended). Schedule 1 of the Act, confers special protection with increased penalties for certain species. Additional protection is provided to species listed under Directive 2009/147/EC on the conservation of wild bird (the 'Birds Directive') codified version.
- 4.5.2 As discussed in relation to statutory designated sites, no direct or indirect effects are anticipated on protected or notable bird species (such as pink footed goose) which form qualifying interest species of internationally designated sites.
- 4.5.3 In order to avoid impacts on nesting birds and to ensure compliance with the provisions of the Wildlife and Countryside Act 1981 (as amended), it is recommended that construction, and any associated vegetation removal, takes place outside of the bird breeding season (March to August inclusive). If

vegetation works are necessary during the breeding season any suitable nesting habitat to be affected by works; including on-Site grassland, should be checked by a suitably experienced ecologist prior to works commencing. Works would be permitted to proceed only when the ecologist is satisfied that no offence will occur under the legislation.

- 4.5.4 The main potential effect of construction from the Proposed Development is the displacement of foraging and nesting birds. Suitable habitats for breeding birds within the Site include grassland, scattered scrub and woodland habitats. Ground nesting species such as lapwing and skylark are unlikely to be present due to the enclosed and small field size, but the Site may support a range of passerines in scrub and woodland habitats.
- 4.5.5 The layout and construction process of the Proposed Development has been designed to avoid impact to the majority of scrub and tree habitats; although a limited area of woodland plantation (W1) and scattered scrub that lies within the Site will be removed. Due to the limited area of woodland and scrub habitat planned for removal, in conjunction with the abundance of similar habitats in the direct vicinity, it is considered that such habitat removal will not impact local bird populations.
- 4.5.6 Woodland and scrub habitat adjacent to the Site will be retained and protected during construction, following British Standards BS5837:2012 *Trees in relation to design, demolition and construction*. With such protective measures adhered to, potential species nesting in adjacent habitats are likely to be unaffected by the works, and are considered at low risk from displacement.
- 4.5.7 Removal works of suitable breeding habitat should be undertaken outside of the nesting bird season (1st March-31st August inclusive). If vegetation works are necessary during the breeding season, suitable nesting habitat should be searched by a suitably experienced ecologist prior to works commencing. Only when the ecologist is satisfied that no offence will occur under the legislation will works be permitted to proceed.
- 4.5.8 In addition, it is recommended that the inclusion of ten bird boxes should be erected in suitable boundary woodland habitats neighbouring the Site.

Bats

- 4.5.9 All species of British bat are protected under the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations. The Act and Regulations make it an offence to
- kill, injure or take a bat;
 - damage, destroy or obstruct access to any place that a bat uses for shelter or protection; and,
 - intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.
- 4.5.10 Seven bat species in the UK are also listed as species of principle importance for the purpose of conserving biodiversity under Section 41 of the NERC Act 2006. Common pipistrelle, soprano pipistrelle, brown long-eared, whiskered, Brandt's, Natterer's, Daubenton's and noctule are further listed within the LBAP.

Roosting bats

- 4.5.11 No effects on roosting bats will result from the Proposed Development. A preliminary ground level roost assessment was completed as part of the extended habitat survey which confirmed that there are no structures or trees on-Site suitable for bat roosting purposes. A strip of woodland (W1) that lies within the Site that is planned for removal includes semi-mature and immature woodland plantation that provides negligible opportunities for roosting bats.

Foraging and commuting bats

- 4.5.12 Following guidance provided in BCT guidance (Collins et al. 2016) it is considered that the mosaic of scrub, woodland, grassland and tall ruderal habitats located within the Site are likely to provide a high commuting and foraging value for bat species. On-Site foraging opportunities may potentially be permanently reduced as a result of the Proposed Development, due to the removal of a relatively small area of such habitats. However, such habitat removal is not considered likely to adversely affect overall foraging resources for bats given the wider availability of high-quality habitat present in the surrounding area.
- 4.5.13 Boundary habitats will be retained and protected throughout works following British Standards BS5837:2012 *Trees in relation to design, demolition and construction*, with Site access utilising existing access points. The relatively small overall loss of grassland, scrub and woodland habitat, together with the avoidance of any indirect effects on wider foraging resources, is not considered to affect local populations of bat species. Similarly, the relatively small area of land take will not cause habitat fragmentation or interruptions to commuting routes, which will continue to be provided by boundary features and woodland in the wider area.
- 4.5.14 The Proposed Development will provide positive measures for bats by providing additional bat roost provision through the inclusion of ten bat boxes erected on suitable mature and semi-mature trees located nearby, including along Knowsley Brook.
- 4.5.15 Lighting required during the construction and operational periods will be directed away from retained boundary habitats. Light spillage would be avoided with adherence to BCT guidance (2018)²². As such there would be no discernible effects on foraging/commuting bats as a result of the Proposed Development
- 4.5.16 Although no mature trees are currently proposed to be affected with plans unlikely to be changed, should any changes be made then suitable checks for roosting bats will be undertaken in advance of any removal. If bats are confirmed to be roosting within any additional trees to be impacted, the data gathered would be used to inform potential design amendments avoiding or reducing impacts, or, failing that to support a licence application to Natural England to destroy/disturb the bat roost.

Badger

- 4.5.17 Badgers are protected under the Protection of Badgers Act 1992; this makes it an offence to kill, injure or take a badger, intentionally or recklessly damage or destroy a badger sett, or obstruct access to it or disturb a badger when occupying a sett.
- 4.5.18 No evidence of badger activity was found during the extended habitat survey. Suitable habitats for foraging, commuting and sett excavating badgers are present within and immediately adjacent to the Site, including grassland, scrub and woodland.
- 4.5.19 Due to the highly mobile nature of badgers, a pre-construction badger check is recommended to confirm the continued absence of badger setts within the Site and within 30m of the Site boundaries (were accessible) before commencement of works. If a sett is found, suitable advice will be sought from the project ecologist to ensure necessary protection, avoidance or mitigation measures are in place before works proceed.

²² Bat Conservation Trust. (2018). *Bats and Artificial Lighting in the UK: Bats and the Built Environment Series Guidance Note 08/18*

Amphibians

- 4.5.20 Great crested newts are protected by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017. The Act and Regulations make it an offence to:
- Kill, injure or disturb a great crested newt;
 - Damage or destroy or obstruct access to any place that a great crested newt uses for shelter or protection; and,
 - Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place that it uses for shelter or protection.
- 4.5.21 Great crested newt and common toad are also listed as priority species in England under Section 41 of the NERC Act 2006 and great crested newt is also listed under the LBAP. Amphibian species, such as great crested newt, are therefore of material consideration within the planning process.
- 4.5.22 The mosaic of habitats within the Site and surrounding area are considered to offer suitable terrestrial habitats for amphibian species. However, the closest potential amphibian breeding pond is located approximately 0.4km to the east, located beyond Hewitts Lane and Knowsley Brook, which are considered to present physical barriers that prevent amphibian dispersal towards the Site.
- 4.5.23 Data provided by Merseyside Biobank, indicates that a single record of great crested newt was received in 2007, located immediately east of the Site boundary. No further information is provided, and it is unknown if any ponds were previously located within the surrounding environment prior to any surrounding developments being constructed (multiple new developments have taken place within Knowsley Industrial Estate and within the adjacent National Grid site).
- 4.5.24 Due to the small footprint and nature of the Proposed Development, as well as the lack of potential amphibian breeding ponds within 250m of the Site, the implementation of a series of Reasonable Avoidance Measures (RAMs) is likely to be sufficient to avoid impacts on individual great crested newts and maintain a favourable conservation status for the local population of this species in the wider environment. The RAMs will include a 'tool box talk', visual searches of habitats prior to habitats clearance/development activities and a watching brief by a suitably qualified ecologist to minimise risk of accidental harm. Site specific RAMs are provided in **Appendix 2**.

Reptiles

- 4.5.25 Under Section 9 (5) of the Wildlife and Countryside Act 1981 (as amended), the more widespread reptile species; slow worm, grass snake, common lizard and adder are protected against sale, barter, exchange, transporting for sale and advertising to sell or buy.
- 4.5.26 Common lizard, grass snake, adder and slow worm are also listed as priority species in England under Section 41 of the NERC Act 2006; common lizard is also listed within the LBAP. Reptiles are therefore a material consideration within the planning process.
- 4.5.27 It is considered that the mosaic of habitats within the Site and surrounding area provide suitable reptile habitat for foraging, basking and hibernation purposes.
- 4.5.28 Due to the relatively small footprint of the Site and limited extent of habitat loss, the Proposed Development will not cause the isolation or fragmentation of habitats on reptile populations (if present).
- 4.5.29 It is considered that the implementation of a series of RAMs will be sufficient to avoid adverse effects on individual reptiles potentially present and any wider local populations present. The RAMs will include a 'tool box talk', visual searches of habitats prior to habitats clearance/development activities

and a watching brief by a suitably qualified ecologist to minimise risk of accidental harm. Site specific RAMs are provided in **Appendix 2**.

Other species

Flora

- 4.5.30 The majority of notable plant records received from Merseyside Biobank related to species commonly associated with habitats that are not found to be within the Site. Therefore, it is considered unlikely that such notable species occur within the Site. Some notable marginal/aquatic species may occur within Knowsley Brook located within the wider survey area, however the maintenance of a suitable buffer zone along the banks of the Brook and standard measures to ensure runoff control and pollution prevention will safeguard such habitats.
- 4.5.31 A limited area of common bluebell was identified in neighbouring woodland habitat north of the Site (W5), however this woodland will be retained and protected during construction, following *British Standards BS5837:2012 Trees in relation to design, demolition and construction*. With such protective measures adhered to, common bluebell is likely to be unaffected by the works.
- 4.5.32 As no notable plant species were identified within the Site itself during the extended habitat survey, it is considered that no notable or protected plant species will be impacted by the habitat replacement associated with the Proposed Development.

Mammals

- 4.5.33 Habitat is suitable within the Site and in the wider area for brown hare and hedgehog. Both species are listed under Section 41 of the NERC Act 2006) and UK BAP. Brown hare is also listed under the LBAP. If present, the species may on occasion use the Site for commuting, foraging and/or hibernating purposes. The Site will maintain and enhance habitats for species such as hedgehog with the implementation of five hedgehog boxes within the surrounding woodland habitat.
- 4.5.34 It is unlikely that the works proposed will negatively affect brown hare or hedgehog species distribution and conservation status in the wider environment. RAMS adopted for amphibians/reptiles will include good practice measures, which will also protect any individual hedgehogs which may be using the Site (**Appendix 2**). If a hedgehog is suspected/found whilst works are being undertaken, work must stop immediately and contact should be made with a licensed, qualified ecologist.

Invertebrates

- 4.5.1 Grassland, scrub and woodland habitats have potential to support a range of invertebrate species, however the small area of land conversion is considered unlikely to impact any notable, local invertebrate populations (if present). Woodland planned for removal primarily comprises a limited area of semi-mature and immature plantation that is considered to be of lower habitat quality compared to mature woodland as found directly north of the Site. As mature woodland and an abundance of similar grassland, plantation and scrub habitats in the wider area will be retained and protected, with appropriate buffers and standard pollution prevention measures in place, the Proposed Development will unlikely impact invertebrate species potentially present within these habitats, such as white-letter hairstreak.
- 4.5.2 In addition, the inclusion of ten invertebrate towers/boxes (of various designs), will enhance opportunities for invertebrates within the Site.

Invasive Non-native Species

- 4.5.3 No species of invasive non-native plant species listed under Schedule 9 of The Wildlife & Countryside Act 1981 (as amended) or the Invasive Alien Species (Enforcement and Permitting) Order 2019 were recorded on-Site during the extended habitat survey.
- 4.5.4 It is an offence to plant or otherwise cause to grow in the wild species listed within Schedule 9; this includes allowing the species to grow/spread, spreading the species or transferring polluted ground material from one area to another.
- 4.5.5 Any waste and soil containing invasive non-native plant species listed under Schedule 9 of The Wildlife & Countryside Act 1981 (as amended) is also classed as controlled waste and as such must be disposed of safely at a licensed landfill site according to the Environmental Protection Act (Duty of Care) Regulations 1991.
- 4.5.6 If any invasive plant species are encountered on-Site or immediately surrounding the Site prior to or during construction, the advice of a suitably qualified ecologist should be sought and the appropriate measures taken to prevent the inadvertent introduction or spread of such plants.

5 SUMMARY - ECOLOGY PRIORITY MATRIX

5.1.1 **Table 5.1** summarises the ecological constraints and opportunities associated with the development, and makes recommendations for pre-construction survey work and/or mitigation measures as required.

Feature		Details
Statutory and Non-statutory designated sites for Nature Conservation	Constraints & Opportunities	a. The survey area does not form part of any statutory or non-statutory designated sites. b. The Site is within a 'Sustainable Urban Extension' area, whereby land has been allocated for meeting Knowsley's future urban development requirements. c. No direct or indirect impacts on statutory designated sites for nature conservation are anticipated by virtue of separation distance, the restricted scale and nature of the Proposed Development and limited habitats on Site. d. The Site does not lie within a SSSI Impact Risk Zone whereby the Local Planning Authority is required to consult with Natural England.
	Protection Measures	e. The implementation of standard good practice pollution prevention and runoff control measures will suitably protect the designated sites. f. Due to the sub-optimal habitat present within the Site and small spatial scale, it is not anticipated that the proposals will impact adversely on any qualifying mobile species, such as pink-footed goose.
Habitats & Flora	Constraints & Opportunities	g. The habitat within the Site comprises neutral grassland with scattered scrub, along with a limited area of overlying woodland plantation that primarily lies outside the Site. The Site is bounded by several woodland parcels, scattered scrub, neutral grassland and urban habitats. Knowsley Brook is located 50m south. h. Tree, hedgerow and grassland planting will enhance the biodiversity value of the Site.
	Protection Measures	i. Standard measures to ensure runoff control and pollution prevention should be implemented; these measures will safeguard habitats on and immediately surrounding the Site.
Birds	Constraints & Opportunities	j. The habitats within the Site provide nesting habitat for breeding birds, in the form of grassland, scattered scrub and woodland. k. The landscape planting, including scrub and tree planting will provide a local benefit for nesting and foraging birds. l. Ten bird boxes will be installed in suitable locations.
	Legislative Compliance – WCA**	m. Works within the suitable habitat should be undertaken outside of the nesting bird season (01 March-31 August inclusive). If vegetation works are necessary during the breeding season, suitable nesting habitat should be searched by a suitably experienced ecologist prior to works commencing. Only when the ecologist is satisfied that no offence will occur under the legislation will works be permitted to proceed.
Bats	Constraints & Opportunities	n. Boundary habitats on Site are considered to be of high value to foraging and commuting bat species. Such habitats will be retained and protected. o. Ten bat boxes will be installed in suitable locations. p. Any lighting required in relation to the Proposed Development will be designed to minimise light spill outside the Site and directed away from neighbouring habitat corridors.
	Legislative Compliance – WCA**, HR***	q. Any lighting required during construction and/or operation of the Proposed Development should be directed away from neighbouring woodland and watercourses (further information is provided in Lighting in the UK, Bats and

Feature		Details
		the Built Environment Series, Bat Conservation Trust and Institute for Lighting Engineers).
Badger	Constraints & Opportunities	r. No signs of badger were noted during the extended habitat survey. Suitable habitats are present within and adjacent to the Site for foraging, resting and sett excavation opportunities.
	Legislative Compliance – PBA****	s. It is recommended that a pre-construction badger survey should be completed by a suitable qualified ecologist immediately prior to the commencement of development to check for any newly constructed setts in and surrounding the Site. t. If an active badger sett is identified within proximity to development, then it is recommended that works do not commence until a mitigation strategy has been produced and if necessary, a licence from Natural England obtained.
Otter	Constraints & Opportunities	u. No signs of otter were recorded during the extended habitat survey. Suitable habitats are present 50m from the Site for foraging, resting and commuting (Knowsley Brook).
	Legislative Compliance – WCA**, HR**	v. Pollution prevention measures will be implemented to prevent pollution and run-off occurring during the construction, with specific control measures implemented to protect the watercourses off-Site.
Water vole	Constraints & Opportunities	w. No signs of water vole were recorded during the extended habitat survey. Suitable habitats are present adjacent to Site for foraging, resting and commuting (Knowsley Brook). x. Historical water vole records were returned by Merseyside Biobank along Knowsley Brook in the wider 2km search area.
	Legislative Compliance – WCA**	y. Pollution prevention measures will be implemented to prevent pollution and run-off occurring during the construction, with specific control measures implemented to protect the watercourses off-Site. z. As associated works are not within 8m of Knowsley Brook, no pre-construction water vole survey is required prior to any works. .
Red squirrel	Constraints & Opportunities	aa. The woodland habitat within and surrounding the Site could potentially support this species, if present locally. bb. Site boundary features such as scrub and woodland will be retained and protected and any red squirrel population potentially present locally will not experience loss of habitat.
	Legislative Compliance – WCA**	cc. Suitable checks for drey will be undertaken prior to works in woodland planned for removal. If a drey is found, the data gathered would be used to inform potential design changes to avoid or reduce impacts or other mitigation measures. dd. Landscape planting to strengthen boundary scrub and woodland will enhance the Site for red squirrel.
Amphibians	Constraints & Opportunities	ee. Suitable terrestrial habitats within and adjacent to the Site include neutral grassland, tall ruderal, scrub and woodland. No ponds are present within 250m of the Site, however suitable amphibian aquatic habitat is located along Knowsley Brook 50m south. ff. The landscape planting, including scrub and tree planting will provide a local benefit for amphibians. gg. If an amphibian is suspected/found whilst works are being undertaken, work must stop immediately and contact should be made with a suitably qualified / licensed ecologist.

Feature		Details
	Legislative Compliance – WCA**, HR***	hh. Works affecting suitable habitat to be undertaken under Reasonable Avoidance Measures (RAMs) on a precautionary basis.
Reptiles	Constraints & Opportunities	ii. The landscape planting, including scrub and tree planting will provide a local benefit for amphibians. jj. If an amphibian is suspected/found whilst works are being undertaken, work must stop immediately, and contact should be made with a suitably qualified / licensed ecologist.
	Legislative Compliance – WCA**	kk. Works affecting suitable habitat to be undertaken under Reasonable Avoidance Measures (RAMs) on a precautionary basis.
White-clawed Crayfish	Constraints & Opportunities	ll. The section of Knowsley Brook located outside the Site is considered potentially suitable for white-clawed crayfish, which is not confirmed historically within the watercourse.
	Legislative Compliance – WCA **	mm. Pollution prevention measures will be implemented to prevent pollution and run-off occurring during the construction and specific control measures will be implemented to protect the watercourses/ditches within and off Site. nn. As associated works are not within 8m of Knowsley Brook, no pre-construction white-clawed crayfish survey is required prior to development works commencing.
Other Species	Constraints & Opportunities	oo. A small area of common bluebell is located in neighbouring woodland north of the Site. Common bluebell will not be affected by the Proposed Development through the retention and protection of neighbouring woodland habitats. pp. Species such as hedgehog, brown hare and various invertebrate species may use the Site temporarily for commuting or foraging and it is unlikely that the works proposed will negatively affect the species distribution and conservation status in the wider environment. qq. Implementation of five hedgehog boxes within the surrounding woodland habitat, as well as ten invertebrate towers/boxes (of various designs) within the Site rr. If a hedgehog is suspected/found whilst works are being undertaken, work must stop immediately, and contact should be made with a suitably qualified ecologist.

Legislative Compliance Key

* The Hedgerows Regulations 1997

**Wildlife & Countryside Act 1981 (as amended)

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

****Protection of Badgers Act 1992

Figure 1: Site Location Plan

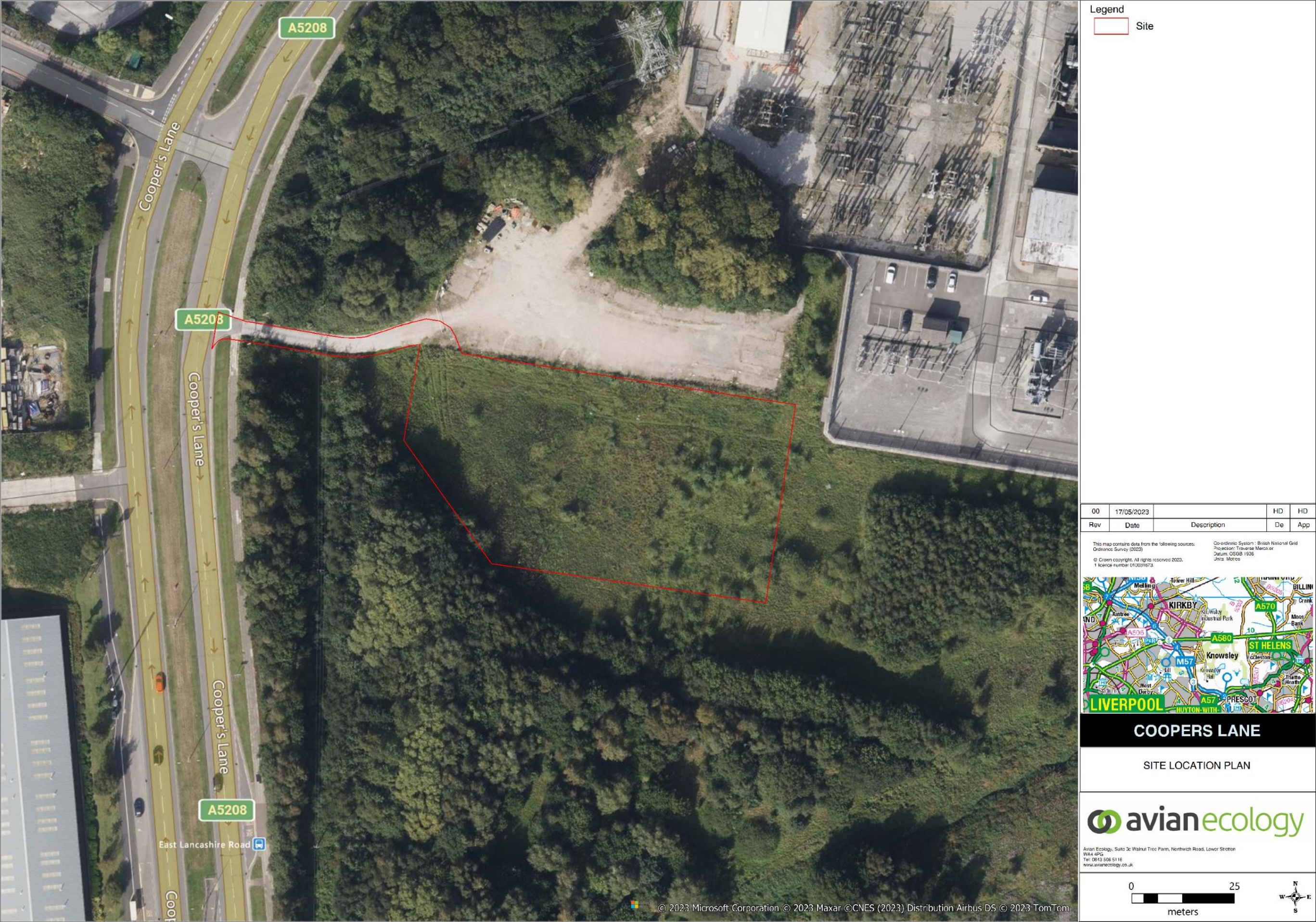


Figure 2: Statutory Designated Sites Plan

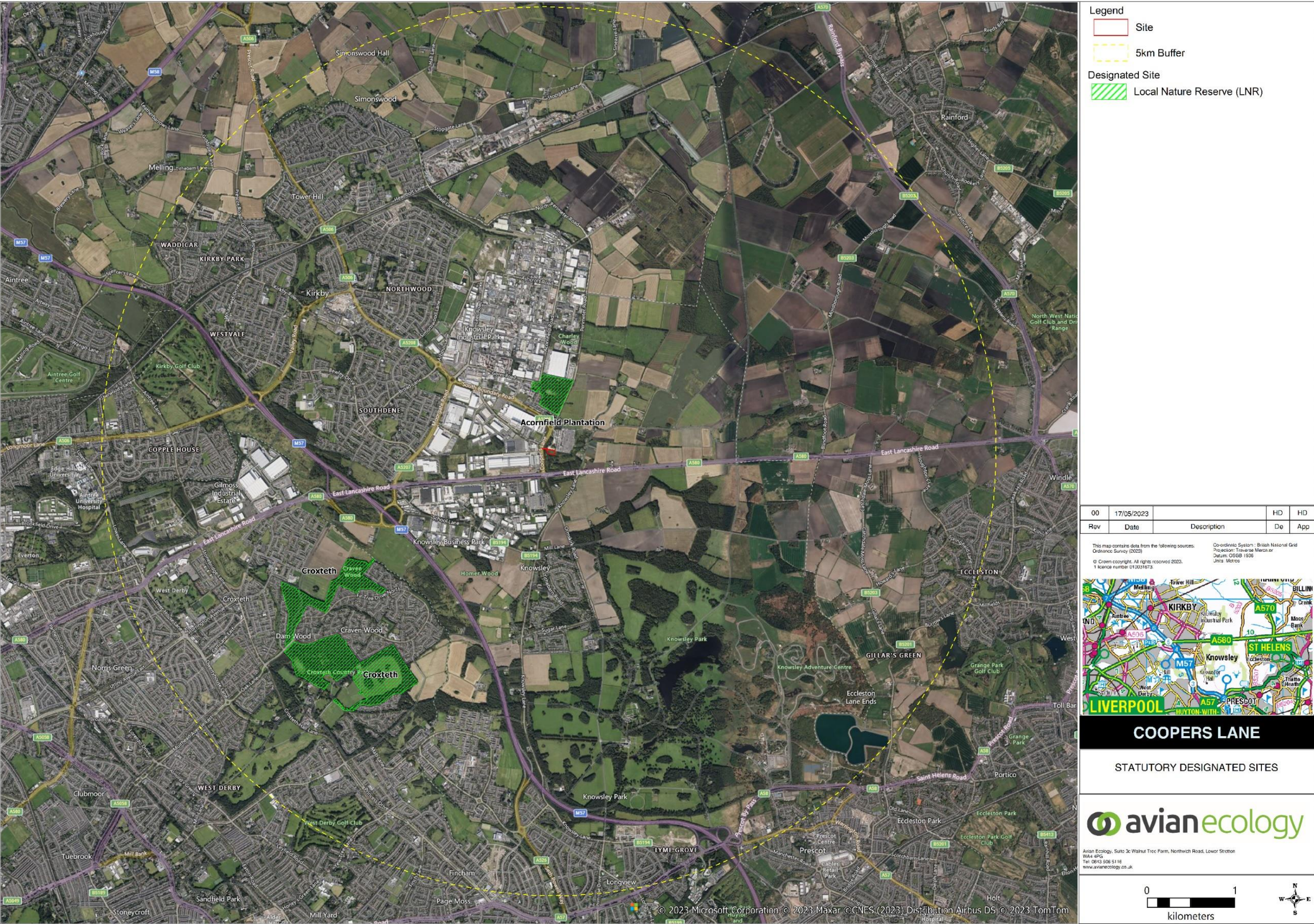
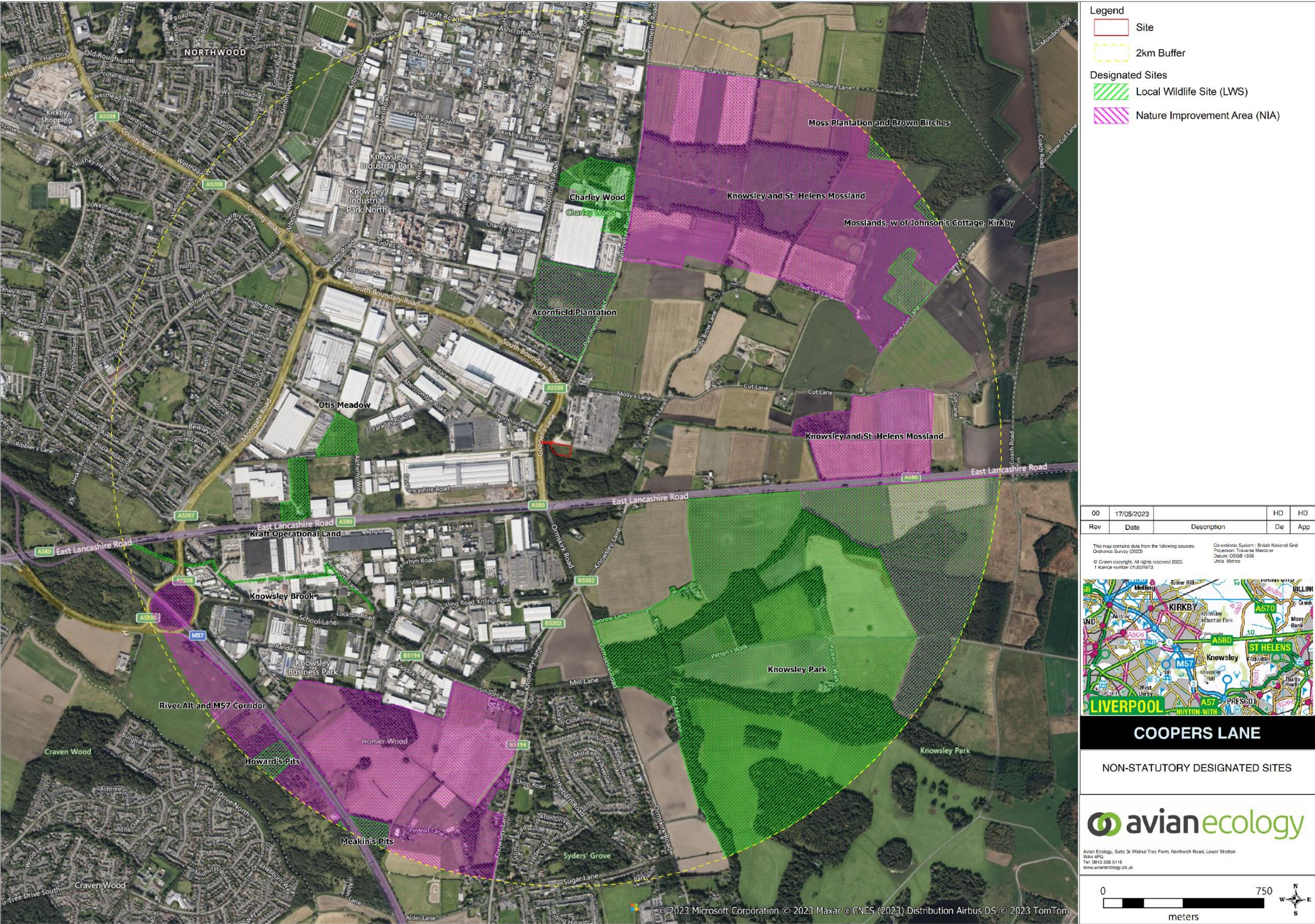


Figure 3: Non-Statutory Designated Sites





Legend

Site

UK Habitat Classification Code

g3c.10.14.16.73

g3c.10.15.121

g4.10.12.16

u1c

u1e.111

u1e.1232

w1f7.10.16.37.38

w1g.10.12.16.36.52

w1g.10.16.36.52

r2a - Rivers (priority habitat)

G1: g3c.10.14.16.73-Other neutral grassland;Scattered scrub/rushes;Tall herb;Bare ground

G2: g3c.10.15.121-Other neutral grassland;Scattered scrub;Rushes dominant;Waterlogged

TR1: g4.10.12.16-Modified grassland;Scattered scrub/bracken;Tall herb

U1: u1e.1232 - Built linear features;Non-permeable paving

U2: u1c - Artificial unvegetated, unsealed surface

U3: u1e - Built linear features;Road

W1: w1g.10.12.16.36.52-Other woodland; broadleaved;Scattered scrub/bracken;Tall herb;Plantation;Coppice with standards

W2: w1g.10.16.36.52-Other woodland; broadleaved;Scattered scrub;Tall herb;Plantation;Coppice with standards

W3: w1g.10.12.16.36.52-Other woodland; broadleaved;Scattered scrub/bracken;Tall herb;Plantation;Coppice with standards

W4: w1f7.10.16.37.38-Other Lowland mixed deciduous woodland;Scattered scrub;Tall herb;Semi-natural woodland;Secondary woodland

W5: w1f7.10.16.37.38-Other Lowland mixed deciduous woodland;Scattered scrub;Tall herb;Semi-natural woodland;Secondary woodland

00	17/05/2023		HD	HD
Rev	Date	Description	De	App

This map contains data from the following sources:
Ordnance Survey (2023)
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1 licence number 013031673.

Co-ordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Metres

COOPERS LANE

HABITAT MAP

Avian Ecology, Suite 3c Walnut Tree Farm, Northwich Road, Lower Stretton
WMA 4PG
Tel: 0843 506 5116
www.avianecology.co.uk

025

meters

APPENDIX 1: PHOTOGRAPHS



Photograph 1: Neutral grassland with scattered scrub (G1).



Photograph 2: Broadleaved woodland plantation (W1).



Photograph 3: Western access into the Site from Coopers Lane (U3).



Photograph 4: Artificial unvegetated, unsealed urban surface directly north of the Site (U2).



Photograph 5: Strip of tall ruderal with scattered scrub (TR1) located between woodlands W1 and W2.



Photograph 6: Knowsley Brook located south of the Site.

APPENDIX 2: REASONABLE AVOIDANCE MEASURES (RAMS)

METHOD STATEMENT

The following Method Statement outlines suitable measures to be implemented during construction works associated with the Proposed Development (the Site), to avoid the potential for disturbance, injury or killing of individual hedgehog, amphibians (including great crested newt *Triturus cristatus*) or reptile species.

Measures to ensure the favourable conservation status of the species during the Proposed Development must reflect legislation and guidance application at the time and the construction phase will be undertaken following RAMS under the supervision of an Ecological Clerk of Works (ECoW) as required to provide advice. Should RAMS be considered insufficient for great crested newts, certain works may require to be undertaken under a Low Impact Class Licence (LICL) or full European Protected Species Mitigation (EPSM) licence from Natural England, either of which would be supported by presence/absence environmental DNA survey and detailed Method Statement.

These RAMs relate to the removal of grassland, scattered scrub, tall ruderal and woodland plantation habitat within the Site, and should not be employed for larger scale or extensive scrub or woodland habitat removal. Minor or short term destructive or disturbance works will also follow this Method Statement to ensure legal compliance and to ensure the objectives are achieved.

Method Statement Objectives

In order to facilitate the proposed works, a detailed working Reasonable Avoidance Measures (RAMs) Method Statement will be adopted to limit disturbance to avoid significant impacts on amphibian, reptile and hedgehog local populations potentially present.

Any development related activities on the Site, such as vegetation clearance or excavations in areas of suitable habitat may potentially affect amphibians, reptiles or hedgehog. As a result, safeguards must be implemented to protect these species and the Method Statement below outlines measures to be implemented to ensure these objectives are achieved. If these measures are followed, then no impacts are likely to occur.

Method Statement

This Method Statement should be followed for the construction works and associated minor short term destructive habitat clearance works within the Application Site in order to ensure legal compliance and to ensure the objectives are achieved.

The following measures will be adopted throughout the construction period of the Proposed Development:

- Site operatives will be informed by 'tool box' talk of the potential for protected species to occur on-Site, what to look out for and what to do in the event that animal is found.
- Vegetation clearance works should only commence after a careful visual inspection by a suitably experienced and where necessary licensed ecologist or Ecological Clerk of Works (ECoW) has determined that no animals are present. Potential refugia should be hand searched by the ecologist prior to removal. Vegetation should be reduced (by hand strimmer) to a height of c.150mm prior to ground works commencing to aid visual searches and encourage individuals to temporarily move away from the working areas.
- The proposed timing of the works should avoid the amphibian, reptile and hedgehog hibernation period (November to February inclusive) in order to prevent disturbance to hibernating animals.
- Trenches and excavations should include an escape route for animals that might enter the trench, especially if left open overnight. Ramps should be no greater than 45 degrees in angle and can include wooden planks or ramped earth. Ideally, any excavations open for a prolonged period should be covered.

- All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling.
- Any excavated material stored overnight should be searched prior to being used as infill.
- Any brash cut down from the Site should be placed in piles within a set aside and undisturbed habitat area, to create additional hibernacula for both amphibian and reptile species.

Should a great crested newt, reptile, hedgehog or other notable species be found at any point during construction, works within suitable habitat and/or potentially disturbing works in close proximity to the great crested newt/reptile/hedgehog must cease immediately and the ECoW will advise on the appropriate actions, including applying for a licence, if required. Other amphibians found during the visual inspection will be placed away from the development works in the wider area comprising of terrestrial habitats which will not be impacted by the proposed works and has excellent connectivity with surrounding terrestrial habitats.