

Yorkshire Water

Hoylandswaine STW

Preliminary Ecological Appraisal

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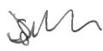
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Contents

1.	Introduction	1
1.1	Site and Scheme Description	1
1.2	Objectives	1
1.3	Report Structure	1
2.	Legal and Policy Context	2
2.1	Wildlife and Countryside Act 1981 (as amended)	2
2.2	Countryside and Rights of Way Act 2000	2
2.3	Natural Environment and Communities Act 2006	2
2.4	The Protection of Badgers Act 1992	2
2.5	Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019	2
2.6	National Planning Policy Framework	3
2.7	Local Context	3
3.	Methodology	4
3.1	Desk Study	4
3.2	Field Survey	4
3.3	Survey Limitations	6
4.	Results	7
4.1	Desk Study	7
4.2	Field Survey	10
5.	Discussion and Recommendations	14
5.1	Designated Sites	14
5.2	Habitats	14
5.3	Fauna	15
6.	Summary	17

Tables

Table 3.1: Bat suitability categories.	5
Table 4.1: Statutory designated sites within 2km.	7
Table 4.2: Non-statutory designated sites within 2km of the site.	7
Table 4.3: S41 Habitats of Principal Importance within 2km.	7
Table 4.4: Protected and notable species within 2km of the site.	8
Table 4.5: UK Habitat Classification habitats within the site.	10
Table 4.6: Results of the BRSAs undertaken on site.	11
Table 4.7: Habitat Suitability Index assessment of waterbodies on site and within 250m.	13

Figures

No table of figures entries found.

Drawings

No table of figures entries found.

Pictures

No table of figures entries found.

Photographs

No table of figures entries found.

Attachments

No table of figures entries found.

Appendices

Drawing 1: UKHab Classification Map	18
A.1 Desk Study Results	19

1. Introduction

Ove Arup and Partners Ltd. (Arup) was commissioned by Yorkshire Water Services Limited (Yorkshire Water) to undertake a Preliminary Ecological Appraisal (PEA) in relation to the proposed development of the Hoylandswaine Sewage Treatment Works (STW) (hereafter referred to as 'the site'). The PEA encompasses a UK Habitat Classification 2.0 survey and protected species scoping study in line with current guidance (CIEEM, 2017).¹ The PEA also conforms to the British Standard BS42020:2013 Biodiversity Code of Practice for Planning & Development.

1.1 Site and Scheme Description

Hoylandswaine STW is located off Cooper Lane, Hoylandswaine, within the jurisdiction of Barnsley Council (Ordnance Grid Reference SE 26886 05482). The site currently consists of hardstanding surfaces and structures, buildings, grassland, broadleaved woodland, and a waterbody.

Yorkshire Water are seeking the upgrade of the STW to achieve compliance with environmental regulations. The regulations are contained within the Water Industry National Environment Programme (WINEP) set out by the Environment Agency (EA). WINEP identifies that water companies have a primary role in protecting and enhancing the environment and thereby improving the lives of those within the communities they serve. To achieve compliance, the proposed development comprises of the construction and installation of two chemical dosing kiosks, Tertiary Solid Removal (TSR) unit, internal access road, and below ground pipes, access chambers and apparatus. Drawing 1 shows the site boundary that was subject to the PEA.

1.2 Objectives

The purpose of this report is to identify habitats within the site, assess the potential for, or presence of, any protected or notable species, potential ecological impacts, further survey requirements and to outline mitigation and potential enhancement options, as appropriate.

1.3 Report Structure

The report includes:

- Section 2: Legal and Policy Context.
- Section 3: Methodology.
- Section 4: Results
- Section 5: Discussion and Recommendations.
- Section 6: Summary.

¹ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Winchester: Chartered Institute of Ecology and Environmental Management.

2. Legal and Policy Context

There is a comprehensive system of legislation, both domestic and international, which aims to protect biodiversity at the landscape, habitat, and species level. Much of the legislation pertaining to biodiversity exists within, and independently of, the planning process.

2.1 Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) is the primary legislation covering endangered species in England and sets out the framework for the designation of Sites of Special Scientific Interest (SSSIs). It confers differing levels of protection on species themselves, their habitats, or both, depending on their conservation status. Species offered protection by the Act are listed in a series of schedules. These Schedules are subject to a rolling review on a five-yearly basis. Protected species are listed under Section 1 (birds), Schedule 5 (animals other than birds and invertebrates) and Schedule 8 (plants).

2.2 Countryside and Rights of Way Act 2000

The Countryside and Rights of Way Act 2000 affords a greater level of protection to SSSIs, provides enhanced management arrangements for Areas of Outstanding Natural Beauty (AONBs), and strengthens wildlife enforcement legislation. This Act has amended the WCA 1981 (as amended) by the addition of the term ‘recklessly’ to Section 1(5) and Section 9(4) which has resulted in additional obligations with respect to protected species. As such, it is now an offence to intentionally or recklessly disturb protected species listed on the relevant Schedules of the WCA 1981 (as amended).

2.3 Natural Environment and Communities Act 2006

The Natural Environment and Rural Communities (NERC) Act 2006 is designed to help achieve a rich and diverse natural environment and thriving rural communities. Under Section 41 there is a Duty to conserve biodiversity; specifically, Subsection (1) states “*Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.*” Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40.

2.4 The Protection of Badgers Act 1992

This Act brings together all the legislation that is specific to badger *Meles meles*, except for their inclusion on Schedule 6 of the WCA 1981, (which prohibits certain methods of taking or capture). The Act makes it an offence to intentionally kill or ill-treat a badger, and destroy, disturb, or obstruct a sett. Specifically, it imposes restrictions on works carried out within certain distances of badger setts. Any works that will directly impact on an existing sett are only permitted subject to approval through the issue of a licence from Natural England.

2.5 Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019

The Habitats Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna provides legal protection for habitats and species of European importance. This Directive was transposed into UK law by the Conservation of Habitats and Species Regulations 2017.

The Regulations for the protection of European Protected Species (EPS) have been amended and consolidated with key changes including the removal of most of the defences from regulation 40 and regulation 43 including the removal of the ‘incidental result of an otherwise lawful operation’ defence, and the increase in the threshold for the offence of deliberately disturbing an EPS. Proposals that will affect EPS may require a licence from Natural England to allow an otherwise unlawful act. In 2009 a new offence of

‘breaching condition of an EPS licence’ was added to the regulations. The licensing process is separate from the planning process.

2.5.1 Brexit Implications

To ensure continued protection of these habitats and species, the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019 came into force on 1 January 2021. The EU Exit Regulations amend the 2017 Habitats Regulations, primarily to enable the transfer of functions from the European Commission to the appropriate authorities in England and Wales, and to ensure the 2017 Habitats Regulations continue to be operable. The Government’s Explanatory Memorandum to these regulations states:

“This instrument provides changes to those parts of the 2017 and 2001 Regulations which would no longer work when the UK leaves the EU... The intention is to ensure habitats and species protection and standards as set out under the Nature Directives are implemented in the same way or an equivalent way when the UK exits the EU. There is no change to policy.”

The EU Exit Regulations therefore ensure that habitat and species protections and standards as derived from EU law will continue to apply now that the UK has left the EU. As a result, the obligations of a competent authority in relation to the protection of European sites or species have not changed. Within this report, reference to the ‘Habitats Regulations’ should be taken to mean the 2017 Habitats Regulations as amended by the EU Exit Regulations.

2.6 National Planning Policy Framework

The revised National Planning Policy Framework (NPPF) was published in July 2021 and updated in September 2023, and is a material consideration in all planning decisions². NPPF refers to the responsibilities of the local authorities to conserve the natural environment with respect to the use of the ‘Circular 6/2005: Biodiversity and Geological Conservation – Statutory Obligation and their Impact within the Planning System’ as guidance in this process. All public bodies including local planning authorities are to consider habitats and species of Principal Importance listed in S41 of the NERC Act 2006 and Priority Species/Habitats within Biodiversity Action Plans when considering a planning application.

2.7 Local Context

Non-statutory local sites are referred to as Local Wildlife Sites (LWS) within the region. These sites are of county importance for their wildlife value. They have no statutory protection but are recognised by Local Authorities and statutory agencies and their presence is fully considered when determining planning applications.

Penistone Neighbourhood Development Plan³ was reviewed for policies relating to ecology and biodiversity that intersect the site. Policy ‘CG11: No policies relate to the site within the plan. Barnsley Metropolitan Borough Council’s Local Plan⁴ was reviewed for policies relating to ecology and biodiversity that intersect the site. The plan refers to achieving net gains in biodiversity within the council area.

² National Planning Policy Framework (2023) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachments_data/file/1182995/NPPF_Sept_23.pdf

³ Penistone Town Council (2019) Neighbourhood development Plan (2018-2033). Available at: <https://www.barnsley.gov.uk/media/17224/penistone-ndp-august-2019.pdf>

⁴ Barnsley Metropolitan Borough Council (2019) Local Plan Available at <https://www.barnsley.gov.uk/media/17249/local-plan-adopted.pdf>

3. Methodology

3.1 Desk Study

Protected and notable species records and non-statutory designated sites information within 2km of the site boundary were requested from Sheffield City Council (SCC) in October 2023.

The Multi-Agency Geographic Information for the Countryside (MAGIC) website⁵ was consulted for:

- Statutory designated site information within 2km of the site;
- Previously granted EPS licences within 2km of the site;
- S41 Habitats of Principal Importance (NERC Act 2006) and ancient woodland within 2km; and
- SSSI Impact Risk Zones (IRZ) which extend onto the site. The Risk Zones have been developed to guide planners on whether a development would impact on a Site of Special Scientific Interest (SSSI)/Special Area of Conservation(SAC)/Special Protection Area(SPA)/Ramsar site.

Ordnance survey maps were examined for the presence of mapped waterbodies within a 250m radius of the site.

3.2 Field Survey

3.2.1 UK Habitat Classification

A field survey was undertaken at the site in October 2023. Habitats were identified using the UKHab survey methodology.⁶ The methodology conforms to the CIEEM guidelines for undertaking PEAs,¹ and comprises of two parts; the hierarchical Primary Habitat system and the list of secondary codes. The former classifies habitats principally around vegetation types within subdivisions including floristic, climatic, and geographic differences. Secondary codes give information on the environment, management, and origin of mapped features and support the mapping of habitat mosaics and complexes.

As part of the field survey, the potential for the site to support any legally protected or notable faunal species was also assessed. This was based on the known range of each species or species group and the suitability of the habitats within the site to ensure any additional survey requirements were identified.

3.2.2 Invasive Species

The list of invasive plant species included on Schedule 9 of the WCA 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The survey checked in particular for the presence of Japanese knotweed *Reynoutica japonica*, giant knotweed *Reynoutica sachalinensis*, giant hogweed *Heracleum mantegazzianum*, and Himalayan balsam, *Impatiens glandulifera*.

3.2.3 Great Crested Newt Habitat Suitability Index (HSI)

In compliance with current guidance⁷, suitable waterbodies within 250m of the study area were assessed as to their potential to support a breeding population of great crested newt *Triturus cristatus*. This assessment was undertaken using the Habitat Suitability Index (HSI) developed by Oldham et al. (2000)⁸, which

⁵ Natural England (2022) Available at www.magic.defra.gov.uk Accessed October 2023.

⁶ UKHab Ltd. (2023). *UK Habitat Classification – Habitat Definitions V2.01* Available at: <http://ukhab.org>

⁷ Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth.

⁸Oldham, R.S., Keeble, J., Swan, M.J., and Jeffcote, M., (2000) 'Evaluating the suitability of habitats for great crested newt (*Triturus cristatus*)', Herpetological Journal 10: pp143-15.

considers several habitat/ecological parameters. Habitat variables measured include location, desiccation, water quality, macrophyte cover, terrestrial habitat quality, etc. A value is recorded for each parameter and combined to determine an index of breeding suitability for great crested newts. The HSI is represented by a value from 0 to 1; the higher the value the more likely it is that the waterbody may support breeding great crested newt.

3.2.4 Bat Roost Suitability Assessment

Bat Roost Suitability Assessments (BRSA) were undertaken on two buildings (TN1, TN2; Drawing 1), and eight trees within the site (TN3 to TN6; Drawing 1). The survey followed standard methodology detailed within Bat Conservation Trust Good Practice Guidelines (Collins, 2023)⁹. Each building and tree was inspected for signs of bat presence including:

- Bat droppings.
- Scratch and grease marks.
- Live or dead bats.
- Noises of bats calling from within the roost.

Each building and tree was then awarded a level of suitability to support roosting bats at different times of the year. An assessment of the site in relation to foraging and commuting activity was also undertaken. The assessment categories used are explained in Table 3.1.

Table 3.1: Bat suitability categories.

Potential suitability (adapted from Collins, (2023) Table 4.1 classification	Roosting habitats in structures	Potential flight paths and foraging habitats
High	A structure or 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 (temp, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses and grazed parkland. Site is close to and connected to known roosts .
Moderate	A structure or 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 (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very

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

Potential suitability (adapted from Collins, (2023) Table 4.1 classification	Roosting habitats in structures	Potential flight paths and foraging habitats
	However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting suitability.	well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however a small element of uncertainty remains in order to account for non-standard bat behaviour.
None	No habitat on site likely to be used by any roosting bat at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).

3.3 Survey Limitations

Ecological surveys are limited by factors that affect the presence of plants and animals, such as the time of year, migration patterns and behaviour. Therefore, the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. However, professional judgement allows for the likely presence of these species to be predicted with sufficient certainty to not significantly limit the validity of these findings.

The timing of the survey undertaken in October 2023 was sub-optimal for recording botanical species of interest as it was undertaken outside of the growing season. The grassland within the site were subject to regular mowing, resulting in the possible removal of signs of species of interest. However, it was considered that an assessment could be made as to the value of these habitats based on the desk study information and botanical species present at the time of the survey.

Any grid references provided within this report are approximate (obtained through handheld GPS devices) and are to be used as a guide only.

4. Results

4.1 Desk Study

4.1.1 Statutory Designated Sites

There is one statutory designated site within 2km of the site (Table 4.1). The site falls within the SSSI IRZ for Pye Flatts Meadows SSSI, however the proposed development does not correspond with the types of planning applications which require consultation with Natural England.

Table 4.1: Statutory designated sites within 2km.

Site	Description	Approximate distance from site
Pye Flatts Meadows SSSI	Designated for its botanical diversity with species including but not limited to quaking grass <i>Briza media</i> , yellow oat-grass <i>Trisetum flavescens</i> , adder's-tongue fern <i>Ophioglossum vulgatum</i> , and common eyebright <i>Euphrasia nemorosa</i> .	0.4km south-east.

4.1.2 Non-Statutory Designated Sites

There are two Local Wildlife Sites (LWS) within 2km of the site (Table 4.2).

Table 4.2: Non-statutory designated sites within 2km of the site.

Site	Status	Description	Approximate distance from site
Wool Greaves Meadows	LWS	Complex of five former fields of mainly semi-improved grasslands, semi-natural broadleaved woodland, and species-rich native hedgerow.	0.5km north.
North Wood	LWS	North Wood is situated along the valley of a small stream, with a strip of semi-natural and ancient woodland in a landscape comprising of predominantly arable land and hedgerows.	0.8km south-east.

4.1.3 Ancient Woodland

There are ten ancient woodland sites within 2km of the site, the closest being an ancient and semi-natural woodland located approximately 0.4km to the north-east of the site.

4.1.4 S41 Habitats of Principal Importance

Three S41 Habitats of Principal Importance were identified within 2km of the site (Table 4.3).

Table 4.3: S41 Habitats of Principal Importance within 2km.

Habitat	Location
Deciduous woodland	There are 45 areas within 2km of the site, the closest being 0.01km south of the site.
Lowland meadows	There are three areas within 2km of the site, the closest being 0.2km north of the site.
Good quality semi-improved grassland	There are four areas within 2km of the site, the closest being 0.3km north of the site.

4.1.5 Species Records

Records of protected and notable species were provided by SCC and are summarised in Table 4.4. Only records from the last 20 years and with relevance to key specific legislation (Section 2) have been included. Bird records include red listed Birds of Conservation Concern (BoCC), species listed on Schedule 1 the WCA (1981) (as amended), and S41 Species of Principal Importance. An approximate distance from the site is not provided for records with less than a six-figure grid reference due to accuracy. The full data is provided in Appendix A.

Table 4.4: Protected and notable species within 2km of the site.

Species group	Common name	Latin name	Approximate location of closest record	Number of records
Amphibian	Great crested newt	<i>Triturus cristatus</i>	1.5km east.	1
Bird	Barn owl	<i>Tyto alba</i>	0.2km east.	14
	Black redstart	<i>Phoenicurus ochruros</i>	2km south-west.	1
	Black-headed gull	<i>Chroicocephalus ridibundus</i>	1.6km north-west	4
	Bullfinch	<i>Pyrrhula pyrrhula</i>	0.5km north.	13
	Common gull	<i>Larus canus</i>	Within 2km of the site (no accurate grid reference)	3
	Cuckoo	<i>Cuculus canorus</i>	0.3km north-east.	5
	Curlew	<i>Numenius arquata</i>	0.5km north.	8
	Dunnock	<i>Prunella modularis</i>	0.5km north.	32
	Fieldfare	<i>Turdus pilaris</i>	2km north-east	5
	Grasshopper warbler	<i>Locustella naevia</i>	1.8km south-east.	1
	Greenfinch	<i>Carduelis chloris</i>	0.5km north.	26
	Grey partridge	<i>Perdix perdix</i>	0.4km south-east.	4
	Grey wagtail	<i>Motacilla cinerea</i>	1.8km south-east.	1
	Hobby	<i>Falco subbuteo</i>	1.5km south-east.	6
	House martin	<i>Delichon urbicum</i>	1km south.	14
	House sparrow	<i>Passer domesticus</i>	0.5km north.	33
	Kestrel	<i>Falco tinnunculus</i>	0.5km north.	15
	Lapwing	<i>Vanellus vanellus</i>	0.5km south.	15
	Lesser black-backed gull	<i>Larus fuscus</i>	1.4km north-west.	2
	Lesser spotted woodpecker	<i>Dendrocopos minor</i>	2km south-east.	1
	Linnet	<i>Linaria cannabina</i>	0.5km east.	23
	Mallard	<i>Anas platyrhynchos</i>	1.9km west.	8

Species group	Common name	Latin name	Approximate location of closest record	Number of records
	Meadow pipit	<i>Anthus pratensis</i>	1.7km north-east.	4
	Mistle thrush	<i>Turdus viscivorus</i>	0.5km south-east.	23
	Moorhen	<i>Gallinula chloropus</i>	1km south-west.	7
	Osprey	<i>Pandion haliaetus</i>	1.5km north-east.	1
	Peregrine	<i>Falco peregrinus</i>	1.7km south-west.	2
	Red kite	<i>Milvus milvus</i>	0.4km south.	3
	Redwing	<i>Turdus iliacus</i>	1.4km north-east.	1
	Rook	<i>Corvus frugilegus</i>	0.5km north.	19
	Skylark	<i>Alauda arvensis</i>	1.2km north-west.	15
	Snipe	<i>Gallinago gallinago</i>	1.9km south-west.	2
	Song thrush	<i>Turdus philomelos</i>	0.5km north.	25
	Sparrowhawk	<i>Accipiter nisus</i>	1.4km north-west.	3
	Spotted flycatcher	<i>Muscicapa striata</i>	1.8km south-east.	1
	Starling	<i>Sturnus vulgaris</i>	0.5km south.	25
	Stock dove	<i>Columba oenas</i>	1.7km west.	4
	Swift	<i>Apus apus</i>	1.8km south-east.	1
	Tawny owl	<i>Strix aluco</i>	0.5km south.	8
	Tree sparrow	<i>Passer montanus</i>	0.2km east.	8
	Whitethroat	<i>Sylvia communis</i>	1km south-west.	9
	Willow tit	<i>Poecile montana</i>	0.1km north-west.	1
	Willow warbler	<i>Phylloscopus trochilus</i>	1km north-west.	6
	Woodpigeon	<i>Columba palumbus</i>	0.5km south-east.	28
	Wren	<i>Troglodytes troglodytes</i>	0.4km south	32
	Yellow wagtail	<i>Motacilla flava</i>	1.5km north-west	4
	Yellowhammer	<i>Emberiza citrinella</i>	0.4km south.	31
Flowering plant	Bluebell	<i>Hyacinthoides non-scripta</i>	0.4km south-east.	34
	Japanese knotweed	<i>Reynoutria japonica</i>	1km south-east.	1
Invertebrate	Wall brown	<i>Lasiommata megera</i>	0.2km east.	4
Mammal	Daubenton's bat	<i>Myotis daubentoni</i>	1.9km south-east.	1
	Brown long-eared bat	<i>Plecotus auritus</i>	1.5km north.	5

Species group	Common name	Latin name	Approximate location of closest record	Number of records
	Brown hare	<i>Lepus europaeus</i>	0.6km north.	2
	Common pipistrelle	<i>Pipistrellus pipistrllus</i>	1.2km north	5
	Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	1.6km north.	2
	Noctule	<i>Nyctalus noctule</i>	1.8km east.	3
	European hedgehog	<i>Erinaceus europaeus</i>	1.5km north-west.	1

4.1.6 Invasive Species

One invasive species, Japanese knotweed, was identified within 1km south of the site.

4.1.7 EPS Licences

One EPS licence for destruction of a Natterer's bat *Myotis nattereri*, resting place was identified 1.8km to the north-west of the site.

4.2 Field Survey

The results of the field survey undertaken at the site is described below.

4.2.1 Habitats

The UKHab map is presented in Drawing 1. This graphically represents the primary habitat types recorded within the survey area and denotes the location of Target Notes (TN). The predominant habitats within the site boundary are modified grassland and urban, consisting of buildings, hardstanding sealed surfaces, and unsealed unvegetated surfaces. The habitats recorded within the site are listed in Table 4.1. Secondary habitat codes provide supplementary information or greater detail on the primary habitat types recorded.

Table 4.5: UK Habitat Classification habitats within the site.

Broad habitat	Detailed habitat	Secondary code
Grassland	g4 – modified grassland	66 – frequently mown
Woodland and forest	w1g – other woodland; broadleaved	
Standing open water and canals	R1 – standing open water and canals	39 – man-made 42 – ponds
Urban	U1b – developed land – sealed surface	
	U1c – artificial unvegetated unsealed surface	852 – water treatment filter bed 519 - abandoned
	U1e – built linear features	

4.2.1.1 Modified grassland (g4)

Modified grassland was extensive within the site. This was the predominant habitat in areas not covered by urban habitats to the south of the site and was mown regularly. Species recorded included perennial ryegrass *Lolium perenne*, creeping buttercup *Ranunculus repens*, creeping thistle *Cirsium arvense*, herb robert *Geranium robertianum*, ribwort plantain *Plantago lanceolata*, dandelion *Taraxacum officinale*, fescue grass *Festuca* sp., bugle *Ajuga reptans*, white clover *Trifolium repens*, great willowherb *Epilobium hirsutum*,

broadleaved dock *Rumex obtusifolius*, greater plantain *Plantago major*, common nettle *Urtica dioica*, and holly *Ilex aquifolium*.

4.2.1.2 Other woodland; broadleaved (w1g)

There was one area of other woodland; broadleaved situated in the east and north of the site, comprising of predominately silver birch *Betula pendula*, ash *Fraxinus excelsior*, crack willow *Salix fragili*, goat willow *Salix caprea*, hawthorn *Crataegus monogyna*, with ground flora of bramble *Rubus fruticosus* agg., great willowherb, and common nettle.

4.2.1.3 Standing open water and canals (r1)

One waterbody was recorded on site, bordered by hawthorn, crack willow and goat willow in an area of broadleaved woodland to the north and common nettle and perennial ryegrass in an area of modified grassland to the south (Drawing 1). The waterbody was artificially connected through pipes to the various sewage treatment structures and tanks in the site.

4.2.1.4 Urban

The predominant habitat in the north of the site surrounding the entrance to the sewage treatment works was developed land – sealed surface (u1b). There were several paved footpaths (built linear features, u1e) leading from this area to four water treatment filter beds which were recorded as artificial unvegetated unsealed surfaces (u1c) (secondary code 852). Numerous water treatment structures were identified throughout the site, which were also recorded as artificial unvegetated unsealed surface. Three sewage water treatment tanks were recorded as artificial unvegetated unsealed surface with one bed colonised by great willowherb, common nettle, herb robert, and broadleaved dock (u1, secondary code 519). Four water treatment tanks adjacent to the waterbody were recorded as urban (u1); they were mostly vegetated with mosses *Hypnum* spp., with small patches of broadleaved dock, great willowherb, and common nettle. Two buildings were recorded on site which were subject to BRSA (Section 4.2.8)

4.2.2 Fauna

During the habitat survey, signs of protected/notable fauna were recorded if observed. In addition, the habitats were assessed as to their potential to support protected species. The protected species groups assessed included:

- Mammals;
- Birds;
- Herpetofauna (amphibians and reptiles); and
- Invertebrates.

4.2.2.1 Bats

Habitats on site were deemed to provide moderate suitability for foraging and commuting bats. The broadleaved woodland in the east and north of the site is considered to provide suitable habitat for foraging and commuting bats such as those species present within the data search. It also provided connectivity to the wider landscape and surrounding habitats, namely woodland further east and south. One building and one tree within the site were also deemed suitable to support roosting bats (Table 4.5 and Drawing 1).

Table 4.6: Results of the BRSAs undertaken on site.

Number	Name	Description	Bat roost suitability
TN1	Building 1	The building had one gap (depth not determined) in the roof tiling on its eastern aspect and a continuous gap in between the brickwork and	Low

Number	Name	Description	Bat roost suitability
		soffit boxes on its western aspect.	
TN2	Building 2	The building had several loose tiles and gaps in its roofing on the eastern aspect, however gaps were not wide or deep enough for entry/egress for an individual bat. Cobwebs were constant between roofing and brickwork with no crevices or gaps.	Negligible
TN3	Silver birch 1	Silver birch, one upward facing hole on broken limb, however depth was less than 5cm and did not lead to any open space. No other features were identified on the tree.	None
TN4	Silver birch 2	Silver birch, one downward facing hole on main stem however depth was less than 5cm and did not lead to an open space suitable for bats.	None
TN5	Silver birch 3	Silver birch, one hole on western aspect, width and depth considered large enough for access/egress points for individual bats. Could not identify lack of open space within main stem. No other suitable features identified on tree.	Potential Roost Feature-1 (PRF-1)
TN6	Silver birch 4	Silver birch, one upward facing hole on broken limb on the northern aspect of tree. The hole did not lead to an open space within the tree	Negligible
Line of trees	Silver birch 5	Silver birch, no potential roosting features identified.	Negligible.
	Silver birch 6	Silver birch, small tree approximately 3m in height, not mature enough to hold any potential roosting features and none recorded.	Negligible.
	Rowan	Rowan <i>Sorbus acuparia</i> , small tree approximately 3m in height, no potential roosting features identified and not mature enough to have cavity in stem.	Negligible.
	Silver birch 7	Silver birch, semi-mature, no potential roosting features identified on any aspect.	Negligible.

4.2.2.2 *Riparian Mammals*

No ditches or watercourses were recorded within the site. No suitable connective habitat for water vole or otter was recorded to the site or to the waterbody. There were no records of riparian mammals within 2km of the site returned from the desk study. Consequently, riparian mammals are not considered further in this report.

4.2.2.3 *Badger*

No signs of badger, such as prints, snuffle holes, or latrines, were recorded during the survey. The grassland on site may provide suitable foraging habitat for badger as it is connected to the wider landscape of agricultural fields and woodland. The opportunities for sett creation within the site are limited due to the prominence of structures for the sewage treatment works and absence of varied topography/bare earth banks considered suitable for sett creation. Consequently, badgers are not considered further in this report.

4.2.2.4 *Breeding birds*

Two nests were recorded in silver birch trees within the woodland on site, and the line of trees is considered suitable for nesting opportunities for common bird species as noted within the desk study; the closest record of a schedule 1 species is barn owl 0.2km north of the site. The woodland may provide further opportunity for ground nesting birds amongst the bramble and tree saplings, however vehicle tracks in the grassland adjacent to the woodland suggests regular disturbance to any potential ground nesting species. The grassland on site supported a short sward length and is subject to regular mowing rendering the habitat unsuitable for ground nesting birds. The grassland and woodland on site and wider landscape of countryside and fields provides suitable habitat for barn owl, however the buildings were enclosed and did not contain gaps in roofing or brickwork large enough to be used by barn owl or other breeding birds.

4.2.2.5 *Wintering birds*

The site was recorded to have limited suitability for foraging or commuting winter birds due to the limited habitat diversity on the site. No internationally designated sites for wintering birds are within 2km of the site. Consequently, wintering birds are not considered further in this report.

4.2.2.6 *Amphibians*

One waterbody was identified within the site (Drawing 1) which was subject to a HSI assessment. The woodland provided suitability for resting and commuting opportunities for great crested newt due to tall ruderal ground flora vegetation, and some but limited deadwood present. The grassland provided suitable commuting opportunity to the hardstanding areas of the site, and a pile of rubble and brick waste in one of the disused sewage treatment beds was suitable for resting amphibian. Three further waterbodies have been identified within 250m of the site that may have potential to support amphibians and are connected to the site through grassland and woodland habitat. The results of the HSI assessment is provided in Table 4.7

Table 4.7: Habitat Suitability Index assessment of waterbodies on site and within 250m.

Waterbody	Grid reference	Description	HSI result	Location
WB1	SE 26913 05472	Within the site, surrounded by woodland and modified grassland. Artificially connected to sewage water treatment structures on site, likely man-made.	Poor (0.38)	Within the site.
WB2	SE 26779 05486	Within residential garden.	To be surveyed, subject to access.	Off site, approximately 60m west.
WB3	SE 26839 05232	Within grassland associated with two buildings – potentially dry from aerial imagery.	To be surveyed, subject to access.	Off site, approximately 140m south.

Waterbody	Grid reference	Description	HSI result	Location
WB4	SE 26827 05197	Within grassland associated with two buildings – potentially dry from aerial imagery.	To be surveyed, subject to access.	Off site, approximately 180m south.

4.2.2.7 Reptiles

The grassland within the site is mown short and therefore provides limited potential for reptiles. One of the disused sewage treatment beds contained brick and rubble waste, which could provide refuge for common reptile species however connectivity to the site from the wider landscape for reptiles is limited. The desk study did not return any records of reptiles within 2km, consequently reptiles are not considered further in this report.

4.2.2.8 Invertebrates

The botanical diversity and habitat mosaic within the site is poor and unlikely to support a diverse terrestrial invertebrate assemblage. The desk study returned one record of wall brown *Lasiommata megera*, 0.2km east of the site, which is a Section 41 species of principal importance under the NERC Act in England. The site is considered unsuitable to support populations of wall brown due to limited tall forbs recorded on the modified grassland and no drystone walls were recorded in the site. Consequently, invertebrates are not considered further in this report.

4.2.2.9 Invasive non-native species

No invasive non-native species were recorded during the field survey.

5. Discussion and Recommendations

5.1 Designated Sites

5.1.1 Statutory Designated Sites

Pye Flatts Meadows SSSI is located approximately 0.4km south-east of the site. The site is designated for its botanical diversity and contains nationally rare species. No impacts on the SSSI are anticipated due to the distance to the proposed development, small scale nature of the works, and lack of pollution pathways.

The site falls within the impact risk zone for Pye Flatts Meadows SSSI, however the proposed development does not correspond with the types of planning applications which require consultation with Natural England.

5.1.2 Non-Statutory Designated Sites

Two non-statutory designated sites are located within 2km of the site; Wool Greaves Meadows LWS is situated approximately 0.5km north of the site, and North Wood LWS is situated approximately 0.8km south-east. No impact on these sites are anticipated due to the distance to the proposed development, the small scale nature of the works, and lack of pollution pathways.

5.2 Habitats

The prevalent habitats on site were buildings, hardstanding, artificial unvegetated unsealed surfaces and modified grassland. There was one area of broadleaved woodland in the east and north of the site, and one pond situated in the woodland to the north of the site.

One S41 priority habitat, lowland mixed deciduous woodland, was identified in south of the site and connected to the other woodland; broadleaved within the site. Under current development plans this woodland will be retained and impacts avoided. Should the development design change and the woodland be impacted, an ecologist should be consulted to determine compensation requirements for habitat creation or enhancement. This should seek to replace any habitat that is permanently removed and improve the quality of existing habitats. Removal of any trees should be avoided; however where this cannot be achieved, trees must be replaced at a minimum of a 2:1 ratio using native species of local provenance.

5.3 Fauna

5.3.1 Bats

British bat species are fully protected through their inclusion in Schedule 5 of the WCA (1981) (as amended) and in Schedule 2 of The Conservation of Habitats and Species Regulations (2010) (as amended). Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat or disturb an animal while it is occupying a structure or place which it uses for that purpose.

The woodland in the north and east of the site is considered to provide moderate suitability for foraging and commuting bats. One tree within the woodland was assessed to have PRF-I suitability.

Building 1 (TN1; Drawing 1) was assessed to have low bat roost suitability and building 2 (TN2; Drawing 1) was assessed to have negligible suitability. One tree (TN5) was assessed having a PRF.

The proposed development of the kiosk is located within the hardstanding area to the north of the site, therefore it is not anticipated the works will impact trees within the woodland. Further works are anticipated to occur on the grassland and adjacent to the woodland, therefore it is recommended an endoscope inspection is undertaken on TN5 if works are to occur within 10m of the tree to determine if the PRF is suitable for bats to use as roost. Building 1 is approximately 25m from the proposed development, therefore it is not anticipated construction works could disturb any potential roosting bats. However if any works are to occur within 10m of Building 1, it is recommended that one dusk emergence survey is undertaken between May and August to determine if the building is being used as a roost. It should be noted that in accordance with guidelines⁹ trees with PRF-I do not require further activity surveys.

If a bat roost is identified and will be disturbed by the proposed works, then a mitigation licence will be required from Natural England prior to the commencement of works. Natural England take a minimum of 30 working days to process a licence application. In order to obtain a bat licence, appropriate mitigation will need to be developed and implemented; works may also be seasonally restricted.

Consideration of artificial lighting design across the site is recommended to reduce the potential impact of lighting to fauna that may utilise the site.¹⁰

5.3.2 Breeding birds

The woodland on-site provides nesting and foraging opportunities for common breeding birds and suitable foraging and commuting habitat for Schedule 1 barn owl. Two nests were recorded in silver birch trees within the woodland. The desk study returned numerous Schedule 1 bird species within 2km, the closest being barn owl 0.2km north of the site.

Wild birds are protected under Part 1 Section 1 of the WCA 1981 (as amended); they are protected from being killed, injured or captured, while their nests and eggs are protected from being damaged, destroyed or taken. Certain birds (listed in Schedule 1 of the 1981 Act) receive extra protection. For these species it is an offence to recklessly disturb them when nesting, building a nest, in or near a nest that contains their young.

¹⁰ 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. Accessed at: <https://cieem.net/wp-content/uploads/2023/09/Bat-Mitigation-Guidelines-2023.pdf>

It is not anticipated that the proposed development will impact the woodland, however it is recommended that any work which is likely to damage a breeding bird nest, such as ground/vegetation clearance or building demolition, should be undertaken outside of the bird nesting season (nesting season March to August inclusive). If this is not possible, a nesting bird survey should be undertaken by a suitably qualified ecologist immediately prior to clearance works commencing. If an active bird nest is discovered, a suitable exclusion zone (to be confirmed by the ecologist) must be implemented until the young have fledged. It is not anticipated works will impact the buildings on site and they are not suitable for breeding birds.

5.3.3 Amphibians

There is one waterbody on site and three waterbodies identified within 250m of the site which have potential to support great crested newt. The waterbody on site was assessed as having poor suitability for great crested newt from the HSI. However, the banks of the waterbody were vegetated and surrounded by grassland and woodland habitat which are suitable for hibernating and commuting great crested newts. The site is also connected to the wider landscape of grassland, arable land, and woodland which are all considered suitable for a great crested newt population. The waterbody on site and the three waterbodies within 250m of the site are outside of the red line boundary for the proposed development. Great crested newt are known to be present within the local area due to the presence of a desk study record 1.5km east of the site. Therefore, the waterbodies are considered suitable for great crested newt.

It is recommended that an environmental DNA (eDNA)¹¹ survey is undertaken on the four waterbodies, one of which is on site. An eDNA survey entails the collection of water samples from the waterbody which is then sent to a laboratory to test for the presence of great crested newt DNA. The eDNA survey may be undertaken 15 April – 30 June.

If great crested newt DNA is recorded, a licence from Natural England may be required for the works. SCC is within one of the Natural England District Level Licensing (DLL) areas, which may mean that detailed surveys and mitigation (newt fencing, pitfall trapping etc.) are not required, in lieu of a payment to Natural England to undertake habitat creation and great crested newt conservation measures in the wider area. It is therefore recommended that consultation with Natural England is undertaken to understand the potential financial implications and to determine what level of further survey will be required.

Alternatively, a traditional mitigation licence may be obtained for the proposed scheme. This requires six survey visits to be undertaken between mid-March and mid-June in order to complete a population size class assessment. Three of the visits must be completed mid-April to mid-May. The survey should include three survey methods (torch survey, bottle-trapping and egg search) per visit in suitable weather conditions.

¹¹ s J., Ewald N., Valentini A., Gaboriaud C., Griffiths R.A., Foster J., Wilkinson J., Arnett A., Williams P. and Dunn F. (2014) *Analytical and methodological development for improved surveillance of the Great Crested Newt*. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

6. Summary

- Pye Flatts Meadow SSSI was identified within 2km of the site however it is not anticipated the proposed development will impact the SSSI. The site falls within the impact risk zone for Pye Flatts Meadows SSSI, however the proposed development does not correspond with the types of planning applications which require consultation with Natural England.
- Two non-statutory designated sites were identified within 2km of the site; Wool Greaves Meadows SSSI and North Wood SSSI. It is not anticipated the proposed development would impact these sites due to the distance, scale of the works and lack of pollution pathways.
- One S41 Priority Habitat, broadleaved deciduous woodland, was identified on site. Therefore, areas of this woodland within the site should be retained and impacts avoided. Where this is not possible, suitable compensation will need to be identified and an ecologist should be consulted to determine any impacts on.
- Building 1 (TN1) was assessed as having low suitability for roosting bats. If works are to occur within 10m of the building, one dusk emergence survey is required between May and August. If a bat roost is identified, an appropriate mitigation licence will be required from Natural England.
- Habitats within the site, including the waterbody, woodland, scrub and grassland, provide suitable habitat for great crested newt. A further three waterbodies are located within 250m of the site. It is recommended that an eDNA survey is undertaken on the four waterbodies. If great crested newt are recorded, a licence from Natural England may be required for the proposed development.
- The woodland, scrub and trees on site provide suitable habitat for nesting birds. It is recommended that any work which is likely to damage a breeding bird nest, such as vegetation clearance, should be undertaken outside of the bird nesting season (nesting season March to August inclusive). If this is not possible, a nesting bird survey should be undertaken by a suitably qualified ecologist immediately prior to clearance works commencing.

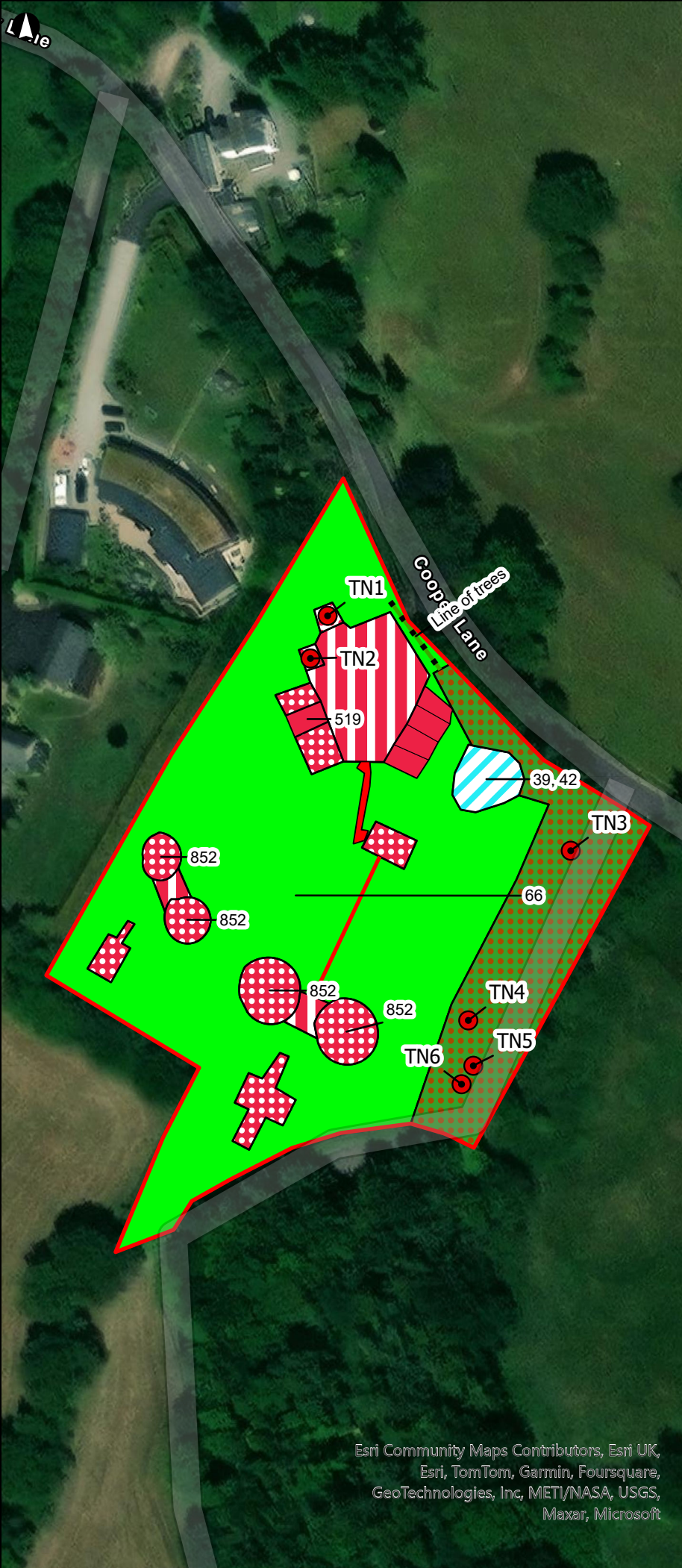
Disclaimer

This report is the result of survey work undertaken in October 2023. This report refers, within the limitations stated, to the condition or proposed development of the survey area at the time of the inspections. Changes in legislation, guidance, best practice, may necessitate a reassessment of the site. It is also advised that if there is a delay of over a year in undertaking the works, a re-survey may be required. No warranty is given as to the possibility of future changes in the condition of the survey area.

This report is produced solely for the benefit of Yorkshire Water Services Limited and no liability is accepted for any reliance placed on it by any other party. This report is prepared for the proposed uses stated in the report and should not be used in a different context.

Drawings

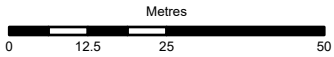
Drawing 1: UKHab Classification Map



- Site Boundary
- Target Notes
- w1g6 - line of trees
- u1e - built linear feature
- g4 - modified grassland
- r1 - standing open water and canals
- u - urban
- u1b - developed land, sealed surface
- u1b5 - buildings
- u1c - artificial unvegetated unsealed surface
- u1e - built linear features
- w1g - other woodland, broadleaved

Coordinate System: British National Grid

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Rev	Date	By	Chkd	Appd	Authd

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Client

Yorkshire Water Services Ltd.

Project Name

Hoylandswaine STW

Drawing Title

Drawing 1: UKHab Classification Map

Scale at A4

1:1,200

Role

Ecology

Suitability

Issue

Project Number
295263-07

Rev
01

Drawing Name

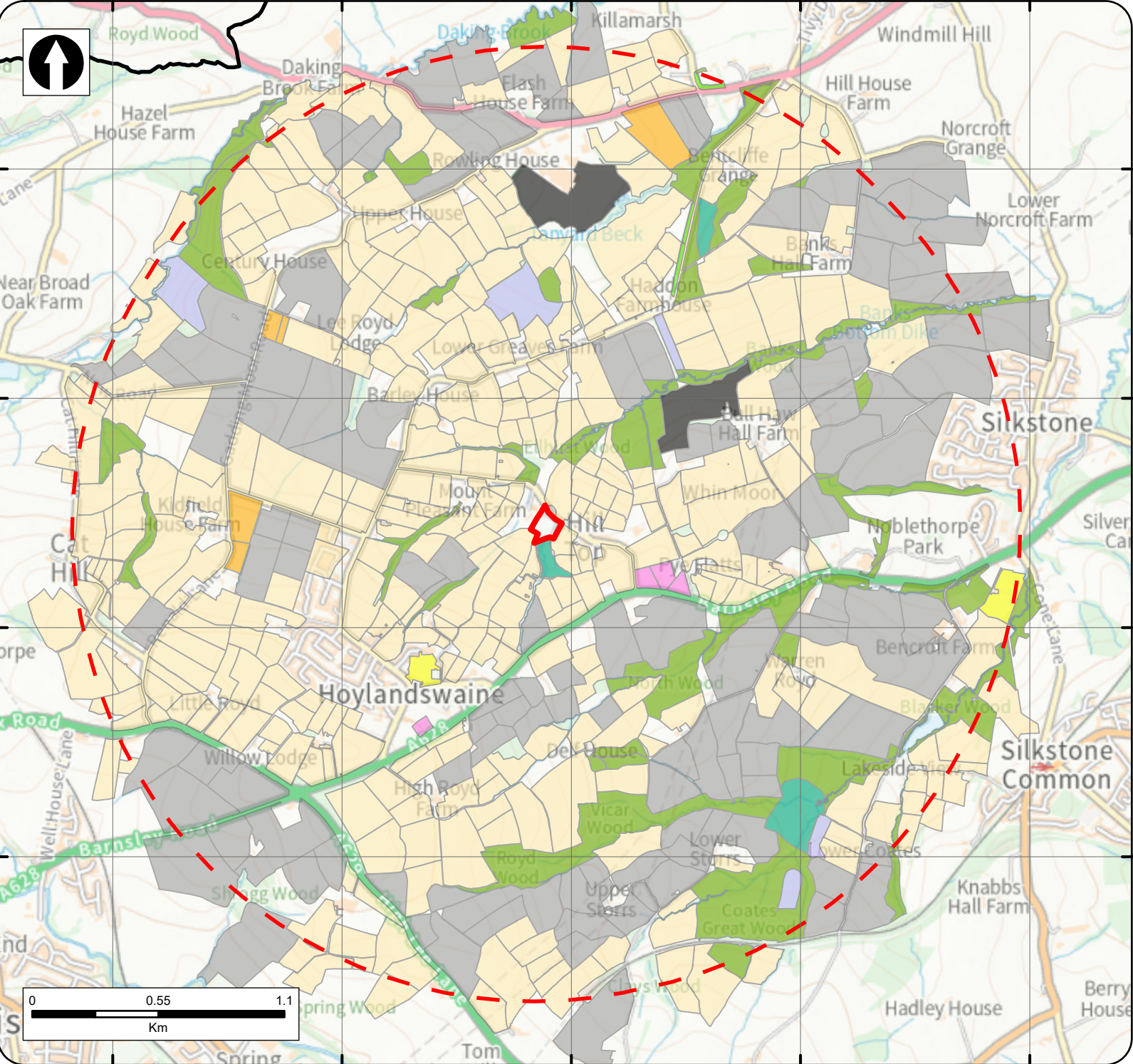
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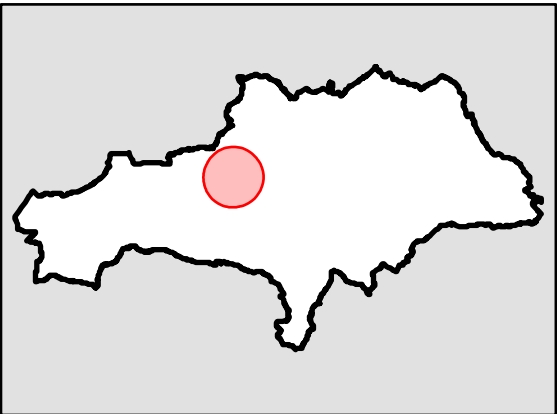
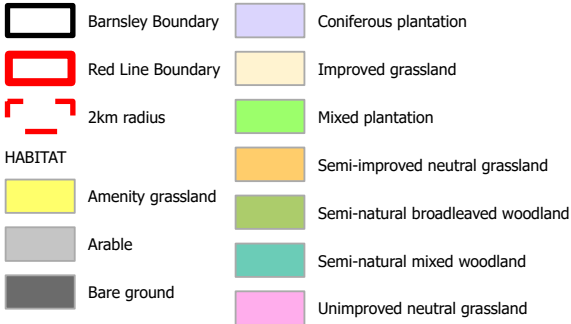
Appendix A

A.1 Desk Study Results

Areas of Interest from the National Habitat Inventories



Hoylandswaine WwTW



Known Distribution Of LBAP Habitats Within the Search Area

Hoylandswaine WwTW



- Barnsley Boundary
- Red Line Boundary
- 2km radius
- main_habitat
- Deciduous woodland
- Good quality semi-improved grassland
- Lowland meadows
- No main habitat but additional habitats present
- Traditional orchard

