KEADBY
NEXT GENERATION
POWER STATION
Hydrogen-enabled flexible power

A collaboration between SSE Thermal and Equinor

The Keadby Next Generation Power Station Project

Document Ref: 6.3

Planning Inspectorate Ref: EN0110001

The Keadby Next Generation Power Station Development Consent Order [year]

Environmental Statement (ES)

Volume II – Appendix 11C Preliminary Ecological Appraisal

The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure Regulations 2009 – Regulation 5(2)(l) The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017'

Applicant: Keadby Next Generation Limited

Date: August 2025

Version: V0

ARUP DWD AECOM

Document History

Document Ref	6.3.11 / Appendix 11C
Issue	V0
Document Owner	AECOM

Glossary

Abbreviation/	Description
AIL	Abnormal Indivisible Loads
CIEEM	Chartered Institute of Ecology and Environmental Management
Defra	Department for Environment, Food and Rural Affairs
EA	Environment Agency
ES	Environmental Statement
IDB	Internal Drainage Board
INNS	Invasive Non-Native Species
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographic Information for the Countryside
NE	Natural England
NERC	Natural Environment and Rural Communities Act
NLC	North Lincolnshire Council
NPPF	National Planning Policy Framework
NPS	National Planning Statement
PEA	Preliminary Ecological Appraisal
PPG	Planning Practice Guidance
S41	Section 41 of the NERC Act
SAC	Special Area of Conservation

Abbreviation/	Description
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UKHab	UK Habitat
WCA	Wildlife & Countryside Act

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11C. Preliminary Ecological Appraisal

11C.1. Introduction

11C.1.1. This Preliminary Ecological Appraisal (PEA) Report has been prepared by AECOM in support of the ecological impact assessment (EcIA) of the Proposed Development. The terms of reference used to describe the Proposed Development in this report are consistent with those defined within the main chapters of the Environmental Statement (ES) (**Volume I, Application Document Ref. 6.2**).

11C.1.2. The Proposed Development Site encompasses an area of approximately 77.1 hectares (ha), of which approximately 26.7ha of land is proposed for construction laydown.

11C.1.3. The Site is divided into the following areas of permanent and temporary land use (the proposed use is described in more detail in **ES Volume I Chapter 3**: Site and Surrounding Area (**Application Document Ref. 6.2**)):

- Main Site;
- Ancillary Facilities;
- Water Connections;
- Electricity Connections;
- Waterborne Transport Off-loading Area;
- Construction Laydown Areas;
- Access routes (emergency, permanent and construction);
- Connections to Keadby 1 and Keadby 2 power stations; and
- Additional areas for landscaping and biodiversity provision.

11C.1.4. The purpose of the PEA was to define the baseline ecological conditions associated within the potential zone of influence of the Proposed Development (based on the study areas defined later in this report), and to determine the need for further survey work to inform the subsequent EcIA. The PEA report provides a record of the initial work undertaken, the findings of these studies, and clarifies which ecological features are and are not relevant to the impact assessment of the Proposed Development.

11C.1.5. The Proposed Development is an alternative to the consented Keadby 3 Carbon Capture and Storage (CCS) enabled Power Station ('Keadby

3') and would be located within the same Site. AECOM undertook the ecological impact assessment (EcIA) for Keadby 3 in 2021 and this has informed the PEA undertaken for the Proposed Development.

11C.1.6. The approach applied when undertaking this PEA accords with current best practice guidelines for PEA published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017), which in turn are informed by British Standard 42020:2013 Biodiversity. Code of Practice for Planning and Development. The PEA addresses relevant wildlife legislation and planning policy as summarised in the next section of this report.

11C.1.7. In order to deliver the PEA, a desk study and a 'modified' UK Habitat (UKHab) survey were undertaken by appropriately experienced ecologists, to identify ecological features within land required for construction, operation and decommissioning of the Proposed Development and its wider potential zone of influence. The potential zones of influence relevant to different ecological features are considered and defined within the Methods section of this PEA report when defining the desk study and field survey areas to be applied.

11C.1.8. The PEA has been informed by previous habitat and protected species surveys undertaken on behalf of the Applicant between 2017 and 2023, with additional survey work in 2024 to re-verify and update the previous survey findings for the Proposed Development.

11C.1.9. The objectives of this PEA report are to:

- identify statutory and non-statutory biodiversity nature conservation designations within the potential zone of influence of the Proposed Development;
- identify and categorise (where possible and accessible) all habitats present within the land required for the Proposed Development, and adjacent areas where there might be potential for direct or indirect effects;
- carry out an appraisal of the potential of the habitats recorded (where possible and accessible) to support protected or notable species of fauna and flora;
- identify requirements for follow-up habitat and species surveys to define the ecological baseline; and to inform the subsequent EIA

(standalone survey reports will be provided for all such additional surveys);

- provide an evaluation of the relative nature conservation value of the identified nature conservation designations, habitats and species to inform the EcIA, where possible based on available information;
- conduct a site condition assessment of habitats associated with the Proposed Development Site, to inform a Biodiversity Net Gain (BNG) baseline assessment; and
- provide figures showing the locations of the identified ecological features.

11C.2. Wildlife Legislation and Planning Policy

Wildlife Legislation

11C.2.1. The following legislation relating to biodiversity conservation in England is potentially relevant to the Proposed Development (further information is provided in **ES Volume II Appendix 11A:**Legislation and Planning Policy (**Application Document Ref. 6.3**)):

- The Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations');
- Environment Act 2021 (as amended);
- Wildlife and Countryside Act 1981 (as amended) (the WCA);
- The Hedgerows Regulations 1997;
- Natural Environment and Rural Communities (NERC) Act 2006 (as amended);
- Protection of Badgers Act 1992 (as amended);
- Animal Welfare Act 2006;
- Wild Mammals (Protection) Act 1996;
- The Eels (England and Wales) Regulations 2009 (as amended);
- Salmon & Freshwater Fisheries Act 1975 (as amended);
- Environmental Protection Act 1990; and
- Invasive Alien Species (Enforcement and Permitting) Order 2019.

11C.2.2. The above legislation has been considered when planning and undertaking this PEA using the methods described in Section 3 and when identifying potential constraints and making recommendations for further survey described in Section 4. Compliance with legislation may

require the attainment of relevant protected species licences prior to the implementation of the Proposed Development.

Planning Policy

National Policy

11C.2.3. The Government's policy for delivery of major energy infrastructure is set out in the following relevant National Policy Statements (NPS) (further information is provided in **ES Volume II Appendix 11A:** Legislation and Planning Policy (**Application Document Ref. 6.3**)):

- Overarching NPS for Energy (EN-1) (Department for Energy Security and Net Zero (DESNZ), 2024a); and
- NPS for Natural Gas Electricity Generating Infrastructure (EN-2) (DESNZ, 2024b).

11C.2.4. The policies set out in the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024) are also important and relevant matters. The NPPF sets out the Government's planning policies for England and how these are expected to be applied and identifies overarching environmental objectives such as protecting and enhancing our natural environment and improving biodiversity. It introduces additional considerations including definitions of and requirements in relation to irreplaceable habitats which must be addressed in the development design and assessment process.

Local Planning Policy

11C.2.5. The Proposed Development is located entirely within the administrative area of North Lincolnshire Council (NLC). Therefore, the following planning policies are potentially relevant to the Proposed Development (further information is provided in **ES Volume II Appendix 11A** (**Application Document Ref. 6.3**)):

- Policy CS5: Delivering design quality in North Lincolnshire of the NLC Local Development Framework Core Strategy adopted 2011 (North Lincolnshire Council, 2011), which states development should incorporate appropriate landscaping and planting which enhances biodiversity and contribute to habitat linkages;
- Policy CS16: Delivering design quality in North Lincolnshire of the NLC Local Development Framework Core Strategy adopted 2011 (North Lincolnshire Council, 2011), which details expectations for the

protection and enhancement to support a diverse multi-functional landscape, including through the protection of trees and hedgerows;

- Policy CS17: Biodiversity of the NLC Local Development Framework Core Strategy adopted 2011 (North Lincolnshire Council, 2011), which sets out requirements to achieve effective stewardship of biodiversity resources by protecting nature conservation designations, paying due regard to the presence of European and nationally protected species, protecting and maintaining features of biodiversity interest, maintaining wildlife networks and green corridors, and ensuring ecological enhancement through good design; and
- Saved Policies LC1, 2, 4, 5, 6 and 12 of the North Lincolnshire Local Plan adopted 2003 (North Lincolnshire Council, 2003a), which together set out expectations for the protection of nature conservation designations, species and trees, woodlands and hedgerows; as well as promoting the creation of nature reserves and new wildlife habitats both in rural and urban areas.

Other Relevant Guidance

11C.2.6. Additional guidance of potential relevance to the Proposed Development and/ or for interpretation of the above planning policy is given in the following documents:

- North Lincolnshire Supplementary Planning Guidance (SPG) 3: Design in the Countryside, which sets out additional considerations in relation to landscape plantings and biodiversity protection and enhancement (North Lincolnshire Council (2003b);
- Planning Practice Guidance (PPG): Natural Environment (Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities, 2025);
- Planning Practice Guidance (PPG): Biodiversity Net Gain (Ministry of Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities, 2024);
- Lincolnshire Biodiversity Action Plan (Lincolnshire Biodiversity Partnership, 2011); and

- Standing Advice: Protected species and development (Natural England and Department for Environment, Food & Rural Affairs (Defra), 2023).

11C.3. Methodology

Desk Study

11C.3.1. A desk study was carried out to identify nature conservation designations and protected and notable habitats and species potentially relevant to the Proposed Development. As part of this, the results of previous surveys undertaken by AECOM on behalf of the Applicant were reviewed for relevant information.

11C.3.2. The desk study areas applied, and the data sources used are detailed in **Table 11C.1**, and the identified designations are shown on **Figures 11C.1** and **11C.2**.

11C.3.3. A stratified approach was taken when defining the desk study area, based on the likely zone of influence of the Proposed Development on different biodiversity and nature conservation features, and an understanding of the maximum distances typically considered by statutory consultees. In defining appropriate desk study search areas, it was also recognised that much of the Proposed Development Site boundary encompasses existing infrastructure that, as a worst-case, would require only relatively minor upgrade works and that would otherwise be utilised in a manner consistent with the existing purpose of these infrastructure. In comparison, construction, operation and decommissioning of the Main Site is more likely to affect biodiversity and nature conservation features, including features located at greater distance. However, the Main Site is also of relatively limited extent compared with the full Proposed Development Site boundary.

11C.3.4. To address the disparity between the extent of the Proposed Development Site boundary and the location and extent of potential sources of impacts that would have potential to give rise to likely significant effects, desk study search areas for nature conservation designations were applied with reference to the location of the Main Site. For habitats and species, the search area was set at 1km from the Proposed Development Site boundary. The likely zone of influence for construction and decommissioning activities for the Proposed Development is unlikely to exceed 1km out from the Proposed Development Site boundary (and in most cases would be much less

than this) for all relevant ecological features. In comparison, operational air quality impacts and effects could potentially arise over a much greater distance.

11C.3.5. Accordingly, and as set out in **Table 11C.1**, all statutory nature conservation designations within 15km of the Main Site were identified to meet maximum good practice requirements for assessment of the potential air quality effects of operation of the Proposed Development. However, non-statutory nature conservation designations were identified over a shorter distance (2km of the Main Site) because this is considered to be the worst-case zone of influence, and good practice guidance does not necessitate air quality assessment of more distant non-statutory nature conservation designations. This approach was sufficient to meet the data needs for assessment of the Proposed Development Site as a whole.

Table 11C.1: Desk study data sources

Type of ecological feature	Desk study area	Data sources
International nature conservation designations e.g. Special Areas of Conservation (SAC), Special Protection Area (SPA), Ramsar site	15km from the Main Site	Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) (accessed February 2025)
National statutory nature conservation designations e.g. Site of Special	15km from the Main Site	MAGIC website (accessed February 2025)

Type of ecological feature	Desk study area	Data sources
Scientific Interest (SSSI)		
Local statutory and non-statutory nature conservation designations (biodiversity) e.g. Local Nature Reserve (LNR), LWS, Site of Importance for Nature Conservation (SINC), ancient woodland	2km from Main Site, otherwise 1km from Proposed Development Site	Lincolnshire Environmental Records Centre (LERC) (returned October 2024)
Ancient and veteran trees	1km from Proposed Development Site	LERC (data received October 2024) Ancient tree inventory website (https://ati.woodlandtrust.org.uk/tree-search) (accessed April 2024) Arboricultural report for Keadby CCS Power Station (included as part of the **Outline Landscaping and Biodiversity Management and Enhancement Plan (LBMEP) Report** (**Application Document Ref. 5.11**))
Protected and notable habitats and	1km from Proposed Development Site	Lincolnshire Environmental Records Centre (LERC) (data received October 2024). Data restricted to the last 10 years, to demonstrate

Type of ecological feature	Desk study area	Data sources
species (Note 1)		current rather than historical biological species recorded. Previous ecological survey information for Keadby Ash Tip, Keadby CCS Power Station DCO and the Keadby CCS Northern Haul Road planning application collected by AECOM between 2017 and 2023. This information covers: • habitats; • protected and notable flora; and • protected and notable fauna: great crested newt, reptiles, badger, bats, water vole, otter, breeding birds, terrestrial invertebrates and aquatic invertebrates. Previous ecological survey information covering the Proposed Development Site and adjacent land contained within reports to the Applicant for Keadby 2 Power Station and Keadby Wind Farm.
Note 1 Protected and notable habitats and species are taken to include those listed under Schedules 1, 5 and 8 of the WCA; Schedules 2 and 5 of the Habitats Regulations; species and habitats of principal importance for nature conservation in England listed under section 41 (s41) of the NERC Act; and other species that are Nationally Rare, Nationally Scarce or listed in national or local Red Data Lists and Biodiversity Action Plans.		

Field Survey

11C.3.6. The methods applied are described below. All survey work was completed by suitably experienced AECOM ecologists.

11C.3.7. The PEA did not include searches for veteran and ancient trees as this has been addressed through an arboricultural survey (the results of

which are appended to the **Outline LBMEP Report** (**Application Document Ref. 5.11**)).

Modified UKHab Survey

11C.3.8. The survey was undertaken on 26th March 2024 with further re-verification during site visits on 28th and 29th August 2024. Habitat data was collected, and this was in a form suitable to establish a terrestrial habitat baseline for the purposes of a future Biodiversity Net Gain (BNG) assessment (Defra, 2024). Accordingly, habitat data was collected using a modified version of the UK Habitat (UKHab) classification (UKHab, 2023).

11C.3.9. At the same time that the habitat data was collected, a habitat condition assessment was also undertaken for terrestrial (non-marine) habitats to meet current requirements for BNG assessment. Site condition assessment is a structured approach for determining the relative quality/ nature conservation importance of habitats. The method for site condition assessment is included within the package of statutory biodiversity metric guidance (Defra, 2024). Data on watercourses were be collected later (as relevant) to meet requirements for BNG assessment.

11C.3.10. All habitat types present within the survey area were recorded and mapped. Typical and notable plant species were recorded for different habitat types.

11C.3.11. Specific surveys were undertaken for the following protected or notable species as part of the PEA:

- badger survey – given the sensitivity of badger to persecution, these results will be provided in a standalone report highlighting the approach taken and the results of the survey;
- searches for any buildings and trees suitable for roosting bats that would require further investigation – see the separate method statement provided below; and
- plant invasive non-native species (INNS) listed on Schedule 9 of the WCA – these were recorded as encountered and the results are provided in this PEA report.

Bat Roost Suitability Assessment

11C.3.12. The survey re-verified and supplemented the findings of a bat roost suitability appraisal completed by AECOM in 2023 for Keadby CCS Temporary Haul Road (**Annex 6**) and was undertaken on the same day as the habitat survey.

11C.3.13. In accordance with standard methods (Collins, 2023), all buildings and trees within and adjacent to the Proposed Development Site that could be affected by the Proposed Development were screened and, where relevant, externally inspected in more detail from ground level for their potential to support roosting bats. This assessment was based on both the intrinsic suitability of features to support roosting bats and other evidence giving an indication of the likelihood of current or prior use by bats, such as:

- stains around entrance holes (resulting from the deposition of oil secretions in bat fur);
- scratch marks around entrance holes (resulting from bat claw holds);
- bat droppings;
- feeding remains; and
- odours or noise characteristic of bats.

Limitations

11C.3.14. The aim of a desk study is to help characterise the baseline context of the Proposed Development and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular habitat or species does not necessarily mean that the habitats or species do not occur in the desk study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Proposed Development.

11C.3.15. With the exception of the areas identified below, all land within the Proposed Development Site was fully accessible. The following areas were not accessed for survey:

- the Water Discharge Corridor, as this is an existing operational buried pipeline which is proposed will be used by the Proposed

Development. No construction works are proposed within the Water Discharge Corridor with the exception of extension of the existing pipeline near its point of origin at Keadby 1 Power Station to connect into the Main Site. Habitats were mapped from aerial imagery;

- private residential properties and associated buildings along the Water Connection Corridors. The Proposed Development would not affect these properties, as the existing buried pipeline infrastructure would be used;
- the Waterborne Transport Off-loading Area on the River Trent. This is a secure operational area and was not accessible at the time of survey. Any use for the Proposed Development would be consistent with the existing operational use of this area; and
- the existing National Grid 400kV substation. There was no requirement to enter the substation.

11C.3.16. The exclusion of the above areas from the survey is not considered a limitation on this PEA for the reasons given above. Enough information was collected, e.g. through inspection at distance, to understand the ecological context and relevance of these areas.

11C.3.17. The survey was undertaken outside of the optimal survey period of April to September. However, the habitats have been surveyed previously and this included detailed botanical surveys (flora being the main reason for undertaking surveys later in the year). Given only minor changes were encountered since the most recent previous habitat surveys in 2020 and 2023, there is no reasonable likelihood that habitats of high nature conservation value were missed. As such, this is not considered a significant limitation to the conclusions reached in this report.

11C.3.18. Where habitat boundaries coincide with physical boundaries recorded on OS maps the resolution is as determined by the scale of mapping. Elsewhere, habitat mapping is as estimated in the field and/or recorded by hand-held GPS. Where areas of habitat are given these areas are approximate and should be verified by measurement on site where required for design or construction. While indicative locations of trees are recorded this is not intended to replicate the detailed specialist arboricultural survey (which is appended to the **Outline LBMEP Report** (**Application Document Ref. 5.11**)) that was completed to comply with

British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction.

11C.3.19. The data informing the advice given in this PEA report cannot be relied on indefinitely (CIEEM, 2019). In this case, the setting and context is an important consideration. Given the baseline described later in this report, no significant change in the relevant ecological constraints is likely for at least the next 12 months.

Evaluation of Ecological Features

11C.3.20. The value of nature conservation designations and habitats identified within this PEA have been defined with reference to the following geographic scale:

- International (generally this is within a European context, reflecting the general availability of good data to allow cross-comparison);
- National (Great Britain, but considering the potential for certain ecological features to be more notable (of higher value) in an England context relative to Great Britain as a whole);
- Regional (East Midlands);
- County (Lincolnshire);
- District (North Lincolnshire);
- Local (ecological features that do not meet criteria for valuation at a District or higher level, but that have sufficient value at the site level to merit retention or mitigation); and
- Negligible (common and widespread ecological features that have very low value at the site level and which do not require retention or mitigation at the relevant location to otherwise maintain a favourable nature conservation status, or to deliver wider relevant biodiversity objectives).

11C.4. Results

International and National Statutory Nature Conservation Designations

11C.4.1. There are six international and European sites (also known, e.g. in the NPPF, as 'Habitats Sites') and 23 national statutory nature conservation designations within the defined search area (which takes account of a maximum search area of 15km from the Main Site. Most of the identified designations (**Table 11C.2**) are distant from the Proposed Development Site; but have been scoped in to meet the requirements

of consultees for the assessment of potential air quality impacts and effects.

Table 11C.2: International and national nature conservation designations in the potential zone of influence of the Proposed Development

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
Humber Estuary Ramsar site	The River Trent at this location forms part of this near-natural estuary system. It is designated as it supports a range of internationally and nationally important species assemblages. This includes grey seal (*Halichoerus grypus*), natterjack toad (*Bufo calamita*) with important assemblages of non-breeding waterfowl including five species of passage birds and seven species of wintering birds. It is also designated for the migration route of both river lamprey (*Lampetra fluviatilis*) and sea lamprey (*Petromyzon marinus*).	Within the land required by the Proposed Development, the River Trent has been identified as the water discharge location, and during construction the existing infrastructure associated with the Waterborne Transport Off-loading Area on the River Trent may be used to facilitate offloading of Abnormal Indivisible Loads (AIL) as was undertaken for Keadby 2 Power Station construction.	1.3km east

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
Humber Estuary SAC	The River Trent at this location forms part of the Humber Estuary SAC. It is designated for its mudflats and sandflats which are not covered by seawater at low tide. This area also supports other important habitats including sandbanks, coastal lagoons, Atlantic salt meadows and embryonic shifting dunes.		
Humber Estuary SSSI	The River Trent at this location forms part of Humber Estuary SSSI. This nationally important estuary supports sand dune and standing water habitats. Furthermore, it also supports nationally and internationally important assemblage of breeding, wintering and passage birds,		

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
	grey seals, and river and sea lamprey.		
Crowle Borrow Pits SSSI	Mosaic of habitats including alder (*Alnus glutinosa*) carr, scrub, fen and open water. The site supports a range of uncommon plant species.	1.2km west of the proposed Mabey Bridge replacement works at site entrance off A18	2.8km south-west
Hatfield Chase Ditches SSSI	Area of former marsh and wetland which has been extensively drained. However, the ditches support a rich assemblage of aquatic and emergent plants, nationally scarce invertebrates, and water vole (*Arvicola amphibius*).	1.4km south-west of the proposed Mabey Bridge replacement works at site entrance off A18	3.4km south-west
Eastoft Meadow SSSI	Herb-rich hay meadow.	3.7km north-west of the Main Site	3.7km north-west
Thorne and Hatfield Moors SPA	Used regularly by 2% of the UK's breeding nightjar (*Caprimulgus europaeus*) population.	5.5km north-west of existing access road via Pilfrey Bridge	6.3km north-west
Thorne Moor SAC	Degraded raised bog still capable of natural regeneration.		
Thorne, Crowle and	Largest extent of lowland raised mire in England which		

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
Goole Moors SSSI	supports invertebrate fauna and is important for breeding and wintering bird populations.		
Humberhead Peatlands NNR	The largest area of raised bog in lowland Britain.		
Belshaw SSSI	Supports an important colony of greater yellow-rattle (*Rhinanthus angustifolius*), a nationally rare species.	5.2km south-west of the proposed Mabey Bridge replacement works at site entrance off A18	7.7km south-west
Risby Warren SSSI	Largest surviving area of heathland developed over coversand in Lincolnshire.	7.6km north-east of the treated wastewater discharge location on River Trent	9.0km north-east
Messingham Heath SSSI	Important example of coversand heathland, which is a rapidly dwindling habitat. Also noted for its population of grayling butterfly.	8.9km south-east of the Waterborne Transport Off-loading Area on the River Trent	9.9km south-east
Humber Estuary SPA	Regular use by populations of four species of breeding birds, 10 species of wintering birds and five species of passage birds	9.1km north-east of the treated wastewater discharge location on River Trent	9.8km north-east

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
Epworth Turbary SSSI	Relict wetland habitat over peat. It is one of only three which remain in South Humberside.	7.4km south-west of the proposed Mabey Bridge replacement works at site entrance off A18	9.8km south-west
Hatfield Moors SSSI	Remnant of a once extensive lowland raised bog which is a nationally rare habitat.	8.2km south-west of the proposed Mabey Bridge replacement works at site entrance off A18	10.4km south-west
Hatfield Moor SAC	Degraded raised bog still capable of natural regeneration.		
Tuetoes Hills SSSI	Mosaic of dry acid grassland vegetation including an inland example of acid dune grassland which is now rare in Lincolnshire and very restricted in its distribution nationally.	9.1km south-east of the proposed Mabey Bridge replacement works at site entrance off A18	10.4km south-east
Messingham Sand Quarry SSSI	Mosaic of habitats supporting notable invertebrate and breeding bird assemblages.	8.9km south-east of the Waterborne Transport Off-loading Area on the River Trent	12.0km south-east
Manton and Twigmoor SSSI	Heathland, grassland and wetland on coversand deposits which are now limited in the area.	10.8km south-east of the Waterborne Transport Off-loading Area on the River Trent	12.2km south-east
Haxey Turbary SSSI	Relict bog with open wet heathland. Particularly valued for	9.5km south-west of the proposed Mabey Bridge	11.9km south-west

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
	the occurrence of saw-sedge (*Cladium mariscus*) and royal fern (*Osmunda regalis*).	replacement works at site entrance off A18	
Rush Furlong SSSI	Hay meadow which is a relic of the Isle of Axholme strip-farming system.	9.7km south-west of the proposed Mabey Bridge replacement works at site entrance off A18	11.9km south
Scotton and Laughton Forest Ponds SSSI	Wetland habitats, particularly base-poor fen/ mire with a characteristic suite of plant species that has formed on permanently wet acid soils.	11.3km south-east of the proposed Mabey Bridge replacement works at site entrance off A18	12.4km south-east
Hewson's Field SSSI	Neutral unimproved grassland which is rare in South Humberside.	10.5km south of the proposed Mabey Bridge replacement works at site entrance off A18	12.7km south-east
Broughton Far Wood SSSI	Botanically diverse woodland and limestone grassland habitats.	12.2km east of the potential river water abstraction location on River Trent	13.6km east
Broughton Alder Wood SSSI	Spring-fed wet woodland.	12.5km east of the potential river water abstraction location on River Trent	13.9km east
Scotton Beck Fields SSSI	An extensive area of acidic unimproved grassland and is the only known grassland	13.0km south-east of the proposed highway	13.9km south-east

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
	community of its type in the county.	improvement works at site entrance off A18	
Scotton Common SSSI	One of the few extant areas of lowland heathland over coversands of north-west Lincolnshire.	13.0km south-east of the proposed highway improvement works at site entrance off A18	14.0km south-east
Laughton Common SSSI	Supports an extensive and diverse range of vegetation communities characteristic of North Lincolnshire coversands, including nationally notable areas of lowland acid grassland, inland dune grassland and lowland heath.	13.0km south-east of the proposed highway improvement works at site entrance off A18	14.7km south

Local Statutory and Non-statutory Nature Conservation Designations

11C.4.2. **Table 11C.3** details the 11 local nature conservation designations identified by the desk study. There are no ancient woodlands (as listed on the Ancient Woodland Inventory) in the desk study area.

11C.4.3. All of the identified designations have been selected by the relevant organisations using standardised criteria, and therefore all should be regarded as being of county biodiversity value.

11C.4.4. In addition, the Proposed Development Site is located within a landscape identified as the Humberhead Levels Nature Improvement

Area (NIA). It is one of 12 NIA chosen by the Government to create joined up and resilient ecological networks at a landscape scale.

Table 11C.3: International and national nature conservation designations in the potential zone of influence of the Proposed Development

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
Keadby Warping Drain LWS	Aquatic habitats supporting a rich aquatic flora.	Crossed by the existing buried pipeline (Water Discharge Corridor) for the existing line of discharge from Keadby 1 Power Station. However no open cut construction works proposed to upgrade the pipeline.	0.3km north
Stainforth and Keadby Canal Corridor LWS	Aquatic habitats supporting a rich aquatic flora. The canal is also designated for its mosaic of associated bankside habitats (rough grassland, reedbed and scrub).	The Canal Water Abstraction Option would take water from the LWS, also crossed by the access route over North Pilfrey Bridge	0.3km south-east
Hatfield Waste Drain LWS	A rich aquatic, emergent and marginal flora within the drain, and adjacent neutral grassland.	Crossed by the proposed Mabey Bridge Replacement works at the Site entrance off A18	2.1km south-east

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
Keadby Boundary Drain LWS	Aquatic habitats supporting a notable aquatic plant assemblage.	Adjacent, to the west of the Main Site	Adjacent, to the west
North Engine Drain, Belton LWS	Aquatic habitats supporting a rich aquatic flora, and a mosaic of neutral grassland and wetland habitats.	20m south of the proposed Mabey Bridge Replacement works at the Site entrance off A18	2.1km south-east
River Torne LWS	Aquatic habitats supporting a rich aquatic flora, neutral grassland, and a mosaic of associated grassland and wetland habitats.	45m south of the proposed Mabey Bridge Replacement works at the Site entrance off A18	2.1km south-east
South Soak Drain, Keadby LWS	Aquatic habitats supporting a rich aquatic flora.	25m south-east of the Canal Water Abstraction on the Stainforth and Keadby Canal	0.6km south-east
Keadby Wetland LWS	Designated for its mosaic habitat of willow scrub and wetland vegetation.	25m south-east of the Canal Water Abstraction on the Stainforth and Keadby Canal	0.7km south-east
Keadby Wet Grassland LWS	Neutral grassland, marsh and swamp supporting a diverse flora.	50m south-east of the Canal Water Abstraction on the Stainforth and Keadby Canal	0.7km south-east
Three Rivers LWS	Aquatic habitats supporting a rich	90m south (upstream) of the Waterborne	1km south

Designation name	Reason for designation	Location relative to the closest part of the Proposed Development Site	Location relative to operational air quality emissions from the Main Site
	aquatic flora, and a mosaic of scrub and neutral grassland habitats.	Transport Off-loading Area on the River Trent	
South Engine Drain LWS	Aquatic habitats supporting a rich aquatic flora and neutral grassland.	0.1km south of the proposed Mabey Bridge Replacement works at the Site entrance off A18	2.1km south-east

Habitats

11C.4.5. The semi-natural habitats identified by the field survey are summarised below and shown on **Figure 11C.3**. More detailed information including the condition assessments made of each habitat is provided in **Annex 1**. Representative site photographs are provided in **Annex 2**.

Irreplaceable Habitats

11C.4.6. Eight likely veteran trees (trees T15, T16, T40, T41, T48, T89, T145 and T149) and three likely ancient trees (T100, T152 and T154) were identified through a specialist arboricultural survey as described within the Arboricultural Assessment (which is appended to the **Outline LBMEP Report** (**Application Document Ref. 5.11**)).

11C.4.7. Of these, two likely veteran trees (T145, T149) and the two likely ancient trees (T152 and T154) (all four of which are goat willow *Salix caprea*) coincide with land that could be affected by construction of the Proposed Development, due to them being located in the vicinity of the Canal Water Abstraction. None of the other likely veteran and likely ancient trees are closely associated with land required for construction of the Proposed Development and as such there can be certainty that they would not be adversely affected.

11C.4.8. The location of these trees is shown in **Annex 3** which is derived from the Trees Constraints Figure provided with the Arboricultural Assessment (which is appended to the **Outline LBMEP Report** (**Application Document Ref. 5.11**)). These trees represent

'irreplaceable habitat' of national nature conservation value. Policy requirements in relation to veteran trees are set out in Natural England & Forestry Commission (2022) and are summarised in Section 5 of this report.

Priority Habitats

Hedgerows

11C.4.9. All of the hedgerows, regardless of current species-diversity and condition, are examples of the 'Hedgerows' priority habitat type list on Section 41 of the NERC Act. Five hedgerows are found across the Proposed Development Site as follows:

- a species-rich native hedgerow occurs along the eastern boundary of the field south of Trent Road (habitat parcel 4; **Annex 2**, Photograph 1);
- a species-poor hedgerow occurs along the western boundary of the field south of Trent Road (habitat parcel 5a; **Annex 2**, Photograph 2);
- a species-poor hedgerow running parallel to the southern margin of Trent Road, (habitat parcel 6b; **Annex 2**, Photograph 3);
- a hedgerow with mature and veteran crack willow (*Salix* x *fragilis*) trees on the north side of Trent Road (habitat parcel 8; **Annex 2**, Photograph 4); and
- an establishing hawthorn hedgerow, still in tree tubes, running for approximately 0.9km along the part of the access road between the A18 and Pilfrey Bridge (habitat parcel 6, **Annex 2**, Photograph 5).

11C.4.10. Hedgerows are not a rare habitat nationally or within Lincolnshire, and they comprise commonly encountered tree and shrub species. So, all of the above hedgerows are assessed as having local nature conservation value. Any component veteran trees are of national value as stated above.

Open Mosaic Habitats on Previously Developed Land (OMH)

11C.4.11. OMH is not a discrete habitat, but instead is a matrix derived from a variety of different habitat types and associated vegetation and land-use features and characteristics, and edaphic conditions. It also includes facets of the grasslands and scrub habitats where they occur in matrix with the sparsely vegetated land. OMH is a priority habitat

under S41 of the NERC Act and a Lincolnshire Local Biodiversity Action Plan (LBAP) habitat.

11C.4.12. Qualifying habitats dominate parts of the former Keadby Ash Tip immediately adjacent to and slightly overlapping with the Proposed Development Site, having developed over former railway sidings and other areas of long disused made ground (**Annex 2**, Photograph 6).

11C.4.13. This resource of OMH on the Keadby Ash Tip was subject to detailed botanical surveys during 2017 and was considered to be of national nature conservation importance, with the populations of certain individual notable flora being regionally important. However, the small area of overlap with the Proposed Development Site is peripheral to the main area of OMH and lacks its more notable characteristics. Consequently, it is of markedly lower quality and lacks populations of notable flora. Without its connection to the wider OMH this uniform ancillary habitat would not merit recognition as OMH.

11C.4.14. The 2017 survey data has been reverified since 2017 for Keadby CCS Power Station DCO and the Proposed Development, to reconfirm the presence of OMH, its characteristics and the locations of notable flora. There has been no change in this since 2017.

Acid Grassland

11C.4.15. Detailed botanical surveys during 2017, which remain valid for assessment of the Proposed Development, confirmed the presence of species-rich acid grassland supporting a high cover of reindeer lichen within the former Keadby Ash Tip. This grassland was confirmed to be a priority habitat under S41 of the NERC Act and a Lincolnshire LBAP habitat. It was also found to support notable assemblages of flora and terrestrial invertebrates, such that it was assessed to be of national nature conservation value.

11C.4.16. This habitat is not located within the Proposed Development Site but is present in adjacent areas of the former Keadby Ash Tip. As such, this

habitat will not be directly affected but may experience air quality impacts.

Other Habitats - Terrestrial

11C.4.17. The other terrestrial habitats recorded within the Proposed Development Site were as follows:

Cropland – Cereal Crops

11C.4.18. This is associated with the existing pipeline corridor for the wastewater discharge, the land associated with the proposed Emergency Vehicle Route, and land to either side of the existing access road from the A18 to Pilfrey Bridge. This is intensively managed for arable crop production with fields generally large and boundaries delineated mostly by dry ditches and/ or wet drains and occasionally with associated scattered trees.

11C.4.19. Arable farmland is only being considered for potential use for temporary construction laydown. Therefore, the Proposed Development may affect areas of intensively managed arable field margin habitat (but not of types covered by S41 of the NERC Act), but this would be small-scale in comparison with the total habitat resource in the local area and wider North Lincolnshire. Given the ubiquity of the habitat and its intensive management for agricultural production, it is considered that the fields associated with the Proposed Development Site are of negligible nature conservation value. Given this, no further consideration is given to arable habitat in this PEA report, other than for its potential to support relevant protected and notable species that might interact with the Proposed Development.

Other Neutral Grassland and Modified Grassland

11C.4.20. These habitats are present within the Proposed Development Site along the margins of the arable fields, on the road verges of Chapel Lane, the field south of Trent Road, the existing access road from the A18 to Pilfrey Bridge and at other scattered locations within the Proposed Development Site (**Annex 2**, Photograph 7). They are grass dominated, predominantly false oat-grass and couch (*Elymus repens*). Associated species include cock's-foot (*Dactylis glomerata*), red fescue (*Festuca rubra*), yarrow (*Achillea millefolium*), creeping thistle (*Cirsium arvense*), teasel (*Dipsacus fullonum*), upright hedge-parsley (*Torilis japonica*), dandelion (*Taraxacum agg.*), daisy (*Bellis perennis*) and ribwort plantain (*Plantago lanceolata*). Given this, these grasslands

have a relatively limited biodiversity value and could be readily substituted.

11C.4.21. This habitat is therefore evaluated as having local nature conservation value.

Scrub

11C.4.22. Scrub is scattered at multiple locations across the Proposed Development Site, with examples of bramble, willow, hawthorn and mixed scrub (**Annex 2**, Photograph 8). These are common habitats and the majority of examples present being species poor and of limited structural diversity. The only exception to this, is the scrub on the southern side of the former sidings, which overlaps slightly with the Proposed Development Site at its eastern end, which is more diverse in composition and structure. Typical species in this scrub include elder, common hawthorn (*Crataegus monogyna*), glandular dog-rose (*Rosa squarrosa*), common dog-rose (*Rosa canina*), hairy dog-rose (*Rosa corymbifera*), hybrid glaucous dog-rose (*Rosa x subcanina*), sweet-briar (*Rosa rubiginosa*), grey willow, sharp-stipuled willow (*Salix x mollissima*) and brambles (*Rubus fruticosus agg*.).

11C.4.23. All of these habitats are assessed as being up to local nature conservation value.

Urban Trees

11C.4.24. Free-standing semi-mature trees were recorded associated along the margins of Trent Road and Chapel Lane, with many being non-native tree species such as weeping willow (*Salix* x *sepulchralis*) and hybrid poplar (*Populus x canadensis)* (**Annex 2**, Photograph 9). The free-standing trees present are assessed individually to be of negligible biodiversity value except where they are identified as veteran trees in paragraph 4.3.2.

Bioswale – SUDS (Sustainable drainage system)

11C.4.25. This comprises a single surface water run-off attenuation pond recently constructed for the Keadby 2 Power Station (**Annex 2**, Photograph 10). Given its purpose and function, it does not constitute a pond for habitat survey purposes and instead it conforms to the definition for a bioswale. It is connected to the wider drainage network (Drain B) by an overflow pipe, and the margins of this feature are vegetated and

dominated by bulrush (*Typha latifolia*) with open water centrally. It is of negligible biodiversity value.

Sparsely Vegetated Land

11C.4.26. This occurs in association with areas of dis-used and unmanaged hardstanding (**Annex 2**, Photograph 11) and other non-sealed surfaces associated with the former construction laydown areas for Keadby 2 Power Station. Given that the ground conditions are sealed asphalt or otherwise compacted and level, and the uniformity of the limited cover of vegetation present, these areas do not qualify as OMH. Therefore, it is not a habitat type considered to be a Lincolnshire or national priority for nature conservation and instead is considered to be of negligible biodiversity value.

Broad-leaved and Mixed Woodland

11C.4.27. There are several small stands of secondary or planted semi-mature woodland within the Proposed Development Site including a mature plantation woodland north of Trent Road (habitat parcel 15, **Annex 1**), secondary willow dominated woodland surrounding the Potential Canal Water Abstraction Option on the Stainforth and Keadby Canal (habitat parcel 86, **Annex 1;** Photograph 12, **Annex 2**), and semi-mature broad-leaved and mixed plantation woodlands adjacent to Chapel Lane (habitat parcels 19 and 78, **Annex 1**).

11C.4.28. Given their small size, composition and relatively recent origin these woodlands are assessed to have a local biodiversity value.

Watercourses, Canals and Drains

11C.4.29. All watercourses relevant to the Proposed Development Site that support permanent water or that hold water long enough to sustain aquatic vegetation or fauna are summarised in **Annex 4** of this report (including representative photographs) and shown on **Figure 11C.3**. Those covered by either statutory or non-statutory nature conservation designations are shown on **Figures 11C.1** and **11C.2**.

11C.4.30. These watercourse habitats are representative of the Lincolnshire BAP habitat ‘rivers, canals and drains’.

Drains

11C.4.31. Keadby Common has a drain on each boundary (four drains in total), and a drain that crosses the Common between the northern field and

the southern area. Only the northern boundary drain (referred to as D1 in this report) has a formal name, being referred to as the Glew Drain by Isle of Axholme and North Nottinghamshire Water Level Management Board ('the IDB'). The other minor drains are referred to as D2 to D5 in **Annex 4**.

11C.4.32. Drain D1 is the most substantial of the Keadby Common drains and has water levels of 50 to 80cm depth. This drain is connected at its western end to an off-Site drain designated as Keadby Boundary Drain LWS for its aquatic plant value.

11C.4.33. All of these drains were assessed for their aquatic plant and aquatic macroinvertebrate interest in 2020 (AECOM, 2021b). The results of these surveys are discussed further in Section 4.4 and **Annex 4**. The findings of these surveys highlighted that Drain 1 (part of Glew Drain) is of county value for both its aquatic plant and aquatic macroinvertebrate communities. The four remaining drains did not meet these criteria and were assessed as Local Value. As the status of these drains has not changed in the intervening period, and indeed drains D2 to D5 have become subject to further terrestrialisation and overshading, the baseline nature conservation value assigned in 2020 is considered to still apply.

11C.4.34. The remaining ditches highlighted in **Annex 4**, are similar in profile to Drains 2 to 5 and are unlikely to support notable aquatic plant or invertebrate communities, as such these are also assessed as being of local value. None are expected to be adversely affected.

River Trent

11C.4.35. The River Trent has been identified as the wastewater discharge location. At the locations of this, the Trent is a large (approximately 150m wide), tidal watercourse and is subject to several statutory nature conservation designations. For the purposes of BNG assessment it is a marine habitat (estuary), as the relevant river reach is located below the tidal limit.

11C.4.36. Along the margins of the River Trent (both banks), centred around extreme high water spring tide level, there are narrow strips of transitional vegetation dominated by common reed (*Phragmites australis*) with abundant hemlock water-dropwort (*Oenanthe crocata*). Below this zone is bare mud, and above this zone is the modified grassland of the flood bank. This vegetation is not considered an example of transitional saltmarsh, as it is not present in association with

any other saltmarsh communities. Regardless, this common reed dominated vegetation is very species-poor and comprised of common plant species, and therefore it is of negligible nature conservation value.

Stainforth and Keadby Canal Corridor

11C.4.37. The canal is the location of the proposed Cooling Water Abstraction. This navigational canal links the inland Sheffield & South Yorkshire Navigation with the River Trent. The channel is approximately 35m wide and appears to be several metres deep with low vertical artificial banks formed of stone; the water was turbid at the time of the survey. Throughout its length, it is uniform with limited channel and bank variability. This part of the canal falls within the boundary of the Stainforth and Keadby Canal Corridor LWS, which is designated for its aquatic flora and associated bankside habitats.

Hatfield Waste Drain

11C.4.38. The existing crossing point over Hatfield Waste Drain, Mabey Bridge, requires replacement but only a limited working footprint is required for the bridge upgrade works. Hatfield Waste Drain is a large drain, approximately 10m wide and several metres deep. At this location it is a LWS for its aquatic, emergent and marginal flora.

Protected and Notable Species

11C.4.39. **Table 11C.4** identifies species that are of potential relevance to the Proposed Development based on information gathered through a combination of desk study and field survey, consideration of their relative legal and conservation status, and their likelihood of presence in the zone of influence of the Proposed Development. Any requirements for further survey are identified in **Table 11C.5**.

11C.4.40. This assessment excludes badger, as this species is highly vulnerable to illegal persecution and it is not considered good practice to publish information on this species in reports with a wide circulation. Given this, further information on this species will be provided in a standalone report.

Table 11C.4: Protected and notable species relevant or potentially relevant to the Proposed Development

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
Bats	Protected, S41, LBAP	✓	✓	✓	x	✓	x	The desk study returned a record of common pipistrelle (*Pipistrellus pipistrellus*) Previous activity surveys undertaken by AECOM for Keadby CCS Power Station in 2020 (**Annex 5**), as well as evidence from emergence surveys in 2023 (**Annex 6**), demonstrate a very low level of bat activity by up to four bat species. This is consistent with the unpublished findings of a previous bat survey of Keadby Ash Tip completed by AECOM in 2017. None of the species

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								recorded are currently considered threatened within England or Great Britain. The number of bat species recorded is well below what might typically be expected in other parts of Lincolnshire with the combined bat assemblage not considered particularly notable. There is limited potential for roosting associated with four trees (including trees with bat boxes) and a single structure. All were surveyed in 2023 (**Annex 6**) and no bat roosts were found. None of these features would be

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								affected by the Proposed Development. Given the time series of existing data and the conclusions reached, bats are not considered a constraint to the Proposed Development and further surveys are not necessary until after determination. This position is consistent with good practice (Collins, 2023). A pre-commencement survey will be needed to reconfirm presence/absence of bat roosts and can be secured as a Requirement on the Draft DCO (**Application Document 3.1**).

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
Nesting birds: barn owl (*Tyto alba*)	Protected	✓	x	✓	x	x	x	A single barn owl record was returned by the records centre in 2016, associated with the Humber Estuary. There are habitats suitable for use by barn owls for foraging as part of a large network of suitable habitat in the surrounding landscape. However, there are no features on or adjacent to the Proposed Development Site that are suitable for nesting or roosting. As such, barn owl is not considered a constraint to the Proposed Development.

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
Nesting birds: kingfisher (*Alcedo atthis*)	Protected	✓	x	✓	x	x	x	The desk study returned three records of kingfisher from between 2019 and 2021. The watercourses associated with the Proposed Development Site do not provide suitable nesting habitat. The banks of the Stainforth and Keadby Canal are concrete with the remaining drains either having banks that are heavily overgrown, or that have an unsuitable bank structure and maintenance regimes. Therefore, kingfisher is not considered a constraint to the Proposed Development.

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
Nesting birds: little ringed plover (*Charadrius dubius*)	Protected	x	✓	✓	x	✓	x	Surveys undertaken in 2017 identified a single pair nesting within the area of the former Ash Tip (assessed as county value), outside the Proposed Development Site. There is no habitat suitable for this species within the Proposed Development Site. Little ringed plover is therefore not a likely constraint. This will be verified through an update breeding bird survey of the Main Site in 2024.
Nesting birds: marsh harrier (*Circus aeruginosus*)	Protected, S41	✓	x	x	x	x	x	This bird species was assessed in detail for the Keadby Wind Farm project, as a species at risk from collision with wind turbines.

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								The agreed mitigation/ enhancement approach for the Keadby Wind Farm project included establishment of a marsh harrier enhancement area to the south of, and at relative distance from, the wind farm. This is well beyond likely disturbance distances arising from the Proposed Development. In comparison, the Proposed Development Site and adjacent land is not likely to be used for breeding given proximity to existing infrastructure (Keadby Wind Farm, National Grid 400kV substation, Keadby 1 and 2 Power Stations etc.) and

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								associated sources of human disturbance. Marsh harrier is not anticipated within the zone of influence given the existing baseline conditions, and enhancement and sensitive management of land elsewhere for the species.
Nesting birds: other	Protected, S41	✓	✓	✓	✓	✓	✓	Breeding bird surveys were undertaken by AECOM in 2017 and recorded 50 species from the adjacent former Keadby Ash Tip, of which 39 were breeding and mainly associated with scrub habitats. In comparison, the Proposed Development will use land previously disturbed for

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								construction of Keadby 2 Power Station, with permanent additional habitat losses largely restricted to species-poor modified grassland of limited value to nesting birds. Given this, breeding birds will be a legal constraint to construction but significant adverse effects are considered unlikely. This will be re-verified through breeding bird surveys of the Main Site and adjacent areas in 2024.
Birds: wintering	Protected, S41	✓	✓	✓	x	✓	x	Given the defined habitat context, it is considered highly unlikely that the Proposed Development Site or adjacent

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								land will have a specific value for passage and wintering birds. However, further desk study data (BTO bird report) has been purchased to help place the Site into its correct context. Based on review of the BTO bird report and other available data there is no evidence to suggest that the surrounding farmland has importance for Humber Estuary SPA, Ramsar site and SSSI bird species. Regardless, works proposed would be unlikely to disturb birds using farmland in the wider landscape (as reviewed in more detail

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								within the **HRA Appropriate Assessment Report** (**Application Document Ref. 7.12**)). The narrow band of marginal mudflat habitat along the banks of the River Trent may be used by low numbers of birds at low tide, but the habitat resource is of very limited extent in comparison with the resource of comparable habitat around the margins of the Humber Estuary. Therefore, bird species associated with the Ramsar site and SSSI are not likely to occur in significant numbers or be

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								adversely affected by the Proposed Development. In considering this, it is relevant here that the primary bird designation applied to the Humber Estuary; the Humber Estuary SPA, does not encompass the River Trent and is located 9.1km north of the Proposed Development Site. This designation captures all habitats considered to be of significance for the wintering bird assemblage of the Humber Estuary and does not encompass the section of the River Trent adjacent to the Proposed Development Site.

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								While habitats outside the SPA may be of functional importance for some bird species, this is not likely to include minor mudflat habitat at the tidal limit of the River Trent given the extent of comparable habitats located closer to the SPA.
Brown hare (*Lepus europaeus*)	S41	x	✓	X	x	x	x	Hares have been observed previously during the surveys undertaken by AECOM including during the PEA. The semi-natural habitats within the Proposed Development Site provide suitable cover and foraging habitat for this species, complementing arable habitats in

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								the wider landscape. This species would not be dependent on the habitats within the Proposed Development Site given the small area of suitable habitat present relative to the surrounding habitat resource in the wider landscape. As such, it requires no further consideration except in relation to legal requirements for animal welfare.
Common toad (*Bufo bufo*)	Protected, S41	✓	✓	✓	x	x	x	Toad was previously recorded during surveys for Keadby Wind Farm (SKM Enviros, 2012). Toad may use the drains associated with Keadby Common for breeding, and the other drains

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								across the Proposed Development site but these drains are of relatively low quality, with only one (the northern boundary drain) having enough open water suitable to sustain any more than opportunistic use. Similar and higher quality drains and semi-natural habitats occur within the wider landscape, and therefore toad will not be dependent on the habitats within the Proposed Development Site. As such, this species requires no further consideration.

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
Fish: European eel (*Anguilla anguilla*)	Protected, S41, LBAP	✓	✓	✓	x	✓	Unlikely given legal requirement for eel screens	It is noted that NPS EN-1 (DESNZ, 2023) states that developments should be assessed under "*the assumption that the relevant pollution control regime and other environmental regulatory regimes, including … water abstraction …, will be properly applied and enforced by the relevant regulator.*" This principle will be applied in the subsequent EcIA for the Proposed Development.
Fish: lamprey species	Protected, S41, LBAP (river lamprey only)	✓	✓	✓	x	✓	Unlikely given legal requirement for eel screens, but needs further assessment	
Fish: other	Protected, S41, LBAP	✓	✓	✓	x	✓	Unlikely given legal requirement	The ongoing use of the established outfall for the

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
							for eel screens	discharge of treated effluent (mixed with the existing permitted discharges of Keadby 1 and 2 Power Stations) to the River Trent (a very large river) is not likely to adversely affect the conservation status of any fish species within the River Trent, including migratory species. Regard will still be needed later to requirements for legal compliance (as per the requirements set in the existing permit). Water abstraction from the canal could affect fish, although eel screens would mitigate this. A
Fish: salmon (*Salmo salar*)	Protected, S41, LBAP	✓	✓	✓	✓	✓	Unlikely given legal requirement for eel screens	

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								fish environmental DNA (eDNA) surveys will confirm the fish community and inform the impact assessment.
Flora: notable native species	Red Data List, S41	x	✓	✓	x	✓	✓	The botanical surveys undertaken by AECOM in 2017 demonstrate that the adjacent land within the former Keadby Ash Tip supports high quality species-rich acid grassland, OMH and freshwater habitats. The results of the above study remain valid, and therefore further surveys are not required within the former Ash Tip. Further botanical data for the drains on Keadby Common was

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								undertaken for Keadby 3 in 2020 (AECOM, 2021b) and also remains valid. Thus the locations of notable plant species and assemblages are well understood. Additional baseline data is not required to inform proportionate impact assessment or to meet regulatory requirements.
Great crested newt	Protected, S41, LBAP	x	x	✓	x	x	x	No desk study records were returned. The majority of the standing waters in the potential zone of influence have been surveyed previously for this species (excluding habitat parcel 76, the bioswale) which is of

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								recent origin). In 2017, all waterbodies within the former Ash Tip were confirmed to dry up by July. In 2012 and 2015 (SKM, 2012; Jacobs, 2016) the waterbodies within the adjacent Keadby Wind Farm were surveyed, and great crested newt was not found. Based on the series of prior surveys, the 2016 report concluded: "*that this species is* [likely to be] *absent from the local area*." Natural England has also surveyed other ponds in the surrounding landscape recently (as shown in the MAGIC website) and great crested newt has not been

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								detected. The sum of all available evidence permits the conclusion that great crested newt is not present in the zone of influence and no further survey work is required.
Harvest mouse (*Micromys minutus*)	S41	x	✓	✓	x	x	x	There is potential for this species to use marginal vegetation along watercourses. However, these habitats are common within the wider landscape, and therefore harvest mouse is unlikely to be dependent on the habitats within the Proposed Development Site. Given the construction, operation and decommissioning requirements of the Proposed

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								Development, this species requires no further consideration.
Hedgehog (*Erinaceus europaeus*)	S41	x	✓	✓	x	x	x	There is potential for this species to use semi-natural habitats associated with the Proposed Development Site. However, hedgehog is unlikely to be dependent on the habitats within the Proposed Development Site and as such it requires no further consideration.
Invertebrates: aquatic	Red Data List, S41,	x	✓	✓	x	✓	✓	Surveys were undertaken by AECOM in 2020 across the four field drains (Drains 1 (Glew Drain), 2, 3 and 4) in association with the Main Site.

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								This demonstrated that Drain 1 (Glew Drain) supports a diverse invertebrate community with this drain (and Keadby Boundary Drain LWS) of county value for aquatic macroinvertebrate assemblage. The remaining ditches were assessed to be of Local Value only. No further invertebrate surveys are considered necessary to inform impact assessment as the results of this previous study remain valid.
Invertebrates: terrestrial	Red Data List, S41,	x	✓	✓	x	✓	✓	Richard Wilson Ecology Ltd undertook surveys within the former Keadby Ash Tip in 2017

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								and identified a notable assemblage dependent on the notable OMH and acid grassland habitats present. Richard Wilson Ecology Ltd inspected Keadby Common in July 2020 for Keadby 3 and was satisfied that further surveys were not required given the positioning of the Site. The results of this previous study are considered to remain valid and, given the positioning of the Proposed Development Site avoids impacts, update survey work is not needed. There are no other habitats associated with the Proposed Development that are likely to

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								support notable terrestrial invertebrates. No further terrestrial invertebrate surveys are considered necessary to inform impact assessment.
Otter (*Lutra lutra*)	Protected, S41, LBAP	x	✓	✓	✓	✓	x	The Proposed Development has limited potential to affect this species. The most suitable habitat occurs along the Stainforth and Keadby Canal. Surveys for this species in 2020, 2023 and further investigations during the PEA, found no evidence of otter resting places associated with the Proposed Development Site, or habitat

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								features that could provide refuge. Otter is not considered to be a constraint to the Proposed Development, so further assessment is not required. However, top-up surveys are likely to be required in future years to reconfirm the status of the species and the suitability of the habitats present.
Reptiles	Protected, S41	x	✓	✓	x	✓	x	The desk study returned records for grass snake (*Natrix helvetica*) and these are closely associated with wetland habitats (primarily those subject to LWS designations). Extensive

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								AECOM surveys across the former Keadby Ash Tip in 2017 recorded a single juvenile grass snake in rough grassland habitat near the drain on the western boundary of the former Ash Tip. Given the most optimal habitats for reptiles were surveyed by AECOM in 2017, the findings of these surveys, and the desk study information returned, reptiles are not likely to occur (other than on a transitory basis) in association with the Proposed Development Site. Given this, grass snake still needs appropriate regard to ensure legal compliance at construction,

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								but further survey is not required to inform specification of legally compliant mitigation measures.
Water vole	Protected, S41, LBAP	✓	✓	✓	✓	✓	✓	The desk study returned 95 records of water vole. AECOM surveys undertaken in 2017, 2020 and 2023 have identified this species in a number of watercourses associated with Proposed Development Site (further information is provided for each relevant drain in **Annex 4**). These results remain valid but top-up surveys are likely to be required in future years to reconfirm the status of the

Species	Status	Desk study records	PEA surveys indicate likely or potential presence	Suitable habitat in zone of influence?	Relevant to the Proposed Development?			Supporting comments
					Further survey needed to inform EcIA?	Requires further assessment of legal/ policy implications?	Potential for significant adverse effects	
								species to inform an application for a Water Vole Mitigation Licence.
White-clawed crayfish (*Austro-potamobius pallipes*)	Protected, S41, LBAP	x	x	x	x	x	x	There are no records of white-clawed crayfish in the desk study area. The only remaining known Lincolnshire population occurs on the River Witham (Lincolnshire Biodiversity Partnership, 2011). There are no grounds to expect this species within any of the watercourses associated with the Proposed Development. Given this, further survey is not required.

Invasive Non-Native Species

Invasive Fauna

11C.4.41. The aquatic macroinvertebrate surveys undertaken in 2020 by AECOM highlighted the presence of a number of invertebrate INNS with the Stainforth and Keadby Canal. These species are still likely to be present and will require further consideration in relation to the potential use of the canal as the water supply:

- zebra mussel (*Dreissena polymorpha*). Although this species is not listed on Schedule 9 of the WCA, it is highly invasive. It is unlike all other native mussel species in that it colonises and grows on hard substrates which can lead to a number of potential impacts including the clogging of water intake pipework and screens (GB Non-native Species Secretariat, 2016) and in so doing, increase frequency and requirements for maintenance and repair to maintain the operational function of affected infrastructure. The survey confirms this species to be well established within the canal. Large numbers of live animals were found during sampling, and there were also large numbers of old shells visible on the canal bed;
- demon shrimp (*Dikerogammarus haemobaphes*). This species was first recorded in the UK in 2012 and has spread rapidly. It is a highly efficient predator altering the diversity and abundance of other aquatic macroinvertebrates species.

11C.4.42. Given the implications arising from the presence of zebra mussel (and to a lesser extent demon shrimp) this should be considered further during detailed design to mitigate the potential risk to the effective operation of the Proposed Development.

Invasive Flora

11C.4.43. Surveys have found three plant INNS listed under Schedule 9 of the WCA, and it is an offence to cause these species to spread in the wild.

11C.4.44. AECOM surveys in 2017 found two small bushes of wall cotoneaster (*Cotoneaster horizontalis*) on land adjacent to the Proposed Development Site within the former railway sidings (at SE 8172 1169) of the former Keadby Ash Tip. AECOM surveys in 2020 and 2023 re-found wall cotoneaster in the same area of the former Keadby Ash Tip but at grid reference SE 8187 1168. It is therefore possible that this species may

establish further within the Proposed Development Site by the time of construction.

11C.4.45. In addition, surveys in 2017 of drains to the immediate north and west of the former Keadby Ash Tip were found to support Nuttall's waterweed (*Elodea nuttallii*), and this species was considered likely to be present in other nearby watercourses including those associated with the Proposed Development Site. During the 2020 aquatic plant surveys, Nuttall's waterweed was found to be abundant within the Proposed Development Site where this coincides with the Stainforth and Keadby Canal and the drain on the northern boundary of Keadby Common (Drain 1 (part of Glew Drain)).

11C.4.46. New Zealand pigmyweed (*Crassula helmsii*) was recorded during the PEA in 2020, on the lower bank of the River Trent at SE 8361 1211 and SE 8367 1224, coinciding with the location of the existing cooling water outfall structure for Keadby 1 Power Station within the Proposed Development Site.

11C.4.47. The Canal & River Trust has advised (refer to Table 11.2 of **ES Volume I Chapter 11:** Biodiversity, Ecology and Nature Conservation (**Application Document Ref. 6.2**)) that floating pennywort (*Hydrocotyle ranunculoides*) is present within the Stainforth and Keadby Canal. Consequently, this species may occur in the vicinity of the Proposed Development at the time of construction and/or operation.

11C.5. Identification of Potential Biodiversity Constraints

Statutory Nature Conservation Designations

11C.5.1. The River Trent, which is part of the Humber SAC, Ramsar site and SSSI, is located within the land required for the construction, operation and decommissioning of the Proposed Development. Specifically, it is the location of the Water Discharge Corridor existing outfall structure and the Waterborne Transport Off-loading Area. While the Proposed Development is unlikely to affect the integrity of these large designations, there remains potential for localised impacts and effects.

11C.5.2. Most of the qualifying species of the Ramsar and SSSI designations are not likely to occur in association with the Proposed Development Site, as they are largely coastal and marine species. Wintering bird surveys have been scoped out, see **Table 11C.4**. However, adult lamprey species need to (given their known presence upstream) migrate along the River Trent to access headwater watercourses used for breeding, and juveniles will migrate from breeding habitats downstream to access marine habitats where they will mature into adults. Potentially, although there is no data to demonstrate this, the Stainforth and Keadby Canal could also be used by

lamprey species to reach breeding habitats. Therefore, the potential for lamprey species to be affected will require consideration in the EcIA. This will require further assessment, including consideration of potential barrier effects, and the risk of impingement and entrainment (although the latter will be avoided with an appropriate specification for the committed fish screens and associated water intake velocities, in accordance with the requirements of the Regulator).

11C.5.3. The next closest international or national statutory designation is the nationally designated Crowle Borrow Pits SSSI located 1.2km to the west of the Proposed Development Site. Given this distance, neither Crowle Borrow Pits SSSI or any of the other additional and even more distantly located statutory nature conservation designations presented in **Table 11C.2** could be directly affected by the Proposed Development. However, there is potential for indirect impacts and effects, particularly from emissions to air during operation of the Proposed Development.

11C.5.4. No further ecological surveys are considered necessary to assess potential impacts and effects on relevant international and national statutory nature conservation designations.

Local Statutory and Non-statutory Nature Conservation Designations

11C.5.5. There are no local statutory designations and 11 local non-statutory nature conservation designations within the defined desk study area for the Proposed Development Site. Most of the identified non-statutory designations are associated with, or dependent on connectivity with, the aquatic environment. However, most also have some associated terrestrial habitat interest features.

11C.5.6. The only local designations that could be directly affected by the Proposed Development are the Stainforth and Keadby Canal Corridor LWS, as the Proposed Development may utilise the canal as a water supply via the preferred Canal Water Abstraction Option, and the Hatfield Waste Drain LWS as this is crossed by the access road off the A18 and it is proposed that the existing Mabey Bridge over the LWS will be upgraded to provide a permanent means of access for the Proposed Development.

11C.5.7. Any operational abstraction of water from the Stainforth and Keadby Canal Corridor LWS would be subject to relevant permits, which would set requirements to ensure maintenance of appropriate water levels and quality within the canal. No adverse impacts and effects from water abstraction during operation of the Proposed Development are likely, as statutory regulatory requirements have been set to prevent this and would need to be met. Given this regulatory context, there is no requirement for detailed ecological assessment of adverse impacts and effects arising

from water abstraction. This is consistent with the requirements of NPS EN-1 (paragraph 4.12.10) which states:

> "*The SoS should work on the assumption that the relevant pollution control regime and other environmental regulatory regimes, including … water abstraction and biodiversity…, will be properly applied and enforced by the relevant regulator*."

11C.5.8. All of the designations will require further assessment for potential indirect impacts and effects. All of the local designations (with the exception of Keadby Warping Drain LWS, River Torne LWS and Three Rivers LWS) are within the potential zone of influence for construction and decommissioning water quality and hydrological impacts and therefore require further consideration in relation to this. In addition, emissions to air during construction and/or operation could affect all of the identified local designations, as all are located within the relevant study areas for air quality impact assessment (up to 500m for construction air quality impact assessment, and 2km from the Main Site for operational air quality impact assessment).

11C.5.9. No other ecological surveys are considered necessary to assess potential impacts and effects on relevant local nature conservation designations.

Habitats

11C.5.10. The identified likely veteran and likely ancient trees represent an important constraint as irreplaceable habitat of national nature conservation value. The Local Plan and the NPPF both carry a presumption against losses of irreplaceable habitat. The former states:

> "*development resulting in the loss or deterioration of irreplaceable habitats such as ancient woodlands, aged or veteran trees, and historic hedgerows should be refused unless there are wholly exceptional reasons and a suitable compensation strategy exists*".

11C.5.11. Wholly exceptional reasons relate to a public benefit that clearly outweighs the loss or deterioration of the habitat.

11C.5.12. Further guidance has been published in the form of Standing Advice (Natural England & Forestry Commission, 2022), which reinforces the above planning policy. It is expected that all measures will be explored to avoid loss or deterioration of veteran and ancient trees, in accordance with

the 'mitigation hierarchy'. Requirements for protective buffer zones have been defined in the Standing Advice as follows:

> "*For ancient or veteran trees the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter. This will create a minimum root protection area*".

11C.5.13. The former Keadby Ash Tip, which is located adjacent to the Proposed Development Site, contains OMH (with small ancillary areas associated with the Proposed Development Site), acid grassland and watercourse habitats that are priorities for nature conservation in England and/ or in Lincolnshire. The OMH and grassland habitats are of particularly high (national) nature conservation value. These low nutrient early successional habitats, and associated flora including an abundance of reindeer lichens, are potentially vulnerable to indirect impacts from emissions to air once the Proposed Development is operational. The relevant watercourses, including one of county value, may also experience indirect effects due to connectivity with watercourses elsewhere within the Proposed Development Site.

11C.5.14. The other semi-natural habitats likely to be affected by the Proposed Development are not of priority types, and in all cases have been assessed as having negligible to local nature conservation value.

11C.5.15. The information collected during the PEA in addition to the previous habitat surveys undertaken by AECOM is considered sufficient to fully

characterise the terrestrial and aquatic habitats. Therefore no other habitat surveys are considered necessary to inform the EcIA.

Protected Species

11C.5.16. A number of protected or notable species have been identified as potentially present within the Proposed Development Site, based on the review provided above in **Table 11C.4**.

11C.5.17. **Table 11C.5** summarises the species scoped into the EcIA for the Proposed Development and any requirements for further survey to inform the EcIA.

Table 11C.5: International and national nature conservation designations in the potential zone of influence of the Proposed Development

Species scoped in (based on Table 4)	Further survey needed to inform impact assessment	Survey scope (where relevant)	ES Appendix containing further information
Badger	No additional data required to inform assessment/ legal compliance.	-	**ES Volume II Appendix 11D (Application Document Ref. 6.3.12)**
Bats	No additional data required to inform assessment/ legal compliance.	-	**Annex 5** and **Annex 6** of this report
Barn owl	No additional data required to inform assessment/ legal compliance.	-	Not relevant
Breeding birds	Yes	Bird survey of Main Site and adjacent habitats.	**ES Volume II Appendix 11G (Application Document Ref. 6.3.15)**

Species scoped in (based on Table 4)	Further survey needed to inform impact assessment	Survey scope (where relevant)	ES Appendix containing further information
Wintering Birds	No additional survey data required to inform impact assessment. But additional data purchase required, which in combination with a review of habitat suitability will inform impact assessment and HRA.	Purchase of BTO bird data report[1]	The BTO report and an interpretative technical note is provided within the HRA Appropriate Assessment Report (**Application Document Ref. 5.2**)
Flora: notable native species	No additional data required to inform assessment/ legal compliance	-	Not relevant, off-site locations of notable flora within the former Keadby Ash Tip is well understood.
Fish	Yes – Stainforth and Keadby Canal only	eDNA survey of the Stainforth and Keadby Canal in the vicinity of the proposed water intake.	**ES Volume II Appendix 11F** (**Application Document Ref. 6.3.14**)
Great crested newt	No – scoped out, not relevant.	-	Not relevant

[1] BTO Data Reports provide rigorous scientific information to inform fieldwork decisions and desk studies for Ecological Impact Assessment of potential development sites in the UK. Reports collate comprehensive and contemporary bird distribution and abundance data from BTO's high quality ornithological datasets to identify species associated with the site at different spatial scales, and to put these in wider contexts to identify key features. A BTO Data Report will list all bird species present at or near your site in the breeding season and in winter.

Species scoped in (based on Table 4)	Further survey needed to inform impact assessment	Survey scope (where relevant)	ES Appendix containing further information
Invertebrates: aquatic	No additional data required to inform assessment/ legal compliance.	-	**ES Volume II Appendix 11F (Application Document Ref. 6.3.14)**
Invertebrates: terrestrial	No additional data required to inform assessment/ legal compliance.	-	Not relevant, off-site locations of notable invertebrates within the former Keadby Ash Tip is well understood.
Aquatic Invasive non-native species (INNS)	No additional data required to inform assessment/ legal compliance.	-	**ES Volume II Appendix 11F (Application Document Ref. 6.3.14)**
Otter	Yes	Top-up survey to confirm current status and distribution.	**ES Volume II Appendix 11E (Application Document Ref. 6.3.13)**
Reptiles	No additional data required to inform assessment/ legal compliance.	-	Not relevant
Water vole	Yes	Top-up survey to confirm current status and distribution.	**ES Volume II Appendix 11E (Application Document Ref. 6.3.13)**

11C.6. References

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Humber Estuary (SPA, SAC, Ramsar, SSSI)

Thorne, Crowle and Goole Moors (SSSI)
Thorne Moor (SAC)
Thorne & Hatfield Moors (SPA)

Eastoft Meadow (SSSI)

Conesby (Yorkshire East) Quarry (SSSI)

Risby Warren (SSSI)

Humberhead Peatlands (NNR)

Hatfield Chase Ditches (SSSI)

Crowle Borrow Pits (SSSI)

Broughton Far Wood (SSSI)

Broughton Alder Wood (SSSI)

Castlethorpe Tufas (SSSI)

Belshaw (SSSI)

Hatfield Moors (SSSI)

Hatfield Moor (SAC)

Epworth Turbary (SSSI)

Manton and Twigmoor (SSSI)

Messingham Heath (SSSI)

Tuetoes Hills (SSSI)

Messingham Sand Quarry (SSSI)

Manton Stone Quarry (SSSI)

Haxey Turbary (SSSI)

Rush Furlong (SSSI)

Scotton and Laughton Forest Ponds (SSSI)

Cleatham Quarry (SSSI)

Scotton Beck Fields (SSSI)

Hewson's Field (SSSI)

Laughton Common (SSSI)

Scotton Common (SSSI)

1:120,000 @ A3
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AECOM

PROJECT

KEADBY
NEXT GENERATION POWER STATION
Hydrogen-enabled flexible power

A collaboration between SSE Thermal and Equinor

CONSULTANT

AECOM Limited
Midpoint,
Alencon Link,
Basingstoke, RG21 7PP
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LEGEND

- Proposed Development Site
- Main Site
- 15km Study Area from the Main Site
- Ramsar Site
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)
- Special Area of Conservation (SAC)

NOTES

ISSUE PURPOSE

PRELIMINARY ECOLOGICAL APPRAISAL

PROJECT NUMBER

60721867

FIGURE TITLE

Statutory Nature Conservation Designations

FIGURE NUMBER

Figure 11C.1

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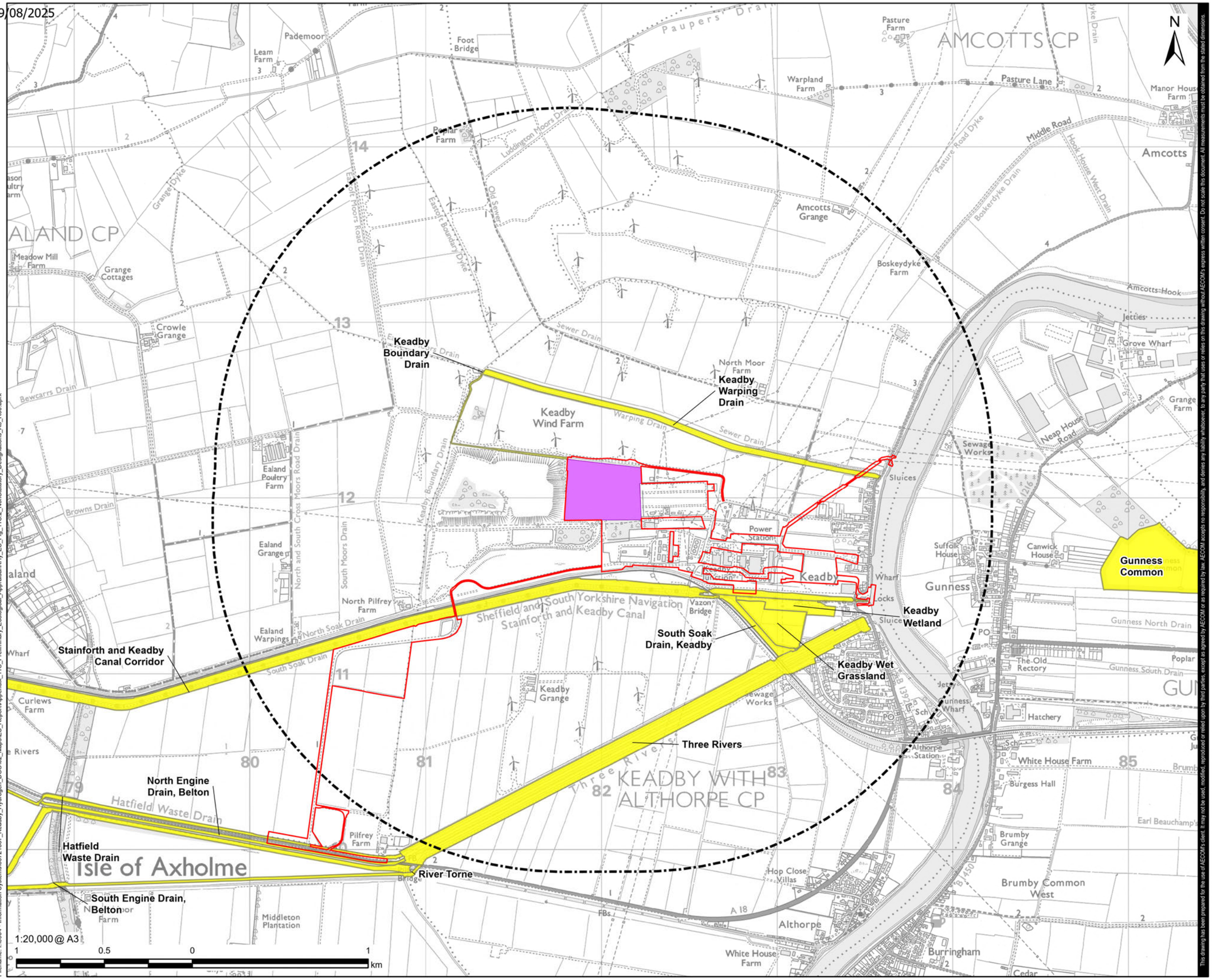

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KEADBY
NEXT GENERATION POWER STATION
Hydrogen-enabled flexible power

A collaboration between **SSE Thermal** and **Equinor**

CONSULTANT

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LEGEND

- Proposed Development Site
- Main Site
- 2km Study Area from the Main Site
- Local Wildlife Site (LWS)

NOTES

ISSUE PURPOSE

PRELIMINARY ECOLOGICAL APPRAISAL

PROJECT NUMBER

60721867

FIGURE TITLE

Non-statutory Nature Conservation Designations

FIGURE NUMBER

Figure 11C.2

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-08-19

Filename: I:\5004 - Information Systems\60721867_Keadby_Hydrogen_DCO\02_Maps\ES_Report\Appendix_11C_Preliminary_Ecological_AppraisalKHy_ES_Fig_11C.3_UK_Habitats_A3_R00.aprx

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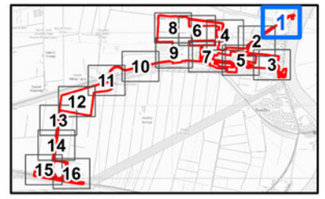
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Other rivers and streams
- Cropland - Cereal crops
- Grassland - Modified grassland
- Heathland and shrub - Mixed scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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PRELIMINARY ECOLOGICAL APPRAISAL

PROJECT NUMBER

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FIGURE TITLE

UK Habitat Map
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FIGURE NUMBER

Figure 11C.3

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-08-19

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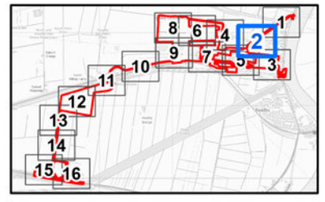
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Urban tree
- Native hedgerow
- Native hedgerow with trees
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Bramble scrub
- Heathland and shrub - Hawthorn scrub
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved



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PRELIMINARY ECOLOGICAL APPRAISAL

PROJECT NUMBER

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FIGURE TITLE

UK Habitat Map
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FIGURE NUMBER

Figure 11C.3

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-08-19

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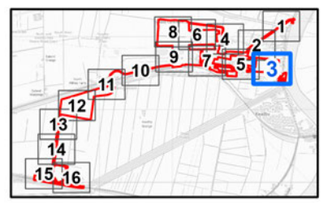
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Urban tree
- Native hedgerow
- Native hedgerow with trees
- Species-rich native hedgerow
- Ditches
- Other rivers and streams
- Grassland - Modified grassland
- Heathland and shrub - Hawthorn scrub
- Sparsely vegetated land - Tall forbs
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved



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PROJECT NUMBER

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FIGURE TITLE

UK Habitat Map
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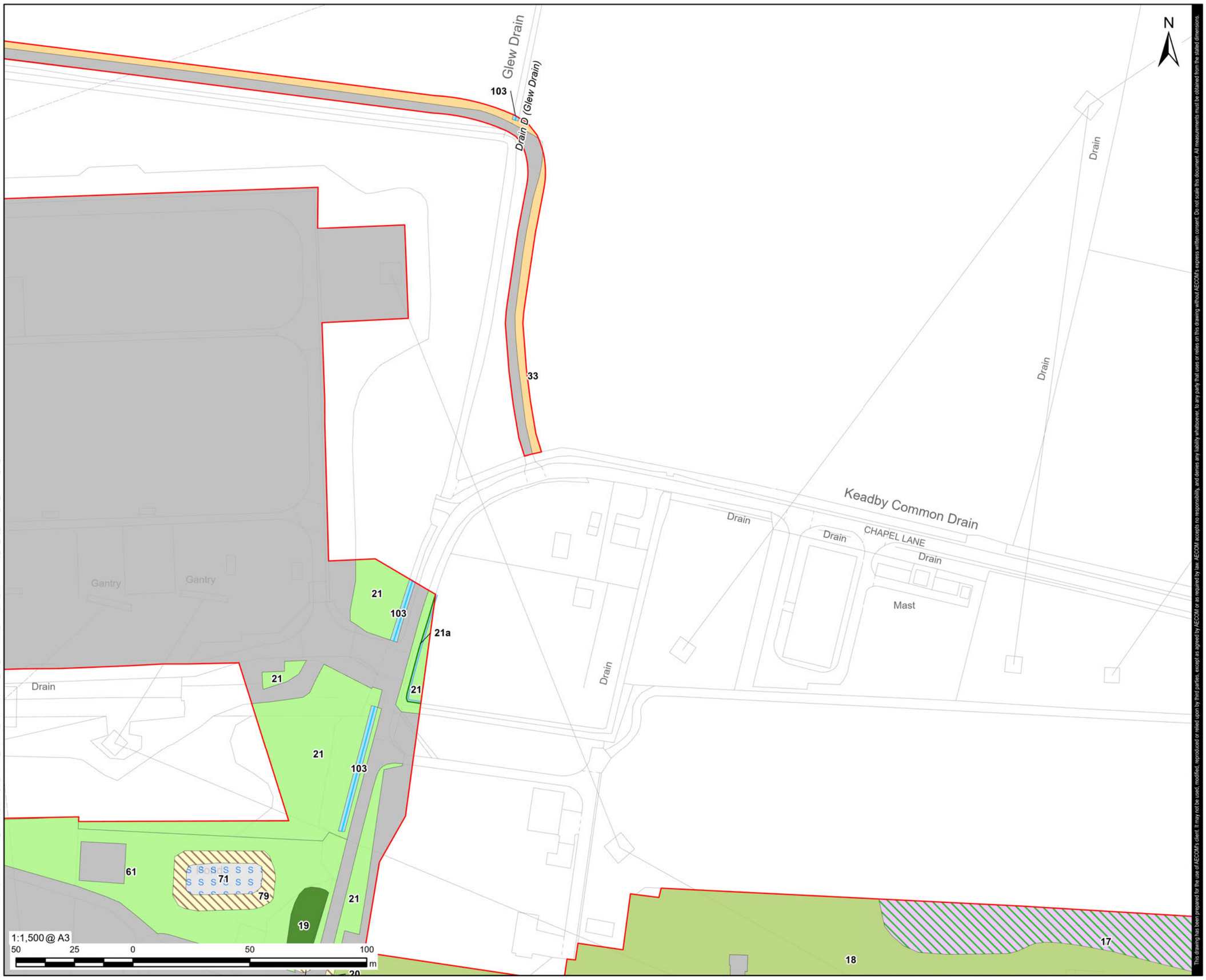

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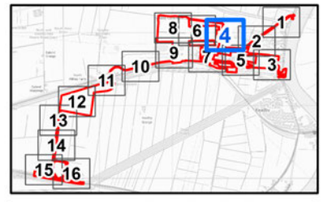
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow - associated with bank or ditch
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Bramble scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Bioswale
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved



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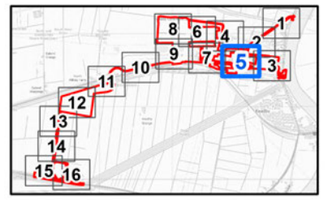
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Urban tree
- Native hedgerow
- Native hedgerow with trees
- Ditches
- Other rivers and streams
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Bramble scrub
- Heathland and shrub - Mixed scrub
- Sparsely vegetated land - Tall forbs
- Urban - Artificial unvegetated, unsealed surface
- Urban - Bare ground
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Lowland mixed deciduous woodland
- Woodland and forest - Other woodland; broadleaved



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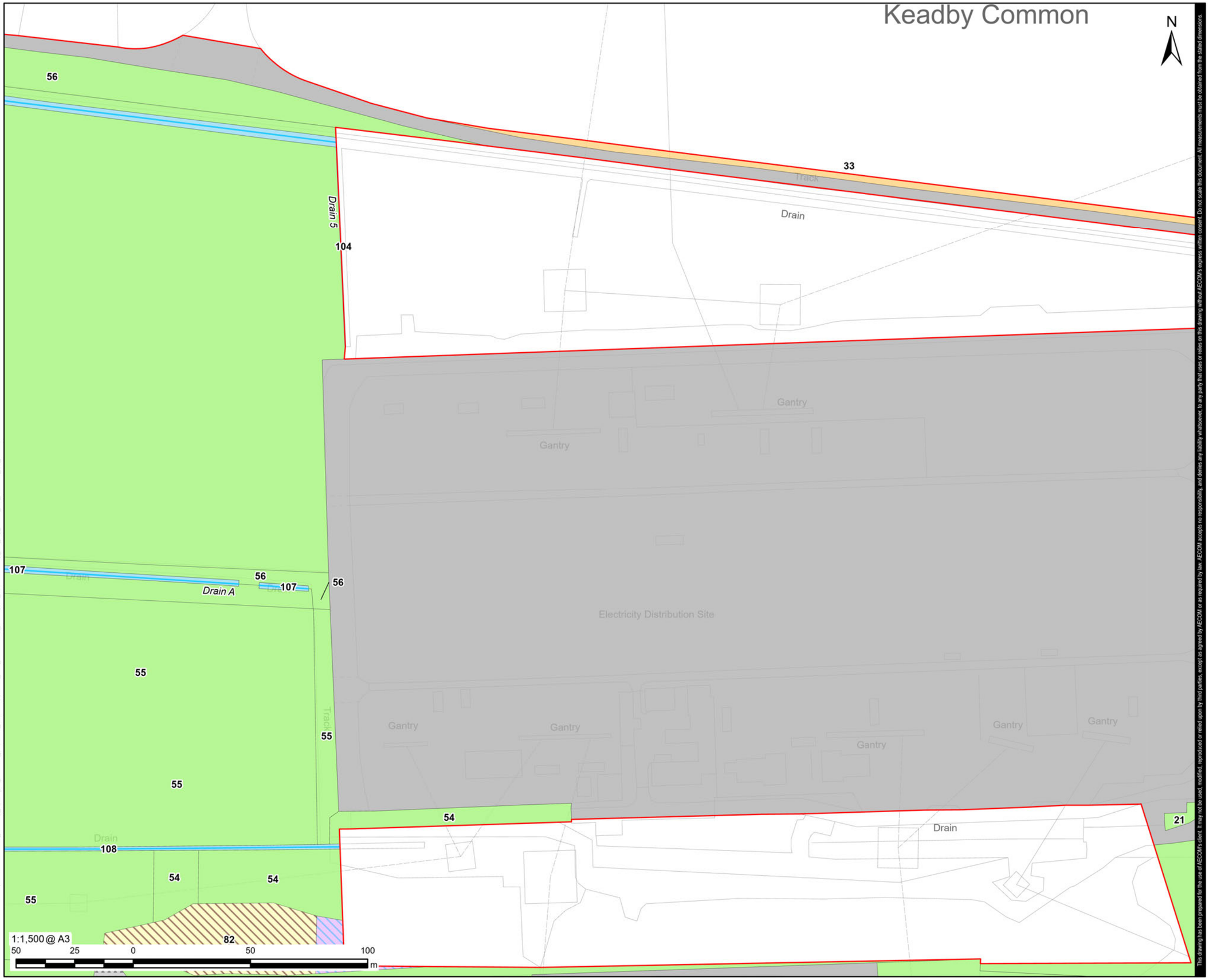

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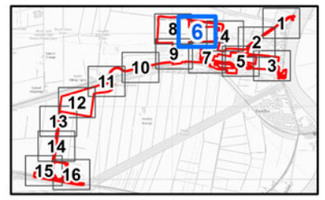
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Heathland and shrub - Hawthorn scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Bare ground
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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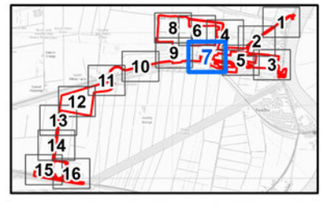
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow - associated with bank or ditch
- Ditches
- Grassland - Modified grassland
- Grassland - Other neutral grassland
- Heathland and shrub - Hawthorn scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Artificial unvegetated, unsealed surface
- Urban - Bare ground
- Urban - Bioswale
- Urban - Building
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint
- Woodland and forest - Other woodland; broadleaved
- Woodland and forest - Other woodland; mixed



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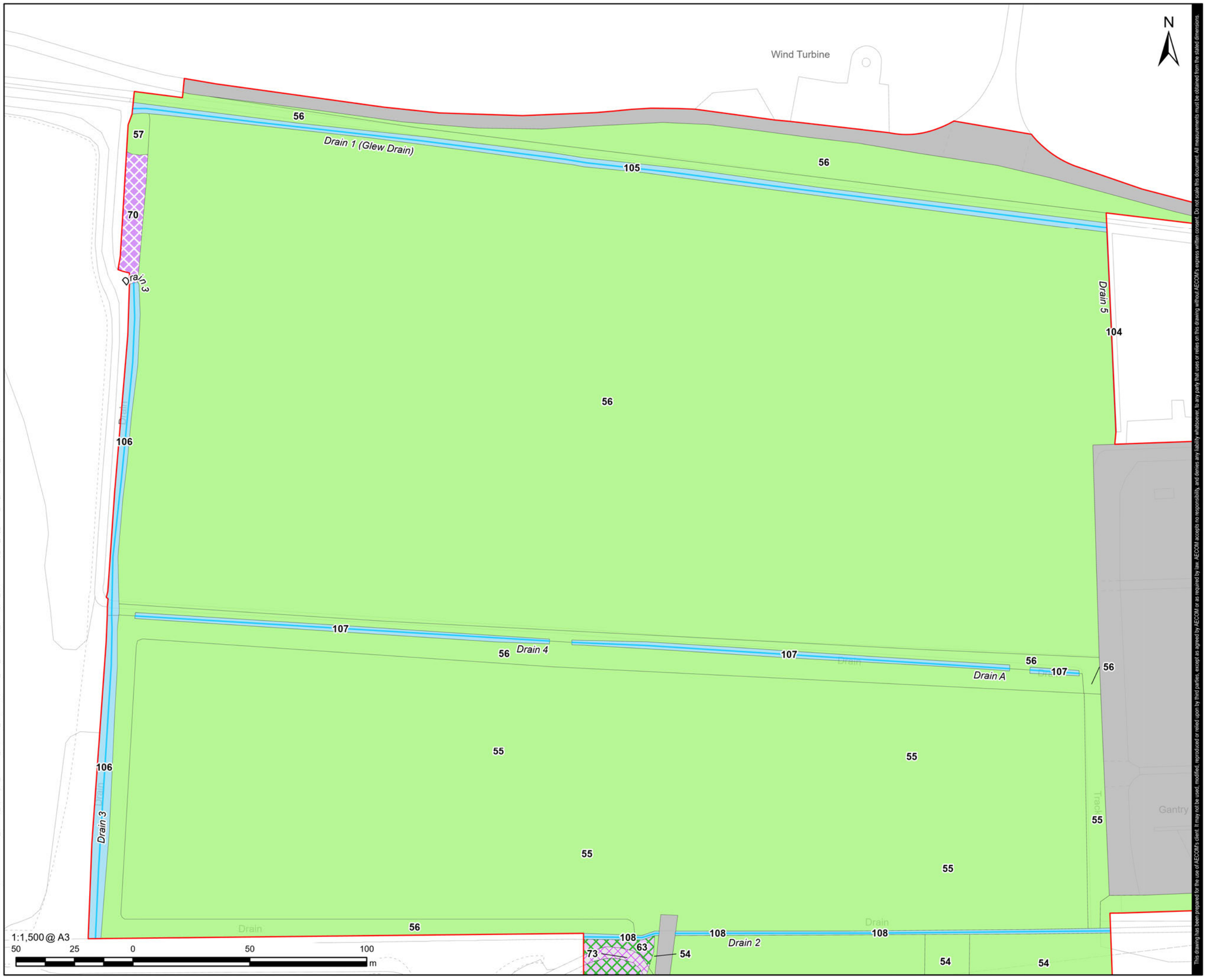

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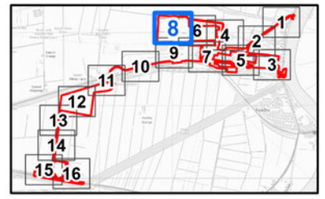
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Heathland and shrub - Mixed scrub
- Heathland and shrub - Willow scrub
- Urban - Developed land; sealed surface
- Urban - Open mosaic habitats on previously developed land
- Watercourse footprint - Watercourse footprint



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PRELIMINARY ECOLOGICAL APPRAISAL

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FIGURE TITLE

UK Habitat Map
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Figure 11C.3

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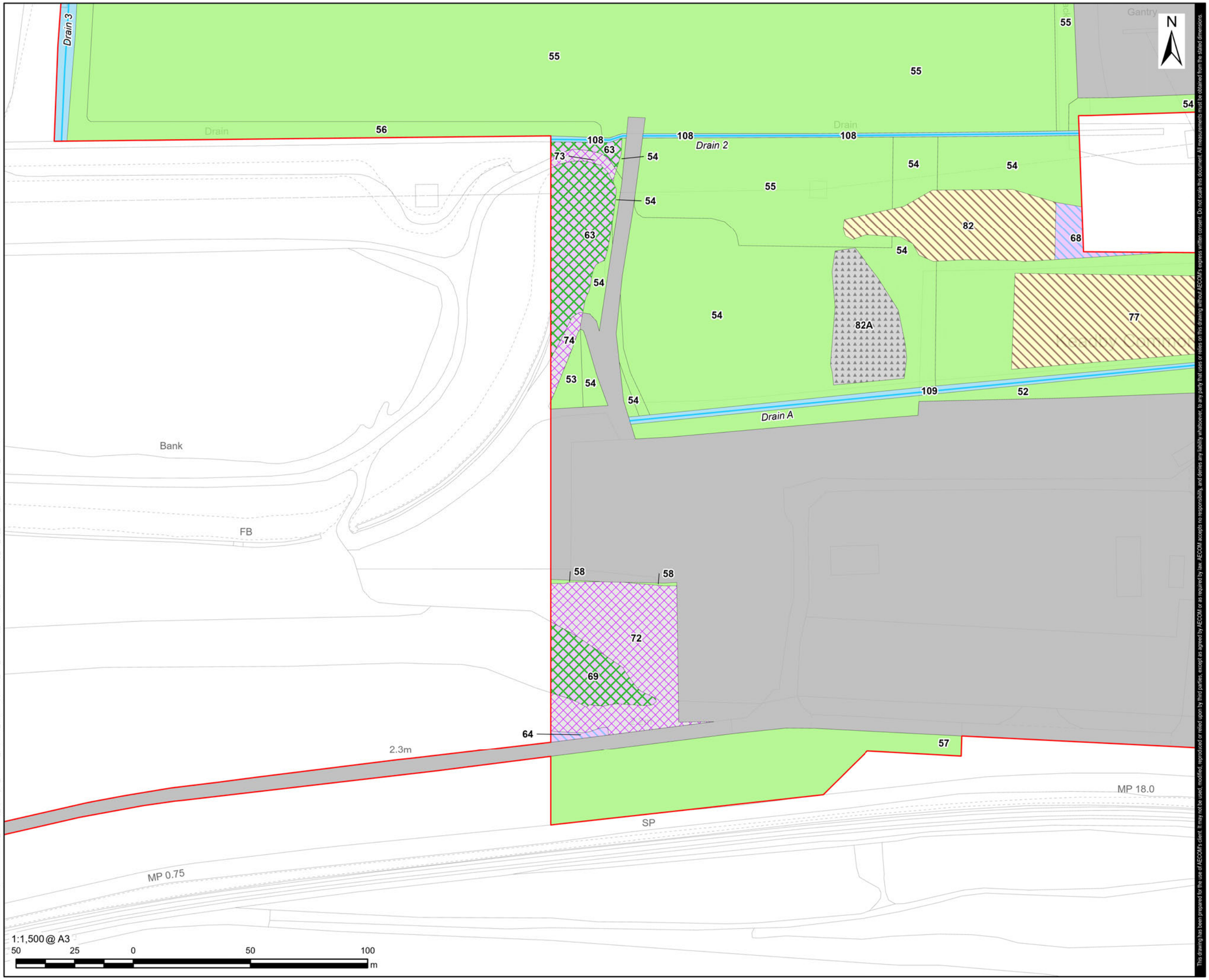

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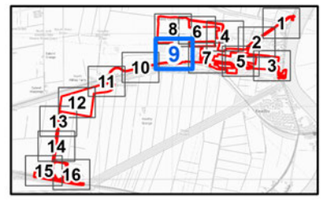
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Grassland - Modified grassland
- Heathland and shrub - Hawthorn scrub
- Heathland and shrub - Mixed scrub
- Sparsely vegetated land - Ruderal/ Ephemeral
- Urban - Bare ground
- Urban - Developed land; sealed surface
- Urban - Open mosaic habitats on previously developed land
- Watercourse footprint - Watercourse footprint



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PROJECT NUMBER

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FIGURE TITLE

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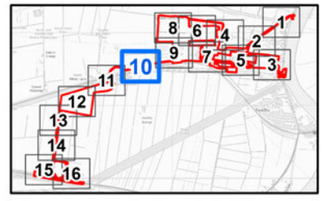
LEGEND

Proposed Development Site

Baseline UK Habitat Type

Urban - Developed land; sealed surface



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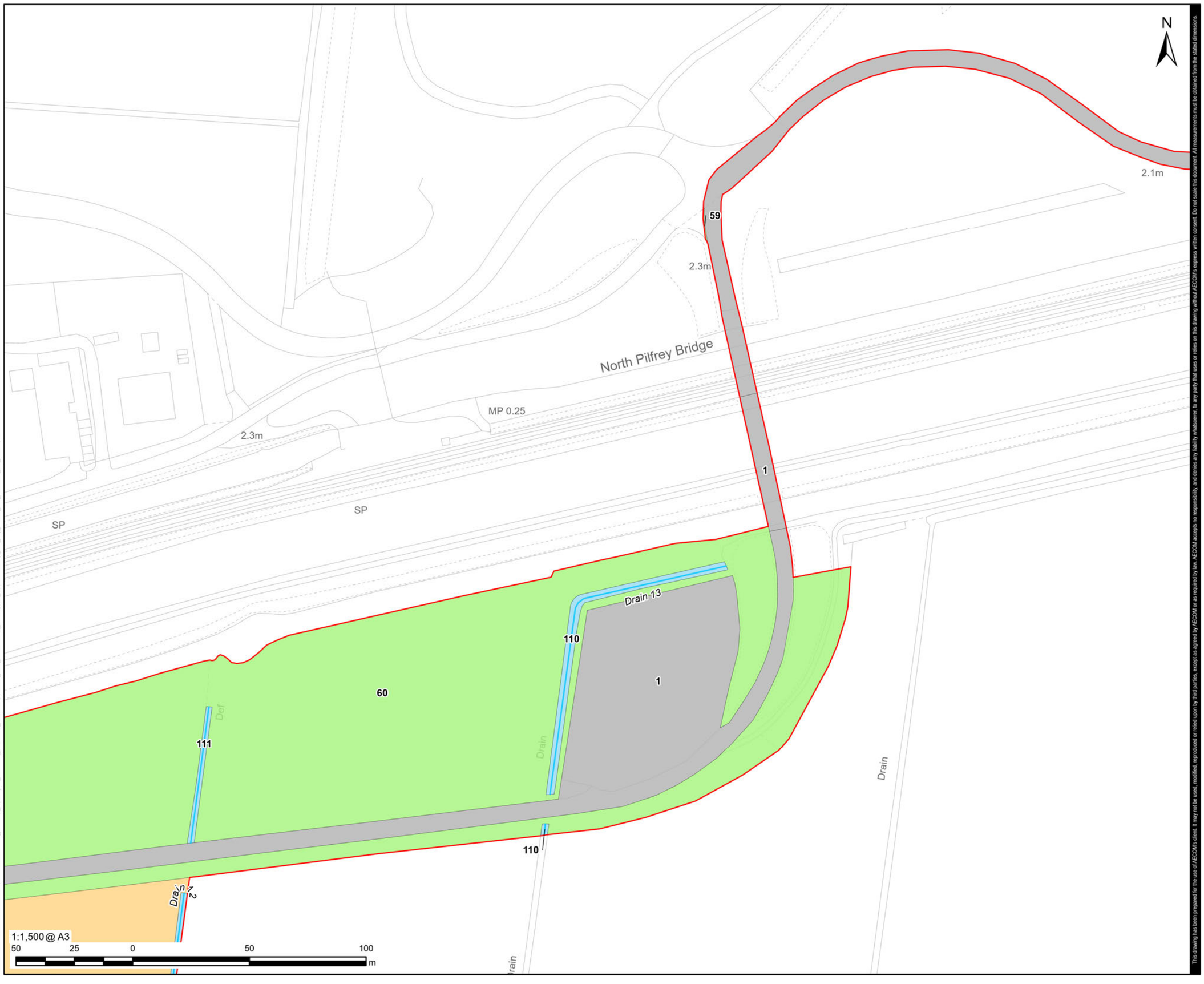

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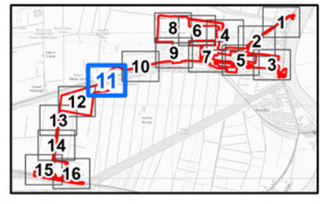
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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UK Habitat Map
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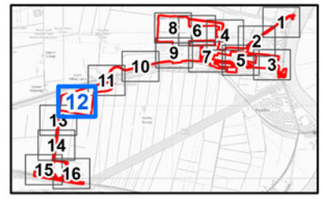
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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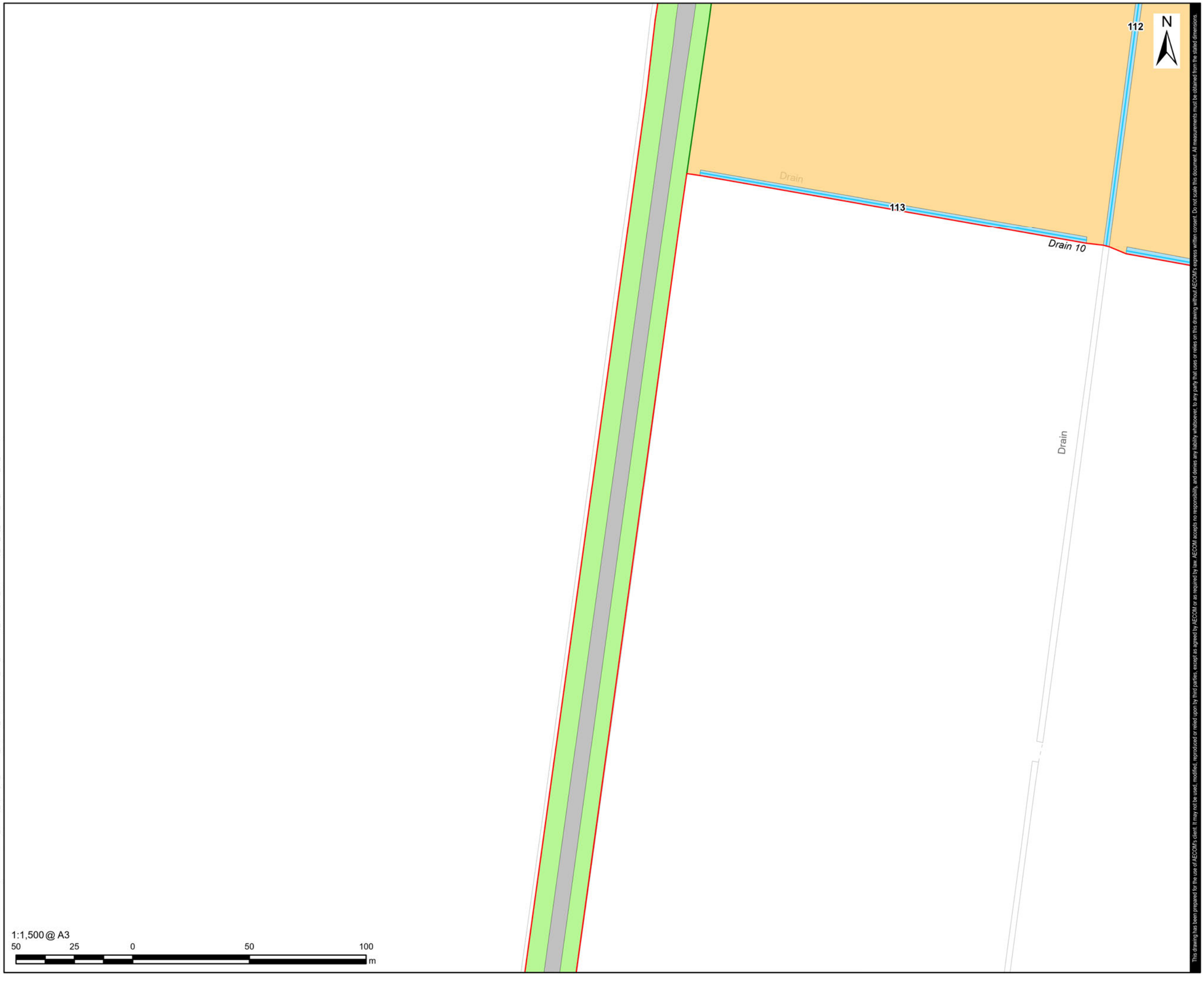

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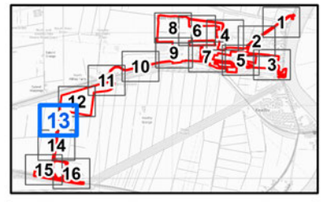
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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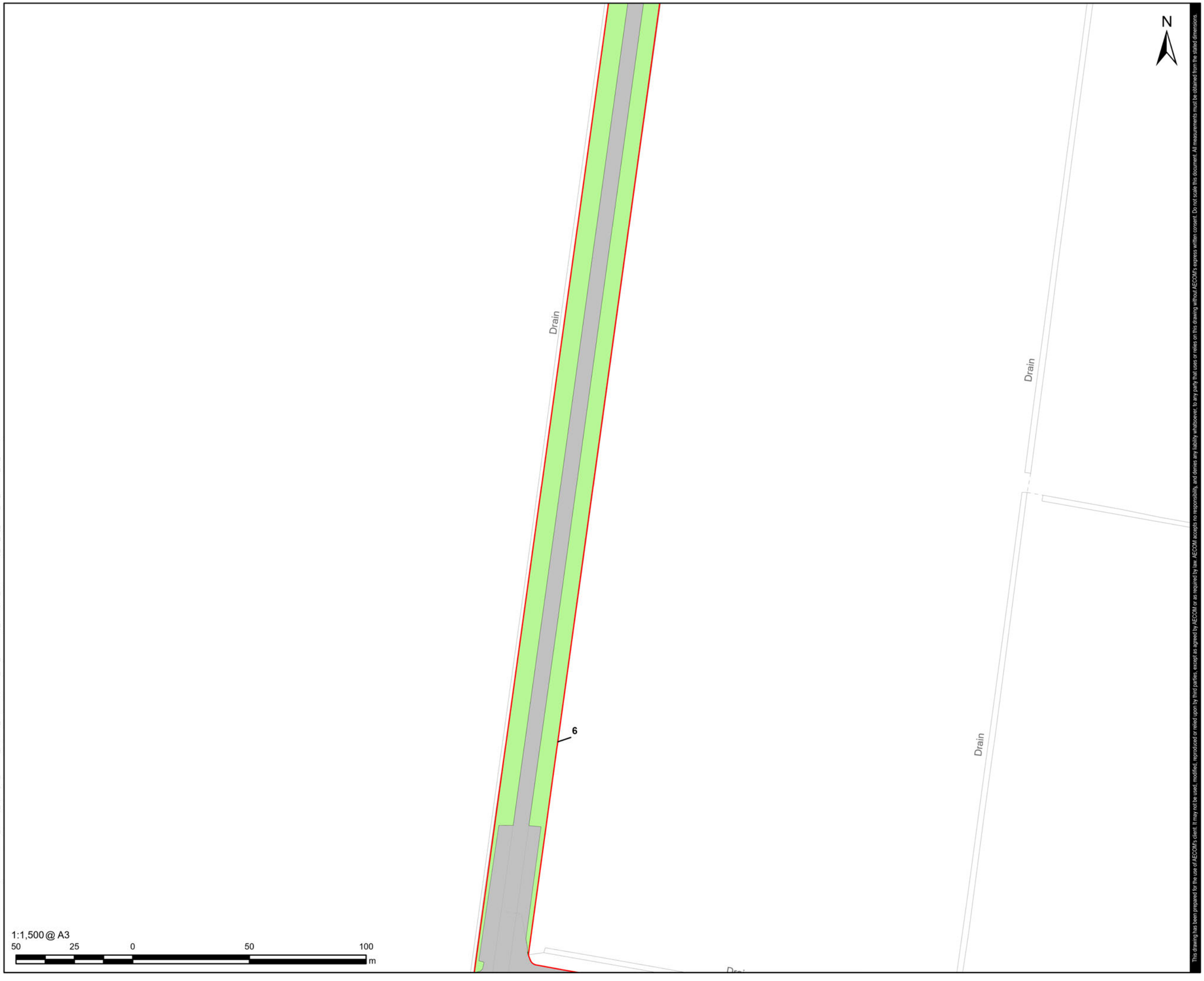

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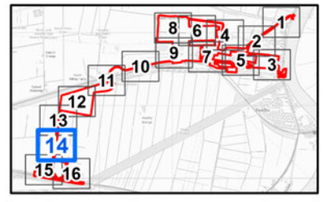
AECOM Limited
Midpoint,
Alencon Link,
Basingstoke, RG21 7PP
www.aecom.com

LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow
- Grassland - Modified grassland
- Urban - Developed land; sealed surface



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ISSUE PURPOSE

PRELIMINARY ECOLOGICAL APPRAISAL

PROJECT NUMBER

60721867

FIGURE TITLE

UK Habitat Map
(Page 14 of 16)

FIGURE NUMBER

Figure 11C.3

Revision: 0 Drawn: MAB Checked: SM Approved: DB Date: 2025-08-19

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AECOM

PROJECT

KEADBY
NEXT GENERATION POWER STATION
Hydrogen-enabled flexible power

A collaboration between **SSE Thermal** and **Equinor**

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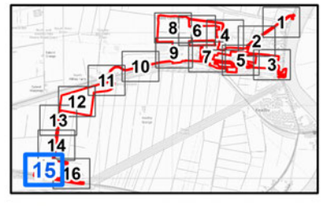
LEGEND

- Proposed Development Site

Baseline UK Habitat Type

- Native hedgerow
- Ditches
- Cropland - Cereal crops
- Grassland - Modified grassland
- Urban - Developed land; sealed surface
- Watercourse footprint - Watercourse footprint



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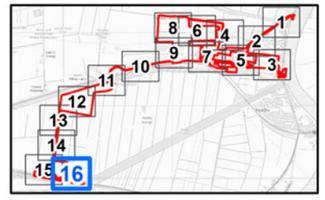

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ISSUE PURPOSE

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PROJECT NUMBER

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FIGURE TITLE

UK Habitat Map
(Page 16 of 16)

FIGURE NUMBER

Figure 11C.3

Annex 1 - Habitat Target Notes and Condition Assessment

Where parcel numbers are omitted this is because they do not fall within the Order Limits and consequently they are not shown on the habitat mapping.

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
1	Developed land; sealed surface	Existing hardstanding yards and roads, structures etc.	N/A	N/A
1A	Ruderal/ephemeral	Disturbed area along the boundary of the K1 Power Station	Poor	A. Uniform structure (fail) B. Low herb diversity and limited flower resource (fail) C. INNS < 5% of total vegetated area (pass)
2	Modified grassland	Species-poor grassland paddock (grassland of secondary origin). Plant diversity in the order of 3-4 species per 1m^2. Typical species are *Agrostis stolonifera* (A), *Holcus lanatus* (O), *Alopecurus pratensis* (F), *Poa trivialis* (O), *Cerastium fontanum* (O), *Equisetum arvense* (O), *Taraxacum* agg. (O) *Cirsium arvense* (F).	Poor	A. <6 species (fail) B. Uniform sward height (fail) C. No scrub (pass) D. No damage (pass) E. No bare ground (fail) F. No bracken (pass) G. No INNS (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
2a	Modified grassland	Unmanaged species-poor grassland road verge adjacent to PD Ports/B1392, dominated by *Arrhenatherum elatius*.	Poor	A. <6 species (fail) B. Uniform sward height (fail) C. No scrub (pass) D. No damage (pass) E. No bare ground (fail) F. No bracken (pass) G. No INNS (pass)
3	Sparsely vegetated land – tall forbs	Stand of vegetation almost entirely comprising *Cirsium arvense* (D). No obvious grass component below this.	Poor	A. Vegetation structure uniform (fail) B. Limited botanical diversity (fail) C. No INNS or detrimental species (pass)
4	Species-rich native hedgerow (associated with ditch but this is ignored for BNG purposes)	Hedgerow located either side of existing ditch crossing. Diverse mix of native and archaeophyte species within 30m section. Comprises *Crataegus monogyna* (A), *Cornus sanguinea* (O), *Salix cinerea* (F), *Prunus domestica* (O), *Ulmus* sp. (A), *Sorbus aucuparia* (R), *Prunus avium* (R).	Good	A1 >1.5m tall (pass) A2 >1.5m wide (pass) B1 Gaps at base <0.5m (pass) B2 No gaps in length (excluding the pre-existing crossing) (pass) C1 Undisturbed vegetation adjacent (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				C2 No evidence of enrichment (pass) D1 No INNS (pass) D2 No damage (pass)
5	Ditch (Drain 7)	Wet ditch associated with parcel 4. Shallow and largely overhung by scrub. Water <10cm deep and likely dries up in summer. Limited flora comprising *Typha latifolia* (LD), *Epilobium hirsutum* (LF), *Scrophularia auriculata* (O), *Solanum dulcamara* (O).	Poor	A. No evidence to suggest pollution, no turbidity (pass) B. <10 aquatic species (fail) C. No algae/Lemna (pass) D. <90% of length has fringing vegetation (fail) E. No damage (pass) F. Insufficient water depth (fail) G. >80% of length is shaded (fail) H. No INNS (pass)
5a	Native hedgerow (associated with ditch but this is ignored for BNG purposes)	Species-poor hedgerow located between field and Keadby 1 car park. *Crataegus monogyna* (D).	Good	A1 >1.5m tall (pass) A2 >1.5m wide (pass) B1 Gaps at base >0.5m (pass) B2 Gaps in length <10% (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				C1 Undisturbed vegetation adjacent (pass) C2 No evidence of enrichment (pass) D1 No INNS (pass) D2 No damage (pass)
5b	Ditch (Drain 6)	Wet ditch associated with parcel 5a. Water shallow (<50cm) and likely prone to drying. Limited flora comprising *Phragmites australis* (A), *Typha latifolia* (A), *Juncus inflexus* (O), *Scrophularia auriculata* (F).	Poor	A. No evidence to suggest pollution, no turbidity (pass) B. <10 aquatic species (fail) C. No algae/Lemna (pass) D. >90% of length has fringing vegetation (pass) E. Damage/disturbance to banks from existing temporary bridge (fail) F. Insufficient water depth due to dominance of common reed (fail) G. Light shading only (pass) H. No INNS (pass)
6a	Native hedgerow	Establishing *Crataegus monogyna* hedgerow located along the access	Moderate	A1 <1.5m tall (fail)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
		road between the A18 and Pilfrey Bridge		A2 <1.5m wide (fail) B1 Gaps at base <0.5m (pass) B2 Gaps in length <10% (pass) C1 Undisturbed vegetation adjacent (pass) C2 No evidence of enrichment (pass) D1 No INNS (pass) D2 No damage (pass)
6b	Native hedgerow (associated with ditch but this is ignored for BNG purposes)	Hedgerow located on south side of Trent Road. Limited diversity (4 species) within 30m sections. Comprises *Crataegus monogyna* (D), *Rosa canina* agg. (O), Salix *cinerea* (R), *Sambucus nigra* (R).	Moderate	A1 >1.5m tall (pass) A2 >1.5m wide (pass) B1 Gaps at base >0.5m (fail) B2 Gaps in length >10% (fail) C1 Undisturbed vegetation adjacent (pass) C2 No evidence of enrichment (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				D1 No INNS (pass) D2 No damage (pass)
7	Ditch	Wet ditch associated with parcel 6b. Shallow (5-10cm deep). Banks shallow and largely bare earth. Limited vegetation of *Phragmite australis* (F to LD) and *Solanum dulcamara* (O). Filamentous algae (F).	Poor	A. No evidence to suggest pollution, no turbidity (pass) B. <10 aquatic species (fail) C. Algae abundant (fail) D. <90% of length has fringing vegetation (fail) E. No damage (pass) F. Insufficient water depth (fail) G. >80% of length is shaded (fail) H. No INNS (pass)
8	Native hedgerow with trees (associated with ditch but this is ignored for BNG purposes)	Hedgerow located on north side of Trent Road. Limited diversity (3 species) within 30m sections. Comprises *Crataegus monogyna* (A), *Prunus spinosa* (A), *Cornus sanguinea* (O). Several large trees of *Salix* x *fragilis*, including veteran trees.	Good	A1 <1.5m tall (fail) A2 >1.5m wide (pass) B1 Gaps at base <0.5m (pass) B2 No gaps in length (pass) C1 Undisturbed vegetation adjacent (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				C2 No evidence of enrichment (pass) D1 No INNS (pass) D2 No damage (pass) E1 One age class of tree (fail) E2 Trees healthy (pass)
10	Modified grassland	Verges on both sides of Trent Road. Regularly mown, resulting in a lawn like appearance. Limited diversity, in the order of 6-8 plant species per 1m2. Typical flora comprises *Festuca rubra* (A), Geranium *molle* (F), *Potentilla reptans* (F), *Prunella vulgaris* (O), *Veronica arvensis* (O), *Bellis perennis* (F), *Taraxacum* agg. (O), *Cerastium glomeratum* (O).	Moderate	A. 6-8 species (pass) B. Uniform sward height (fail) C. No scrub (pass) D. No damage (pass) E. Bare ground <1-5% cover (fail) F. No bracken (pass) G. No INNS (pass)
11	Urban trees	Group of seven small trees and two medium sized trees. Six are native *Sorbus aria/ aucuparia*, two are *Alnus*	Moderate	A. Predominantly native (pass) B. Canopy continuous (pass) C. Trees are semi-mature (fail) D. No damage (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
		incana and one is Alnus cordata. Trees 26-34 of the tree survey.		E. No niches (fail) F. Vegetation beneath (pass)
12	Urban trees	Group of four small trees of *Sorbus aria* and *Sorbus aucuparia*. Trees T35, 36, 38 & 39 of the tree survey.	Moderate	A. Predominantly native (pass) B. Canopy continuous (pass) C. Trees are semi-mature (fail) D. No damage (pass) E. No niches (fail) F. Vegetation beneath (pass)
15	Other woodland; broad-leaved	Semi-mature woodland to the north-east of Keadby 1 Power Station. The woodland is dominated by *Fraxinus excelsior* with *Salix x sepulchralis* and *Tilia x europaea*. The shrub and ground layers are sparse and generally limited to *Sambucus nigra*, *Rubus fruticosus* agg. and *Urtica dioica*, with areas of bare ground due to the high levels of shading. Locally there are small stands of *Hyacinthoides x massartiana* and *Alliaria petiolata*.	Moderate	A. One age class (1 point) B. No herbivore damage (3) C. No INNS (3) D. Three native woody species (2) E. >80% native (3) F. No open space but wood small (3) G. No regeneration (1) H. No mortality (3) I. No NVC community (1) J. Two storeys (2) K. No veteran trees (1) L. Some deadwood (2) M. No enrichment or damage (3)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
16	Urban trees	Two *Fraxinus excelsior,* one medium and one large sized. Trees previously topped and limbs largely reduced. Previous pruning on stem. Trees present very poor form and has limited future potential. T13 & 14 of the tree survey	Moderate	A. Native (pass) B. Canopy non-continuous (fail) C. Trees are mature (pass) D. Trees hard pruned (fail) E. No niches (fail) F. Vegetation beneath (pass)
17	Bramble scrub	Self-explanatory	Not applicable	Not applicable
18	Other neutral grassland	The grassland is unmanaged and is heavily invaded by *Rubus fruticosus* agg. Flora observed include *Arrhenatherum elatius*, *Agrostis capillaris*, *Dactylis glomerata, Potentilla reptans, Galium verum, Primula veris, Plantago lanceolata, Centaurea nigra* agg., *Glechoma hederacea, Inula conyzae, Cirsium arvense* and *Jacobaea vulgaris*.	Moderate	A. Typical of its type (pass) B. Variable sward height (pass) C. Negligible bare ground (fail) D. Bramble >5% (fail) E. No damage, no INNS (pass) F. <10 species per 1m2 (fail)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
19	Other woodland; broad-leaved	Dense semi-mature broad-leaved plantation woodland with *Fraxinus excelsior* (A), *Prunus avium* (A), and *Quercus* sp. (O). The plantation is of 20-30 years of age. No shrub or field layer.	Moderate	A. One age class (1 point) B. No herbivore damage (3) C. No INNS (3) D. Three native woody species (2) E. >80% native (3) F. Minor open space but wood small so irrelevant (3) G. No regeneration (1) H. No mortality (3) I. No NVC community (1) J. One storey (1) K. No veteran trees (1) L. No deadwood (1) M. No enrichment or damage (3)
20	Sparsely vegetated land – ruderal/ephemeral	Road verges disturbed by Keadby 2 construction. Bare ground with sparse ephemerals.	Poor	A. Vegetation structure uniform (fail) B. Limited botanical diversity (fail) C. No INNS or detrimental species (pass)
21	Modified grassland	Unmanaged and grass dominated, predominantly *Arrhenatherum elatius* and *Elymus repens*. Associated species	Moderate	A. 6-8 species (pass) B. Uniform sward height (fail) C. No scrub (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
		include *Dactylis glomerata, Festuca rubra, Achillea millefolium, Cirsium arvense, Dipsacus fullonum, Torilis japonica, Taraxacum* agg., and *Plantago lanceolata*.		D. No damage (pass) E. No bare ground (fail) F. No bracken (pass) G. No INNS (pass)
21a	Native hedgerow - associated with a ditch	Hedgerow located by Chapel Lane and with a dry ditch. Species-poor and dominated by *Crataegus monogyna.*	Good	A1 >1.5m tall (pass) A2 >1.5m wide (pass) B1 Gaps at base <0.5m (pass) B2 No gaps in length (excluding the pre-existing crossing) (pass) C1 Undisturbed vegetation adjacent (pass) C2 No evidence of enrichment (pass) D1 No INNS (pass) D2 No damage (pass)
22	Modified grassland	As parcel 13.	Poor	As parcel 13.

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
23	Modified grassland	Rank grassland dominated by *Phalaris arundinacea*.	Poor	A. <6 species (fail) B. Uniform sward height (fail) C. No scrub (pass) D. No damage (pass) E. No bare ground (fail) F. No bracken (pass)
24	Urban trees	Two small trees – a young semi-mature *Tilia x europaea*, and a smaller *Sorbus aucuparia*. Trees 71 and 72 of the tree survey.	Moderate	A. Native (pass) B. Canopy continuous (pass) C. Trees are semi-mature (fail) D. Trees unpruned (pass) E. No niches (fail) A. Vegetation beneath (pass)
25, 38	Modified grassland	Area re-profiled and re-seeded c. 2020. Comparable with habitat parcel 21 but with frequent *Phalaris*.	Poor	A. <6 species (fail) B. Uniform sward height (fail) C. No scrub (pass) D. No damage (pass) E. No bare ground (fail) F. No bracken (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
26	Urban tree	Mature free-standing *Populus x canadensis*. T51 of tree survey. Size is 'very large'.	Moderate	A. Non-native (fail) B. Single tree, automatic pass (pass) C. Trees is mature (pass) D. Trees not hard pruned (pass) E. No niches (fail) F. Vegetation beneath (pass)
27	Developed land; sealed surface	Buildings	N/A	N/A
28, 30, 31,32, 33, 56	Cropland – Cereal crops	Intensively managed land for the production of cereal crops	N/A	N/A
34	Bramble scrub	Self-explanatory	Not applicable	Not applicable
39, 40, 41, 42, 43, 44, 45, 47, 48	Modified grassland	Grassland areas on third party land beyond the land required for construction.	Moderate	Reasonable assumption where grasslands were not accessed

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				because they are located beyond the land required for construction.
46, 50, 51, 52, 53, 54, 58, 59	Modified grassland	Unmanaged and grass dominated, predominantly *Arrhenatherum elatius* and *Elymus repens*. Associated species at low cover include *Dactylis glomerata, Festuca rubra, Achillea millefolium, Cirsium arvense, Dipsacus fullonum, Torilis japonica, Taraxacum* agg., and *Plantago lanceolata*.	Poor	A. Mean of >6 species per m^2 (pass) B. Sward height uniform (fail) C. Scrub encroachment <20% (pass) D. No damage (pass) E. No bare ground (fail) F. No bracken (pass) G. No Invasive Non-native Species (INNS)/ undesirables at low cover (pass)
55	Modified grassland	Species poor, grass dominated. This is recently sown following use of the area as a temporary soil storage during construction of Keadby 2 Power Station. Evidence of recent mowing.	Poor	A. <6 species (fail) B. Uniform sward height (fail) C. No scrub (pass) D. Damage < 5% (pass) E. Bare ground present 2% (pass) F. No bracken (pass) G. No INNS (pass)
56, 57	Modified grassland	Species poor grassland, sown within the last 10 years. The grassland is	Poor	A. <6 species (fail) B. Uniform sward height (fail)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
		species-poor with the sward dominated by *Lolium perenne, Schedonorus arundinaceus* with lesser contributions from *Phleum pratense, Holcus lanatus, Dactylis glomerata, Trifolium repens, Tussilago farfara, Ervum tetraspermum, Jacobaea vulgaris and Cirsium arvense*. There was evidence of recent management through mowing.		C. No scrub (pass) D. Damage < 5% (pass) E. Bare ground present 2% (pass) F. No bracken (pass) G. No INNS (pass)
60, 61	Modified grassland	Species poor, grass dominated.	Poor	A. <6 species (fail) B. Uniform sward height (fail) C. Scrub < 20 % (pass) D. No Damage (pass) E. No bare ground (fail) F. No bracken (pass) G. No INNS (pass)
62, 64, 67, 68	Hawthorn scrub	Self-explanatory	Poor	A. >75% hawthorn (fail) B. Uniform age structure (fail) C. No INNS or undesirables (pass) D. Poorly developed edge (fail) E. No glades (fail)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
63, 65, 66	Mixed scrub	Typical species included *Crataegus monogyna*, *Rosa* agg, *Salix cinerea, Salix caprea, Rubus fruticosus* agg., *Alnus glutinosa, Sambucus nigra and Betula pendula*.	Poor	A. Some stands are not dominated by a single species, other stands >75% one species (pass, based on stands in best condition) B. Uniform age structure (fail) C. No INNS or undesirables (pass) D. Poorly developed edge (fail) E. No glades (fail)
69	Mixed scrub	Adjacent to OMH. This is more diverse in composition and structure than the other examples of this habitat. Typical species in this scrub include *Sambucus nigra, Crataegus monogyna, Rosa squarrosa Rosa canina, Rosa corymbifera, Rosa x subcanina, Rosa rubiginosa, Salix x mollissima* and *Rubus fruticosus* agg.	Moderate	A. Good example of scrub habitat, closely matching the UKhab description B. Good age range (pass) C. No INNS or undesirables (pass) D. Well-developed edge (pass) E. No glades (fail)
70	Willow scrub	Dense stand of semi-mature *Salix cinerea* colonising from the areas of wet woodland located within the Ash Tip.	Poor	A. Native but <3 species (fail) B. Even age, no obvious regeneration (fail)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				C. No INNS or negative indicators (pass) D. Sharp transition to short grassland (fail) E. No clearings or rides (fail)
71	Bioswale	Recently created surface water attenuation pond/balancing pond constructed as part of Keadby 2 Power Station. The margins of this feature are vegetated and dominated by bulrush (*Typha latifolia*) with further areas of open water.	Moderate	A. Uniform vegetation structure (fail) B. Limited diversity of beneficial plants (including flowering species) (fail) C. No INNS (pass) D. Native plants predominate (pass) E. Plant taxa suited to wetland habitats (pass)
72, 73, 74	OMH	Existing disturbed ground coinciding with access route for vehicles into ash tip. Nominally (given connected), but trivial, part of OMH in main ash tip. Some botanical interest but value limited by use for access and ground conditions. Contributes negligibly to the invertebrate interest of the main ash tip, substrates compacted. Without the	Poor	A. Uniform structure (fail) B. Moderate herb diversity but limited flower resource (fail) C. INNS < 5% of total vegetated area, *Cotoneaster horizontalis* present in the wider habitat parcel but is located outside of the Proposed Development Site (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
		connection to the wider OMH these ancillary habitat parcels would not merit recognition as OMH.		D. Spatial variation not consistent with formal definition of OMH (fail)
75, 77, 79	Sparsely Vegetated Land - Ruderal/Ephemeral	Disused and unmanaged hardstanding which is being recolonised by a range of early successional plant species	Poor	A. Uniform structure (fail) B. Low herb diversity and limited flower resource (fail) C. INNS < 5% of total vegetated area (pass)
78	Other woodland; mixed	Semi-mature plantation of Scot's pine (*Pinus sylvestris*), Austrian pine (*Pinus nigra*), Norway maple (*Acer platanoides*), ash (*Fraxinus excelsior*), field maple (*Acer campestre*), cherry (*Prunus* sp). Partially felled (unrelated to the Proposed Development), with ground layer largely bare of vegetation.	Moderate	A. 1 age class (1 point) B. No browsing damage (3 points) C. No INNS (3 points) D. 4 native species (3 points) E. 50-80% native (2 points) F. No open space, but small woodland size (3 points) G. No regeneration (1 point) H. No disease seen (3 points) I. Secondary woodland so no recognisable NVC type (1 point) J. One storey (1 point) K. No veteran trees within the woodland (1 point)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				L. Minimal deadwood (1 point) M. No enrichment (3 points)
80, 81,82, 83	Sparsely Vegetated Land - Ruderal/Ephemeral	Not typical of the habitat but this is the best fit. Area of past (c. 3-5 years previous) scrub and vegetation removal. Chippings left in-situ inhibiting regrowth, where present vegetation is limited to scattered plants of grasses and ruderals.	Poor	A. Uniform structure (fail) B. Low herb diversity and limited flower resource (fail) C. INNS < 5% of total vegetated area (pass)
81a & 82a	Bare ground	Exposed spoil.	Poor	A. Uniform structure (fail) B. Poor quality habitat for pollinators (fail) C. No INNS (pass)
85	Other woodland; broadleaved	Salix dominated woodland located north of Trent Road.	Moderate	A. 1 age class (1 point) B. No browsing damage (3 points) C. No INNS (3 points) D. >4 native species (3 points) E. Native woodland (3 points) F. No open space, but small woodland size (3 points) G. Some regeneration (2 points)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				H. No disease seen (3 points) I. Secondary woodland so no recognisable NVC type (1 point) J. One storey (1 point) K. No veteran trees within the woodland (1 point) L. Minimal deadwood (1 point) M. No enrichment (3 points)
86	Other woodland; broadleaved	Dry, semi-natural secondary woodland located between the Keadby 1 boundary and the Stainforth and Keadby Canal (Photograph 12, **Annex 2**). *Salix* x *fragilis* (D), with locally occasional *Crataegus monogyna, Sambucus nigra,* and rare *Rosa* sp. and *Quercus* sp. The shrub and ground layers are sparse with areas of bare ground due to the high levels of shading. The composition of the woodland does not conform with any of the woodland communities identified as encompassed by the lowland mixed	Moderate	A. 2 age classes (2 point) B. No browsing damage (3 points) C. No INNS (3 points) D. >4 native species (3 points) E. Native woodland (3 points) F. 10-20% open space (3 points) G. Some regeneration (2 points) H. No disease seen (3 points) I. No representative NVC type at ground level (1 point) J. Two storeys (2 points) K. Four veteran/ancient trees occur (3 point) L. Minimal deadwood (1 point)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
		deciduous woodland habitat, and there is insufficient water to classify as wet woodland.		M. No enrichment (3 points)
87, 88	Other woodland; broadleaved	Secondary woodland located between the Keadby 1 boundary and North Soak Drain. Similar composition of tree species as HP19. The shrub and ground layers are dominated by *Rubus fruticosus* agg.	Moderate	A. 1 age class (1 point) B. No browsing damage (3 points) C. No INNS (3 points) D. >4 native species (3 points) E. Native woodland (3 points) F. No open space (3 points) G. No regeneration (1 points) H. No disease seen (3 points) I. Secondary woodland so not good example of NVC type (1 point) J. One storey (1 point) K. No veterans (1 point) L. Minimal deadwood (1 point) M. No enrichment (3 points)
89, 91	River Trent	Watercourse footprint. Not covered by BNG as this is marine habitat (estuary) within no observed intertidal habitat within the Order Limits.	Not assessed (marine)	Not assessed

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
90	Ditch (Drain 8)	Shallow (10cm deep) ditch adjacent to a hedgerow, shading channel. Limited vegetation of *Typha latifolia* (O) and *Solanum dulcamara* (F)	Poor	A. No signs of pollution (pass) B. Aquatic flora rare (fail) C. Algae < 10% cover (pass) D. Marginal vegetation along <75% of length (fail) E. No damage (pass) F. Sufficient water levels (pass) G. Heavy shading (fail) H. No INNS (pass)
92, 94, 95, 96, 97, 117	Ditches	Ditches on third party land that will not be affected by the Proposed Development.	Moderate	Reasonable assumption where drains were not visited because they are located beyond the land required for construction.
93	Ditch (Keadby Warping Drain).	Ditch on third party land that will not be affected by the Proposed Development. Watercourse footprint subject to MoRPh survey between SE 83460 12149 and SE 83582 12129.	Moderate	River type is K – straight/sinuous with a score of 0.219.
98	Ditch (Drain 15)	Drain approximately 2m wide and 60cm wide. This is located in woodland and receives heavy shaded. Given this	Poor	A. No signs of pollution (pass) B. Aquatic flora rare (fail) C. Algae < 10% cover (pass) D. Marginal vegetation along <75% of length (fail)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
		aquatic vegetation was limited to isolated stands of *Phragmites australis*.		E. No damage (pass) F. Sufficient water levels (pass) G. Heavy shading (fail) H. No INNS (pass)
99	Canal	Watercourse was subject to MoRPh assessment at the Water Intake (between SE 82933 11456 and SE 82667 11473).	Fairly Poor	River Type of a navigable river/canal, score of -0.478
100	North Soak Drain	Watercourse subject to MoRPh assessment between SE 82651 11511and SE 82750 11505.	Fairly Poor	The River Type is K, score of 0.012
101	Ditch (Drain B)	Drain adjacent to Chapel Lane which connects to the SUDs pond. It is 10cm deep and 60cm wide. There was evidence of pollution and no aquatic vegetation is present.	Poor	A. Evidence of pollution (fail) B. Aquatic flora absent (fail) C. Algae < 10% cover (pass) D. Marginal vegetation along <75% of length (fail) E. No damage (pass) F. Insufficient water levels (pass) G. Heavy shading (fail) H. No INNS (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
103	Ditch (Drain D (part of Glew Drain))	Minor arable field drain	Poor	A. No signs of pollution (pass) B. Aquatic flora rare (fail) C. Duckweed dominant (fail) D. Marginal vegetation along >75% of length (pass) E. No damage (pass) F. Insufficient water levels (fail) G. No shading (pass) H. No INNS (pass)
104	Ditch (Drain 5)	Field drain with water depth approximately 10cm deep and 60cm wide. The channel was dominated by silt. Banks support modified grassland.	Poor	A. No signs of pollution (pass) B. Aquatic flora rare (fail) C. No algae present but this reflects lack of open water (fail) D. Marginal vegetation along >75% of length (pass) E. No damage (pass) F. Insufficient water levels (fail) G. No shading (pass) H. No INNS (pass)
105	Ditch (Drain 1 (part of Glew Drain))	The drain is over-deepened and is subject to periodic dredging. The channel width is approximately 2m. Water depth is variable, but the	Moderate	A. No signs of pollution (pass) B. A range of aquatic plants present (pass) C. Duckweed and algae not excessive (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
		average is around 30cm. The substrate within the drain is equal part clay to silt.		D. Marginal vegetation along >75% of length (pass) E. No damage (pass) F. Sufficient water levels (pass) G. No shading (pass) H. *Elodea nuttallii* abundant (fail)
106	Ditch (Drain 3)	Field drain approximately 1m wide with water depth approximately 20cm deep. The channel was dominated by silt. Banks support modified grassland scrub.	Poor	A. No signs of pollution (pass) B. Aquatic flora (except Phragmites) rare and of low diversity due to shading (fail) C. Algae >10% cover (fail) D. Marginal vegetation along <75% of length (fail) E. No damage (pass) F. Insufficient water levels (pass) G. Heavy shading along 50% of length (fail) H. No INNS (pass)
107	Ditch (Drain 4)	Field drain approximately 1m wide with water depth approximately 20cm deep. The channel was dominated by silt. Banks support modified grassland.	Poor	A. No signs of pollution (pass) B. Aquatic flora (except Phragmites) rare (fail) C. Algae <10% cover only due to lack of water (fail)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				D. Marginal vegetation along >75% of length (pass) E. No damage (pass) F. Insufficient water levels (fail) G. No shading (pass) H. No INNS (pass)
108	Ditch (Drain 2)	Field drain approximately 2m wide and 50cm deep. The channel was dominated by silt and the water surface. Banks support modified grassland and dense scrub.	Poor	A. No signs of pollution (pass) B. Aquatic flora (except Phragmites) rare and of low diversity due to shading (fail) C. Algae >10% cover (fail) D. Marginal vegetation along <75% of length (fail) E. No damage (pass) F. Sufficient water levels (pass) G. Heavy shading along 50% of length (fail) H. No INNS (pass)
109	Ditch (Drain A)	Previously dry field drain. The channel width approximately 1m, with water depths of approximately 0.2m depth. The drain is dominated by *Phragmites australis* along its entire length limiting other aquatic plant species.	Moderate	A. No signs of pollution (pass) B. Aquatic flora absent (except Phragmites) rare (fail) C. Algae < 10% cover (pass) D. Marginal vegetation along >75% of length (pass) E. No damage (pass)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				F. Insufficient water levels (fail) G. No shading (pass) H. No INNS (pass)
110,111,112, 113	Arable drains (Drains 10,11,12 and 13)	Arable fields drains approximately 1m in width. The channel was dominated by silt. Banks support modified grassland.	Poor	A. Poor water quality, associated with arable runoff (fail) B. Aquatic flora (except Phragmites) rare (fail) C. Algae < 10% cover (pass) D. Marginal vegetation along >75% of length (pass) E. No damage (pass) F. Insufficient water levels (fail) G. No shading (pass) H. No INNS (pass)
114	Hatfield Waste Drain	Large drain approximately 10m wide and several metres deep. It is fringed with *Phragmites australis* and supports numerous submerged species. This was subject to MoRPh assessment between SE 80261 10048 and SE 80407 10017.	Fairly Poor	River type is K – straight/sinuous with a score of 0.097.
116	Modified grassland	A18 road verges	Poor	A. <6 species (fail)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
				B. Uniform sward height (fail) C. Low scrub cover (pass) D. Damage <5% (pass) E. Bare ground <1% (fail) F. No bracken (pass) G. No INNS (pass)
117	Ditch	Minor arable field ditch near to the proposed gate house. Not surveyed so precautionary condition applied.	Moderate	Reasonable assumption where drains were not visited because they are located beyond the land required for construction.
119	Ruderal/Ephemeral	Sparse ruderal vegetation along fence line around Keadby 2.	Poor	A. Uniform structure (fail) B. Low herb diversity and limited flower resource (fail) C. INNS < 5% of total vegetated area (pass)
Additional trees recorded by tree survey	Urban trees	Small tree over-looked at time of habitat survey. Sapling ash by Chapel Lane Tree T215 of the tree survey	Moderate	A. Native (pass B. Canopy continuous (pass) C. Tree semi-mature (fail) D. No damage (pass), G63 E. No niches (fail) F. Vegetation beneath (pass)
Additional trees	Urban trees	Small trees over-looked at time of habitat survey. Group of four hard	Poor	A. Non-native (fail) B. Canopy continuous (pass) C. Trees are semi-mature (fail) D. Damaged (fail)

Habitat parcel(s)	Habitat type	Description	Condition (Statutory biodiversity metric)	Evidence for the assigned condition
recorded by tree survey		pruned silver maples north of Keadby 1. G63 of the tree survey		E. No niches (fail) F. Vegetation beneath (pass)
Additional trees recorded by tree survey	Urban trees	Group 73 of tree survey. Three small trees, one lime, one rowan and one non-native maple. By Trent Road.	Moderate	A. Predominantly native (pass) B. Canopy continuous (pass) C. Trees are semi-mature (fail) D. No damage (pass) E. No niches (fail) F. Vegetation beneath (pass)
Additional trees recorded by tree survey	Urban trees	Group 110 of tree survey. Two small trees, one aspen and one Norway maple. By Trent Road.	Moderate	A. Predominantly native (pass) B. Canopy continuous (pass) C. Trees are semi-mature (fail) D. No damage (pass) E. No niches (fail) F. Vegetation beneath (pass)
Additional trees recorded by tree survey	Urban trees	Seven trees by Trent Road. Trees T99 and T101-104 are medium sized Norway Maple, T105 is a medium lime, T111 is a small oak.	Moderate	A. Trees 105 and 111 native (pass), rest non-native (fail) B. Canopy continuous (pass) C. Trees are semi-mature (fail) D. No damage (pass) E. No niches (fail) F. Vegetation beneath (pass)

Annex 2 - Representative Site Photographs

Photograph 1 - species-rich native hedgerow present along the eastern boundary of the field south of Trent Road

Photograph 2 - species-poor hedgerow occurs along the western boundary of the field south of Trent Road

Photograph 3 - species-poor hedgerow running parallel to the southern margin of Trent Road

Photograph 4 - a hedgerow with mature and veteran crack willow (*Salix* x *fragilis*) trees on the north side of Trent Road

Photograph 5 - a recently planted hawthorn hedgerow, still in tree tubes, running for approximately 0.9km along the access road between the A18 and Pilfrey Bridge

Photograph 6 - Open Mosaic Habitats on the margins of the former Keadby Ash Tip

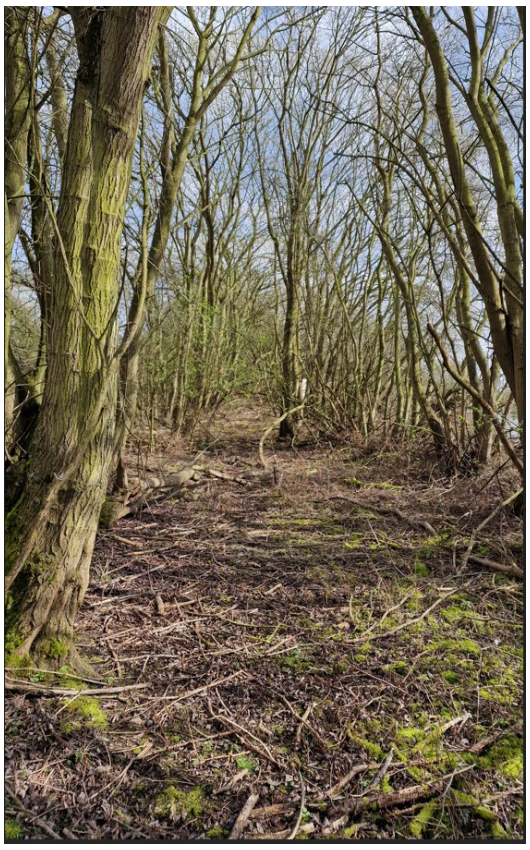
Photograph 7 – Modified Grassland across Keadby Common associated with the Main Site

Photograph 8 – Example of mixed scrub habitat associated with the Proposed Development Site

Photograph 9 - Free-standing semi-mature urban trees

Photograph 10 – Bioswale recently created as part of Keadby 2 Power Station

Photograph 11 - Sparsely vegetated land associated with associated with non-sealed surfaces associated with the former construction laydown areas for Keadby 2 Power Station.



Photograph 12 – Secondary woodland adjacent to potential water abstraction location adjacent to Stainforth and Keadby Canal

Annex 3 - Tree Constraints Plan – Likely Veteran and Ancient Trees

Annex 4 - Descriptions of Relevant Watercourses and Assessment of their Suitability for Riparian Mammals, Fish and Aquatic Invertebrates

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
D1 (part of Glew Drain)	Field drain, which is adjacent to, and part of the wider designated Keadby Boundary Drain LWS. The drain is over-deepened and is subject to periodic dredging. The channel width is approximately 2m. Water depth is variable, but	 This drain runs along the northern boundary to Keadby Common.	Water voles presence confirmed in 2023 with a peak count of over 150 latrines, indicating a High population density. Population was larger than the previous baseline, likely as a consequence of the Keadby 2 water vole translocation in autumn 2020. **Confirmed**	Insufficient cover along the banks to provide suitable areas for holts or lying-up. Surveys undertaken by AECOM in 2023 within this drain, did not record any evidence of otter. However, it is connected to a wider drain network so it	**Fish** This small drain has the potential to support some minor and common fish species e.g. three-spined stickleback (*Gasterosteus aculeatus*). Relevant to requirements for legal compliance, but no likelihood of notable fish species or assemblages. **Low Potential** **Aquatic Invertebrates**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
	the average is around 30cm. The substrate within the drain is equal parts clay to silt. AECOM recorded 23 aquatic plant species in 2020. No rare or notable species were present but the assemblage was assessed as being of **County Value**.			may be explored by otter if present in the wider area. **Low Potential**	Surveys undertaken in 2020 by AECOM recorded a moderate diversity of aquatic invertebrates. In combination with aquatic plant data the drain was considered to be of **County Value** for its invertebrates and aquatic plants.

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
D2	Field drain approximately 2m wide and 50cm deep. The channel was dominated by silt and the water surface. Banks support modified grassland and dense scrub. It is connected to other drains associated with Keadby Common. AECOM recorded six species of	 This drain runs along the southern boundary of Keadby Common adjacent to the former laydown area for Keadby 2 Power Station	Water vole presence confirmed in 2023 with 8 latrines recorded (peak count), indicating a Low population density. Limited presence likely associated with sub-optimal conditions due to heavy shading and limited food plants. **Confirmed**	Surveys undertaken by AECOM in 2023, did not record any evidence of otter. Sub-optimal due to minimal food resource but does provide some cover and might be used by otters if present in local area. **Low Potential**	**Fish** This drain has the potential to support some minor and common fish species e.g. three-spined stickleback. Relevant to requirements for legal compliance, but no likelihood of notable fish species or assemblages. **Low Potential** **Aquatic Invertebrates** Surveys undertaken in 2020 by AECOM recorded a moderate diversity

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
	aquatic plant species. No rare or notable species were recorded and the assemblage was valued as being of **Local Value.**				of aquatic invertebrates and the assemblage was valued as being of **Local Value.**
D3	Field drain approximately 1m wide with water depth approximately 20cm deep. The channel was dominated by silt. Banks support modified grassland and scrub. Connected to the rest of the	 This drain runs along the eastern boundary to Keadby Common.	Evidence of water vole conducted in 2023 was limited to a single latrine (peak count) where this drain meets Drain 1 (part of Glew Drain). As such, this record is considered to represent population flux from the more suitable habitats present within Drain 1. **Confirmed**	Surveys undertaken by AECOM in 2023 did not record any evidence of otter. Sub-optimal due to minimal food resource but does provide some cover and might be used	**Fish** This drain has limited potential (because of water depths) to support some minor and common fish species e.g. three-spined stickleback. Relevant to requirements for legal compliance, but no likelihood of notable fish species or assemblages.

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
	drains associated with Keadby Common. AECOM recorded nine species of aquatic plant species. No rare or notable species were recorded and the assemblage was valued as being of **Local Value.**			by otters if present in local area. **Low Potential**	**Negligible Potential** **Aquatic Invertebrates** Surveys undertaken in 2020 by AECOM recorded a moderate diversity of aquatic invertebrates and the assemblage was valued as being of **Local Value.**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
D4	Field drain approximately 1m wide with water depth approximately 20cm deep. The channel was dominated by silt. Banks support modified grassland. Evidence of channel management through vegetation cutting was evident during the PEA. Connected to the rest of the drains associated	 This drain runs through the centre of Keadby Common	Water vole presence confirmed in 2023 with 3 latrines recorded (peak count), indicating a Low population density. **Confirmed**	There is insufficient cover along the banks to provide suitable areas for holts or lying-up. The drain is very shallow so is sub-optimal for foraging. However, it is connected to more suitable habitat so may be explored by otter. **Negligible Potential**	**Fish** As this drain is likely subject to regular drying, fish are likely to be absent or only present on a transitory basis. **Scoped out** **Aquatic Invertebrates** Surveys undertaken in 2020 by AECOM recorded a moderate diversity of aquatic invertebrates and the assemblage was valued as being of **Local Value.**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
	with Keadby Common. AECOM recorded four species of aquatic plant species. No rare or notable species were recorded and the assemblage was valued as being of **Local Value.**				

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
D5	Field drain with water depth approximately 10cm deep and 60cm wide. The channel was dominated by silt. Banks support modified grassland. Reed canary-grass was the only plant species observed within the channel, with cover approximately 90%. This is connected to the rest of the drains	 This drain runs along the western boundary of Keadby Common adjacent to the existing 400kV National Grid substation.	Evidence of water vole was present across the length of this drain but was mostly restricted to where this drain meets Drain 1 (part of Glew Drain). A total of nine latrines and one burrow were recorded. Given the wetter weather conditions of 2023, this subsequent increase in water depth has likely provided water vole with more suitable conditions than previously recorded. However, in a typical year this would still be subject to drying and therefore would be sub-optimal for	There is insufficient cover along the banks to provide suitable areas for holts or lying-up. The drain is very shallow so is sub-optimal for foraging. However, it is connected to more suitable habitat so may be explored by otter. **Negligible Potential**	**Fish** As this drain is subject to regular drying, fish are considered absent. **Scoped out** **Aquatic Invertebrates** This drain is likely to support a range of common early successional species found in temporary wet drain habitats. No notable species or assemblages are likely to occur. **Scoped out**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
	associated with Keadby Common. Not surveyed in 2020, for its aquatic plants as it only supports water in the wetter months of the year. **Local Value**		water vole. As such, the results are likely to represent population flux from the more suitable habitats present within Drain 1. **Confirmed**		
D6	Field drain with water depth less than 50cm and 2m wide and likely prone to drying. Banks supported modified grassland and a hedgerow.		Isolated from surrounding wet drains and is likely subject to high levels of disturbance. No likelihood of presence given lack of connectivity to other watercourses. Habitat conditions sub-optimal. **Scoped out**	This drain is isolated from surrounding wet drains, is likely subject to high levels of disturbance and unlikely to provide suitable food sources. **Scoped out**	**Fish** This drain has the potential to support some minor and common fish species e.g. three-spined stickleback. Relevant to requirements for legal compliance, but no likelihood of

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
	Limited flora recorded comprising *Phragmites australis* (A), *Typha latifolia* (A), *Juncus inflexus* (O), *Scrophularia auriculata* (F), assessed as **Local Value**	This drain runs along the eastern side of the field south of Trent Road. This ditch will be retained unaffected.			notable fish species or assemblages. **Negligible Potential** **Aquatic Invertebrates** This drain is likely to support a range of common species found within drain habitats. **Scoped out**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
D7	Shallow and largely overhung by the hedgerow. Water <10cm deep and likely dries up in summer. Limited flora comprising *Typha latifolia* (LD), *Epilobium hirsutum* (LF), *Scrophularia auriculata* (O), *Solanum dulcamara* (O) assessed as **Local Value**	 This drain runs along the western side of the field south of Trent Road. This ditch will be retained unaffected.	Water vole not relevant, former Keadby 2 haul road bridge footings in place, no new habitat impact. Most of the ditch is under a hedgerow, with the only open section coinciding with the existing bridge footings. **Scoped out**	This drain is isolated from surrounding wet drains, is likely subject to high levels of disturbance and unlikely to provide suitable food sources. **Scoped out**	**Fish** This drain has the potential to support some minor and common fish species e.g. three-spined stickleback. Proposed Development will not affect fish. **Scoped out** **Aquatic Invertebrates** This drain is likely to support a range of common species found within drain habitats. **Scoped out**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
D8	Shallow (10cm deep) ditch (Kelsey Drain) adjacent to a hedgerow. Limited vegetation of *Typha latifolia* (O) and *Solanum dulcamara* (F) assessed as **Local Value**	 This drain runs along a hedgerow north of Trent Road. This ditch will be retained unaffected.	Sub-optimal for water vole, banks reinforced with stone. Shallow channel lacking aquatic vegetation. Surveyed by ERM Limited for Keadby 2 in 2017 and 2019 and water vole not found (SSE, 2020). **Scoped out**	The drain is very shallow so is sub-optimal for foraging. **Scoped out**	**Fish** This drain has the potential to support some minor and common fish species e.g. three-spined stickleback. Proposed Development will not affect fish. **Scoped out** **Aquatic Invertebrates** This drain is likely to support a range of common species found within drain habitats. **Scoped out**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
Drain A	The channel width is approximately 1m, with water depths of approximately 0.2 m depth. Dry in 2020 but habitat changes as a consequence of construction of Keadby 2 appear to have improved water supply to this drain. The drain is dominated by reeds along its entire length, limiting other aquatic plant species. **Local Value**	 Location north of the Keadby 2 laydown area.	Water vole presence confirmed in 2023 with 8 latrines recorded (peak count), indicating a Medium population density. **Confirmed**	There is insufficient cover along the banks to provide suitable areas for holts or lying-up. The drain is very shallow so is sub-optimal for foraging. **Negligible potential**	**Fish** Given this ditch is isolated from other ditches and historically has been dry, fish are considered absent. **Scoped out** **Aquatic Invertebrates** This drain is likely to support a range of common species found within drain habitats. **Scoped out**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
D10, D11, D12 and D13	Four connected arable field drains which are culverted under the existing access road.	 Typical example of the arable field drains	**Not relevant, scoped out**. The road between the A18 and Pilfrey Bridge already exists and is in use for construction of Keadby 2 Power Station, and as access to Keadby Windfarm. The Proposed Development will use the road consistent with its established purpose, and no improvements or other works are anticipated to be required to permit use of the existing road. No works are proposed that would affect the drains.		

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
Drain B	Shallow (10cm deep) ditch, draining water from the SUDS pond. At the time of the PEA there was no aquatic vegetation present with the banks showing evidence of recently been cut.	 This watercourse runs adjacent to Chapel Lane.	This ditch sub-optimal for water vole given the of the shallow depth with the channel lacking aquatic vegetation. However it is connected to the wider drainage network (Keadby Common Drain) which did support water vole in 2020. Any water vole presence in this section of drain is likely to be the result represent population flux from more suitable habitats. **Low Potential**	There is insufficient cover along the banks to provide suitable areas for holts or lying-up. The drain is very shallow so is sub-optimal for foraging. **Negligible potential**	**Fish** This drain has the potential to support some minor and common fish species e.g. three-spined stickleback. Relevant to requirements for legal compliance, but no likelihood of notable fish species or assemblages. **Scoped out** **Aquatic Invertebrates** This drain is likely to support a range of common species found within drain habitats. **Scoped out**

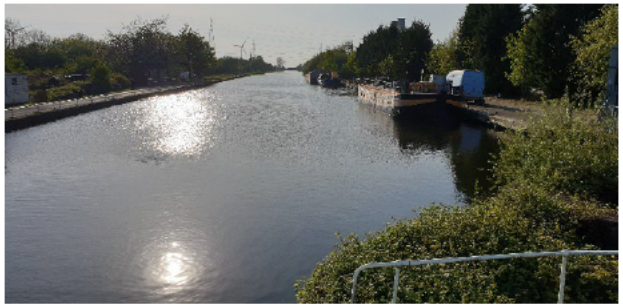
Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
Drain C	The channel is 1 m wide with water depth of approximately 0.4 m. It has earth banks and is fringed with marginal reeds with a diverse submerged plant community. Bankside trees are absent.		This ditch supports a suitable depth of water and aquatic vegetation to support water vole. Furthermore, it is connected to the wider drainage network (Drain 1 (part of Glew Drain)) which does support water vole. **High Potential**	There is insufficient cover along the banks to provide suitable areas for holts or lying-up. However, it is connected to a wider drain network so it may be explored by otter if present in the wider area. **Low Potential**	**Fish** This small drain has the potential to support some minor and common fish species e.g. three-spined stickleback. Relevant to requirements for legal compliance, but no likelihood of notable fish species or assemblages. **Low Potential** **Aquatic Invertebrates** The Proposed Development will not directly impact the watercourse and therefore, no meaningful impacts

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
					is anticipated during construction. **Scoped out**
Drain D (part of Glew Drain)	The channel is approximately 0.5 m wide and was dry along the majority of its length, with it only supporting localised pooled water. It has earth banks, no bankside trees and supports reeds throughout its length.		This ditch is sub-optimal for water vole given the shallow depth with the channel lacking aquatic vegetation. However it is connected to the wider drainage network (Drain 1 (part of Glew Drain)) which did support water vole in 2020. Any water vole presence in this section of drain is likely to be the result represent population flux from the suitable habitats. **Low Potential**	There is insufficient cover along the banks to provide suitable areas for holts or lying-up. The drain is very shallow so is sub-optimal for foraging. **Negligible potential**	**Fish** As this drain is subject to regular drying, fish are considered absent. **Scoped out** **Aquatic Invertebrates** This drain is likely to support a range of common early successional species found in temporary wet drain habitats. No notable species or assemblages are likely to occur. **Scoped out**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
D15	The channel width approximately 1m, with water depths of approximately 0.5 m. The channel is heavily shaded from the surrounding woodland, with aquatic vegetation limited to *Phragmites australis*. **Local Value**	 Located in broadleaved woodland adjacent to the proposed cooling water intake from the Stainforth and Keadby Canal.	This ditch sub-optimal for water vole given the heavily shading and the limited aquatic vegetation. It also has limited connectivity to more suitable drains. **Scoped out**	The drain itself is highly unlikely to be used by otter given sub-optimal conditions for foraging in comparison to adjacent suitable habitats (Stainforth and Keadby Canal). **Scoped out**	**Fish** This drain has the potential to support some minor and common fish species e.g. three-spined stickleback. Relevant to requirements for legal compliance, but no likelihood of notable fish species or assemblages. **Scoped out** **Aquatic Invertebrates** This drain is likely to support a range of common species found within drain habitats. **Scoped out**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
River Trent	The tidal reach of a large watercourse. It is therefore marine habitat. Approximately 150m wide and subject to several statutory nature conservation designations.	 The River Trent would not be affected by the Proposed Development but it is the location of the existing cooling water discharge structure.	The habitat conditions are not suitable for water vole. **Scoped Out**	Otter may forage along the Trent. However, the Proposed Development has limited potential to impact this species. The outfall location does not provide suitable cover for holts or lying-up. **Scoped Out**	**Fish** The river at this location will support a diverse fish assemblage typical of brackish waters. No in channel construction works are proposed. Therefore, no meaningful impact on fish is anticipated during construction, this has previously been assessed as having a Negligible impact to fish. Use of fish screens and other regulatory requirements will also manage the potential for adverse operational effects. Certain migratory fish, e.g. lampreys,

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
					are of potential relevance to the impact assessment. Survey is not needed to permit robust impact assessment of these fish species. **High Potential but Surveys Scoped Out** **Aquatic Invertebrates** The River Trent at this location will support a diverse assemblage typical of brackish waters. No in channel construction works are proposed. Therefore, no meaningful impact on invertebrates is

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
					anticipated during construction. Regulatory requirements will also manage the potential for adverse operational effects. **Scoped Out**
Stainforth and Keadby Canal	Navigable canal, approximately 35m wide and several metres deep. Artificial banks formed of stone. Designated as a LWS.		The habitat conditions are not suitable for water vole. The banks are comprised of concrete and there is minimal food resource. **Scoped Out**	Otter may use the canal for foraging if present in the local area. There are suitable holt/ laying up locations within the adjacent woodland but no evidence of otter was found during the PEA.	**Fish** The same rationale applies as for the River Trent (albeit freshwater), but lamprey is not likely to be present. Compliance with legislation is not reliant on availability of survey data, and fish screens are committed. Given this, survey data is not strictly necessary but an eDNA survey has

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
				Moderate Potential	been commissioned to qualify the fish assemblage. **Scoped in** **Aquatic Invertebrates** The same rationale applies as for the River Trent (albeit freshwater). See also comments under fish. High risk INNS known to be present, these species (and other species that may also invade the canal in future) should be considered during developing plans for the water intake. However further

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
					survey is not required for this. **Scoped Out**
North Soak Drain	Large drain approximately 10m wide and 1m deep. The channel was dominated by silt. Banks support semi-improved grassland and dense scrub. The existing access track to the proposed Canal Water Abstraction is visible on the right of the photo.		**Not relevant, scoped out**. There are no potential for impacts on the watercourse. Whilst small parts of North Soak Drain are within the Site, the only activities proposed nearby are those consistent with current land use (roads) or temporary works for construction of the Canal Water Abstraction infrastructure in the Canal. There will be no impact on North Soak Drain or its suitability for protected species.		

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
Hatfield Waste Drain	This drain is located adjacent to the A18 and is crossed by Mabey Bridge. The bridge will need to be upgraded for the Proposed Development. This watercourse is a LWS for its aquatic, emergent and marginal flora.		Evidence of water vole was established in 2023, with a single latrine recorded. However, this was away from the limited footprint required for the bridge upgrade works. However it is possible that water vole may move into these areas in future. **High Potential**	Evidence of otter using this watercourse was identified in 2023, however there are limited suitable holt/ laying up locations surrounding the footprint required for the bridge upgrade works. **Moderate Potential**	**Fish** The drain at this location will likely support a diverse fish assemblage typical of lowland watercourses. Requirements for construction of the Proposed Development to replace Mabey Bridge will not directly impact the watercourse and therefore, no meaningful impacts on fish is anticipated during construction. **Scoped Out** **Aquatic invertebrates**

Drain (location shown on Figure 3)	Description – including aquatic flora	Photograph and Location Details	Potential for water vole	Potential for otter	Potential fish/ aquatic invertebrate value
					The same rationale applies as fish, there is no pathway for impacts. **Scoped Out**
Warping Drain	Approximately 6 m wide with excessive siltation shallowing the depth of the watercourse. This watercourse is a LWS for its aquatic, emergent and marginal flora.		**Not relevant, scoped out**. Only coincides with the Proposed Development because the existing operational water discharge pipeline is routed under the drain. This pipeline will be utilised in its current state, no upgrade works are proposed.		

Annex 5 - Bat Activity Survey Report Submitted with the Keadby CCS Power Station DCO Application

The Keadby 3 Low Carbon Gas Power Station Project

Document Ref: 6.3

Planning Inspectorate Ref: EN010114

The Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order

Land at and in the vicinity of the Keadby Power Station site, Trentside, Keadby, North Lincolnshire

Environmental Statement
Volume II - Appendix 11E: Bat Survey Report

The Planning Act 2008

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

Applicant: Keadby Generation Limited

Date: May 2021

DOCUMENT HISTORY

Document Ref	6.3.16/APPENDIX 11E
Revision	VP1.0
Document Owner	AECOM

GLOSSARY

Abbreviation	Description
CIEEM	Chartered Institute of Ecology and Environmental Management
CCGT	Combined Cycle Gas Turbine
CCP	Carbon Capture and Compression
DCO	Development Consent Order
EcIA	Ecological Impact Assessment
NERC	Natural Environment and Rural Communities Act
PEA	Preliminary Ecological Appraisal

CONTENTS

TABLES

1.0 INTRODUCTION

1.1 Background

1.1.1 This report accompanies **Chapter 11**: Biodiversity and Nature Conservation (ES Volume I - **Application Document Ref. 6.2**) and describes the approach and findings of the bat activity surveys undertaken in support of the Ecological Impact Assessment (EcIA) of the Proposed Development.

1.1.2 The terms of reference used to describe the Proposed Development in this report are broadly consistent with those defined within the main chapters of the Environmental Statement (ES) (ES Volume I – **Application Document Ref. 6.2**).

1.1.3 The Proposed Development Site encompasses an area of approximately 69.4 hectares (ha) which includes circa 20.7ha of land for construction laydown.

1.1.4 The Proposed PCC Site comprises an area of approximately 18.7ha of the Proposed Development Site within the wider Keadby Power Station site that is located within Keadby Common. Overhead electricity transmission lines associated with the existing National Grid 400kV Substation bisect the Proposed PCC Site. Land to the south of these overhead lines within the Proposed PCC Site is proposed for administration/ control room/ warehouse buildings and car parking areas and an above ground installation (AGI) for the gas connection. The area of the Proposed PCC Site on which the power generation (CCGT), carbon capture and compression (CCP) and associated stacks will be developed is referred to as the 'Main Site' herein.

1.2 Survey Scope

1.2.1 An initial Preliminary Ecological Appraisal (PEA) of the ecological constraints and opportunities associated with the Proposed Development Site was made by AECOM in March 2020, including identification of the requirements for further protected species survey. The findings of the habitat and scoping survey are compiled as a PEA report (included as **Appendix 11C** (ES Volume II - **Application Document Ref. 6.3**)), which should be referred to for a more detailed overview of the Proposed Development Site conditions and habitats present.

1.2.2 This habitat information was used to identify locations within the potential zone of influence of the Proposed Development that supported conditions potentially suitable as roosting or foraging habitat for bats. Accordingly, the PEA report (**Appendix 11C** (ES Volume II - **Application Document Ref. 6.3**)) confirms that no habitats with potential to support bat roosts would be affected by the Proposed Development, so further survey and assessment was not required in relation to this. In addition, the PEA report identifies that bat activity surveys were only required of undeveloped land within and adjacent to the Proposed PCC Site, including land within the former Keadby Ash Tip being considered at that time for, but subsequently rejected as, a potential temporary laydown area.

Bat activity surveys were not necessary elsewhere within the Proposed Development Site as there would be no impacts on habitats that would be likely to affect the suitability of these habitat for bats (based on considerations of habitat availability, quality and connectivity).

1.2.3 The purpose of the bat surveys and this report is to:

- provide data on the level, nature and location of bat activity associated with the Proposed PCC Site and immediately adjacent land with suitable habitat (excluding land encompassed within the boundary of the Keady 2 Power Station construction site) i.e. the part of the Proposed Development Site where there would be a potentially adverse impact on bat foraging and commuting habitats;
- present the above data in a manner that allows the results to be used to support an assessment of relative nature conservation value, including review against relevant criteria (see Section 2 of this report); and
- inform the options for impact avoidance, mitigation and/ or compensation to be considered during design of the Proposed Development.

1.2.4 The purpose of this report is to provide baseline technical information only. It does not seek to include recommendations, specify mitigation, or make an EcIA of the Proposed Development. The formal EcIA is provided as **Chapter 11**: Biodiversity and Nature Conservation (ES Volume I - **Application Document Ref. 6.2**), and this report comprises an appendix to that chapter.

2.0 METHODS

2.1 Desk Study

2.1.1 A desk study was undertaken as part of the PEA (included as **Appendix 11C** (ES Volume II - **Application Document Ref. 6.3**)) that was completed in advance of the bat surveys and informed the scoping of requirements for further survey.

2.1.2 Desk study results of relevance to the assessment have been carried forward into this report, and where appropriate this data is presented in more detail or re-interrogated for the needs of the current assessment.

2.2 Bat Activity Survey

2.2.1 The bat activity survey was completed in accordance with current good practice survey requirements (Collins, 2016) for a site that is of low suitability for foraging and commuting bat species.

2.2.2 The survey approach therefore involved a combination of transect survey and static detector survey, with one of each type of survey completed during each season when bats are active (spring, summer and autumn). This survey approach is described in more detail below.

2.2.3 Surveys were scheduled for dates when appropriate weather conditions were expected. Appropriate conditions were those with an absence of rain and/ or strong wind and with evening temperatures above 7°C.

Transect Survey

2.2.4 The survey dates, times and associated weather conditions are detailed in Table 1. Surveyors were in position on site ready to start from just before sunset, and the surveys lasted until at least two hours after sunset, to correspond with peak activity as bats leave their roosts.

2.2.5 The transect route used during the survey is shown on **Figure 11E.1** (at the end of this report (ES Volume II - **Application Document Ref. 6.3)**), and this was selected to take in as much of the undeveloped land within the Proposed PCC Site as possible (excluding habitats encompassed within the boundary of the Keady 2 Power Station construction site), taking care to cover all habitats of potential value to foraging and commuting bats. The transect route also took in part of the adjacent former Keadby Ash Tip for the reasons given in Section 1 of this report. While this land is no longer of direct relevance to the Proposed Development, it does allow the level of bat activity recorded within the Proposed PCC Site to be compared with levels of bat activity in association with other habitats of potential foraging and commuting value to bats.

2.2.6 The transect route was walked at a steady speed and bat activity was detected using appropriate bat detection equipment (an Elekon Batlogger M). All bat

activity detected during the survey was recorded and mapped on a suitably scaled plan. Bat call recordings made during surveys were later analysed using BatSound v4.2 to verify species identification.

Table 1: Transect survey dates, timings and associated environmental conditions

Survey Season	Date	Sunset Time	Air Temperature (°C)	Rain[1]	Wind Speed[2]	Cloud Cover[3]
Spring	27/05/2020	21.06	14	0	2	0
Summer	27/07/2020	21.07	15	0	3	1
Autumn	29/09/2020	18.35	12	0	1	2

[1]Rain scale: 0 = none, 1 = drizzle, 2 = shower, 3 = rain, 4 = downpour, 5 = flood

[2]Beaufort wind force scale: 0 = No wind, 1 = Light air, smoke drifts, 2 = Light breeze, leaves rustle, 3 = Gentle breeze, small twigs move, 4 = Moderate breeze, small branches move, 5 = Fresh breeze, small trees sway, 6 = Strong breeze, large branches move, 7 = Mod Gale, whole trees in motion

[3]Percentage cloud cover based on: 1 = 0-20%, 2 = 21-40%, 3 = 41-60%, 4 = 61-80%, 5 = 81-100%

Static Detector Survey

2.2.7 This survey involved the deployment of a static SM2BAT+ bat detector at the location shown on **Figure 11E.1** (at the end of this report (ES Volume II - **Application Document Ref. 6.3)**). This location was at the edge of woodland on a potential flight route into and out of the Proposed Development Site via boundary drains. This location was also considered to be representative of the habitats most suitable for bats in association with the Proposed PCC Site.

2.2.8 The survey dates, times and associated weather conditions are detailed in Table 2. In each survey period, data was collected for five consecutive full nights of suitable weather.

2.2.9 The static detectors were set to start recording half an hour before sunset and to stop recording half an hour after sunrise. Bat calls were recorded in WAV format. All bat calls recorded by the static bat detectors were subsequently analysed using AnalookW and BatSound v4.2 software to identify the bat species recorded. The number of bat passes recorded was used to calculate a value for the level of bat activity present during the survey period. A bat pass is defined as a single static detector file made up of bat pulses of a single species, therefore a single bat pass may comprise recordings of one or more bats. It is not possible to separate the pulses out to identify the number of bats involved, so the number of bat passes recorded on static detectors cannot be reliably correlated to actual bat abundance. However, it does provide an indication of the level of bat activity at a site over a longer period of time than is recorded during bat activity transect survey.

2.2.10 There is no published guidance to inform interpretation of relative levels of bat using static bat detector data. For the purpose of this report, the bat activity levels recorded are classified as follows:

- Very low activity - defined as a mean of <2 passes per hour (per static location);
- Low activity - defined as a mean of 2 to 25 passes per hour;
- Moderate activity - defined as a mean of 26 to 99 passes per hour; and
- High activity - defined as a mean of over 100 passes per hour.

Table 2: Static detector survey dates, timings and associated environmental conditions

SURVEY SEASON	START DATE	END DATE	MAXIMUM TEMPERATURE (°C)	MINIMUM TEMPERATURE (°C)
Spring	20/05/2020	25/05/2020	27.0	8.0
Summer	27/07/2020	31/07/2020	24.2	14.6
Autumn	01/10/2020	05/10/2020	14.6	3.9

2.3 Nature Conservation Evaluation

2.3.1 Evaluation of the relative nature conservation value of the identified ecological features within a site (encompassing nature conservation designations, ecosystems, habitat and species) is required to inform EcIA. This report presents the evaluation for the bat species and assemblage recorded, and the impact assessment is presented in **Chapter 11**: Biodiversity and Nature Conservation (ES Volume I - **Application Document Ref. 6.2**).

2.3.2 The method of evaluation that has been utilised has been developed with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) *Guidelines for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater and Coastal and Marine – Second Edition* (CIEEM, 2019). These guidelines give advice on scoping and carrying out environmental assessments and place appraisal in the context of relevant policies. Data received through consultation, desk-based studies and field-based surveys are used to allow ecological features of nature conservation value or potential value to be identified, and the main factors contributing to their value described and related to available guidance. This data can also be used to identify other relevant values e.g. socio-economic or ecosystem services values, but this is beyond the remit of this report and requires the involvement of other relevant specialists.

2.3.3 The value of a faunal species, such as bats, may relate, for example, to its geographic location (species may be rare and more valued towards the edge of their geographic range), the extent to which the species is threatened

throughout its range, or to its rate of decline. The value of the bat species and assemblage associated with the Proposed Development Site has been defined with reference to the geographical level at which it is considered to matter (Table 3). This assessment has been made with reference to published guidance and criteria, which in this case is based on the approach described in Wray *et al.* 2010.

2.4 Limitations

2.4.1 There was only one survey limitation that affected the survey work completed. This involved a drop in the overnight temperature on 1st October 2020 to below 7°C for a period of 4 hours during the five nights of autumn static bat detector survey. Temperatures below 7°C are considered sub-optimal for bat survey.

2.4.2 This limitation, given the brief period of relevance and the results for the bat activity survey as a whole, has not adversely affected provision of a robust assessment of the importance of the Proposed Development Site for bats.

2.4.3 The only limitation to the survey data analysis is one common to all bat surveys and assessments. This relates to the inability to reliably separate species of *Myotis* bat through call analysis. Consequently, it is normally the case that the relevant survey results have to be reported as an unidentified *Myotis* bat species. In this case, the habitats associated with the Proposed Development Site, as described in **Appendix 11C:** Preliminary Ecological Appraisal Report (ES Volume II - **Application Document Ref. 6.3**), are most suitable for Daubenton's bat (*Myotis daubentonii*) but it cannot be discounted that other species of *Myotis* bat occur in the local area. Daubenton's bat is a species commonly encountered in association with open freshwater habitats, such as the extensive network of rivers, canals and drains in the vicinity of the Proposed Development Site.

3.0 LEGISLATION, PLANNING POLICY AND RELATED GUIDANCE

3.1.1 The following wildlife legislation, planning policy and guidance is specifically relevant to the identification and assessment of potential constraints posed by the presence of bats. At this stage of assessment, this legislation, policy and guidance is primarily listed to demonstrate that an appropriate level of survey and assessment has been undertaken to meet likely data requirements for future decision-making regarding these material considerations.

3.1.2 Wider relevant biodiversity legislation, policy and guidance is detailed in **Appendix 11A**: Biodiversity and Nature Conservation Legislation and Planning Policy (ES Volume II - **Application Document Ref. 6.3**).

3.1.3 Bat species are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). The relevant aspects of this legislation, when taken together, results in a level of protection that prohibits the intentional, deliberate or reckless:

- killing, injuring, taking or disturbance of bats; and
- damaging, destroying or obstructing any place used by bats for the purposes of breeding, sheltering or protection.

3.1.4 Certain bat species are also listed as 'Species of Principal Importance for Nature Conservation in England' pursuant to Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act requires that local planning authorities have regard to the conservation of biodiversity in England, when carrying out their normal functions.

3.1.5 The Government has published standing advice (Natural England and Department of Environment, Food and Rural Affairs (Defra), 2020) to guide decision-makers on the determination of proposals with potential to affect protected species such as bats. The guidance sets out responsibilities and minimum requirements for survey and mitigation.

4.0 RESULTS

4.1 Desk Study

4.1.1 The desk study returned records of common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats within 1km of the Proposed Development Site, but most these records are located more than 1km from the Proposed PCC Site.

4.1.2 One of the desk study records is located in the 1km grid square TL8212, which covers part of the Proposed PCC Site and land to the north. This is a 2003 record of a common pipistrelle roost, located at North Moor Farm, 0.7km to the north-east of the Proposed PCC Site. All of the other bat records (considering only those that were provided with adequate grid references) were made to the south-west of the Proposed PCC Site, with the closest at Althorpe approximately 1.4km from the Proposed PCC Site.

4.1.3 Surveys within the boundary of Keadby Wind Farm have recorded low levels of common pipistrelle activity in association with farmland to the north and south of the Proposed Development Site (Jacobs, 2016).

4.1.4 In 2017, AECOM undertook transect and static detector surveys for the Applicant (unpublished data) within the area of the former Keadby Ash Tip covered by the current survey but excluding the Proposed PCC Site. This survey collected data in May, July and August coinciding with spring, mid-summer and late summer (an autumn survey was not possible). The survey recorded low levels of bat activity (as defined above in Section 2.2). This activity predominantly involved low levels of activity by common pipistrelle bat. Very low to low levels of activity by an unidentified *Myotis* bat(s) was also recorded during all surveys. In addition, very low levels of activity by soprano pipistrelle were recorded in May and August 2017, and very low levels of activity by noctule (*Nyctalus noctula*) and Leisler's bat (*Nyctalus leisleri*) in August 2017.

4.2 Bat Activity Survey

Transect Survey

4.2.1 The summary results of the transect surveys are shown by season on **Figure 11E.1** (at the end of this report (ES Volume II - **Application Document Ref. 6.3**)), with the raw survey data are provided as **Annex A**.

4.2.2 Two bat species were recorded during the transect surveys, with the majority of records during all three survey visits relating to common pipistrelle. All bats (which included early emerging species) were recorded more than 30 minutes after sunset on all surveys, despite the suitability of habitats within the former Keadby Ash Tip for bats. This indicates that they are arriving from roost sites located at relative distance from the Proposed PCC Site.

4.2.3 The common pipistrelle activity involved small numbers of bats (typically only one or two bats), with this activity recorded in areas of dense scrub and secondary woodland habitats on the western boundary of the Proposed PCC Site and within the former Keadby Ash Tip adjacent to the Proposed PCC Site. No common pipistrelle activity was recorded within the Proposed PCC Site.

4.2.4 A small number of passes by noctule bats were recorded in spring and autumn. These bats were not seen, so are presumed to have been flying high over the survey area. This is supported by the brief nature of the bat calls recorded.

Static Detector Survey

4.2.5 The static survey results are provided in Table 3, which summarises the bat activity (passes) and the associated level of bat activity (as defined in Section 2.2) for each survey period. The raw survey data are provided as **Annex B**.

4.2.6 At least three bat species were recorded over the three static detector surveys, all of which showed only very low levels of activity (as defined above in Section 2.2). These species were common pipistrelle, soprano pipistrelle and an unidentified *Myotis* bat species. In this case, it is considered that the unidentified *Myotis* bat may have been Daubenton's bat because the habitats present are most suitable for this species, but this is not known for certain (see limitation, Section 2.4).

4.2.7 The static survey results are consistent with the findings of the walked transect surveys in that most of the recorded bat activity related to common pipistrelle. However, two additional species were recorded. One pass of a soprano pipistrelle was recorded in spring, and the unidentified *Myotis* bat was present in spring and autumn.

Table 3: Summary of the results of the static detector surveys

Survey Season	**No. nights of data**	**Total bat passes for recording period**			**Mean passes per hour (all species**	**Bat activity level**
		Common pipistrelle	Soprano pipistrelle	*Myotis* species		
Spring	5	34	1	2	1	Very low
Summer	5	19	0	0	0.5	Very low
Autumn	5	23	0	3	0.5	Very low

5.0 CONCLUSIONS

5.1 Summary Findings of the Surveys

5.1.1 The combined results of the bat activity demonstrate only a very low level of bat activity by at least four bat species (it not being possible to segregate *Myotis* bats to determine the species present) in association with the boundaries of the Proposed PCC Site and an adjacent area of the former Keadby Ash Tip. No bat activity was recorded from within the Proposed PCC Site. This level of bat activity and the species recorded is consistent with the unpublished findings of a previous bat survey of Keadby Ash Tip completed by AECOM in 2017 (see desk study, Section 4.1). This previous survey recorded low levels of bat activity within the former Keadby Ash Tip in association with habitats that are more optimal for foraging and commuting bats than those present within the Proposed PCC Site.

5.1.2 The only bat species recorded consistently during all survey visits and survey methods was common pipistrelle, which used the boundaries of the Proposed PCC Site to forage and commute through to access other habitats.

5.1.3 Habitat usage by the noctule bat was not observed, and it may have foraged in the air space over the Proposed PCC Site, but it is considered that more optimal and attractive foraging conditions for this species are present in association with adjacent land supporting more established and structurally varied semi-natural vegetation e.g. the former Keadby Ash Tip.

5.1.4 Other species, soprano pipistrelle and the unidentified *Myotis* bat (probably Daubenton's bat), were recorded only sporadically and at very low levels through static detector survey. Given the location of the static detector, this activity was associated with habitats on the boundary of the Proposed PCC Site, and there is no evidence to indicate use of land within the Proposed PCC Site. While this is possible, again it is considered that the habitats of highest foraging and commuting quality for these species are located on adjacent land.

5.1.5 The four bat species recorded are considered typical for the geographic location of the Proposed Development and the habitats present. None of the species recorded (and regardless of whether the *Myotis* species involved is Daubenton's bat or another species) are currently considered threatened within England or Great Britain (The Mammal Society, 2020). These four species are also not considered to be rare in Lincolnshire (Greater Lincolnshire Nature Partnership, 2013).

5.1.6 Given the limited number of common bat species recorded and that these are typical for the habitats present, the combined bat assemblage is not considered particularly notable. The number of bat species recorded is well below what might typically be expected in parts of Lincolnshire and other lowland areas of England where habitat conditions are more optimal for bats.

5.2 Assessment of the Relative Geographic Importance of the Proposed PCC Site and Adjacent Land as Bat Foraging and Roosting Habitat

5.2.1 The transect and static survey data has been considered together to assess the relative geographic importance (nature conservation value) of the Proposed Development Site for bats based on the methods and scoring system described in Wray *et al*. (2010), supplemented (if appropriate) by professional judgement and consideration of available information on the current status of the bat species concerned.

5.2.2 The results of this assessment are provided below as Table 4. Based on this assessment, the Proposed PCC Site and immediately adjacent land is considered to be of between local and district geographic importance as foraging habitat and commuting habitat for the four bat species recorded.

5.2.3 All four of the identified species, all of which are of relatively favourable nature conservation status nationally and in Lincolnshire, make only limited use of the Proposed PCC Site and adjacent land within the former Keadby Ash Tip. There is no evidence that the survey area provides either functionally important foraging habitat, or otherwise provides important habitat connections (commuting habitat) for bats moving between roosts and preferred feeding areas. This is not surprising given the most optimal habitat for bats (the former Keadby Ash Tip) is essentially an island of habitat isolated within an extensive open landscape that is managed intensively for arable production. Habitat features optimal for use by bats to navigate across the landscape are also very limited, being restricted to the network of drains that subdivide arable fields. Other habitats connections such as hedgerows and cohesive areas of woodland are absent. There are no habitats likely to be of high attractant value to bats within the Proposed PCC Site. Instead, the most suitable habitats are on the boundaries of the Proposed PCC Site and adjacent land.

5.2.4 Given this additional context, the geographic importance of the Proposed PCC Site and adjacent land is revised to local value based on professional judgement.

Table 4: Assessment of the value of foraging and commuting habitats for the species recorded

Species	Relative rarity in UK[1]	Number of bats	Roosts/ potential roosts nearby[2]	Type and complexity of linear features	Commuting value	Character of foraging habitat	Foraging value
Common pipistrelle	Common	Small numbers	Small number	Site isolated in arable landscape with large field sizes. Habitat connectivity across/ around Proposed PCC Site poor (minor field drains only).	Local to district	Isolated woodland patches, less intensive arable and/or small towns and villages.	Local to district
Soprano pipistrelle	Common	Individuals	Small number	As above	Local to district	As above	Local to district
Noctule bat	Rarer	Individuals	None (open landscape lacking mature trees)	As above.	Local to district	As above	Local to district
Unidentified *Myotis* bat	Rarer to common	Individuals	Small number	As above (major waterbodies bypass the Proposed PCC Site).	Local to district	As above (major waterbodies bypass the Proposed PCC Site).	Local to district

Species	Relative rarity in UK[1]	Number of bats	Roosts/ potential roosts nearby[2]	Type and complexity of linear features	Commuting value	Character of foraging habitat	Foraging value
[1]This is based on minimum estimated population size with the most current reference for this, superseding the references cited in Wray *et al.* (2010), being Mathews *et al*. (2018). [2]Recorded or potential based on desk study and field survey data (including consideration of habitat suitability as described in **Appendix 11C:** Preliminary Ecological Appraisal Report (ES Volume II - **Application Document Ref. 6.3**).							

6.0 REFERENCES

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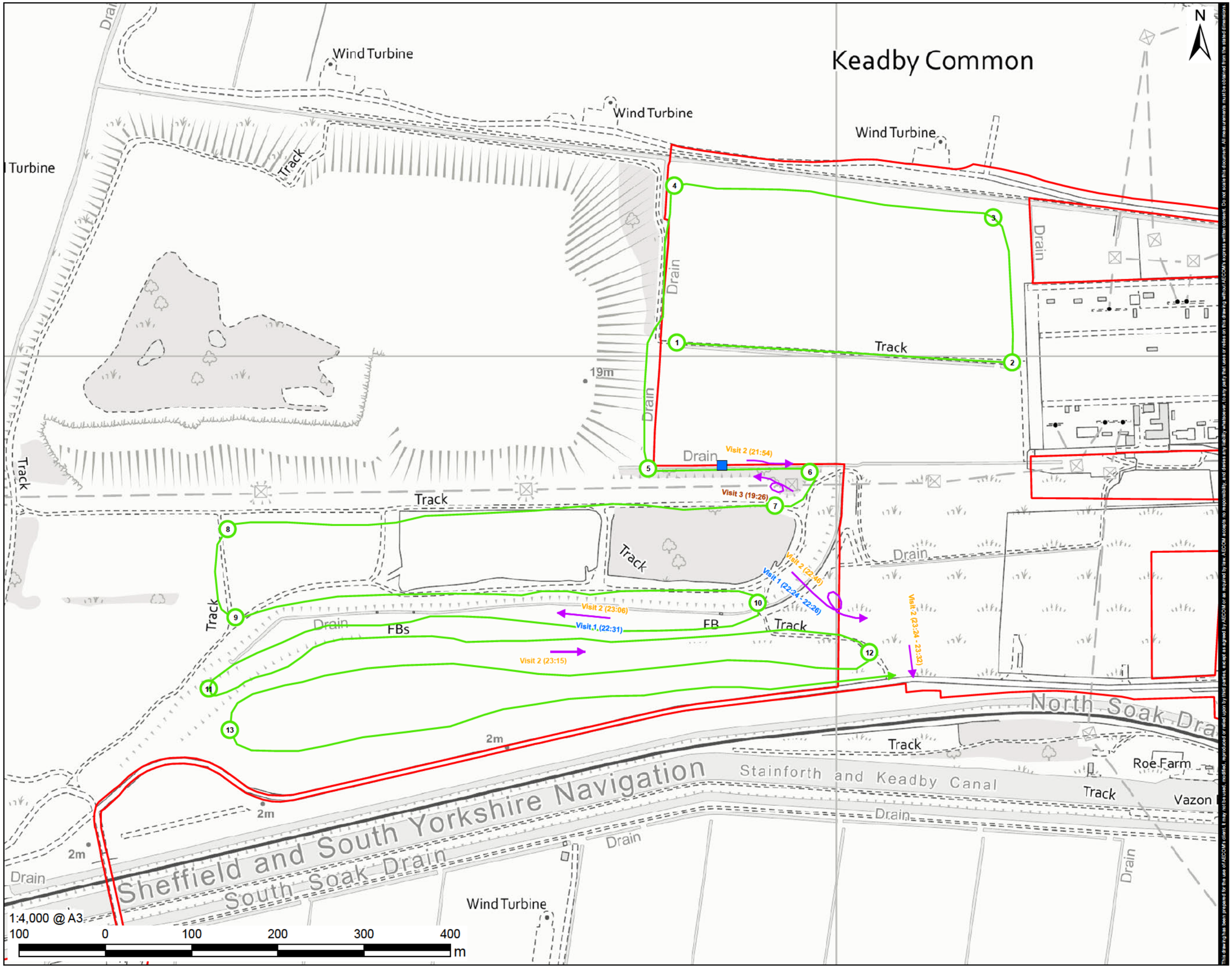
Figure 11E.1 - Bat activity survey

Filename: K:\07 CAD & GIS\02_Maps\PEA Preliminary Environmental Assessment\ES Version\K_ES_PEA_Fig_11E.1_Bat_Activity_Survey_20210507_R01.mxd

Revision: 01 Drawn: BO Checked: JW Approved: GS Date: 13/05/2021

Keadby Common



AECOM

PROJECT
The Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order

CLIENT
Keadby Generation Limited

CONSULTANT
AECOM Limited
2 City Walk
Leeds
LS11 9AR
T: 0113 391 6800
www.aecom.com

LEGEND
- The Order Limits
- Common pipistrelle Flight Line
- Transect Route
- Stop Location
- Static Detector

Blue text refers to 'Visit 1 (Spring)'

Orange text refers to 'Visit 2 (Summer)'

Brown text refers to 'Visit 3 (Autumn)'

NOTES

ISSUE PURPOSE
BAT ACTIVITY SURVEY REPORT

PROJECT NUMBER
60625943

SHEET TITLE
Bat Activity Survey

SHEET NUMBER
Figure 11E.1

ANNEX A RESULTS OF THE TRANSECT SURVEY

Table A1: May Bat Activity Transect Results

Date: **27/05/20**		Temperature (°C): **14**		Rain (0-5)[2]: **0**
Sunset time: 21.06		**Wind (0-7)[3]:** 2		**Cloud Cover (0-5)[4]:** 0
Start Time: 21:00	**Finish Time:** 23:10	**Equipment used**: Elekon Batlogger M		**Weather description (incl. previous evening):** Dry, warm (at survey and previous)
Reference Number /Stop	**Time**	**Species [1]**	**No. of bats**	**Activity/Description**
7	22:10	NYNO	1	Heard not seen (HNS), 2 passes
8	22:24-22:26	PIPI	1	Foraging in depression
8-9	22:31	PIPI	1	Commuting west along scrub line
8-9	22:42	PIPI	1	HNS
8-9	22:49	PIPI	1	HNS
8-9	22:53	PIPI	1	HNS
9-10	23:00	NYNO	1	HNS
9-10	23:01	PIPI	1	HNS

[1]**Species codes:** PIPI: common pipistrelle (*Pipistrellus pipistrellus*), NYNO: noctule (*Nyctalus noctula*)

[2]**Rain scale:** 0 = none, 1 = drizzle, 2 = shower, 3 = rain, 4 = downpour, 5 = flood

[3]**Beaufort wind force scale:** 0 No wind, 1 Light air smoke drifts, 2 Light Breeze leaves rustle, 3 Gentle Breeze small twigs move, 4 Mod Breeze small branches move, 5 Fresh Breeze small trees sway, 6 Strong Breeze large branches move, 7 Mod Gale whole trees in motion

[4]**Percentage scale based on:** 1 = 0-20%, 2 = 21--40%, 3 = 41-60%, 4 = 61-80%, 5 = 81-100%

Table A2: July Bat Activity Transect Results

Date: **27/07/20**		Temperature (°C): **15**		Rain (0-5)[2]: **0**
Sunset time: 21:07		**Wind (0-7)[3]:** 1		**Cloud Cover (0-5)[4]:** 1
Start Time: 21:07	**Finish Time:** 23:35	**Equipment used**: Elekon Batlogger M		**Weather description (incl. previous evening):** Humid, thunderstorm just before survey
Reference Number/ Stop	**Time**	**Species [1]**	**No. of bats**	**Activity/Description**
5	21:54	PIPI	1	Commuting along woodland edge
5	21:59	PIPI	1	Commuting along woodland edge
8	22:46-22:49	PIPI	1	Foraging in depression
9-10	23:06	PIPI	1	HNS
10-11	21:15	PIPI	1	HNS
12	23:29-23.32	PIPI	1	HNS

[1]**Species codes:** PIPI: common pipistrelle (*Pipistrellus pipistrellus*)

[2]**Rain scale:** 0 = none, 1 = drizzle, 2 = shower, 3 = rain, 4 = downpour, 5 = flood

[3]**Beaufort wind force scale:** 0 No wind, 1 Light air smoke drifts, 2 Light Breeze leaves rustle, 3 Gentle Breeze small twigs move, 4 Mod Breeze small branches move, 5 Fresh Breeze small trees sway, 6 Strong Breeze large branches move, 7 Mod Gale whole trees in motion

[4]**Percentage scale based on:** 1 = 0-20%, 2 = 21--40%, 3 = 41-60%, 4 = 61-80%, 5 = 81-100%

Table A3: September Bat Activity Transect Results

Date: 29/09/2020		**Temperature (°C): 12**		**Rain (0-5)[2]: 0**
Sunset time: 18:45		**Wind (0-7)[3]:** 1		**Cloud Cover (0-5)[4]:** 2
Start Time: 18.45	**Finish Time:** 20:45	**Equipment used**: Elekon Batlogger M		**Weather description (incl. previous evening):** Cool, calm and dry. Previous evening dry
Reference Number /Stop	**Time**	**Species[1]**	**No. of bats**	**Activity/Description**
5	19:14	PIPI	1	Commuting along hedgerow west
5	19:17	PIPI	1	Commuting along hedgerow west
6	19.21	PIPI	1	HNS
7	19:26	PIPI	1	Foraging beneath pylon
9	19:42	PIPI	1	HNS
9	19:43	PIPI	1	HNS
10-11	19:59	PIPI	1	HNS
11	20:05	PIPI	1	HNS
12	20:17	NYNO	1	HNS

[1]**Species codes:** PIPI: common pipistrelle (*Pipistrellus pipistrellus*) NYNO: noctule (*Nyctalus noctula*)

[2]**Rain scale:** 0 = none, 1 = drizzle, 2 = shower, 3 = rain, 4 = downpour, 5 = flood

[3]**Beaufort wind force scale:** 0 No wind, 1 Light air smoke drifts, 2 Light Breeze leaves rustle, 3 Gentle Breeze small twigs move, 4 Mod Breeze small branches move, 5 Fresh Breeze small trees sway, 6 Strong Breeze large branches move, 7 Mod Gale whole trees in motion

[4]**Percentage scale based on:** 1 = 0-20%, 2 = 21--40%, 3 = 41-60%, 4 = 61-80%, 5 = 81-100%

ANNEX B RESULTS OF THE STATIC SURVEY

Table B1: Spring Static Survey Results

Night	Date	Sunset	Sunrise	Average hours of darkness	Total no. bats	Species and number of bats			Bat Activity Index	
						Common pipistrelle	Soprano pipistrelle	*Myotis sp.*		
1	19/05/2020	21:05	04:54	7.8	12	12	0	0	1.5	
2	20/05/2020	21:06	04:52	7.8	8	7	1	0	1.0	
3	21/05/2020	21:08	04:51	7.7	10	9	0	1	1.3	
4	22/05/2020	21:09	04:49	7.7	6	6	0	0	0.8	
5	23/05/2020	21:11	04:48	7.6	1	0	0	1	0.1	
					Total	34	1	2	**Mean Activity Index**	1.0

Table B2: Summer Static Survey Results

Night	Date	Sunset	Sunrise	Average hours of darkness	Total no. bats	Species and number of bats	Bat Activity Index	
						Common pipistrelle		
1	27/07/2020	21:07	05:13	7.1	1	1	0.1	
2	28/07/2020	21:05	05:15	7.1	0	0	0.0	
3	29/07/2020	21:03	05:16	7.2	7	7	1.0	
4	30/07/2020	21:02	05:18	7.2	4	4	0.6	
5	31/07/2020	21:00	05:19	7.3	7	7	1.0	
					Total	19	**Mean Activity Index**	0.5

Table B3: Autumn Static Survey Results

Night	Date	Sunset	Sunrise	Average hours of darkness	Total no. bats	Species and number of bats		Bat Activity Index	
						Common pipistrelle	*Myotis sp.*		
1	01/10/2020	18:38	07:06	11.5	5	5	0	0.4	
2	02/10/2020	18:35	07:08	11.5	11	9	2	1.0	
3	03/10/2020	18:33	07:10	11.6	3	3	0	0.3	
4	04/10/2020	18:30	07:11	11.6	4	4	0	0.3	
5	05/10/2020	18:28	07:13	11.7	3	2	1	0.3	
					Total	23	3	**Mean Activity Index**	0.5

Annex 6 - Bat Survey Report Submitted with the Application for the Keadby CCS Temporary Haul Road Application

KEADBY 3
CARBON CAPTURE
POWER STATION

A collaboration between **SSE Thermal** and **Equinor**

The Keadby 3 Temporary Haul Road

Land at and in the vicinity of the Keadby Power Station site, Trentside, Keadby, North Lincolnshire

Haul Road Planning Application – Appendix 7B: Bat Survey Report

The Town and Country Planning (Environmental Impact Assessment) Regulations 2017

Applicant: Keadby Generation Limited

Date: November 2023

DOCUMENT HISTORY

Document Ref	Appendix 7B: Bat Survey Report		
Revision	VP1.0		
Author	AECOM		
Signed		**Date**	November 2023
Approved By	Susan Evans		
Signed	[redacted]	**Date**	November 2023
Document Owner	AECOM		

GLOSSARY

Abbreviation	Description
BAI	Bat Activity Index
BCT	Bat Conservation Trust
BEIS	Business, Energy and Industrial Strategy
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
EIA	Environmental Impact Assessment
EPSML	European Protected Species Mitigation Licence(s)
ES	Environmental Statement
Ha	Hectares
IR	Infra-red
LERC	Lincolnshire Environmental Records Centre
NERC Act	Natural Environment and Rural Communities Act
PEA	Preliminary Ecological Appraisal
PRA	Preliminary Roost Appraisal
SoS	Secretary of State
WAV	Wave Audio File

CONTENTS

TABLES

Figures

1. INTRODUCTION

1.1 Background and Scope

1.1.1 AECOM Ltd ('AECOM') has been commissioned by Keadby Generation Limited (hereafter referred to as 'the Applicant') to prepare an Environmental Impact Assessment (EIA) to support a planning application ('the Application') to be submitted under the Town and Country Planning Act 1990 ('TCPA 1990') (UK Government, 1990) for a proposed temporary construction haul road (herein referred to as 'the Proposed Temporary Haul Road') on land at, and in the vicinity of, the existing Keady Power Station, Trentside, Keadby, Scunthorpe DN17 3EF.

1.1.2 The Proposed Temporary Haul Road will serve the consented Keadby 3 Carbon Capture Power Station ('the Authorised Development') which was granted a Development Consent Order (DCO) by the Secretary of State (the 'SoS') for Business, Energy and Industrial Strategy (BEIS) (now known as the Department for Energy Security and Net Zero (DESNZ)) on 7 December 2022 under Section 37 of the Planning Act 2008 ('the 2008 Act') (HM Government, 2008). The Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order 2022 ('the Order') came into force on 29 December 2022. The DCO has been subject to a Correction Order made by the SoS on 19 April 2023.

1.1.3 The Proposed Temporary Haul Road is approximately 1.7km long and to be formed from a combination of existing roadways/ hardstanding, and new sections of haul road to be constructed. The Application boundary covers a total area of approximately 6.6 hectares (ha) and is located fully within the terrestrial (inclusive of freshwaters) environment, with no impact on the inter-tidal and marine habitats of the River Trent.

1.1.4 To inform the baseline conditions for **Chapter 7**: Ecology and Nature Conservation of the Environmental Statement (ES) (ES Volume I), a Preliminary Ecological Appraisal (PEA) (**Appendix 7A,** ES Volume III) was commissioned. The PEA included a Preliminary Roost Appraisal (PRA) to identify structures and trees suitable to support roosting bats and made recommendations for further bat emergence surveys to investigate this. The Application boundary for the Proposed Temporary Haul Road is shown on the series of Figures presented in Volume II of the ES.

1.1.5 The purpose of this report is therefore to provide the results of the subsequent emergence surveys and clarify whether there are any bat roosts that could be affected by construction and operation of Proposed Temporary Haul Road. Where relevant, this report also identifies any future advice relating to updated surveys or mitigation.

2. RELEVANT LEGISLATION

2.1 Legal Protections

2.1.1 All bat species native to the UK are protected under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended) (HM Government, 2017), hereafter the 'Habitats Regulations'. This makes it an offence to:

- deliberately kill, injure or capture a bat;
- deliberately disturb bats (which includes any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate or to affect significantly the local distribution or abundance of the species to which they belong); or
- damage or destroy a breeding site or resting place of a bat ("roosts"), even when bats are not present at the point of impact.

2.1.2 The offence relating to the damage or destruction of roosts is a no fault (or strict liability) offence. In other words, no matter how careful the person has been to avoid the offence, if a breeding site or resting place is damaged or destroyed, then the offence has been committed.

2.1.3 Where development works are likely to result in one or more of the offences listed above, and subject to the prescribed legal tests being met and agreement of a suitable mitigation strategy, a mitigation licence can be obtained from Natural England to allow the works to go ahead (see Section 2.2).

2.1.4 Bats are also protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (HM Government, 1981). This makes it an offence to:

- intentionally or recklessly obstruct access to any structure or place used by a bat for shelter or protection; or
- intentionally or recklessly disturb a bat whilst it is occupying such a place.

2.1.5 Lower levels of disturbance not covered by the Habitats Regulations remain an offence under the Wildlife and Countryside Act. A defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided.

2.1.6 Given the above legislation, the potential presence of bats at a site represents a material consideration in the planning process. Even where planning permission is not required, there is still a legal responsibility placed on the developer to obtain a Natural England licence to cover any works that have the potential to result in an offence under the above legislation.

2.1.7 Seven of the UK bat species are listed as 'Species of Principal Importance for Nature Conservation in England' pursuant to Section 41 of the Natural

Environment and Rural Communities (NERC) Act 2006 (HM Government, 2006). Section 40 of the NERC Act requires that local planning authorities have regard to the conservation of biodiversity in England, when carrying out their normal functions. The relevant bat species are:

- barbastelle (*Barbastella barbastellus*);
- Bechstein's bat (*Myotis bechsteinii*);
- noctule (*Nyctalus noctula*);
- soprano pipistrelle (*Pipistrellus pygmaeus*);
- brown long-eared bat (*Plecotus auritus*);
- greater horseshoe bat (*Rhinolophus ferrumequinum*); and
- lesser horseshoe bat (*Rhinolophus hipposideros*).

2.2 European Protected Species Mitigation Licences

2.2.1 Although the law provides strict protection to bats, it also allows this protection to be set aside (derogated) under Regulation 53 of the Habitats Regulations through the issuing of European Protected Species Mitigation Licences (EPSML) for the purpose of preserving public health; public safety; and, other imperative reasons of overriding public interest, including those of a social or economic nature, and beneficial consequences of primary importance for the environment. However, in accordance with the requirements of the Habitats Regulations, a licence can only be issued if the following licensing tests are satisfied:

- the activity is for a certain purpose, for example it is in the public interest to build a new development;
- there is no satisfactory alternative that will cause less harm to the species; and
- the development does not harm the long-term conservation status of the species.

2.2.2 In England, EPSML applications are determined by Natural England and take up to five working days to acknowledge receipt and up to 30 working days to determine, depending on the type of licence being sought. Natural England will normally only accept applications for schemes where planning consent has been granted and all ecology relevant planning conditions have been discharged.

3. METHODS

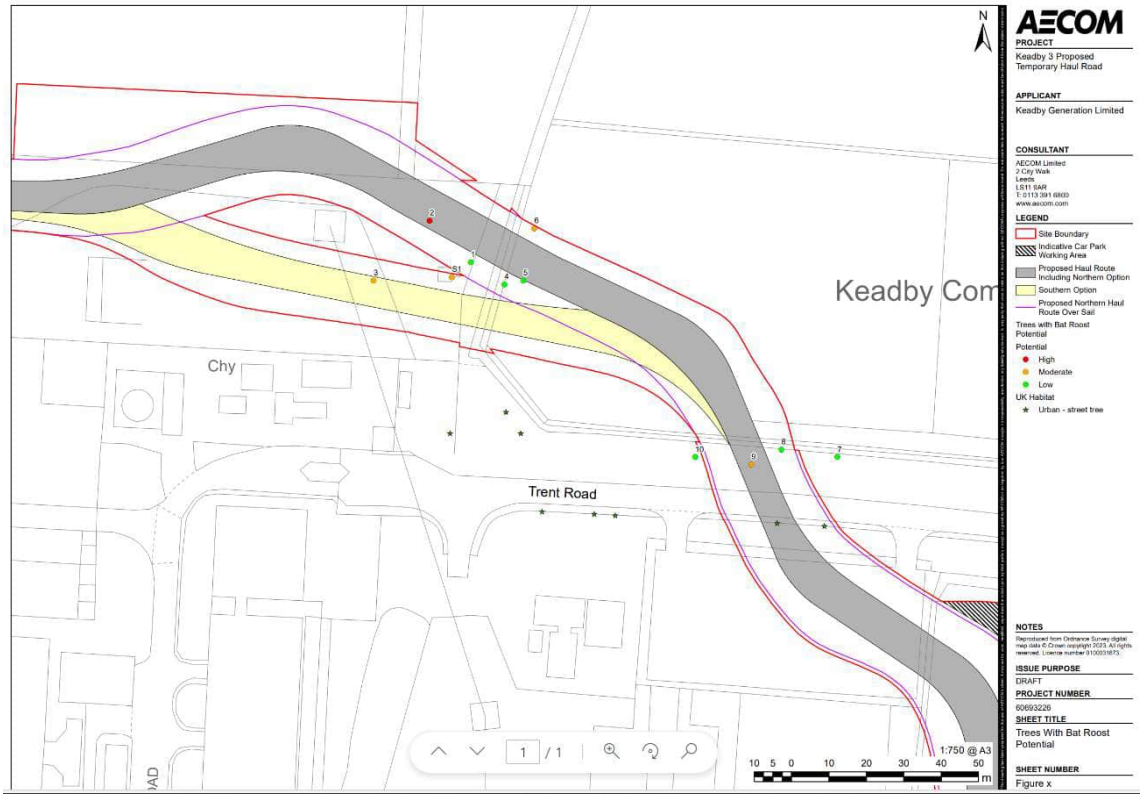
3.1 Desk Study

3.1.1 A desk study was undertaken as part of the scope of works for the PEA (**Appendix 7A** of ES Volume III). Recent bat records (last 10 years) were obtained from Lincolnshire Environmental Records Centre (LERC) for a search radius of 1km out from the red line boundary.

3.2 Bat Emergence Survey

3.2.1 The PRA survey completed as part of the PEA (**Appendix 7A**) on 11 May 2023 identified 10 No. trees and one brick structure within the red line boundary that had some suitability for roosting bats. The locations of the features requiring survey (paragraph 3.2.2) are shown on **Figure 1, reproduced in Plate 1 below for ease of reference**.

Plate 1 Trees and Structures with Bat Roost Potential



3.2.2 The emergence survey approach selected was informed by the industry standard bat survey methods available at the time of survey i.e. Collins (2016)[1] and Bat Conservation Trust (BCT) (2022). In accordance with these methods, the survey effort to be selected depends on the relative level of bat roost suitability of the relevant structures and trees, as outlined in Error! Reference source not found.. Therefore, two dusk emergence surveys[2] were completed at Tree (T) 3, T6, and T9 with moderate roosting suitability (trees 59, 48 and 41 respectively of the Tree Survey Report presented in the Arboricultural Impact Assessment (AIA) that accompanies the Application). Tree 2 (tree 58 of the Tree Survey Report) had three surveys completed due to its high roosting suitability. Two surveys were completed on the low suitability structure (S1) to address equipment failure during the first survey visit.

Table 1: Required survey effort (after Collins, 2016) with reference to the assessed bat roost suitability.

Roosting suitability	Minimum number of survey visits	Survey timing
High	3	Between May and September, with at least one in the optimal period of May to August. Surveys to be at least 3 weeks apart.
Moderate	2	As above
Low	1 (buildings only)	May to August. No further survey of trees is needed to comply with good practice.
Negligible	No further surveyed needed	-

3.2.3 The emergence survey dates, timings and weather conditions were as set out in **Table 2**. All surveys were undertaken at dusk and started 15 minutes before sunset and ended 1.5 to 2 hours after sunset. Surveys were undertaken in

[1] This version of the Bat Survey Guidelines was revised, and a 4th edition published (Collins, 2023) in September 2023, after completion of the work described in this report. The approach in the updated guidance remains consistent, albeit with some changes in terminology and incorporation of the interim guidance published as BCT (2022). The latter formed part of the survey approach as described in the main text of this report.

[2] Recent updates to good practice (BCT, 2022) discourage use of dawn surveys, except where justified as specifically appropriate. Therefore, no dawn surveys were completed despite reference to these in Collins (2016). This is consistent with the updated guidance (Collins, 2023).

suitable weather conditions, i.e. no rain or strong wind and with temperatures above 10°C at sunset.

3.2.4 Surveys were led by a suitability licenced and experienced ecologist and accompanied by an experienced assistant. Any bats observed emerging from or returning were recorded along with details of their roost location. In addition, observations of general bat activity within the vicinity of the survey locations were also recorded by each of the surveyors.

3.2.5 In addition to direct observation, each surveyor was equipped with an 'Elekon Batlogger M' to detect and record bat calls. Sound recordings were made in full spectrum Wave Audio File ('WAV') to allow verification of species or species groups after the survey.

3.2.6 Infra-red cameras (IR) (Cannon XA11) and a thermal camera (FLIR T1020) were paired with surveyors to support the identification of any emerging/ re-entering bats.

Table 2: Dates and environmental conditions during the emergence surveys

Date	Location	Sunset/ sunrise time	Start/finish time	Temperature (°C)	Wind speed (Beaufort)	Cloud cover (% scale)	Rainfall	Weather description
10/07/2023	T2 (Survey 1) and T3 Survey 1)	21:29	21:14-22:59	20-19	1	2	0	Rain all day. Dry through survey
19/07/2023	S1 (Survey 1) and T9 (Survey 1)	21:20	21:05-22:50	15-16	0	1	0	Some rain during day. Dry through survey
03/08/2023	T2 (Survey 2) and T3 (Survey 2)	20:59	20:46-22:29	17-17	0	5	0	Scattered showers during day. Dry through survey.
07/08/2023	T6 (Survey 1)	20:51	20:36-22:21	16-16	0	1	0	Warm and dry during day. Dry through survey.
14/08/2023	S1 (Survey 2) and T9 (Survey 2)	20:34	20:18-21:54	16-16	0	2	0	Some showers during day. Dry through survey.
04/09/2023	T6 (Survey 2) and T2 (Survey 3)	19:46	19:31-21:16	23-22	0	0	0	Dry and warm during day. Dry through survey.

Beaufort wind force scale: 0 no wind, 1 light air, 2 light breeze, 3 gentle breeze, 4 moderate breeze, 5 fresh breeze, 6 strong breeze, 7 moderate gale

Cloud cover (% scale): 1 = 0-20%, 2 = 21-40%, 3 = 41-60%, 4 = 61-80%, 5 = 81-100%

Precipitation scale: 0 = none, 1 = drizzle, 2 = shower, 3 = rain, 4 = downpour, 5 = flood

3.3 Data Analysis

3.3.1 Acoustic recordings were subsequently analysed using Elekon BatExplorer software to identify the species of bat present, both in relation to any bats emerging from features (if roosts were found) and also the wider bat activity in the vicinity of survey locations. Reference was also made to bat call identification guidance (Russ, 2012) when evaluating the relevant bat species.

3.3.2 The acoustic analysis provides information on the bat species present and their relative level of activity at each survey location at the time of survey. The latter can be inferred from the number of bat registrations recorded. A registration is defined as a single automated detector file made up of bat pulses of a single species. The number of registrations recorded cannot be used to determine the population size of bats present, as an individual bat will result in multiple registrations when engaged in foraging activity. Conversely, a single registration could comprise one bat or multiple bats of the same species.

3.3.3 Despite the above restrictions on data interpretation, registrations can still be used to infer the relative level of bat activity at individual locations as follows:

- very low activity is up to five registrations per hour;
- low activity is 6 to 25 registrations per hour;
- moderate activity is 26 to 99 registrations per hour; and
- high activity is 100 registrations per hour.

3.3.4 The video recordings, made by the IR and thermal cameras when surveying features to determine the presence of roosts.

3.3.5 All data analysis was completed by a suitably experienced ecologist.

3.4 Limitations

3.4.1 Different bat species vary in their likelihood of detection using bat detectors. Long-eared bat species (*Plecotus* spp.) have very quiet echolocation calls that may only be recorded up to 10m away and are often not recorded on bat detectors. Noctule bats on the other hand can be recorded up to 50m away. To address this potential limitation, night vision equipment was used during the bat emergence surveys to increase the accuracy of bat detection under dark conditions (in accordance with BCT, 2022).

3.4.2 It is accepted that Myotis bat species (*Myotis* spp.) are difficult to identify from echolocation alone, therefore these species are aggregated as '*Myotis* sp.'. This aggregation, where used, is widely accepted (Walters *et al*. 2012; Parsons & Jones, 2000) and does not affect the evaluation of the results of activity surveys. Likewise, the term 'NLS/EP' is used where echolocation calls of noctule, Leisler's bat (*Nyctalus leisleri*) and serotine (*Eptesicus serotinus*) were unable to be confidently distinguished from one another. Similarly, long-

eared bats cannot be identified to species level by their echolocation call alone. However, given the survey location is outside of the known or potentially suitable range of the grey long-eared bat (*Plecotus auratus*), all long-eared bat calls recorded are considered to be brown long-eared bat.

3.4.3 Bats are highly mobile animals that, in addition to being faithful to certain preferred roosting locations, will also frequently move between and establish new roost sites. Therefore, whilst meeting good practice survey effort, these surveys only provide a snapshot of current roosting behaviour. Such survey data is typically considered valid for up to two years, after which point it is usually appropriate to commission an update survey.

4. RESULTS

4.1 Desk-Based Study

4.1.1 The desk study reported in **Appendix 7A**: Preliminary Ecological Appraisal returned three bat records, two of which were common pipistrelle (*Pipistrellus pipistrellus*) and one of which was an undetermined pipistrelle species within 1km of the red line boundary. The closest of these records was over 1km south-east of the Proposed Temporary Haul Road.

4.2 Bat Emergence Survey

4.2.1 No bats were observed emerging from structure S1 or the four trees T2, T3, T6 and T9 during any of the emergence surveys. This was also confirmed through review of video footage for each of the surveys.

4.3 Bat Activity in the Vicinity of Survey Locations

4.3.1 The bat acoustic data recorded in the vicinity of the survey locations has been summarised (**Table 3**) to provide an indication of the level of bat activity associated with the Application site. This summary provides both the total number of registrations of each bat species recorded, and a Bat Activity Index (BAI) which is the mean number of registrations per hour of survey observation. All of the survey locations are close together and coincide with a cohesive stand of habitat optimal for bat foraging (a hedgerow with mature trees connected to a woodland, with adjacent pasture and scrub habitats). So, the bat registrations recorded are likely to involve the same individuals as bats move around the foraging habitat. As such, the BAI for each location and survey event has been averaged, and the resultant mean BAI used as the basis for appraising the level of overall habitat use by bats.

4.3.2 The acoustic data shows that common pipistrelle is the predominant species utilising the Application site, being present on every survey with a mean BAI of 56 registrations which indicates a moderate level of common pipistrelle activity (refer to Section 3.3) within the Application site.

4.3.3 The level of activity by all other bat species, comprising soprano pipistrelle, Leisler's bat and noctule bat, was very low. The acoustic data therefore indicates only incidental use of the Application site by individuals of these bat species.

4.3.4 Common pipistrelle is a widespread, generalist bat species that is not threatened (Mathews & Harrower, 2020). Therefore, the level of bat activity recorded is indicative of a population of this species of local nature conservation value. The low levels of activity recorded for the other species, which suggests the brief presence of individual bats only, is also consistent with local nature conservation value.

Table 3: Bat registrations and BAI from interpretation of acoustic data recorded in the vicinity of the survey locations

Survey location	Survey Event	Total Registrations and BAI by Species			
		Common pipistrelle	Soprano pipistrelle	Leisler's bat	Noctule bat
Tree T2	1	228	2	0	0
	BAI	130.3	1.1	0	0
	2	318	3	0	0
	BAI	181.7	1.7	0	0
	3	171	1	0	0
	BAI	97.7	0.6	0	0
Tree T3	1	28	0	0	0
	BAI	16.0	0	0	0
	2	50	0	0	0
	BAI	28.6	0	0	0
Tree T6	1	136	0	0	0
	BAI	77.7	0	0	0
	2	17	0	0	1
	BAI	9.7	0	0	0.6
Tree T9	1	107	2	0	0
	BAI	61.1	1.1	0	0
	2	153	1	0	0
	BAI	87.4	0.6	0	0
Structure S1	1	143	5	0	0
	BAI	81.7	2.9	0	0
	2	65	0	1	0
	BAI	37.1	0	0.6	0
Mean BAI		56	<1	<1	<1

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Overview

5.1.1 No bats were observed emerging from structure S1 or any of the trees T2, T3, T6 and T9 surveyed. Therefore, there are currently no bat roost constraints to the construction and operation of the Proposed Temporary Haul Road and there is no requirement for a EPSML to be obtained.

5.1.2 It remains appropriate for all trees (including those of low suitability) and the building S1 to be soft felled/ removed under ecological supervision between October to April (when bats are least likely to be affected). Whilst the surveys indicate the absence of bat roosts, there is a low residual risk of bats using these features later.

5.1.3 Foraging bat activity within the Application site was low to moderate, with common pipistrelle the main species present, and only incidental activity by soprano pipistrelle, Leisler's bat and noctule bat. All species are assessed in Section 4.3 as having local nature conservation value. There is nothing inherent to the Application that is likely to meaningfully affect bat habitat usage for foraging. Whilst there would be some temporary losses of short sections of hedgerow and trees, this would not result in any habitat gaps that bats could not cross, or that they are not already crossing. The wider habitat cohesion for bats around the Keadby Power Station site would remain unaltered.

5.1.4 The survey data and conclusions contained in this report remain valid for 2 years, after which it is advised that the structure S1 and trees T2, T3, T6 and T9 would need to be reassessed by an ecologist and the surveys may need to be updated.

6. REFERENCES

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FIGURES

Figure 1: Trees and Structures with Bat Roost Suitability

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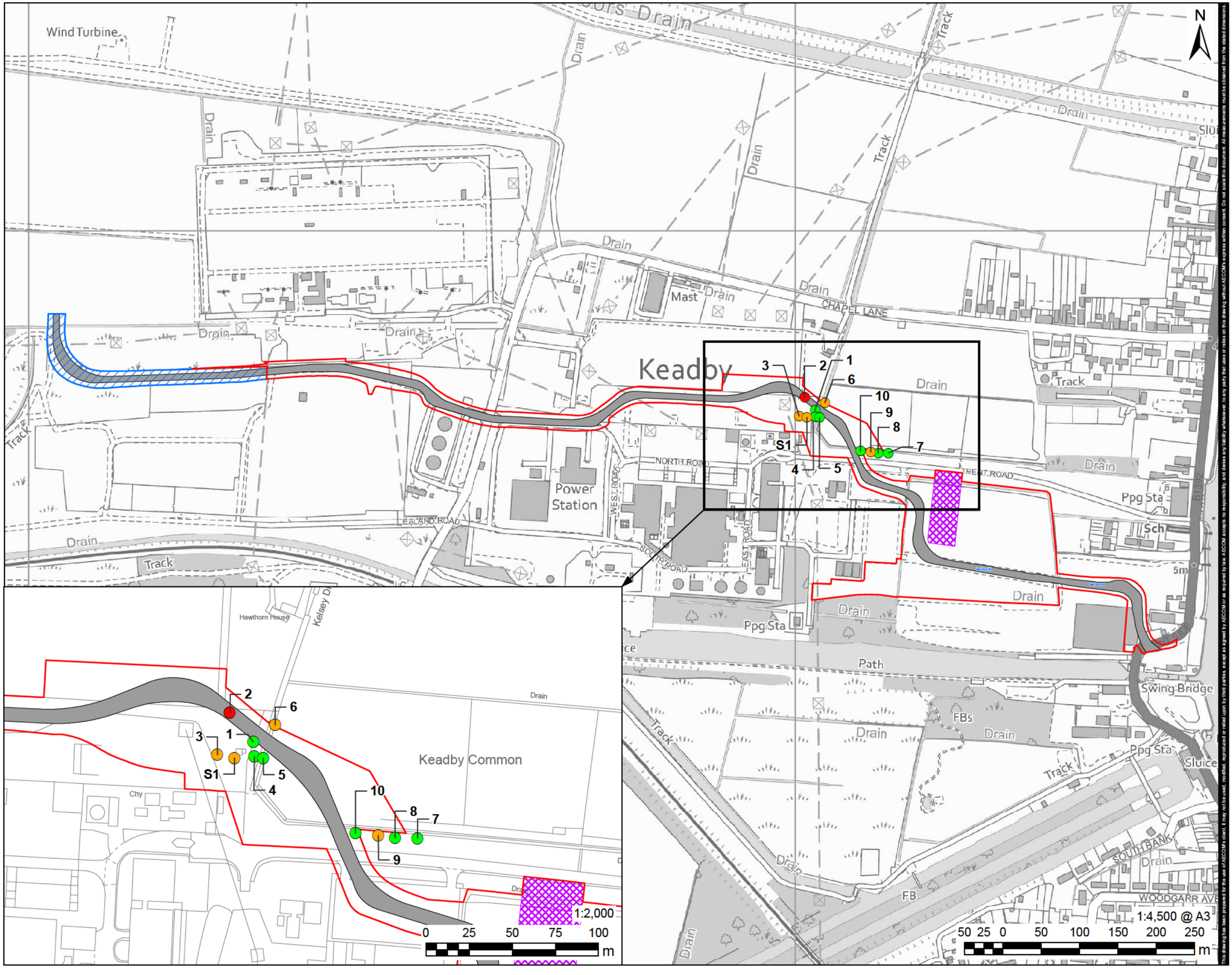

PROJECT

Keadby 3 Proposed Temporary Haul Road

APPLICANT

Keadby Generation Limited

CONSULTANT

AECOM Limited
2 City Walk
Leeds
LS11 9AR
T: 0113 391 6800
www.aecom.com

LEGEND

- Site Boundary
- Route Within Authorised Development
- Temporary Car Parking Replacement
- Proposed Haul Route

Bat Roost Suitability

- High
- Moderate
- Low

S = Structure

NOTES

ISSUE PURPOSE

FINAL

PROJECT NUMBER

60693226

SHEET TITLE

Trees and Structures with Bat Roost Suitability

SHEET NUMBER

Figure 1