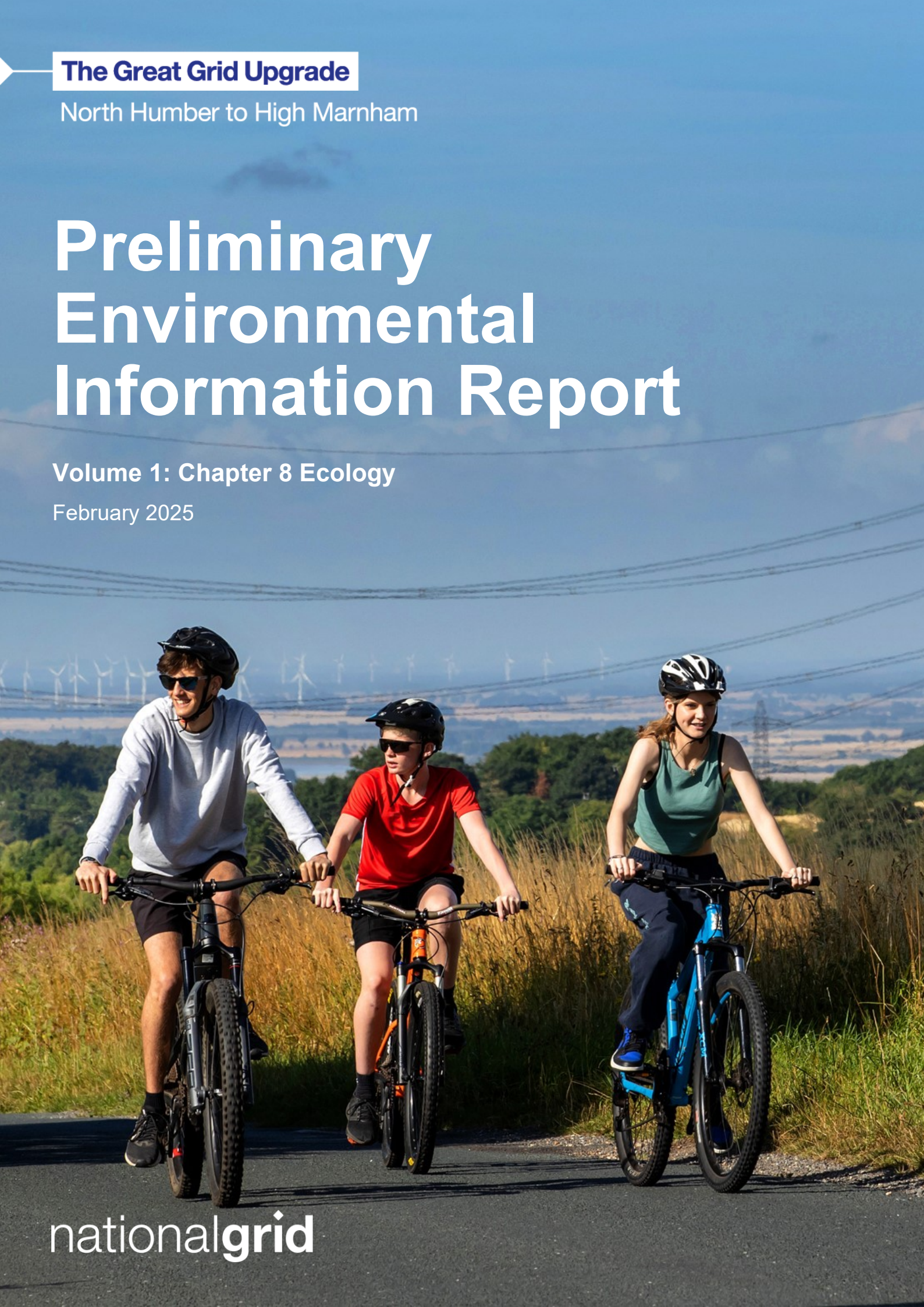
The Great Grid Upgrade

North Humber to High Marnham

Preliminary Environmental Information Report

Volume 1: Chapter 8 Ecology

February 2025



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8. Ecology

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8. Ecology

8.1 Introduction

8.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents a preliminary assessment of the likely significant effects on ecologically sensitive receptors identified to date, that could result from the Proposed Overhead Line between the proposed Birkhill Wood Substation and the proposed High Marnham Substation as described in **Chapter 4 Description of the Project**.

8.1.2 **Chapter 1 Introduction** explains that the proposed Birkhill Wood Substation and proposed High Marnham Substation are proposed to be authorised through separate consenting procedures, however, they have also been included as part of the Project. As explained in **Chapter 5 Approach to Preparing the PEIR**, the environmental effects of these two substations including their associated overhead line reconfigurations, hereafter referred to as the Proposed Substation Works, have accordingly been considered within **Chapter 20 Substations and Associated Works**. For the purpose of this chapter the Proposed Overhead Line between the proposed Birkhill Wood Substation and the proposed High Marnham Substation is hereafter referred to as the Proposed Overhead Line.

8.1.3 To ensure that the Project as a whole has been assessed a summary has been included within this preliminary assessment of the likely significant effects on ecology which brings together the assessment of the Proposed Overhead Line and Proposed Substation Works for ecology.

8.1.4 This chapter describes the methodology used, the datasets that have informed the preliminary assessment, baseline conditions, mitigation, and the preliminary residual significant effects that could result from the Proposed Overhead Line.

8.1.5 This chapter covers effects on the following during construction, operation and maintenance noting that decommissioning has been scoped out.

- Temporary / permanent direct habitat loss;
- Disturbance and fragmentation of habitats and species;
- Incidental mortality of protected and notable species;.
- Disturbance to protected or notable species;
- Changes in air quality;
- Pollution impacts on designated sites and notable habitats;
- Introduction of INNS; and
- Loss/reduction in habitat quality

8.1.6 This chapter should be read in conjunction with:

- **Chapter 4 Description of the Project**;
- **Chapter 5 Approach to Preparing the PEIR**; and
- **Chapter 20 Substations and Associated Works**.

8.1.7 There are interrelationships between the potential effects on ecology and other environmental topics. Therefore, please also refer to the following chapters:

- **Chapter 6 Landscape**;
- **Chapter 7 Visual**;
- **Chapter 9 Ornithology**;
- **Chapter 11 Water Environment**;
- **Chapter 12 Geology and Hydrogeology**;
- **Chapter 13 Agriculture and Soils**;
- **Chapter 14 Traffic and Transport**;
- **Chapter 15 Air Quality**;
- **Chapter 16 Noise and Vibration**; and
- **Chapter 21 Cumulative Effects**.

8.1.8 This chapter is supported by the following figures in Volume 2 and appendices in Volume 3:

- **Figure 8.1 International Sites Designated for Nature Conservation within 10 km and National and Local Statutory Designated Sites within 5 km**;
- **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitat within 2 km**;
- **Figure 8.3 Phase 1 Habitat Survey Map**;
- **Figure 8.4 Aquatic Survey Locations**;
- **Figure 8.5 Arboricultural Survey Results**;
- **Appendix 8-1 Designated Sites**; and
- **Appendix 8.2 Habitat Regulation Assessment Preliminary Stage 1 Report**.

8.2 Regulatory and Planning Context

8.2.1 This section sets out the legislation and planning policy that is relevant to the preliminary ecology assessment. A full review of compliance with relevant national and local planning policy will be provided within the Planning Statement that will be submitted as part of the application for Development Consent.

8.2.2 **Chapter 2 Regulatory and Planning Context** describes the overall regulatory and planning policy context for the Project. Key legislation, policy, and planning guidance relevant to the assessment of potential effects on ecology associated with the construction, operation and maintenance of the Project are presented below (noting that decommissioning has been scoped out of the Environmental Impact Assessment (EIA)).

Legislation

8.2.3 The legislation listed below has been considered when identifying potential constraints to the Project, design options and mitigation.

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) (Ref 8.1);
- Regulation (EU) 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (IAS) (Ref 8.2) as enacted in England by The Invasive Alien Species (Enforcement and Permitting) Order 2019 (as amended) (Ref 8.3);
- The Invasive Non-native Species (Amendment etc.) (EU Exit) Regulations 2019 (Ref 8.4);
- Wildlife and Countryside Act 1981(WCA) (as amended) (Ref 8.5);
- Countryside and Rights of Way Act 2000 (CRoW) (Ref 8.6);
- The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations 2017) (Ref 8.7);
- Natural Environment and Rural Communities Act 2006 (NERC) (Ref 8.8);
- Environment Act 2021 (Ref 8.9);
- The Protection of Badgers Act 1992 (Ref 8.10);
- The Hedgerows Regulations 1997 (Ref 8.11);
- Animal Welfare Act 2006 (Ref 8.12);
- Salmon and Freshwater Fisheries Act 1975 (Ref 8.13);
- The Eels (England and Wales) Regulations 2009 (Ref 8.14); and
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref 8.15).

National Policy Statements

8.2.4 **Chapter 2 Regulatory and Planning Context** sets out the overarching policy context relevant to the Project, including the Overarching National Policy Statements (NPS) for Energy (EN-1) (Ref 8.16). This is supported by the NPS for Electricity Networks Infrastructure (EN-5) (Ref 8.17).

Overarching NPS for energy (EN-1)

8.2.5 Section 4.6 (Environmental and Biodiversity Net Gain) of EN-1 (Ref 8.16) outlines the consideration for environmental and biodiversity net gain (BNG) within energy projects. Paragraph 4.6.2 states that:

'……projects in England should consider and seek to incorporate improvements in natural capital, ecosystem services and the benefits they deliver when planning how to deliver biodiversity net gain.'

8.2.6 Paragraph 4.6.6 states energy NSIP proposals, should:

'…..seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity, and the wider environment where possible.'

with Paragraph 4.6.7 advising that applicants:

'…..are encouraged to use the latest version of the biodiversity metric to calculate their biodiversity baseline and present planned biodiversity net gain outcomes. This calculation data should be presented in full as part of their application.'

8.2.7 Paragraph 4.6.8 states that, where possible, biodiversity metric calculation data:

'…should be shared, alongside a completed biodiversity metric calculation, with the Local Authority and Natural England for discussion at the pre-application stage….'

8.2.8 Paragraph 4.6.10 states that:

'Biodiversity net gain should be applied after compliance with the mitigation hierarchy and does not change or replace existing environmental obligations, although compliance with those obligations will be relevant to the question of the baseline for assessing net gain and if they deliver an additional enhancement beyond meeting the existing obligation, that enhancement will count towards net gain.'

8.2.9 Paragraph 4.6.11 states that:

'…We encourage details of any off-site delivery of biodiversity net gain to be set out within the application for development consent.'

8.2.10 Paragraph 4.6.12 further advises that:

'When delivering biodiversity net gain off-site, developments should do this in a manner that best contributes to the achievement of relevant wider strategic outcomes, for example by increasing habitat connectivity, enhancing other ecosystem service outcomes, or considering use of green infrastructure strategies. Reference should be made to relevant national or local plans and strategies, to inform off-site biodiversity net gain delivery. If published, the relevant strategy is the Local Nature Recovery Strategy (LNRS). If an LNRS has not been published, the relevant consenting body or planning authority may specify alternative plans, policies or strategies to use.'

8.2.11 Paragraph 4.6.13 states that:

'In addition to delivering biodiversity net gain, developments may also deliver wider environmental gains and benefits to communities relevant to the local area, and to national policy priorities such as…

- *the enhancement, expansion or provision of trees and woodlands.'*

8.2.12 Paragraph 4.6.15 states that:

'Applications for development consent should be accompanied by a statement demonstrating how opportunities for delivering wider environmental net gains have been considered, and where appropriate, incorporated into proposals as part of good design (including any relevant operational aspects) of the project.'

8.2.13 Paragraph 4.6.1 on Page 69 (Secretary of State Decision Making), states that:

'Although achieving biodiversity net gain is not currently an obligation on applicants, Schedule 15 of the Environment Act 2021 contains provisions which, when commenced, mean the Secretary of State may not grant an application for Development Consent Order unless satisfied that a biodiversity gain objective is met.'

Paragraph 4.6.2 on Page 69 (Secretary of State Decision Making), states that:

'The biodiversity gain objective will be set out in a biodiversity gain statement.'

8.2.14 Section 5.4 (Biodiversity and Geological Conservation) details the requirement for a Habitats Regulations Assessment (HRA) to assess the implications of a project. Paragraph 5.4.5 states:

'As a matter of policy, the following should be given the same protection as sites covered by the Habitats Regulations and an HRA will also be required:

a) potential Special Protection Areas and possible Special Areas of Conservation;

b) listed or proposed Ramsar sites; and

c) sites identified, or required, as compensatory measures for adverse effects on any of the other sites covered by this paragraph.'

8.2.15 In relation to Sites of Special Scientific Interest (SSSI), Paragraph 5.4.8 states that:

'Development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits (including need) of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national networks of SSSIs.'

8.2.16 Paragraph 5.4.17 states that:

'Where the development is subject to EIA the applicant should ensure the ES [Environmental Statement] clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance…on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats.'

8.2.17 Paragraph 5.4.19 states that:

'The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests.'

while Paragraph 5.4.20 states that:

'Applicants should consider wider ecosystem services and benefits of natural capital when designing enhancement measures.'

8.2.18 Paragraphs 5.4.20 – 5.4.34 advise on measures and actions to be taken during design (e.g., consideration of wider ecosystem services within enhancement measures and consideration of effects on mobile/migratory species) and on providing appropriate information to allow the Secretary of State to determine whether an HRA is required and/or to conduct an Appropriate Assessment. If a proposed plan or project is considered likely to have a significant effect on a protected habitats site (Special Protection Area (SPA), Special Area of Conservation (SAC) (including potential and candidate sites), Ramsar site and protected marine site), either individually or in combination with other plans or projects, then an appropriate assessment of the implications for the site, in view of the site's conservation objectives, must be undertaken. This does not apply to plans or projects directly connected to the conservation management of the features for which the site was designated.

8.2.19 Paragraph 5.4.35 details measures and actions that should be demonstrated as part of the application e.g., timing construction to avoid/limit disturbance and restoring habitats (where practicable) after construction.

8.2.20 Paragraph 5.4.36 states that

'*Applicants should produce a Biodiversity Management Strategy as part of their development proposals.'*

8.2.21 Paragraph 5.4.42 states that:

'As a general principle…development should, in line with the mitigation hierarchy, aim to avoid significant harm to biodiversity and geological conservation interest, including through consideration of reasonable alternatives…Where significant harm cannot be avoided, impacts should be mitigated and as a last resort, appropriate compensation measures should be sought.'

8.2.22 Paragraph 5.4.44 states that:

'….any habitat creation or enhancement delivered including linkages with existing habitats for compensation or biodiversity net gain should generally be maintained for a minimum period of 30 years, or for the lifetime of the project, if longer.'

8.2.23 Paragraph 5.4.53 states that:

'The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of any irreplaceable habitats, including ancient woodland, and ancient and veteran trees unless there are wholly exceptional reasons and a suitable compensation strategy exists.'

8.2.24 Paragraph 5.4.55 states that:

'The Secretary of State should refuse consent where harm to a protected species and relevant habitat would result, unless there is an overriding public interest and the other relevant legal tests are met.'

NPS for electricity networks infrastructure (EN-5)

8.2.25 Paragraph 2.9.16 of EN-5 states that:

'The Holford Rules – guidelines for the routing of new overhead lines – were originally set out in 1959. These guidelines, intended as a common-sense approach to overhead line route design, were reviewed and updated by the industry in the 1990s, and they should be embodied in the applicants' proposals for new overhead lines.'

8.2.26 Paragraph 2.9.17 of EN-5 states that:

'In brief, the Holford Rules state that applicants should:

- *avoid altogether, if possible, the major areas of highest amenity value, by so planning the general route of the line in the first place, even if total mileage is somewhat increased in consequence;*
- *avoid smaller areas of high amenity value or scientific interest by deviation, provided this can be done without using too many angle towers, i.e. the bigger structures which are used when lines change direction….'*

8.2.27 Paragraph 2.9.18 of EN-5 states that:

'The Horlock Rules – guidelines for the design and siting of substations – were established by National Grid in 2009 in pursuance of its duties under Schedule 9 to the Electricity Act 1989. These principles should be embodied in applicants' proposals for the infrastructure associated with new overhead lines.'

8.2.28 Paragraph 2.9.19 state that:

'In brief, the Horlock Rules state that applicants should:

- *consider environmental issues from the earliest stage to balance the technical benefits and capital cost requirements for new developments against the consequential environmental effects in order to keep adverse effects to a reasonably practicable minimum.*
- *seek to avoid altogether internationally and nationally designated areas of the highest amenity, cultural or scientific value by the overall planning of the system connections.*
- *protect as far as reasonably practicable areas of local amenity value, important existing habitats and landscape features including ancient woodland, hedgerows, surface and ground water sources and nature conservation areas...*'

8.2.29 Other relevant paragraphs from EN-5 relate to ornithology and potential collision risk, including in and around important habitats for birds. Please refer to **Chapter 9 Ornithology** where the relevant paragraphs are outlined.

Other National Policy

8.2.30 Although the Project will be tested in line with NPS as previously stated, the preliminary assessment has been undertaken with reference to the following national legislation and policy:

- National Planning Policy Framework (NPPF) (Ref 8.18) and accompanying planning practice guidance (Ref 8.19). The NPPF provides guidance on ecological protection and enhancement by protecting sites of biodiversity, geological value and soils while emphasising the importance of BNG; and
- Keepers of Time: ancient and native woodland and trees policy in England (Ref 8.20).

Regional and Local Policy

8.2.31 **Chapter 2 Regulatory and Planning Context** lists relevant regional and local policy documents. Key local policies relevant to ecology, that have informed this preliminary assessment and will inform the assessment reported within the ES include:

- East Riding Local Plan 2012-2029, Adopted 2016 (Ref 8.21)
  - Policy ENV4: Conserving and enhancing biodiversity and geodiversity; and
  - Policy ENV5: Strengthening green infrastructure.
- North Lincolnshire Local Development Framework Core Strategy 2006 – 2026, Adopted 2011 (Ref 8.22)
  - CS17: Biodiversity.
- North Lincolnshire Local Plan Saved Policies (Ref 8.23)
  - Saved Policy LC1 Special Protection Areas, Special Areas of Conservation and Ramsar Site;
  - Saved Policy LC2 Site of Special Interest and National Nature Reserve;

  - Saved Policy LC3 Local Nature Reserves;
  - Saved Policy LC4 Development Affecting Sites of Local Nature Conservation Importance;
  - Saved Policy LC5 Species Protection; and
  - Saved Policy LC6 Habitat Creation.
- East Riding of Yorkshire Local Plan Update 2020 – 2039 (Ref 8.24)
  - Policy ENV4: Conserving and enhancing biodiversity and geodiversity; and
  - Policy ENV5: Strengthening green infrastructure.
- Bassetlaw District Local Plan 2020–2038, Adopted 2024 (Ref 8.25)
  - Policy 39: Trees, woodlands and hedgerows.
- Cottingham Neighbourhood Plan and Design Guide 2015 – 2029, Adopted 2018 (Ref 8.26)
  - GP5B Biodiversity and the green network (wildlife).
- Treswell and Cottam Neighbourhood Plan, Adopted 2021 (Ref 8.27)
  - Policy 5: Lee Beck Green Corridor.
- Walkeringham Neighbourhood Plan 2019–2035, Adopted 2021 (Ref 8.28)
  - Neighbourhood Plan Policy 2: Protecting the natural environment and landscape character.
- Misterton Neighbourhood Plan 2022 – 2028 (Ref 8.29)
  - Policy 2R: Improving green and blue infrastructure and biodiversity.
- Newark and Sherwood Amended Core Strategy DPD, Adopted March 2019 (Ref 8.78)
  - Core Policy 12 Biodiversity and Green Infrastructure.
- Treswell and Cottam Neighbourhood Plan Review 2023 (Ref 8.30)
  - Policy 9: Lee Beck Green Corridor.

8.2.32 North Lincolnshire Council submitted the New Local Plan for Examination in November 2022. The Examination progressed however, the authority took the decision to formally withdraw the New Local Plan from the Examination in September 2024. The Saved Policies in the Local Plan (2003 as updated in October 2024 (Ref 8.23), North Lincolnshire Local Development Framework Core Strategy (2011) (Ref 8.22) form the adopted Development Plan and have been considered in the PEIR where relevant.

8.2.33 The relevant emerging Local Nature Recovery Strategies for Hull and East Yorkshire, Nottinghamshire and Nottingham and Greater Lincolnshire will be used to inform the final assessment, should they be published and become available prior to submission of the ES.

8.3 Scoping Opinion and Consultation

Scoping Opinion

8.3.1 The scope of the assessment has been informed by the Scoping Opinion (Ref 8.31) provided by the Planning Inspectorate on behalf of the Secretary of State, following submission of the EIA Scoping Report (Ref 8.32). The scope has also been informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion (Ref 8.31) together with a response from National Grid against each point of relevance to ecology is provided in Table 8.1.

Table 8.1 – Comments raised in the Scoping Opinion

ID	Inspectorate's comments	Response
3.3.1	**Permanent habitat loss, temporary habitat loss, disturbance and fragmentation, indirect impacts - Statutory and non-statutory designated sites (without mobile qualifying criteria) located greater than 2 km from the site** The Applicant proposes to scope out this matter for all phases for the receptors identified on the basis that the potential for significant effects as a result of the Proposed Development would not be likely. The Inspectorate considers that there is insufficient evidence relating to the extent and location of permanent habitat loss, demonstration that these designations do not form supporting habitat/foraging habitat (for example) to determine whether these statutory and non-statutory designated sites are linked to the Proposed Development. In the absence of this information, the Inspectorate is unable to agree that significant effects would not be likely.	Designated sites with mobile qualifying criteria for example birds, are not proposed to be scoped out of the assessment. Therefore, permanent and temporary loss, disturbance, and fragmentation of supporting/foraging habitat (including functionally linked land), have been included in this preliminary assessment and will be included within the ES. Designated sites located in the relevant study areas (including those beyond 2 km) have been considered in terms of potential indirect impacts that could occur, for example changes to water quality where a potential hydrological link exists between the designated site and the Project. Sites beyond 2 km are not assessed where there is no likely pathway for significant effects to occur.
3.3.2	**Incidental mortality of protected or notable species (Invertebrates) – Construction and Operation (Maintenance activity)**	Appropriate mitigation will be agreed with the relevant stakeholders and will be secured and embedded within the appropriate documents.

ID	Inspectorate's comments	Response
	The Applicant proposes to scope out this matter for all phases for the receptor identified on the basis that it is unlikely that notable population assemblages will be significantly affected by direct mortality once mitigation measures are in place. The Inspectorate is content that this matter can be scoped out, subject to appropriate mitigation measures agreed with the relevant stakeholders, secured and embedded within control documents.	
3.3.3	**Impacts to common and widespread habitats of low sensitivity and/or conservation interest** The Applicant proposes to scope out this matter. However, the Inspectorate considers that there is currently insufficient information regarding the habitats the Applicant has classified to be of low sensitivity and/or conservation interest, together with the scale of any temporary/permanent loss, and therefore cannot agree that significant effects would not be likely.	As per the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment (Ref 8.33) the assessment focuses on habitats and species that are relevant i.e., ecological features considered important and potentially affected by the Project. In its guidance, CIEEM makes clear that there is no need to: '…*carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable'*. However, the embedded mitigation and control measures (as detailed in section 8.6) will also help to safeguard wider biodiversity. As stated in paragraph 8.4.23 of this chapter, all ecological features of local value and above, where there is the potential for the Project to impact them directly or indirectly, will be taken forward to impact assessment and will be the relevant ecological features for the purposes of the Ecological Impact Assessment (EcIA). Habitats and species which are of site importance only will not be taken through the assessment.
3.3.4	**Chesterfield Canal Site of Special Scientific Interest (SSSI)**	Potential effects on Chesterfield Canal SSSI have been assessed in this preliminary assessment (refer to

ID	Inspectorate's comments	Response
	The Applicant's attention is drawn to the consultation response from the Canal and River Trust (Appendix 2 of this Opinion). This states that a section of the Chesterfield Canal is a designated SSSI and, although it is designated primarily for the nationally uncommon aquatic plant community, it is an important flight line for birds and bats. The Inspectorate therefore advises that any cable crossings have measures in place to reduce the risk of cable strikes by birds and that any construction phase activities should be kept away from the canal corridor to minimise any disturbance. The ES should also provide full details of habitat loss in proximity to the Chesterfield Canal SSSI, including an assessment of the extent of vegetation loss. Any proposed mitigation measures should be agreed with the relevant stakeholders.	Table 8.22) and will be reported in the ES. The ES will provide details of any habitat loss in proximity to the Chesterfield Canal SSSI. Proposed mitigation measures will be agreed with the relevant stakeholders. Effects in relation to birds are discussed within **Chapter 9 Ornithology**.

Project Engagement and Consultation

8.3.2 The ecology assessment has been, and will continue to be, informed by consultation and engagement with stakeholders including East Riding of Yorkshire Council, North Lincolnshire Council, Bassetlaw District Council, Newark and Sherwood District Council, Nottinghamshire County Council and Natural England. Further details of these discussions will be provided in the ES.

8.4 Assessment Approach and Methods

8.4.1 **Chapter 5 Approach to Preparing the PEIR** sets out the overarching approach that has been used in developing the preliminary environmental information. This section describes the technical methods used to determine the baseline conditions, sensitivity of receptors, and magnitude of impacts and resulting effects, and sets out the criteria that have been used for the preliminary ecology assessment. This section also identifies further assessment work to be undertaken and reported in the ES.

Guidance Specific to the Ecology Assessment

8.4.2 Relevant guidance specific to ecology that has informed the approach to the preliminary assessment, and will inform the final assessment reported within the ES, comprises:

- CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater, Costal and Marine, 2024 (Ref 8.33);
- Natural England and Department for Environment, Food and Rural Affairs (Defra) Standing Advice (protected species), 2023 (Ref 8.34);
- Birds of Conservation Concern (BoCC), 2021 (Ref 8.35);
- The International Union for Conservation of Nature Red List of Threatened Species, 2024 (Ref 8.36);
- Bat Surveys for Professional Ecologists: Good Practice Guidelines, 2023 (Ref 8.37);
- Joint Nature Conservation Committee (JNCC) Handbook for Phase 1 habitat survey, 2010 (Ref 8.38);
- Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*), 2000 (Ref 8.39);
- Froglife Advice Sheet 10 Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation, 1999 (Ref 8.40);
- The Mammal Society Surveying Badgers, 1989 (Ref 8.41);
- The Water Vole Mitigation Handbook, 2016 (Ref 8.42);
- The Water Vole Conservation Handbook, 2011 (Ref 8.43);
- Ecology of the European Otter, 2003 (Ref 8.44);
- The Dormouse Conservation Handbook, 2006 (Ref 8.45); and
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services, 2011 (Ref 8.46).

Study Area

8.4.3 This section describes the study areas for ecological assessment and includes the land within the draft Order Limits and appropriate buffer zones (termed the zones of influence (ZoI)), as described in Table 8.2. The study areas presented in Table 8.2 is presented for the Project inclusive of both the Proposed Overhead Line and Proposed Substation Works. These buffers will be applied to the subsequent refined Order Limits when defined later within the Project.

8.4.4 The boundaries and ZoIs for the ecological study areas reflect standard industry good practice guidance and professional judgment, and are the distances that statutory nature conservation bodies would typically expect to be considered for identification of features that could be impacted by the Project.

Table 8.2 - Study areas for different ecological features

Study area (distance from draft Order Limits)	Feature
30 km	SAC and SPA where (respectively) bats, cetaceans or bird species with large foraging ranges are noted as qualifying features.
10 km	Statutory designated sites of international nature conservation value e.g., SACs, SPAs and Ramsar sites (as well as proposed or potential sites).
5 km	Statutory designated sites of national and local nature conservation value e.g., SSSIs (also referencing Natural England Impact Risk Zones for SSSIs on the Multi-Agency Geographic Information for the Countryside (MAGIC) website (Ref 8.47), National Nature Reserves (NNR) and Local Nature Reserves (LNR)).
2 km	Non-statutory designated sites of nature conservation value e.g., Local Wildlife Sites (LWS), Wildlife Trust Nature Reserves, Royal Society for the Protection of Birds (RSPB) reserves[1], Roadside Nature Reserves (RNR) (Lincolnshire), Verge Nature Reserves (ERYC), Notified Road Verges (NRV) (Nottinghamshire), ancient woodland, and other notable habitats (e.g., Habitats of Principal Importance (Ref 8.48). Records of protected and notable species received from the Local Records Centres (LRC).

Baseline Data Gathering and Forecasting Methods

Data sources

8.4.5 The baseline information has been informed by a desk study, which has drawn on the following information sources:

- Following on from the data collected for the routeing and siting stage of the Project, as reported in the Scoping Report (Ref 8.32), LRCs were contacted initially in April 2023 and most recently in July and November 2024 (to ensure the data was the most up to date) to obtain pre-existing ecological data (i.e., locations of non-statutory sites designated for nature conservation, existing records of protected, notable and invasive non-native species (INNS)). The relevant LRCs contacted were:
  - North and East Yorkshire Ecological Data Centre;
  - Greater Lincolnshire Nature Partnership; and
  - Nottinghamshire Biological and Geological Records Centre.

[1] Effects relating to RSPB reserves are assessed in Chapter 9 Ornithology

- Online data resources that were reviewed include:
  - the Natural England website (Ref 8.49) for information on statutory designated sites of nature conservation interest and to confirm reasons for designation and their condition;
  - Ordnance Survey (OS) 1:10,000, 1:25,000, 1:50,000 and 1:250,000 base mapping;
  - the MAGIC website (Ref 8.47) to identify the location (and details) of statutory designated sites, ancient woodland, Priority Habitats, and for any granted European Protected Species (EPS) Licence applications;
  - the Joint Nature Conservation Committee (JNCC) website (Ref 8.50) for site information and designation details of SACs, SPAs, and Ramsar sites;
  - aerial imagery (Google Maps);
  - Lincolnshire Biodiversity Action Plan (Ref 8.51);
  - Nottinghamshire Local Biodiversity Action Plan (Ref 8.52);
  - Yorkshire and Humber Regional Biodiversity Strategy (Ref 8.53);
  - Woodland Trust Ancient Tree Inventory (Ref 8.54) for records of veteran and ancient trees;
  - Environment Agency Ecology and Fish Data for species records of fish, macroinvertebrate and macrophytes species (Ref 8.55);
  - Environment Agency Catchment Data Explorer for data on Water Framework Directive (WFD) waterbodies and water catchments (Ref 8.56);
  - National Biodiversity Network (NBN) Gateway for open-source records of crayfish (Ref 8.57);
  - data relating to protected/notified verges will be requested from the relevant authorities; and
  - data held by the relevant councils, and local groups and organisations such as the Nottinghamshire Dormouse Group, where not already accessed through the LRCs.

Site visit and surveys

8.4.6 Some survey information obtained through field surveys carried out between February 2024 and October 2024 has been used to inform this preliminary assessment, where this information has been subject to review and analysis.

8.4.7 Surveys conducted in support of the proposed Birkhill Wood Substation and High Marnham substation, which are subject to separate planning applications under the Town and Country Planning Act, have been used in support of the preliminary assessment within this chapter, where available.

8.4.8 Full details of field surveys undertaken from February 2024 onwards, including those programmed to be completed in 2025, will be included within the ES.

8.4.9 The ecological survey programme is outlined in

8.4.10 Table 8.3, this is based on surveys completed to date and those programmed for 2025, in addition to the results of the desk study, good practice guidance and previous consultation/engagement. The survey status is based on the surveys carried up to and including October 2024. Further engagement and consultation with relevant consultees regarding the survey programme is on-going and may influence the information provided within Table 8.3 which will be reported within the ES.

Table 8.3 - Ecological survey programme for the Proposed Overhead Line

Survey Type	Overview and survey area	Survey status
Fixed Wing Flyover Survey	Within and up to 50 m from the draft Order Limits, to provide an indication of the habitats present, prior to the Phase 1 habitat survey being undertaken on the ground.	Completed in 2023
Extended Phase 1 Habitat Survey	Within and up to 50 m from the draft Order Limits, in accordance with the JNCC Handbook for Phase 1 habitat survey (Ref 8.38).	Survey ongoing and approximately 80% complete, having commenced in February 2024
Habitat Condition Assessments (HCA)	Within affected land within the draft Order Limits, where required, in accordance with the most up-to-date guidance (Ref 8.38) at the time the surveys are conducted.	Surveys ongoing and largely complete, having commenced in February 2024.
Detailed Habitat/Vegetation Surveys (NVC)	Affected locations within the draft Order Limits where the Phase 1 habitat survey identifies habitat as being particularly species diverse and/or sensitive and/or a type restricted in the UK/region. The survey would be undertaken in accordance with the JNCC NVC Users' Handbook (Ref 8.58).	Some areas of woodland inside the draft Order Limits have been subject to a more detailed botanical survey. Further detailed habitat/vegetation surveys will be undertaken, where required, in 2025.
Detailed Habitat/Vegetation Surveys (Hedgerows)	Affected locations within the draft Order Limits where Phase 1 habitat survey identifies hedges as being particularly species diverse and/or more than thirty years old, and potentially Important under The Hedgerow Regulations 1997 (Ref 8.11). The survey would be undertaken in accordance with the Hedgerow Survey Handbook (Ref 8.59).	Surveys will be undertaken, where required, in 2025.
Arboricultural Survey	Within and up to 30 m of the draft Order Limits, in accordance with BS5837:2012 (Ref 8.60)	Surveys ongoing, and largely complete, having commenced in August 2024

Survey Type	Overview and survey area	Survey status
Aquatic Habitats	Affected and unavoidable watercourses and ditches within the draft Order Limits. Targeted approach focusing on crossing points on or connected to Main/WFD Rivers. Standing waterbodies are scoped out of the aquatic ecological assessment as they will be avoided.	Modular River Surveys will be completed in 2025 to inform BNG assessment where required.
Aquatic Macroinvertebrate Surveys	Affected and unavoidable watercourses and ditches within the draft Order Limits. Targeted approach focusing on crossing points on or connected to main/WFD rivers. Surveys are undertaken in accordance with the Environment Agency Operational Instructions (Ref 8.61). Standing waterbodies are scoped out of the aquatic ecological assessment as they will be avoided. Macroinvertebrate survey sites are shown on **Figure 8.4 Aquatic Survey Locations**.	Surveys completed in Spring, Summer and Autumn 2024. Any required repeat and additional surveys will be undertaken in 2025.
Fish Surveys	Affected and unavoidable watercourses and ditches within the draft Order Limits. Targeted approach focusing on crossing points on or connected to main/WFD rivers.	Autumn 2024 completed, with further surveys scheduled for 2025.
Terrestrial Invertebrates	Affected and unavoidable locations within the draft Order Limits where the Phase 1 habitat survey identifies potentially significant habitat for terrestrial invertebrates. The survey methodology would be dependent on the target species.	Surveys will be completed in 2025, if required. The scope and survey programme will be determined following initial habitat survey and scoping visits. Scoping visits would involve revisiting areas of habitat that could potentially support notable invertebrates to determine the survey type and effort required.
Reptiles	Reptile surveys will be undertaken in the draft Order Limits where the Phase 1 habitat survey identifies habitat as being suitable for reptiles, having potential for more than low populations, and where large scale or permanent habitat loss would result due to the Proposed Overhead Line. This will be determined through professional judgement based on the habitat and Froglife's Advice Sheet 10 for Reptile Surveys (Ref 8.40).	Surveys will be undertaken between April and October 2025, if required.

Survey Type	Overview and survey area	Survey status
Great Crested Newt (*Triturus cristatus*) (GCN)	GCN Habitat Suitability Index (HSI) surveys to be carried out on accessible waterbodies located within and up to 250 m from the draft Order Limits, in accordance with Evaluating the suitability of habitat for the great crested newt (Ref 8.39). Following the HSI surveys, presence/likely absence surveys (environmental DNA (eDNA) survey) will be (Ref 8.62) carried out on waterbodies within 250 m of the draft Order Limits that are assessed as being potentially suitable for breeding GCN. The requirement for population size estimation surveys will be determined based on the results of the eDNA surveys and whether the District Level Licence (DLL) approach is taken (see paragraphs 8.4.52 to 8.4.54 for further information). This may differ for each Route Section depending on if and where DLL approaches are available.	GCN HSI surveys were undertaken on all accessible waterbodies that fell within 250 m of the draft Order Limits relevant at that time during Spring 2024. Of the 91 ponds surveyed, 56 had an eDNA survey. Further surveys will be undertaken in Spring 2025, as required, and will include additional ponds that now fall within 250 m of the current draft Order Limits.
Bats – Roosting	Surveys to be conducted in accordance with best practice guidance (Ref 8.37) to identify bat tree roosts that could be affected. This includes daytime bat walkover (DBW) surveys, ground level tree assessments (GLTA) and assessments of woodlands to determine where any further surveys are required, such as aerial inspection surveys or dusk emergence surveys where appropriate.	The DBW and GLTA surveys are ongoing having commenced in February 2024. The GLTA surveys carried out to the end of October 2024 have covered the majority of the accessible woodland areas inside the draft Order Limits, in addition to some standalone trees.
Bats – Foraging and Commuting	Surveys conducted in accordance with best practice guidance (Ref 8.37). Night-time bat walkover (NBW) surveys and automated static detectors placed in suitable habitat, according to bespoke criteria, to obtain information on species assemblage and an indication of activity levels across the draft Order Limits.	Surveys to be undertaken between April and October 2025.
Hazel Dormouse (*Muscardinus avellanarius*)	Suitable habitat that falls within the draft Order Limits, in proximity to Treswell Wood, the location of a known hazel dormouse reintroduction site. Surveys would be in accordance with the Dormouse Conservation Handbook (Ref 8.45), if required.	Surveys will be undertaken in 2025, if required.

Survey Type	Overview and survey area	Survey status
Otter (*Lutra lutra*) and Water Vole (*Arvicola amphibius*)	Targeted sections of watercourses/ditches that will be crossed by the Proposed Overhead Line, either through the installation of a new crossing or modification of an existing crossing. Surveys would be in accordance with standard guidance (Ref 8.42, Ref 8.43, and Ref 8.44)	Surveys are ongoing and will continue between April and October 2025. In total, 246 watercourse/ditch crossing points have been identified as requiring a survey.. Of these, 151 received an initial survey visit in 2024, with 95 not yet accessed for survey. Of the 151 crossing points visited in 2024, 79 of these watercourse/ditch sections were found to be dry or not present. Those that were dry when visited in 2024 (but which have the potential to hold water) will be revisited as part of the 2025 surveys.
Species of Principal Importance (SPI), listed under Section 41 of the NERC Act 2006 (Ref 8.8)	Most SPI have been considered under the relevant species or groups, for example habitat surveys will consider plants that are SPI, and terrestrial invertebrate surveys consider invertebrate SPI. Five species: common toad (*Bufo bufo*), brown hare (*Lepus europaeus*), harvest mouse (*Micromys minutus*), hedgehog (*Erinaceus europaeus*) and polecat (*Mustela putorius*)) have been identified that have the potential to be present within the draft Order Limits, and so may be affected by the Proposed Overhead Line. No targeted survey work for these five species is proposed, but their presence will be recorded if they are encountered during other surveys and their presence will be assumed where suitable habitat is present.	No dedicated surveys are being undertaken for SPI. Species have been incidentally recorded during the ongoing ecology surveys and will continue in this approach into 2025.
Badger (*Meles meles*)	The presence of badger within the draft Order Limits has been confirmed. Evidence of badger will continue to be recorded during ecological surveys in 2025. A dedicated badger survey will be undertaken pre-construction to confirm the locations and status of badger setts.	Surveyors will continue to make note of any badger setts during the ongoing ecological surveys.

Further data to be collected to inform the ES

8.4.11 The ES will be informed by the ongoing and additional surveys as set out in Table 8.3

Assessment Methods and Criteria

8.4.12 The following section summarises the methods used for the ecology assessment in this chapter and the assessment method that will be followed for the ES. This builds on the general assessment method presented in **Chapter 5 Approach to Preparing the PEIR**.

8.4.13 The impact assessment will be undertaken in accordance with best practice guidance for EcIA, issued by CIEEM entitled Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater, Costal and Marine (Ref 8.33). The principal steps involved in the CIEEM approach can be summarised as:

- ecological features that are both present and might be affected by the Project are identified through a combination of targeted desk-based study and field survey work, to determine the relevant baseline conditions;
- the importance of the identified ecological features are evaluated, placing their relative biodiversity and nature conservation value into geographic context, which is then used to define the relevant ecological features that need to be considered further;
- the changes or perturbations predicted to result as a consequence of the Project (i.e., the potential impacts) and which could potentially affect relevant ecological features are identified and their nature described. Established best-practice, legislative requirements, or other incorporated design measures to minimise or avoid impacts, are also described and are taken into account;
- the likely significant effects (beneficial or adverse) on relevant ecological features are then assessed and, where possible, quantified;
- measures to avoid or reduce any likely significant effects, if possible, are then developed in conjunction with other elements of the design (including mitigation for other environmental disciplines) and, if necessary, measures to compensate for likely significant effects on features of nature conservation importance are also included;
- the residual effects of the Project are reported; and
- the potential for delivering ecological enhancements is considered.

Sensitivity/value of ecological feature

8.4.14 The CIEEM guidelines (Ref 8.33) make clear that there is no need to:

'carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable'.

8.4.15 Therefore, it is not necessary for the assessment to address all habitats and species with potential to occur in the relevant study area and instead the focus is on those that are relevant i.e., ecological features that are considered to be important and potentially affected by the Project. This does not mean that efforts will not be made to safeguard wider biodiversity.

8.4.16 To support a focussed assessment, there is a need to determine the scale at which the relevant ecological features identified through the desk studies and field surveys undertaken for the Project are of value. The value of each relevant ecological feature has been defined with reference to the geographical level at which it matters.

8.4.17 The frames of reference that will be used for the assessment, based on Section 4.7 of the CIEEM guidelines (Ref 8.33) are:

- international (i.e., Ramsar Sites, SACs and SPAs) (normally within the geographic area of Europe);
- UK or national (Great Britain, but considering the potential for certain ecological features to be more notable (of higher value) in England, with context relative to Great Britain as a whole);
- regional (Yorkshire and the Humber and East Midlands);
- county (East Riding of Yorkshire, Nottinghamshire, and Lincolnshire);
- district (town or parish area for example Garthorpe);
- local (ecological features that do not meet criteria for valuation at a District or higher level, but that have sufficient value to merit retention or mitigation); and
- site (common and widespread ecological features the priority of which is low enough that they do not require retention or mitigation at the relevant location to otherwise maintain a favourable nature conservation status).

8.4.18 Species populations are valued on the basis of their size, recognised status (such as Biodiversity Action Plan (BAP) status) and legal protection.

8.4.19 In assigning values to species populations, it is important to consider the status of the species in terms of any legal protection. However, it is also important to consider other factors such as its distribution, rarity, population trends, and the size of the population that would be affected. For example, whilst GCN is afforded EPS status under the relevant legislation and therefore conservation of the species is of significance at an international level, this does not mean that every population of GCN is internationally important. It is important to consider the each population in its context. Therefore, in assigning values to species, the geographic scale at which they are important has been considered. The assessments of value rely on the professional opinion and judgment of suitably experienced ecologists.

8.4.20 Plant communities will be assessed in terms of their intrinsic value, as habitat for protected and notable species.

8.4.21 Due regard will be paid to the legal protection afforded to species during the development of mitigation and compensation measures to be implemented for the Project. For EPS there is a requirement that the Project should not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

8.4.22 Assessing the value of features requires consideration of both existing and future predicted baseline conditions. Therefore, the description and valuation of ecological features takes account of any likely changes, such as trends in the population size or distribution of species, likely changes to the extent of habitats, and the effects of other proposed developments or land use changes.

8.4.23 All ecological features of local value and above, where there is the potential for the Project to impact them directly or indirectly, will be taken forward to impact assessment and will be the relevant ecological features for the purposes of the EcIA.

8.4.24 In line with Section 1.21 of the CIEEM guidelines (Ref 8.33), the terminology used within the EcIA draws a clear distinction between the terms impact and effect. For the purposes of this EcIA these terms are defined as follows:

'Impact – actions resulting in changes to an ecological feature. For example, the construction activities of a development removing a hedgerow.

Effect – outcome to an ecological feature from an impact. For example, the effects on a dormouse population from loss of a hedgerow.'

8.4.25 When describing potential impacts (and where relevant the resultant effects) consideration is given to the following characteristics likely to influence this:

- positive or negative (beneficial or adverse) – i.e., is the change likely to be in accordance with nature conservation objectives and policy and is that change:
  - positive (beneficial) – a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g., increasing the extent of a habitat of conservation value; or
  - negative (adverse) – a change that reduces the quality of the environment e.g., destruction of habitat.
- spatial extent – the spatial or geographical area or distance over which the impact or effect may occur under a suitably representative range of conditions;
- magnitude – the size, amount or intensity and volume of an impact – this is described on a quantitative basis where possible;
- duration – the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. Consideration has been given to how this duration relates to relevant ecological characteristics such as a species' lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;
- timing and frequency – i.e., consideration of the point at which the impact occurs in relation to critical life-stages or seasons; and
- reversibility – i.e., is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

8.4.26 Inter-Project cumulative effects result from the combined impacts of multiple developments on a receptor. Intra-project effects occur where multiple in-scheme impacts, for example, combined noise, air quality and lighting impacts, affect the same sensitive receptor.

Significance of effects

8.4.27 For each ecological feature only those characteristics relevant to understanding the ecological effect of the Project and determining the significance are described. The

determination of the significance of effects will be made based on the predicted effect on the structure and function, or conservation status, of relevant ecological features, as follows:

- not significant – no effect on structure and function, or conservation status; and
- significant – structure and function, or conservation status is affected.

8.4.28 Section 5.24 of the CIEEM guidelines (Ref 8.33) state that:

'…For the purpose of EcIA, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' (explained in Chapter 4) or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.'

8.4.29 *Sections 5.*25 and 5.26 of the CIEEM guidelines (Ref 8.33) state that:

'A significant effect is simply an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. A significant effect is a positive or negative ecological effect that should be given weight in judging whether to authorise a project: it can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring. A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects have been lawfully permitted following EIA procedures.

In broad terms, significant effects encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).'

8.4.30 Using this information and judgment, it is determined whether the effects will be significant or not on the structure and integrity (of site or ecosystems) or conservation status (of habitats and or species) of each ecological feature and the effect significance is determined at the appropriate geographical scale.

8.4.31 There are a range of approaches for determining the significance of effects on ecological features. Whilst the CIEEM guidelines (Ref 8.33) recommends the avoidance of the use of the matrix approach for categorisation (major, moderate and minor), in order to provide consistency of terminology within the ES, as presented in **Chapter 5 Approach to Preparing the PEIR**, the findings of the CIEEM assessment will be translated into the classification of effects scale, as outlined in Table 8.4, but still remain consistent with the CIEEM guidelines (Ref 8.33). As a rule, major and moderate effects are considered to be significant, whilst minor and negligible effects are considered to be not significant. However, professional judgement will also be applied when concluding whether an effect is significant or not, including taking account of whether the effect is permanent or temporary, its duration and frequency, whether it is reversible, and/or its likelihood of occurrence.

Table 8.4 - Relating CIEEM assessment terms to those used in **Chapter 5 Approach to Preparing the PEIR**

Effect classification terminology used in Chapter 5 Approach to Preparing the PEIR	Equivalent CIEEM assessment
Major beneficial	Beneficial effect on structure/function or conservation status at regional, national, or international level.
Moderate beneficial	Beneficial effect on structure/function or conservation status at county and district level.
Minor beneficial	Beneficial effect on structure/function or conservation status at local level.
Negligible	No effect on structure/function or conservation status.
Minor adverse	Adverse effect on structure/function or conservation status at local level.
Moderate adverse	Adverse effect on structure/function or conservation status at county and district level.
Major adverse	Adverse effect on structure/function or conservation status at regional, national or international level.

Approach to defining significance in the PEIR

8.4.32 As set out in **Chapter 5 Approach to Preparing the PEIR** the general approach taken in determining the significance of effect in this preliminary assessment is only to state whether effects are likely or unlikely to be significant, rather than assigning a significance level.

8.4.33 Following on from the identification of whether an effect is considered likely to be significant or not significant, a confidence in the prediction is given a rating of high, moderate, or low, in line with the confidence level definitions presented in **Chapter 5 Approach to Preparing the PEIR**.

8.4.34 For some effects it is not possible to assign a prediction of significance at this preliminary stage due to baseline survey data not being available, with surveys programmed for 2025.

Preliminary Assessment Assumptions and Limitations

8.4.35 The assessment has been undertaken based on preliminary design information for the Proposed Overhead Line as described in **Chapter 4 Description of the Project**. This information is likely to develop further in response to ongoing design, assessment and stakeholder feedback, and will be updated for the ES as the design evolves.

8.4.36 The broad habitats that were recorded within the Phase 1 survey area (as defined in Table 8.3) between the end of February and October 2024 are shown in **Figure 8.3 Phase 1 Habitat Survey Map**. The habitat surveys are ongoing and some of the broad

habitats that were recorded between February and October 2024 will be further defined through additional surveys (see Table 8.3). Therefore, the importance/value assigned to some of these habitats (as presented in Table 8.23). Table 8.23 will be revised in the ES.

8.4.37 As the ecology surveys are ongoing (as detailed in Table 8.3), the evaluation of importance/value assigned to each species (as presented in Table 8.24) is preliminary and may be updated in the ES once the surveys are complete and full data are available.

8.4.38 As set out in **Chapter 4 Description of the Project**, the following assumptions are taken into consideration for the ecology assessment with regard to vegetation removal and management:

- Overhead line:
  - Any vegetation within 20 m either side of the overhead line centreline would require removal.
  - Any vegetation between 20 m and 28 m of the overhead line centreline would be affected managed[2].
  - Any vegetation between 28 m and 50 m of the overhead line centreline would be potentially affected.
  - Any vegetation beyond 50 m would not be affected.
- For construction access and working areas, vegetation would be removed in the following areas:
  - Construction compounds
  - Access tracks, including culverts
  - Bellmouths and visibility splays
  - Pylon working areas
  - Crossing protection working areas
  - Bridge working areas
  - Highway widening
  - Third party works
- Vegetation would be affected managed in the following areas:
  - Overhanging of accesses and bellmouths
  - Trackway access and panel working areas
  - Operational, maintenance and third-party accesses
  - Stringing areas and between crossing protection (for netting)
  - Proposed temporary drainage areas
  - Temporary fibre optic diversions

[2] Management of vegetation for electrical clearances such as pruning.

8.4.39 Unless otherwise stated it is assumed that vegetation within the draft Order Limits, but outside one of the areas listed above, could be potentially affected. This is because there is flexibility in the design within the draft Order Limits, for example access track locations are currently indicative and could move within the draft Order Limits. Importantly, though, the assessment does not assume that all vegetation will be removed, as this is highly unlikely to be the case. Once the surveys are complete it will be possible to commit to not removing vegetation in certain areas, where this would avoid a potentially significant effect.

8.4.40 Suitably sized stand-off distances have been applied to the design of the Project to protect important habitat features during construction, including woodland, watercourses, and hedgerows, where practicable.

8.4.41 As detailed in **Chapter 15 Air Quality**, the preliminary air quality assessment focuses on the local air quality impacts associated with the construction phase of the Proposed Overhead Line. At the current stage of the assessment, it is anticipated that there would be no significant impacts on air quality during operation due to the Proposed Overhead Line being a static structure which will not have any associated emissions during operation. Potential air quality effects from the maintenance of the Proposed Overhead Line have been scoped out (Table 8.1). Therefore, this chapter does not consider potential effects on ecological features (i.e., habitats, sites and species) due to operational and maintenance air quality impacts, as no significant effects are anticipated.

8.4.42 **Chapter 15 Air Quality** presents a preliminary assessment of construction dust on relevant ecological sites, located up to 50 m from the draft Order Limits and up to 50 m from the route(s) used by construction vehicles on the public highway, up to 250 m from the bellmouths. This has been used to inform the preliminary assessment presented in this chapter.

8.4.43 As detailed in **Chapter 15 Air Quality**, provisional construction traffic data have been reviewed as part of the preliminary assessment but are not yet in a format that enables comparison with the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK) Development Control screening thresholds set out **Chapter 15 Air Quality**. Therefore, the air quality impacts from construction vehicle emissions will be assessed and reported in the ES once further details are available, and if any of the IAQM and EPUK screening thresholds have been exceeded.

8.4.44 The preliminary assessment presented in this chapter is based on the watercourse crossings schedule presented in **Appendix 4.3 Indicative Bridge and Culvert Schedule**.

8.4.45 The assumptions and limitations will be reviewed based on the design presented in the Development Consent Order (DCO) application and, where required, they will be updated or refined. The ES will present the final parameters and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from what is presented in this preliminary assessment.

Further Assessment within the ES

8.4.46 The ES will present a full detailed assessment in accordance CIEEM guidance (Ref 8.33) with the significance of the effect on a receptor presented, where relevant, during construction and operation (and maintenance), when considered in relation to the sensitivity or value of the receptor and the magnitude, duration, reversibility etc. of the potential effect. In addition, a BNG assessment and details of DLL (if considered

appropriate for the Project in consultation with Natural England) for great crested newt will be appended to the ES, further details are provided in the paragraphs that follow. The HRA will be undertaken in parallel with the ES. The HRA will consider if the Project could result in significant effects on the integrity of a European site and its conservation objectives, either alone or in-combination with other plans/projects.

Biodiversity Net Gain

8.4.47 BNG is an approach to development that makes sure that habitats for wildlife are left in a measurably better state than they were before the development by increasing the overall biodiversity value of a site.

8.4.48 National Grid has committed to 10% Net Gain in Environmental value including, as a minimum, 10% BNG across all its construction projects, including this Project, in line with the Environment Act 2021 (Ref 8.9).

8.4.49 A BNG assessment will be undertaken and submitted with the DCO application, and will follow industry good practice methods comprising:

- Biodiversity Net Gain: Good Practice Principles for Development (Ref 8.63); and
- Statutory Biodiversity Metric Tools and User Guides, 2024 (Ref 8.64) (this being the most recent version at the time of undertaking the preliminary assessment).

Habitats Regulations Assessment

8.4.50 A HRA is required to consider whether a project is likely to have a significant effect on areas that have been internationally designated for nature and conservation purposes (habitat sites) including SACs, SPAs and Ramsar sites. Habitat sites are protected under the Conservation of Habitats and Species Regulations 2017 (Ref 8.7).

8.4.51 A preliminary HRA stage 1 report is provided in **Appendix 8.2 HRA Preliminary Stage 1 Report.** A full assessment will be undertaken and submitted with the DCO application, and will follow the industry guidance comprising:

- General European Commission (EC) guidance on HRA (Ref 8.65);
- General guidance on HRA published by the UK Government in July 2019 (Ref 8.66); and
- Nationally Significant Infrastructure Projects: Advice on Habitats Regulations Assessments (Ref 8.67).

Great crested newt

8.4.52 DLL is an alternative approach to mitigation licensing for development that could affect GCN. The approach aims to increase the number of GCNs by providing new/better habitats in targeted areas to benefit their wider population, rather than mitigation being located where the potential impacts occur.

8.4.53 The DLL approach includes strategic area assessment, the identification of risk zones, and the use of strategic opportunity area maps. The DLL approach is not available in all locations; however, where a DLL scheme is in place, developers can make a financial contribution to strategic habitat compensation (documented within an Impact Assessment and Conservation Payment Certificate (IACPC)) instead of applying for a separate licence. This avoids the need to conduct detailed GCN surveys and means that GCN do not need to be considered in the EcIA.

8.4.54 There are three risk categories under the Natural England DLL scheme (red, amber, and green) and DLL is only available for development within amber and green zones.

8.4.55 Discussions with Natural England are ongoing regarding whether DLL is an approach that will be available to the Project. The ecology assessment has been, and will continue to be, informed by consultation and engagement with stakeholders including East Riding of Yorkshire Council, North Lincolnshire Council, Bassetlaw District Council, Newark and Sherwood District Council, Nottinghamshire County Council and Natural England. Further details of these discussions will be provided in the ES.

8.5 Baseline Conditions

8.5.1 This section describes the baseline ecology in the study area where it relates to the Proposed Overhead Line. The baseline ecology environment in the study area in relation to the Proposed Substation Works is presented in **Chapter 20 Substations and Associated Works**.

8.5.2 This section describes the baseline ecological conditions present in the appropriate study and survey areas (see Table 8.2) identified for assessment.

8.5.3 Baseline conditions have been gathered from desk-based information and ongoing site surveys and are presented with reference to the Route Section of the Project within which they are relevant to (as shown on **Figure 1.1 Project Location and Route Sections** in Volume 2).

Statutory Designated Sites of International Importance

8.5.4 There are six internationally important designated sites within 10 km of the Proposed Overhead Line. No additional SACs were identified within 30 km that are designated for bat conservation, or for cetaceans. Please refer to **Chapter 9 Ornithology** for any additional designated sites within 30 km that are included specifically for birds. A HRA screening exercise has identified the potential for likely significant effects on all of these sites, as outlined further in **Appendix 8.2 Habitat Regulations Assessment Stage 1 Screening Report**.

8.5.5 These sites are listed in Table 8.5 and shown on **Figure 8.1 International Sites Designated for Nature Conservation within 10 km and National and Local Statutory Designated Sites within 5 km**.

Table 8.5 - International Sites Designated for nature conservation

Designation	Approximate distance from the draft Order Limits (km)	Closest Route Section
Humber Estuary SAC	Partly within the draft Order Limits	Route Section 4
Humber Estuary SPA	Partly within the draft Order Limits	Route Section 4
Humber Estuary Ramsar	Partly within the draft Order Limits	Route Section 4
Thorne Moor SAC	2.70 km	Route Section 6

Designation	Approximate distance from the draft Order Limits (km)	Closest Route Section
Thorne and Hatfield Moors SPA	2.70 km	Route Section 6
Hatfield Moor SAC	5.24 km	Route Section 7

Statutory Designated Sites of National Importance

8.5.6 There are 36 other statutory designated sites of national importance (SSSIs/NNRs) within the study area. Please refer to **Chapter 9 Ornithology** for any additional designated sites included specifically for birds.

8.5.7 These sites are listed in Table 8.6 and are shown in **Figure 8.1 International Sites Designated for Nature Conservation within 10 km and National and Local Statutory Designated Sites within 5 km.**

Table 8.6 - SSSI and NNR designated for nature conservation

Designation	Approximate distance from the draft Order Limits (km)	Closest Route Section[3]
Burton Bushes SSSI	3.33 km	Route Section 1
Brantingham Dale SSSI	Partly within the draft Order Limits	Route Section 2
Drewton Lane Pits SSSI	2.66 km	Route Section 2
Wyedale SSSI	4.38 km	Route Section 2
Everthorpe Quarry SSSI	2.16 km	Route Section 3
Melton Bottom Chalk Pit SSSI	2.86 km	Route Section 3
South Cliffe Common SSSI	3.12 km	Route Section 3
Hotham Meadow SSSI	4.89 km	Route Section 3
Humber Estuary SSSI	Partly within the draft Order Limits	Route Section 4
Crowle Borrow Pits SSSI	Partly within the draft Order Limits	Route Section 6

[3] Only the closest Route Section of the draft Order Limits is provided.

Designation	Approximate distance from the draft Order Limits (km)	Closest Route Section[3]
Hatfield Chase Ditches SSSI	0.07 km	Route Section 6
Eastoft Meadow SSSI	0.97 km	Route Section 6
Thorne, Crowle and Goole Moors SSSI	2.69 km	Route Section 6
Humberhead Peatlands NNR	2.70 km	Route Section 6
Hewson's Field SSSI	0.39 km	Route Section 7
Rush Furlong SSSI	1.06 km	Route Section 7
Belshaw SSSI	2.29 km	Route Section 7
Laughton Common SSSI	3.65 km	Route Section 7
Epworth Turbary SSSI	2.73 km	Route Section 7
Tuetoes Hills SSSI	3.74 km	Route Section 7
Haxey Turbary SSSI	3.76 km	Route Section 7
Scotton and Laughton Forest Ponds SSSI	4.83 km	Route Section 7
Chesterfield Canal SSSI	Partly within the draft Order Limits	Route Section 8/9 (canal defines Route Section boundary)
Mother Drain, Misterton SSSI	0.65 km	Route Section 8
Haxey Grange Fen SSSI	1.37 km	Route Section 8
River Idle Washlands SSSI	2.50 km	Route Section 8
Misson Line Bank SSSI	2.82 km	Route Section 8
Misson Training Area SSSI	2.89 km	Route Section 8
Lea Marsh SSSI	3.11 km	Route Section 9
Sutton and Lound Gravel Pits SSSI	4.71 km	Route Section 9
Treswell Wood SSSI	0.29 km	Route Section 10
Clarborough Tunnel SSSI	0.62 km	Route Section 10
Ashton's Meadow SSSI	0.80 km	Route Section 10
Castle Hill Wood SSSI	2.41 km	Route Section 10
Gamston & Eaton Woods & Roadside Verges SSSI	3.46 km	Route Section 10

Designation	Approximate distance from the draft Order Limits (km)	Closest Route Section[3]
Spalford Warren SSSI	3.68 km	Route Section 11

Statutory Designated Sites of Local Importance

8.5.8 Nine locally important statutory sites designated for nature conservation (all Local Nature Reserves (LNR)) are located within the study area.

8.5.9 All LNRs within the study area are listed in Table 8.7 and are shown in **Figure 8.1 - International Sites Designated for Nature Conservation within 10 km and National and Local Statutory Designated Sites within 5 km**.

Table 8.7 - LNRs designated for nature conservation

Designation	Approximate distance from the draft Order Limits (km)	Closest Route Section[4]
Beverley Parks LNR	0.67 km	Route Section 1
Phoenix LNR	3.57 km	Route Section 6
Phoenix Parkway LNR	4.15 km	Route Section 6
Conesby Quarry LNR	4.26 km	Route Section 6
Atkinson's Warren LNR	4.57 km	Route Section 6
Owston Ferry Castle LNR	0.69 km	Route Section 7
Axholme Line LNR	1.79 km	Route Section 7
Owlet LNR	4.46 km	Route Section 7
Theaker Avenue LNR	4.97 km	Route Section 9

Non-Statutory Designated Sites of Local Importance

8.5.10 There are 131 non-statutory sites designated for nature conservation (Local Wildlife Sites (LWS), Candidate LWS, Historic LWS, Wildlife Trust Reserves and RSPB reserves[5]) located within the study area. Some of these sites are both LWS and Wildlife Trust Reserves. Of these sites, 16 are partially located within the draft Order Limits.

[4] Only the closest Route Section of the draft Order Limits is provided.

[5] Effects relating to RSPB reserves and the bird species they support are assessed in **Chapter 9 Ornithology**

8.5.11 Within the East Riding of Yorkshire, in addition to LWS, there are two further categories, which are not fully designated LWS: Candidate LWS and Historic LWS. Candidate LWS have not yet been formally designated but are considered as part of the preliminary assessment as if they were designated LWS. The document from the East Riding of Yorkshire Council which formalises the processes and procedures for the management of the Local Sites system and provides guidelines for the selection of sites (Ref 8.79) states, at paragraph 4.6.2:

'Candidate sites act as a constraint in the planning system and with some Environment Agency consents. Policy ENV4 (part C) of the East Riding Local Plan Strategy document (adopted April 2016) states in the supporting text of paragraph 8.58 that:

> *Proposals that would have an adverse impact upon a Candidate LWS should treat the site as a designated LWS or provide sufficient relevant and credible ecological data to enable the site to be assessed against the objective guidelines detailed in the Local Sites in the East Riding of Yorkshire.'*

8.5.12 Historic LWS (located in East Yorkshire) have not been surveyed by the relevant authority under the current LWS system (i.e., since 2007), but unlike Candidate LWS these sites lack evidence that the site is of any substantive value, but equally lack compelling evidence to support their deletion. These sites will stay at this status until such a time that a survey can be completed.

8.5.13 It is understood that Historic LWS are no longer designated sites of local importance with regards local plan policies. The East Riding of Yorkshire Council's 'processes, procedures and guidelines' document (Ref 8.79), at paragraph 4.6.7 states:

'…It is intended that the new category of historic LWS would only be used for internal consultation on a case by case basis to assess if any additional information is required to determine a planning application. It will not be supplied to external partners such as the Environment Agency for use as a constraint in their consenting regimes. This approach was agreed with the council's planning and legal services'.

8.5.14 Paragraph 4.6.9 states that:

'…The Historic LWS designation will only be used internally be East Riding Council who may request that additional ecological information is provided by any planning applications which would be likely to have a significant impact upon such sites'.

8.5.15 Nevertheless, the uncertainty surrounding the ecological value of Historic LWS has led National Grid to consider them as if they were Candidate LWS for the purposes of the preliminary assessment.

8.5.16 Deleted LWSs have been surveyed by the relevant authority and their value does not meet the current LWS guidelines. As such these former sites have not been considered in the preliminary assessment as discrete ecological receptors.

8.5.17 All non-statutory sites designated for nature conservation are listed in Table 8.8 and are shown in **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitat within 2 km.**

Table 8.8 - Local Non-Statutory Sites designated for nature conservation

Designation	Approximate distance from the draft Order Limits	Closest Route Section[6]
Jillywood Lane LWS	Partly within the draft Order Limits	Route Section 1
Fishpond Wood, Risby Estate LWS	10 m	Route Section 1
Birkhill Wood LWS	31 m	Route Section 1
Woodhill Path, Cottingham LWS	0.39 km	Route Section 1
Bentley Moor Wood LWS	0.80 km	Route Section 1
Drove Road Candidate LWS	0.97 km	Route Section 1
Moor Lane LWS	1.40 km	Route Section 1
Mill Beck and Fields LWS	1.74 km	Route Section 1
Brantingham Dale Historic LWS	Partly within the draft Order Limits	Route Section 2
Cliffs Plantation Candidate LWS	4 m	Route Section 2
Woodale Historic LWS	50 m	Route Section 2
Risby Park LWS	0.18 km	Route Section 2
Little Weighton Cutting Historic LWS	0.52 km	Route Section 2
Eppleworth Wood LWS	0.59 km	Route Section 2
Mount Airy Verge Candidate LWS	0.70 km	Route Section 2
Sweatty Hill Plantation Historic LWS	0.75 km	Route Section 2
Raywell House LWS	1.13 km	Route Section 2
Disused Railway and The Warrens, Weedley Dale Candidate LWS	1.39 km	Route Section 2
Little Wold Plantation LWS	1.48 km	Route Section 2
Nut Wood and Wauldby Scroggs LWS	1.55 km	Route Section 2
Weedley Dale Candidate LWS	1.72 km	Route Section 2
Broomfleet Pits LWS	Partly within the draft Order Limits	Route Section 3
Broomfleet Washlands LWS	0.72 km	Route Section 3
Oxmardyke Washlands LWS	0.75 km	Route Section 3

[6] Only the closest Route Section of the draft Order Limits is provided.

Designation	Approximate distance from the draft Order Limits	Closest Route Section[6]
Watery Plump LWS	1.37 km	Route Section 3
Elloughton Dale East LWS	1.47 km	Route Section 3
Blacktoft Sands RSPB Reserve	Partly within the draft Order Limits	Route Section 4
Burton upon Stather Brick Pit LWS	1.79 km	Route Section 5
Paupers' Drain LWS	Partly within the draft Order Limits	Route Section 6
Folly Drain North LWS	Partly within the draft Order Limits	Route Section 6
Hatfield Waste Drain LWS	Partly within the draft Order Limits	Route Section 6
North Engine Drain, Belton LWS	Partly within the draft Order Limits	Route Section 6
River Torne LWS	Partly within the draft Order Limits	Route Section 6
South Engine Drain, Belton LWS	Partly within the draft Order Limits	Route Section 6
Stainforth and Keadby Canal Corridor LWS	Partly within the draft Order Limits	Route Section 6
Three Rivers LWS	2 m	Route Section 6
Keadby Boundary Drain LWS	0.34 km	Route Section 6
Crowle Brick Pits LWS	0.46 km	Route Section 6
Keadby Warping Drain LWS	0.53 km	Route Section 6
Warping Drain, Derrythorpe LWS	1.01 km	Route Section 6
South Soak Drain, Keadby LWS	1.05 km	Route Section 6
Keadby Wetland LWS	1.17 km	Route Section 6
Keadby Wet Grassland LWS	1.18 km	Route Section 6
New Godnow Drain West LWS	1.70 km	Route Section 6
Old Dun Drain LWS	1.93 km	Route Section 6
South Moor Covert and Fishpond Plantation LWS	Partly within the draft Order Limits	Route Section 7

Designation	Approximate distance from the draft Order Limits	Closest Route Section[6]
Warping Drain Corridor LWS	Partly within the draft Order Limits	Route Section 7/8
Sedge Hole Close Wildlife Trust Reserve/ LWS	Adjacent to the draft Order Limits	Route Section 7
Former Landfill, Belton LWS	0.98 km	Route Section 7
Rush Furlong Wildlife Trust Reserve	0.57 km	Route Section 7
Axholme Line, Belton LWS	1.00 km	Route Section 7
Rush Furlong LWS	1.04 km	Route Section 7
Belton Picnic Area LWS	1.13 km	Route Section 7
Belton Brickworks LWS	1.25 km	Route Section 7
Epworth Meadows LWS	1.33 km	Route Section 7
Axholme Line, Haxey LWS	1.79 km	Route Section 7
River Trent, West Stockwith LWS	1.99 km	Route Section 7
Chesterfield Canal (Welham to Misterton) LWS	Partly within the draft Order Limits	Route Sections 8 and 9
Mother Drain, Misterton LWS	0.01 km	Route Section 8
Shaw Ponds LWS	0.20 km	Route Section 8
Misterton Pasture LWS	0.22 km	Route Section 8
River Idle and Banks, West Stockwith LWS	0.32 km	Route Section 8
Tindale Drain LWS	0.34 km	Route Section 8
Chesterfield Canal (Misterton to West Stockwith) LWS	0.39 km	Route Section 8
River Idle LWS	0.47 km	Route Section 8
Walkeringham Wildlife Trust Reserve	0.73 km	Route Section 8
Walkeringham Claypits LWS	0.73 km	Route Section 8
Langholme Wood Wildlife Trust Reserve	0.74 km	Route Section 8
Langholme Wood LWS	0.83 km	Route Section 8
Walkeringham Pasture LWS	1.36 km	Route Section 8

Designation	Approximate distance from the draft Order Limits	Closest Route Section[6]
Misterton Soss Ponds LWS	1.38 km	Route Section 8
Scotts Wood LWS	1.46 km	Route Section 8
Soss Lane Grassland, Misterton LWS	1.50 km	Route Section 8
Mother Drain, East Gringley LWS	1.51 km	Route Section 8
Carr Road Drains Complex LWS	1.78 km	Route Section 8
Mill Road Verge LWS	1.91 km	Route Section 8
Saundby Park Wood LWS	2 m	Route Section 9
Tongs and Dogholes Woods LWS	0.08 km	Route Section 9
Wheatley Wood LWS	0.13 km	Route Section 9
Wooden Beck Hill Verges LWS	0.16 km	Route Section 9
Beckingham Wood LWS	0.30 km	Route Section 9
Lancaster Lane Hedge, Gringley LWS	0.98 km	Route Section 9
Clayworth Woodhouse Pond LWS	1.01 km	Route Section 9
Lovers Lane, Clayworth LWS	1.11 km	Route Section 9
Bole Ings Drains LWS	1.33 km	Route Section 9
Saundby Marsh Drains Candidate LWS	1.34 km	Route Section 9
Beckingham Marshes LWS and RSPB Reserve	1.36 km	Route Section 9
Marsh Road Pond, Walkeringham Candidate LWS	1.86 km	Route Section 9
Mill Lane, Clayworth LWS	1.90 km	Route Section 9
Caddow Wood (Southern Assarts) LWS	Adjacent to the draft Order Limits)	Route Section 10
Retford Gate Green Lane LWS	Partly within the draft Order Limits	Route Section 10
High House Road Verges, Sturton Le Steeple LWS	0.02 km	Route Section 10
West Burton Meadow Wildlife Trust Reserve/LWS	0.12 km	Route Section 10
Caddow Wood (Northern Assart) LWS	0.23 km	Route Section 10

Designation	Approximate distance from the draft Order Limits	Closest Route Section[6]
Treswell Wood Wildlife Trust Reserve/LWS	0.29 km	Route Section 10
Bushstocks Lane Meadow LWS	0.35 km	Route Section 10
Headon Verges LWS	0.41 km	Route Section 10
Cowsland Stripe LWS	0.58 km	Route Section 10
Clarborough Tunnel Wildlife Trust Reserve/LWS	0.62 km	Route Section 10
Beast Wood Grassland LWS	0.65 km	Route Section 10
Maumhill Wood LWS	0.66 km	Route Section 10
Ashtons Meadow Wildlife Trust Reserve/LWS	0.80 km	Route Section 10
Hutchinsons Holt LWS	0.84 km	Route Section 10
North Wheatley Beck LWS	0.89 km	Route Section 10
Kingshaugh Farm Earthwork LWS	0.90 km	Route Section 10
Fledborough Holme LWS	1.11 km	Route Section 10
Retford Road Wood, Rampton LWS	1.16 km	Route Section 10
West Burton Power Station LWS	1.17 km	Route Section 10
Blue Stocking Lane, Clarborough LWS	1.21 km	Route Section 10
Grovefield Stripe LWS	1.31 km	Route Section 10
Muspitt Lane LWS	1.33 km	Route Section 10
Bole Ings LWS	1.51 km	Route Section 10
West Burton Reedbed LWS	1.52 km	Route Section 10
Burton Round Ditch LWS	1.54 km	Route Section 10
Grove Road Woodland LWS	1.77 km	Route Section 10
Dunham Oxbow LWS	1.79 km	Route Section 10
Whinleys Road Woodland LWS	1.90 km	Route Section 10
Dunham Dubs LWS	1.90 km	Route Section 10
Fledborough to Harby Dismantled Railway LWS	Partly within the draft Order Limits	Route Section 11

Designation	Approximate distance from the draft Order Limits	Closest Route Section[6]
Marnham Railway Yard Candidate LWS	Adjacent to the draft Order Limits)	Route Section 11
Skegby Road Triangle LWS	0.73 km	Route Section 11
Old Trent, Marnham LWS	1.04 km	Route Section 11
North Clifton Church LWS	1.58 km	Route Section 11
South Clifton Grassland LWS	1.64 km	Route Section 11
Old Trent Oxbow, Spalford LWS	1.83 km	Route Section 11

Habitats

Ancient woodland

8.5.18 Ancient woodland includes all woodland that has existed continuously since 1600. Wooded continuously does not mean that there has been continuous tree cover across the whole site since 1600. Open ground, both temporary and permanent, is an important component of ancient woodlands. Further, the trees and shrubs in ancient woodlands may have been felled or cut for coppice at various times since 1600. As long as the area as a whole has remained as woodland i.e., the coppice stools have re-grown, or the stand has been replanted soon after felling, then it still qualifies as ancient woodland. As the woodland may have been cut over many times in the past, ancient woodland does not necessarily contain old trees (Ref 8.68, and Ref 8.69). Ancient woodlands can be classified into different categories including ancient semi-natural woods and plantations on ancient woodland sites (Ref 8.47).

8.5.19 No areas of ancient woodland as recorded on the ancient woodland inventory (Ref 8.47) intersect the draft Order limits associated with the Proposed Overhead Line. The following areas are present within the study area and are shown on **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitat within 2 km**:

- Birkhill Wood ancient and semi-natural woodland is located approximately 30 m from the draft Order Limits at its closest point, in Route Section 1. Two further areas of ancient semi-natural woodland lie approximately 847 m (part of Bentley Moor Wood LWS) and 964 m from the draft Order Limits, in Route Section 1.
- Two areas of ancient replanted woodland (also known as plantation on ancient woodland) lie approximately 32 m and 133 m (connected to Jillywood Lane LWS) from the draft Order Limits, in Route Section 1. One area of this includes parts of Birkhill Wood, which is both ancient and semi-natural woodland and ancient replanted woodland.
- One area of ancient and semi-natural woodland (part of Eppleworth Wood LWS) and one area of ancient replanted woodland (Nut Wood) lie approximately 590 m and 1.58 km from the draft Order Limits respectively, in Route Section 2.
- Three areas of ancient and semi-natural woodland lie within approximately 77 m (part of Tongs and Dogholes Woods LWS), 304 m (Beckingham Wood LWS), and

128 m (Wheatley Wood LWS) of the draft Order Limits, in Route Section 9. One area of ancient replanted woodland also lies within approximately 175 m of the draft Order Limits, in Route Section 9.

- Treswell Wood ancient and semi-natural woodland lies approximately 286 m from the draft Order Limits, in Route Section 10.

8.5.20 Targeted surveys will continue to be undertaken to establish if additional wooded areas affected by the Proposed Overhead Line have the potential to support ancient woodland features, and to identify veteran trees. This information will be included within the ES.

8.5.21 Veteran trees recorded through arboricultural surveys up to October 2024 within a 30 m study area of the draft Order Limits associated with the Proposed Overhead Line are recorded in

8.5.22 Table 8.9, and shown in **Figure 8.5 Arboricultural Survey Results**:

Table 8.9 Veteran Trees within 30 m of the draft Order Limits associated with the Proposed Overhead Line

Route Section	Tree Species	Total
1	Ash (*Fraxinus excelsior*)	3
	Common oak (*Quercus robur*)	1
2	Ash	1
3	Ash	1
	Common oak	5
7	Common oak	1
	White Willow (*Salix alba*)	1
8	White Willow	1
10	Ash	1
	Common oak	1
	White Willow	8

8.5.23 There are no ancient or veteran trees recorded within or up to 50 m of the draft Order Limits associated with the Proposed Overhead Line, shown in the Woodland Trust Ancient Tree Inventory (Ref 8.54).

Priority habitats

8.5.24 The desk study identified the presence of several habitats listed on the Priority Habitat Inventory (Ref 8.48) within the draft Order Limits. These are detailed in Table 8.10.

Table 8.10 - Priority Habitats within the draft Order Limits associated with the Proposed Overhead Line

Priority Habitat	Area of Priority Habitat in draft Order Limits, in each Route Section
Route Section 1 Creyke Beck to Skidby	
Deciduous woodland	1.3 m^2
Route Section 2 Skidby to A63 Dual Carriageway	
Deciduous woodland	11.96 ha
Lowland calcareous grassland	0.86 ha
Route Section 3 A63 Dual Carriageway to River Ouse Crossing	
Deciduous woodland	0.20 ha
Reedbeds	0.13 ha
Route Section 4 River Ouse Crossing	
Coastal saltmarsh	1.50 ha
Mudflats	0.19 ha
No main habitat but additional habitats present	0.71 ha
Route Section 5 River Ouse Crossing to Luddington	
None	None
Route Section 6 Luddington to M180 Motorway	
Deciduous woodland	0.15 ha
Good quality semi-improved grassland	0.26 ha
Lowland dry acid grassland	1.67 ha
Lowland fens	11 m^2
No main habitat but additional habitats present	272 m^2
Route Section 7 M180 Motorway to Graizelound	
Deciduous woodland	0.83 ha
Route Section 8 Graizelound to Chesterfield Canal	
Deciduous woodland	0.12 ha
No main habitat but additional habitats present	0.15 ha
Route Section 9 Chesterfield Canal to A620 east of North Wheatley	
Deciduous woodland	270 m^2

Priority Habitat	Area of Priority Habitat in draft Order Limits, in each Route Section
No main habitat but additional habitats present	52 m^2
Route Section 10 A620 east of North Wheatley to Fledborough	
Deciduous woodland	0.34 ha
Traditional orchard	65 m^2
Route Section 11 Fledborough to High Marnham	
Deciduous woodland	9.5 m^2

8.5.25 The following habitats listed on the Priority Habitat Inventory (Table 8.10) were also identified within the study area, but which lie outside of the draft Order Limits:

- Lowland meadows;
- Purple moor grass and rush pastures; and
- Reedbeds.

8.5.26 The location of Priority Habitats is illustrated on **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitat within 2 km**. Further surveys will determine whether Habitats of Principal Importance, as listed under Section 41 of the NERC Act (Ref 8.8) are present within the draft Order Limits. The ongoing Phase 1 habitat survey has recorded many hedgerows, the majority of which would be classed as Priority Habitat[7].

Phase 1 habitat survey

8.5.27 Habitats recorded during the ongoing Phase 1 habitat survey are shown in **Figure 8.3 Phase 1 Habitat Survey Map**. A summary of the habitats that have been recorded inside the draft Order Limits, in each Route Section of the Project is provided below, which also refers to designated habitats located within the draft Order Limits. As detailed in Table 8.3 further detailed targeted habitat surveys, including NVC surveys will be carried out in 2025, where required.

Route Section 1

8.5.28 The land within Route Section 1 of the draft Order Limits is predominantly arable, with crops including wheat (*Triticum* sp.) and barley (*Hordeum* sp.). Field boundary habitats comprise ditches (some of which were dry) and hedgerows, with one pond recorded just outside the draft Order Limits in Route Section 1. Birkhill Wood is located approximately 30 m from the draft Order Limits at its closest point (refer to **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitats within 2 km**). This woodland is designated as a LWS and comprises both ancient semi-natural woodland and ancient replanted woodland. Part of Jillywood Lane LWS also lies within

[7] Priority hedgerows are considered to be predominantly covered (i.e., 80% or more cover) of at least one woody UK native species, where each UK country can define the list of woody species native to their respective country (Ref 8.70)

Route Section 1. This LWS comprised a strip of broadleaved semi-natural woodland, with a footpath through it. The Phase 1 habitat survey recorded oak (*Quercus* sp.) and ash (*Fraxinus excelsior*) trees, with holly (*Ilex aquifolium*) and an established shrub layer (including bramble (*Rubus fruticosus* agg.)), hazel (*Corylus avellana*) and hawthorn (*Crataegus monogyna*)). Ground flora recorded here included; bluebell (*Hyacinthoides non-scripta*), wood anemone (*Anemonoides nemorosa*), lesser celandine (*Ficaria verna*) and wild garlic (*Allium ursinum*). Areas of plantation were also evident.

Route Section 2

8.5.29 The land within Route Section 2 of the draft Order Limits was predominantly arable, with crops including wheat, rape (*Brassica* sp.) and barley. Improved grassland and poor semi-improved fields, mostly functioning as paddocks were also present within the draft Order Limits. Field boundary habitats comprised hedgerows and ditches (some of which were dry), with one pond recorded inside the draft Order Limits in Route Section 2. An area of mature semi-natural broadleaved woodland (Socken Wood) was located to the south of Rowley Road, in the Little Weighton area. This woodland included abundant sycamore (*Acer pseudoplatanus*), frequent ash and the rare presence of wych elm (*Ulmus glabra*). The shrub layer was sparse with locally frequent hawthorn and the rare presence of elder (*Sambucus nigra*), holly and dog rose (*Rosa canina*). The field layer included common nettle (*Urtica dioica*), cow parsley (*Anthriscus sylvestris*), bramble, bearded couch (*Elymus caninus*), giant fescue (*Lolium giganteum*), dogs mercury (*Mercurialis perennis*), red campion (*Silene dioica*), white dead nettle (*Lamium album*), hogweed (*Heracleum sphondylium*), herb Robert (*Geranium robertianum*), hybrid bluebell (*Hyacinthoides × massartiana*), greater burdock (*Arctium lappa*). This woodland will be crossed by the overhead line, with a pylon and associated working area positioned just to the south. The western end of the woodland also lies within an indicative stringing area.

8.5.30 Brantingham Dale, part of which is designated as a SSSI (refer to **Figure 8.1 - International Sites Designated for Nature Conservation within 10 km and National and Local Statutory Designated Sites within 5 km**) and a historic LWS, lies within and immediately adjacent to the draft Order Limits, in Route Section 2. Much of the woodland is mapped as Priority deciduous woodland, with smaller areas of Priority lowland calcareous grassland also present (as shown in **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitats within 2 km**). During the ongoing Phase 1 habitat survey the following broad habitat types were recorded inside the draft Order Limits, in the Brantingham Dale area and adjoining woodlands: broadleaved semi-natural woodland, calcareous grassland, scrub, broadleaved plantation and mixed plantation woodland. Some of the aforementioned habitats lie within the proposed working areas.

8.5.31 To the north of Dale road, within and just outside of the draft Order Limits the broadleaved semi-natural woodland was located on a steep slope. The ash dominated woodland transitioned to calcareous grassland (sheep grazed) with scattered hawthorn upslope. Downslope, trees were recorded to be semi-mature, with frequent silver birch (*Betula pendula*). Ground flora included abundant dogs mercury, locally frequent wood false brome (*Brachypodium sylvaticum*), occasional bramble and nettle, with the rare presence of deadly nightshade (*Atropa belladonna*). The scattered scrub on the steep slope included dominant hawthorn, occasional dog rose, ash, elder and the rare presence of sycamore. In another compartment of the broadleaved semi-natural woodland to the north of Dale Road, also dominated by ash (young to mature), the

shrub layer was recorded to be well developed with a heavy bryophyte layer and lichen visible on the trees. There was frequent hawthorn, silver birch and elder, with occasional bramble. The ground layer included frequent bluebell, lords and ladies (*Arum maculatum*), occasional wood sedge (*Carex sylvatica*), wood avens (*Geum urbanum*), herb Robert, hogweed, nettle and blackthorn (*Prunus spinosa*), common dogs mercury and the rare presence of wild strawberry (*Fragaria vesca*). An area of sheep-grazed calcareous grassland was present on the steep valley slope, to the northwest of Dale Road. Species recorded here included; frequent wood false brome and moss species, with occasional wild mignonette (*Reseda lutea*), false oat grass (*Arrhenatherum elatius*), *Dryopteris* fern species and the rare presence of marsh thistle (*Cirsium palustre*) and spear thistle (*Cirsium vulgare*). South of Dale Road was an area recorded as calcareous grassland that had been heavily invaded by dense scrub. However, it was not possible to fully access this area at the time of the Phase 1 habitat survey.

8.5.32 To the west of the broad-leaved semi-natural woodland were areas of mixed plantation woodland, located northwest of Dale Road. One of these areas was recorded during the Phase 1 habitat survey to be young to semi-mature woodland, situated on a steep slope. Species recorded during the survey included frequent sycamore, Norway spruce (*Picea abies*), beech (*Fagus* sp.), occasional ash and bramble and the rare presence of silver birch and hazel. The ground flora included occasional lords and ladies, abundant dogs mercury, the rare presence of pendulous sedge (*Carex pendula*) and occasional grass of the *Calamagrostis* genus. To the west of this area was another compartment of mixed plantation woodland which contained a mixture of Norway spruce, European larch (*Larix decidua*), beech and sycamore. The field layer was heavily disturbed but contained patches of dogs mercury, wood false brome and rare presence of dog violet (*Viola riviniana*). Other species included frequent bramble and wood avens and creeping thistle (*Cirsium arvense*), occasional lords and ladies, greater burdock, common chickweed (*Stellaria media*), wood sedge, herb Robert, and the rare presence of wild strawberry and raspberry (*Rubus idaeus*). Part of the mixed plantation would be crossed by the overhead line.

8.5.33 Southwest of the mixed plantation woodland, inside the draft Order Limits was an area of young broadleaved plantation woodland. Species recorded during the Phase 1 habitat survey were beech, ash, sycamore and cherry (*Prunus* sp.). The field layer was mainly disturbed bare ground with occasional false oat grass at the edge of the woodland, bramble, strawberry and speedwell (*Veronica* sp.) South-west of the plantation was another area of broadleaved semi-natural woodland, with a canopy of beech and sycamore and occasional oak. The shrub layer and field layer included: holly, hawthorn, wild privet (*Ligustrum vulgare*), yew (*Taxus baccata*), ivy (*Hedera* sp.), dogs mercury, lesser celandine, lords and ladies, dog violet and wood false brome. Parts of these woodland areas will be crossed by the overhead line.

8.5.34 An area of semi-improved grassland was located to the east of the A63, which partially lies within the draft Order Limits. The grassland had been sown with a wildflower mix and included false oat grass, poppy (*Papaver* sp.), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), oxeye daisy (*Leucanthemum vulgare*), broadleaf dock (*Rumex obtusifolius*) and purple tansy (*Phacelia tanacetifolia*). Temporary crossing protection is proposed in this field to enable the overhead conductors to be installed above the A63. A smaller area of neutral semi-improved grassland was also recorded further northeast of the A63. Species recorded here during the Phase 1 habitat survey included dominant cocksfoot (*Dactylis glomerata*) and false oat grass, abundant moss species, occasional bramble, herb Robert, ragwort (*Jacobaea vulgaris*), nettle, sow thistle (*Sonchus oleraceus*), creeping thistle, square stalked willowherb (*Epilobium tetragonum*), creeping buttercup (*Ranunculus repens*), daisy sp. (*Bellis* sp.), selfheal (*Prunella*

vulgaris), field speedwell (*Veronica agrestis*) and the rare presence of agrimony (*Agrimonia* sp.), mugwort (*Artemisia* sp.) and species of sedge. A pylon working area and construction access are currently proposed in this area of grassland.

Route Section 3

8.5.35 The land within Route Section 3 of the draft Order Limits was predominantly arable. Improved and semi-improved grassland fields, mostly functioning as paddocks were also present within the draft Order Limits. Field boundary habitats comprised hedgerows, ditches (some dry) and watercourses. Named watercourses which lie partially within the draft Order limits in Route Section 3 include Broomfleet Beck, Market Weighton Canal, Bishopsail Drain, Blacktoft Warping Drain and Bellasize Drain. Three ponds were recorded within the draft Order Limits, with larger waterbodies associated with the Broomfleet Pits located to the north of the draft Order Limits. Woodland was largely absent; however, an area of woodland lies inside the draft Order Limits, towards the southern end of Route Section 3, between Blacktoft Warping Drain and Bellasize Drain. This woodland would be crossed by the overhead line and an access road, part of the woodland also lies within an indicative stringing area. Wych elm, elder, hawthorn and birch were recorded in the woodland during the Phase 1 habitat survey.

Route Section 4

8.5.36 The Proposed Overhead Line crosses the River Ouse in Route Section 4. The section of the River which lies within and adjacent to the draft Order Limits forms part of the Humber Estuary SPA, SAC, Ramsar and SSSI (as shown in **Figure 8.1 - International Sites Designated for Nature Conservation within 10 km and National and Local Statutory Designated Sites within 5 km**). Part of Blacktoft Sands RSPB Reserve also lies within the draft Order Limits, south of the River Ouse (refer to **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitats within 2 km**). Priority coastal saltmarsh and Priority mudflat habitat is mapped either side of the River Ouse (as shown in **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitats within 2 km**).

8.5.37 The remaining land within Route Section 4 of the draft Order Limits was predominantly arable, with field boundaries comprising watercourses/ditches, lines of mature trees and hedgerows. An area of poor semi-improved grassland was also recorded during the Phase 1 habitat to the north of the River Ouse, just beyond the saltmarsh. No ponds were recorded inside Route Section 4 of the draft Order Limits.

Route Section 5

8.5.38 The land within Route Section 5 of the draft Order Limits was predominantly arable, with field boundary habitats comprising watercourses/ditches and hedgerows. Arable field margins comprising improved and semi-improved grassland were also recorded during the ongoing Phase 1 habitat survey. A wider strip of improved grassland was present adjacent to Cow Lane, which was noted during the Phase 1 habitat survey to be common land used for access to the surrounding fields and potentially used for grazing. No ponds were recorded inside the Draft Order Limits in Route Section 5.

8.5.39 A narrow belt of trees was partially located inside the draft Order Limits at the northern end of Route Section 5, south of Narrow Lane. Woodland is largely absent from Route Section 5, however, a small area of broadleaved semi-natural woodland lies inside the draft Order limits, to the west of the Fockerby area. During the Phase 1 habitat survey the woodland was recorded to contain a mix of mature and semi-mature trees, with

dominant sycamore, frequent ash, occasional willow (*Salix* sp.) and rare presence of hawthorn. Understory species included bramble and nettle. A tower working area and maintenance access track lie adjacent to this woodland.

Route Section 6

8.5.40 The land within Route Section 6 of the draft Order Limits was predominantly arable, with crops including barley and wheat. Some of the fields contained wider grassland field margins and field boundary habitats comprised watercourses/ditches and hedgerows. Two ponds have been recorded within the draft Order Limits.

8.5.41 The land to the west of Keadby 2 power station, inside the draft Order Limits was recorded to be predominantly ephemeral/short perennial during the Phase 1 habitat survey. The open mosaic habitat comprised lichen and mosses throughout the ground flora, with areas of acid grassland present. Scattered scrub, tree saplings and areas of woodland were also recorded here. This area has been identified as potentially requiring further detailed botanical survey in 2025. Further west in Route Section 6, fields of improved grassland and poor semi-improved grassland were also present around the area of Ealand.

8.5.42 Further south, the Proposed Overhead Line crosses over the Stainforth and Keadby Canal Corridor LWS. It then oversails Hatfield Waste Drain LWS, North Engine Drain, Belton LWS and the River Torne LWS, which run parallel to each other. Approximately 265 m south of the River Torne, the Proposed Overhead Line oversails Folly Drain North LWS (refer to **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitats within 2 km**).

Route Section 7

8.5.43 The land within Route Section 7 of the draft Order Limits was predominantly arable with a small number of poor semi-improved and improved grassland fields present. Some of the fields contained wider grassland field margins and field boundary habitats comprised watercourses/ditches and hedgerows. Three ponds were recorded within the draft Order Limits.

8.5.44 Just south of the M180 a single field was recorded to contain ephemeral/short perennials, with species recorded including; bristly oxtongue (*Helminthotheca echioides*), Yorkshire fog (*Holcus lanatus*), creeping cinquefoil (*Potentilla reptans*), rosebay willow herb (*Chamaenerion angustifolium*), spear thistle, dandelion (*Taraxacum officinale* agg.), curly dock (*Rumex crispus*), hairy bittercrest (*Cardamine hirsuta*), cranesbill (*Geranium* sp.), red fescue (*Festuca rubra* agg.), and speedwell (*Veronica* sp.).

8.5.45 Just south of Beltoft, South Moor Covert and Fishpond Plantation LWS is located adjacent to the draft Order Limits. During the Phase 1 habitat survey, this LWS was recorded to be predominantly broadleaved semi-natural woodland, with several ponds. Species recorded were; oak (*Quercus* sp.), ash, cherry (*Prunus* sp.), hawthorn, sycamore, elder, horse chestnut (*Aesculus hippocastanum*) and blackthorn. The field layer included; garlic mustard (*Alliaria petiolata*), wild garlic, wood avens, lords and ladies, cow parsley, nettle, ground Ivy (*Glechoma hederacea*), bramble and cleavers (*Galium aparine*).

8.5.46 To the north of Owston Ferry the Proposed Overhead Line crosses Melwood Upper Quarry. This area was recorded to comprise a mosaic of habitats including, bare ground (areas of earth and rock) with pioneer species colonising some of these areas, scrub,

grassland and waterbodies. Approximately 500 m south of the quarry the Proposed Overhead Line oversails the edge of an area of broadleaved semi-natural woodland.

8.5.47 To the east of East Lound, Sedge Hole Close LWS/Wildlife Trust Site lies adjacent to the draft Order Limits. To the east of the LWS the Proposed Overhead Line oversails a strip of potentially commercial coniferous plantation and an area of poor semi-improved grassland.

8.5.48 At the southern end of Route Section 7, the Proposed Overhead Line crosses Warping Drain Corridor LWS and Ferry Drain. The Phase 1 habitat survey recorded dense scrub between these two watercourses, which was viewed from the north of Ferry Drain. Scrub was also recorded to the south of Warping Drain, comprising hawthorn, bramble and elder, interspersed with tall ruderal and rank grassland at the margins..

Route Section 8

8.5.49 The land within Route Section 8 of the draft Order Limits was predominantly arable, with crops including wheat and potatoes. Field boundary habitats comprised watercourses/ditches and hedgerows, with some fields having grassland margins. Strips of neutral semi-improved grassland were recorded along the edge of an existing track which joins Debdhill Road. Two ponds were recorded within the draft Order Limits.

8.5.50 South of Warping Drain, the Proposed Overhead Line oversails the railway corridor, which included broadleaved semi-natural woodland and dense scrub. These habitats were viewed from outside the rail corridor. A large waterbody is also visible on OS mapping, but this has not yet been accessed to confirm its presence.

8.5.51 Northwest of Misterton the Proposed Overhead line Crosses Misterton Golf Course, which was noted to be closed during the Phase 1 habitat survey and was heavily grazed by sheep. Inside the former golf course, within the draft Order Limits, the main habitat was recorded to be improved grassland, with groups of trees. A hedgerow, strip of poor semi-improved grassland and woodland was recorded along the northern edge of the former golf course, with the River Idle located immediately north of the golf course.

8.5.52 To the west of Walkeringham, at the southern end of Route Section 8, the Proposed Overhead Line crosses an area of young broadleaved plantation woodland.

Route Section 9

8.5.53 The land within Route Section 9 of the draft Order Limits was predominantly arable, with a small number of improved grassland fields also recorded during the survey. Field boundary habitats comprise watercourses/ditches and hedgerows. No ponds have been recorded within the draft Order Limits.

8.5.54 Woodland is largely absent inside the draft Order Limits. However, the Proposed Overhead Line would cross woodland lining a watercourse in the central area of Route Section 9.

Route Section 10

8.5.55 The land within Route Section 10 of the draft Order Limits was predominantly arable, with a small number of improved grassland fields also recorded. Field boundary habitats comprised watercourses/ditches and hedgerows. Two ponds were recorded within the draft Order Limits.

8.5.56 An area of broadleaved plantation woodland, with dominant ash, was recorded during the Phase 1 habitat survey at the edge of the draft Order Limits, to the south of Wheatley Beck. This area is shown to be Priority traditional orchard on **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitats within 2 km**. The woodland was not fully accessed during the Phase 1 habitat survey so it is possible that remnant orchard habitat remains present, which was not visible at the time of the survey.

8.5.57 West of the North Leverton area, south of the railway corridor a proposed construction access route passes through an area of woodland. The woodland was not accessible at the time of the Phase 1 habitat survey and was viewed from the adjacent road. Tree species recorded from the roadside included ash, beech and field maple. Aerial imagery indicates that there is an existing pathway/access track through the trees.

8.5.58 Further south, the draft Order Limits lie adjacent to Caddow Wood (Southern Assarts) LWS, which was recorded to be broadleaved semi-natural woodland during the Phase 1 habitat survey, but was not fully accessible/visible due to dense scrub around the woodland edge. South-east of the LWS, the Proposed Overhead Line crosses Retford Gate Green Lane LWS. A proposed new drain crossing and bellmouth would also require works inside this LWS. During the Phase 1 habitat survey habitats inside the LWS were recorded to be poor semi-improved grassland, hedgerows, a dry ditch and a stream.

Route Section 11

8.5.59 The land inside Route Section 11 was primarily arable. The Proposed Overhead Line oversails a disused railway corridor, to the west of Fledborough to Harby Dismantled Railway LWS and Marnham Railway Yard LWS. Although the disused railway corridor was not accessible during the Phase 1 habitat survey, the dominant habitat recorded from the adjacent land was continuous dense scrub. Species included: bramble, willow, silver birch, sycamore, hawthorn.

Protected/Notable and Invasive Non-Native Species

8.5.60 The protected or notable species included in Table 8.11 to Table 8.21 are those species that have been identified through the desk study or ecological surveys as being present, or potentially present, within the draft Order Limits (excluding proposed substation work element) or relevant study areas. For protected or notable species within the study areas at Birkhill Wood Substation and High Marnham Substation, read **Chapter 20 Substations and Associated Works.** Desk study records noted in Table 8.11 to Table 8.21 are presented by Route Section and include those present within 2 km of each one, therefore there may be a repeat of some records where they lie within 2 km of more than one Route Section.

8.5.61 Protected and notable species comprise those listed under Schedules 1, 5 and 8 of the WCA 1981 (as amended) (Ref 8.5); Schedules 2, 4 and 5 of the Habitat Regulations (Ref 8.7); and Species and Habitats of Principal Importance for nature conservation in England listed pursuant to Section 41 of the NERC Act 2006 (Ref 8.8). Other habitats and species are also considered and have been assessed for example those included in national, regional or local Red Data Lists but not protected by legislation.

8.5.62 INNS are species listed under Schedule 9 of the WCA 1981 (as amended) (Ref 8.5).

Table 8.11 - Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section 1 Creyke Beck to Skidby.

Species/species group	Description
Flora/Fungi	The desk study identified a record of bluebell (*Hyacinthoides non-scripta*) within the study area, approximately 100 m from the draft Order Limits. Targeted detailed botanical surveys will be undertaken in 2025, as required, and the findings will be presented within the ES. Bluebell was recorded in Jillywood Lane LWS during the ongoing Phase 1 habitat survey, part of the LWS lies within the draft Order limits. Surveys conducted for Wanlass Beck and Birkhill Wood substations recorded bee orchid (*Ophrys apifera*) to be present in two areas of poor semi-improved grassland next to the existing operational Creyke beck substation that will be extended, and a grass verge to the north of the existing substation. The closest recorded plants were approximately 480 m south-east of the draft Order Limits.
Terrestrial Invertebrates	The desk study did not identify any records of protected or notable invertebrates within the study area of the overhead line. The habitats within the draft Order Limits largely comprise agricultural land which is of limited value to terrestrial invertebrates. Any areas within the draft Order limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Following on from this, targeted surveys would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study did not identify any reptile records within the study area. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. Reptile surveys are therefore unlikely to be required in this Route Section.
Great Crested Newt (GCN)	The desk study identified two locations where GCN has been recorded within the study area, approximately 860 m and 870 m from the draft Order Limits. There are also records of common frog (*Rana temporaria*), common toad, and smooth newt (*Lissotriton vulgaris*) within the study area. The closest records are for smooth newt and common frog, approximately 610 m from the draft Order Limits. MAGIC shows one granted Natural England GCN licence within the study area, within approximately 500 m of this Route Section (Ref 8.47).

Species/species group	Description
	GCN presence has been confirmed through eDNA survey in one waterbody in this Route Section (P007, shown on **Figure 8.3 Phase 1 Habitat Survey Map**), within approximately 5 m of the draft Order Limits, lying just north of Dunflat Road. No GCN presence was confirmed in ponds as part of surveys conducted in 2023/2024 for the Wanlass Beck and Birkhill Wood substations. Seven additional ponds within 250 m of Route Section 1 will be surveyed in Spring 2025 for the Proposed Overhead Line, if safe and accessible. Ponds that were found to be dry in 2024 may also be revisited in 2025 to check they are still dry, if possible to do so. Discussions with Natural England are ongoing regarding whether the DLL could be applied to the Project. This area of the Project does fall within an available DLL scheme.
Bats	The desk study returned two noctule (*Nyctalus noctule*) records and two common pipistrelle (*Pipistrellus pipistrellus*) records within the study area. The records are all approximately 1.44 km from the draft Order Limits. Mature trees within the draft Order limits may support bat roosts. GLTA surveys (which commenced in February 2024) and any required follow up surveys for bats will be undertaken, as required, to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Survey work conducted for the Wanlass Beck and Birkhill Wood substations during 2023/2024 recorded five species to be present within the walked transect and via automated bat detector surveys. Four of these are relatively common and widespread species: common pipistrelle, soprano pipistrelle *(Pipistrellus pygmaeus),* brown long-eared (*Plecotus auritus*) and *Myotis* sp, and one, noctule, being widespread but locally distributed. The majority of activity was from common pipistrelle, with seasonal variations including a peak in numbers in May, observed to be the result of regular and continuous activity by a small number of bats as opposed to the presence of a large number. Bats were observed following tree lines and woodland edges.
Hazel Dormouse	There is no known hazel dormouse population in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 1.
Otter and Water Vole	The desk study did not return any recent otter or water vole records within the study area. There are three historic water vole records (dated between 2007 and 2008) within the study area, the closest being approximately 1.44 km from the draft Order Limits. Watercourses in Route Section 1 may have suitability to support otter and water vole. The ongoing targeted surveys for otter and water vole will continue in 2025 and the data will be used to inform the final assessments reported in the ES, and any mitigation and licence requirements. Targeted surveys undertaken in 2023/24 for Wanlass Beck and Birkhill Wood substations, which overlap at the top end of

Species/species group	Description
	this Route Section, did not find presence of otter or water vole, with the majority of watercourses found to be unsuitable.
Badger	The desk study identified two badger records within the study area, however, these are both approximately 1.6 km from the draft Order Limits. Badger surveys are ongoing and will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. No badger setts were recorded within the draft Order limits in Route Section 1 up to the end of October 2024. Potential suitable habitat identified within and close to the draft Order limits in Route Section 1 include areas of woodland and hedgerows. Targeted surveys undertaken in 2023/24 for Wanlass Beck and Birkhill Wood substations did not find any active badger setts.
Species of Principal Importance (SPI)	The desk study identified records of common toad, brown hare, and hedgehog within the study area. The closest record is for hedgehog, approximately 350 m from the draft Order Limits. Incidental sitings of brown hare (*Lepus europaeus*) were recorded for Wanlass Beck and Birkhill Wood Substations. Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys.
Aquatic macroinvertebrates	The desk study did not identify any records of notable macroinvertebrates in this Route Section; however, the East Riding of Yorkshire BAP (Ref 8.71) references white-clawed crayfish *(Austropotamobius pallipes)* as a Priority Species recorded within the respective areas of consideration.
Aquatic macrophytes	The desk study did not identify any records of notable macrophytes directly within watercourses within this Route Section. However, the East Riding of Yorkshire BAP (Ref 8.71) lists UK BAP species which could be associated with aquatic habitats within this Route Section. These include narrow small reed (*Calamagrostis stricta*), divided sedge (*Carex divisa*), greater water parsnip (*Sium latifolium*), marsh stitchwort (*Stellaria palustris*), and tubular water dropwort (*Oenanthe fistulosa*). The protected aquatic macrophyte species blunt-fruited water starwort (*Callitriche obtusangula*) was recorded on Beverly and Barmston Drain 3 km to the west of the draft Order Limits.
Fish	The desk study did not identify any records of fish species in watercourses within this Route Section. However, several fish are listed as Priority Species in the East Riding of Yorkshire BAP (Ref 8.71). These include sea lamprey (*Petromyzon marinus*), river lamprey (*Lampetra fluviatilis*), Atlantic salmon

Species/species group	Description
	(*Salmo salar*), smelt (*Osmerus eperlanus*), and spined loach (*Cobitis taenia*), There are targeted fish surveys scheduled for 2025 in this Route Section.
Invasive non-native species (INNS)	Japanese knotweed (*Reynoutria japonica*) was recorded 1.5 km southeast of the draft Order Limits. A stand of variegated yellow archangel (*Lamiastrum galeobdolon* subsp. *Argentatum*) was recorded just outside of the draft Order Limits, east of the A164 during the ongoing Phase 1 habitat survey. Invasive non-native plant species will continue to be recorded during the ongoing habitat surveys that will conclude in 2025. Any incidental sightings of non-native fauna species will also be recorded during the ongoing ecology surveys.

Table 8.12 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section Route Section 2 Skidby to A63 Dual Carriageway

Species/species group	Description
Flora/Fungi	The desk study did not identify any protected or notable flora or fungi records within the study area. Records for six lichen species were returned within approximately 320 m of the draft Order Limits (*Caloplaca dichroa, Xanthoria ucrainica, Lecania inundata, Catillaria atomarioides, Verrucaria ochrostoma, and Caloplaca arcis*). Brantingham Dale SSSI lies partially with the draft Order Limits in Route Section 2 and includes species-rich chalk grassland amid extensive areas of scrub invasion and young woodland. The citation for Brantingham Dale SSSI states (Ref 8.72): '*the grassland areas, maintained as short-turf by rabbit grazing, are dominated by sheep's fescue Festuca ovina with a notable abundance of rockrose Helianthemum nummularium, salad burnet Sanguisorba minor and wild thyme Thymus praecox. Other species of frequent occurrence include quaking grass Briza media, clustered bellflower Campanula glomerata, lady's bedstraw Galium verum, felwort Gentianella amarella and rough hawkbit Leontodon hispidus. Where ungrazed, the grassland is generally rank and dominated by false oak-grass Arrhenatherum elatius….. There is also a small area of mature ash woodland where the ground flora includes wild strawberry Fragaria vesca, herb bennet Geum urbanum and sanicle Sanicula europaea*.' Targeted detailed botanical surveys commenced in 2024, and will be continued in 2025, and any findings will be presented within the ES.
Terrestrial Invertebrates	The desk study did not identify any records of protected or notable invertebrates within the study area. The habitats within the draft Order Limits largely comprised agricultural land which is of limited value to terrestrial invertebrates, with the exception of Brantingham Dale and other neighbouring woodland and grasslands, including calcareous and neutral semi-improved grasslands. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Following on from this, targeted surveys would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study did not identify any reptile records within the study area. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. However, areas of woodland, grassland and other features, including log piles, inside Brantingham Dale were noted as having suitability to support reptiles during the Phase 1 habitat survey. Other habitat features inside the draft Order Limits, including

Species/species group	Description
	watercourse corridors also have potential to support reptiles. Reptile surveys will be carried out in 2025 within Route Section 2, if required.
Great Crested Newt	The desk study did not identify any amphibian records within the study area. MAGIC shows one GCN class licence return (dated 2015) within approximately 680 m of the draft Order Limits (Ref 8.47). GCN presence was not confirmed in any of the waterbodies that were subjected to an eDNA survey in Spring 2024 in relation to this Route Section. Four additional ponds within 250 m of Route Section 2 will be surveyed in Spring 2025, if safe and accessible. A smooth newt (*Lissotriton vulgaris*) was noted in a pond located within approximately 15 m of the draft Order limits. Discussions with Natural England are ongoing regarding whether the DLL route is an approach that could be applied to the Project. This area of the Project does fall within an available DLL scheme.
Bats	The desk study identified three common pipistrelle bat roost records, one soprano pipistrelle (*Pipistrellus pygmaeus*) roost record and one brown long-eared (*Plecotus auratus*) bat roost record within the study area. The closest record is for a common pipistrelle roost, approximately 5 m from the draft Order Limits, to the north of Brantingham Dale. The remaining records are over 1.2 km from the draft Order Limits. MAGIC shows one granted Natural England bat licence (relating to common pipistrelle) within the study area, within approximately 850 m of Route Section 2 (Ref 8.47). Mature trees within the draft Order Limits may support bat roosts. The ongoing GLTA surveys have identified numerous trees with bat suitability in Route Section 2 of the Proposed Overhead Line, including but not limited to within a strip of Priority woodland (Socken Wood) to the south of Rowley Road and in Brantingham Dale and extended woodland strip along Ellerker Wold Lane. Over 50 trees have been identified as having potential suitable bat roost features inside the draft Order Limits in the Brantingham area. GLTA surveys (which commenced in February 2024) and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Hazel Dormouse	There is no known hazel dormouse population in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 2.
Otter and Water Vole	The desk study did not return any otter or water vole records within the study area. Targeted surveys for otter and water vole will be carried out in Route Section 2 on two further watercourse sections in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements.

Species/species group	Description
Badger	The desk study returned two badger records (each for a dead badger found on the road) within the study area, the closest being approximately 100 m from the draft Order Limits. Badger presence has been identified within Route Section 2 during the ongoing surveys, inside the draft Order Limits. Active setts and other field signs including latrines, snuffle holes, and well-worn paths have been recorded. Badger surveys are ongoing and will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Species of Principal Importance	The desk study returned records of brown hare and hedgehog within the study area. The closest record was for hedgehog, approximately 400 m from the draft Order Limits. Incidental records of hedgehog were made within the draft Order Limits during the Phase 1 habitat survey. Brown hare was also noted in a field to the west of Ellerker Wold Lane, within the draft Order Limits. Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys.
Aquatic macroinvertebrates	The desk study did not identify any records of notable macroinvertebrates in the area, however, the East Riding of Yorkshire BAP references white-clawed crayfish as a Priority Species recorded within the respective areas of consideration.
Aquatic macrophytes	The desk study did not identify any records of notable macrophytes in this Route Section. The East Riding of Yorkshire BAP lists the following UK BAP species which could be associated with aquatic habitats within this Route Section: narrow small reed, divided sedge, greater water parsnip, marsh stitchwort, and tubular water dropwort. Aquatic macrophyte surveys are scheduled in this Route Section for 2025.
Fish	The desk study did not identify any records of fish species in the area; however, several fish are listed as Priority Species in the East Riding of Yorkshire BAP. These include sea lamprey, river lamprey, Atlantic salmon, smelt, and spined loach. There are targeted surveys for fish currently scheduled in this area for 2025.
Invasive non-native species	The desk study returned three records of giant hogweed (*Heracleum mantegazzianum*) within the study area for this Route Section, but these are all over 1.5 km from the draft Order Limits. INNS are being recorded during the ongoing habitat surveys that will conclude in 2025. *Crocosmia* sp. has been recorded inside the draft Order Limits in two locations within Route Section 2, in areas of woodland. Any incidental sightings of non-native faunal species will also be recorded during the ongoing ecology surveys.

Table 8.13 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section 3 A63 Dual Carriageway to River Ouse Crossing

Species/species group	Description
Flora/Fungi	The desk study did not identify any protected or notable flora or fungi records within the study area for this Route Section. Targeted detailed botanical surveys will be undertaken in 2025, as required and any findings will be presented within the ES.
Terrestrial Invertebrates	The desk study did not identify any records of protected or notable invertebrates within the study area for this Route Section. The dominant habitat inside the draft Order Limits in Route Section 3 is arable, which is unlikely to support notable invertebrate assemblages. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Following on from this, targeted surveys in 2025 would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study did not identify any reptile records within the study area for this Route Section. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. However, there are pockets of potentially suitable habitat, including woodland, poor semi-improved grassland and watercourse corridors. An incidental record of a grass snake (*Natrix helvetica*) was made during the Phase 1 habitat survey in an area of grassland which lies within the draft Order limits, close to Staddlethorpe Broad Lane. Reptile surveys will be carried out in 2025, if required.
Great Crested Newt	The desk study did not identify any records of GCN within the study area. GCN presence was not confirmed in any of the waterbodies subject to eDNA survey in Spring 2024 in relation to this Route Section. MAGIC shows three GCN Class Survey Licence Return record locations within 2 km of Route Section 3 (Ref 8.47). The closest of these is approximately 1.2 km northeast of the draft Order Limits (dated 2017). Twenty-two additional ponds within 250 m of Route Section 3 that were not visited in Spring 2024 will be surveyed in Spring 2025, if accessible. Discussions with Natural England are ongoing regarding whether the DLL route is an approach that could be applied to the Project. This area of the Project does fall within an available DLL scheme.
Bats	The desk study identified records of common pipistrelle, soprano pipistrelle and brown long-eared bat roosts within the study area for this Route Section. The closest common pipistrelle roost records included day roosts and a maternity roost approximately 50 m from the draft Order Limits, at a farm in

Species/species group	Description
	the Broomfleet area. The closest soprano pipistrelle and brown long-eared bat roost records (day roosts) are approximately 135 m from the draft Order Limits. MAGIC shows three granted Natural England bat licences within the study area, within approximately 1.6 km (for common pipistrelle), 1.3 km (for common pipistrelle) and 680 m (for common pipistrelle and brown long-eared) of Route Section 3 (Ref 8.47). A relatively small number of trees (when compared with Route Section 2), mostly associated with field boundaries, have been identified as having potential bat roost features. The ongoing GLTA surveys (which commenced in February 2024) and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Hazel Dormouse	There is no known hazel dormouse population in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 3.
Otter and Water Vole	The desk study returned one otter record, approximately 1.46 km from the draft Order Limits. The desk study also returned one water vole record, approximately 1.73 km from the draft Order Limits. An otter print and spraint were noted close to the Market Weighton Canal during the Phase 1 habitat survey. The ongoing targeted surveys for otter and water vole have confirmed the presence of both species within this Route Section. Evidence of otter was recorded along Mill Beck and potential otter holt/lay up sites were recorded along Broomfleet Beck. Evidence of otter was also recorded along an unnamed watercourse at the southern end of Section 3 (which connects to the River Ouse via a sluice gate). Field signs indicating the likely presence of water vole have been recorded along Broomfleet Beck, Bishopsail Drain and an unnamed watercourse at the southern end of Route Section 3. The ongoing otter and water vole surveys will continue in 2025 to inform the final assessments reported in the ES, and any associated mitigation and licensing requirements.
Badger	The desk study returned two badger records (each for a dead badger found on the road) within the study area, the closest being approximately 106 m from the draft Order Limits. Badger presence has been identified within 150 m of the draft Order Limits. A possible badger latrine has also been recorded just outside of the draft Order Limits. Badger surveys are ongoing and will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Potential suitable habitat identified within and close to the draft Order Limits include woodland and hedgerows.

Species/species group	Description
Species of Principal Importance	The desk study returned records of hedgehog and brown hare within the study area for this Route Section. The closest record was for a brown hare, just outside of the draft Order Limits. Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys.
Aquatic macroinvertebrates	The desk study identified aquatic macroinvertebrate records 3 km upstream on Mill Beck, a watercourse that is within the draft Order Limits (though the records are from a section of the watercourse that is outside the draft Order Limits). Notable species included those of high conservation value, including the stonefly (*Amphinemura standfussi*), beetle (*Riolus subviolaceus*), truebug (*Corixa affinis*), a fly from the Order Diptera (*Oxycera pardalina*) and the bivalve mollusc (*Sphaerium rivicola*). Field surveys also recorded the beetle (*Riolus subviolaceus*) on Mill Beck, within the draft Order Limits. The East Riding of Yorkshire BAP and The Ouse and Humber Strategic Sub catchment Area Biodiversity Action Plan (Ref 8.73) all reference white-clawed crayfish as a Priority Species recorded within the respective areas of consideration.
Aquatic macrophytes	The desk study found one record of lesser spearwort (*Ranunculus flammula*) on a watercourse within the draft Order Limits at NGR SE8628 in 2016. The East Riding of Yorkshire BAP lists the following UK BAP species which could be associated with aquatic habitats: narrow small reed, divided sedge, greater water parsnip, marsh stitchwort, and tubular water dropwort.
Fish	The desk study returned no records of notable and protected fish species within the study area itself, but notable species were recorded within connected waterbodies that cross the draft Order Limits. These were brown trout (*Salmo trutta*), bullhead (*Cottus gobio*) and European eel (*Anguilla anguilla*) which were recorded on Mill Beck 3 km upstream of the study area and on Sands Drain 1.5 km downstream of the draft Order Limits. Mill Beck and Sands Drain are hydrologically connected and Mill Beck flows through the study area and has potential to be impacted by the Proposed Overhead Line. The most recent records of fish were from 2023. There are also a number of species listed as Priority Species in the East Riding of Yorkshire BAP (Ref 8.71). These include sea lamprey, river lamprey, Atlantic salmon, smelt, and spined loach, with the Humber Estuary, which is hydrologically connected to watercourses within this Route Section, representing a significant habitat and migration route. Targeted surveys are ongoing.
Invasive non-native species	The desk study returned records of Jenkins' Spire snail (*Potamopyrgus antipodarum*) approximately 780 m north the draft Order Limits. The records appear to be associated with Mill Beck, which is hydrologically connected to the Proposed Overhead Line and would be temporarily crossed during construction for access. The desk study also returned three records of giant hogweed within the draft Order Limits, but these are all over 1.3 km from the draft Order Limits. Jenkins' Spire Snail was also

Species/species group	Description
	recorded in the aquatic macroinvertebrate samples collected during the Spring 2024 surveys in two unnamed drains in this Route Section, in Broomfleet Beck, Broomfleet Dam, Mill Beck, and Ings Drain. The non-native but no longer considered invasive shrimp *Crangonyx pseudogracilis/floridanus* was also recorded in the Spring 2024 macroinvertebrate samples in this Route Section in Mill Beck, an unnamed drain, an unnamed tributary to the Humber Estuary, Broomfleet Dam and Elleker Beck. INNS are being recorded during the ongoing habitat surveys that will conclude in 2025. Any incidental sightings of non-native faunal species will also be recorded during the ongoing ecology surveys.

Table 8.14 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section 4 River Ouse Crossing

Species/species group	Description
Flora/Fungi	The desk study did not identify any protected or notable flora or fungi records within the study area of this Route Section. Targeted surveys will be carried out where required, including land inside the Humber Estuary SAC/Ramsar/SSSI that will potentially be impacted by the Proposed Overhead Line.
Terrestrial Invertebrates	The desk study did not identify any records of protected or notable invertebrates within the study area of this Route Section. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. This will include habitats alongside the River Ouse, as the Humber Estuary SSSI supports a notable invertebrate assemblage. Following on from this, targeted surveys would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study returned two grass snake records within approximately 1.6 km of the draft Order Limits, in the Adlingfleet area. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. Reptile surveys will be carried out in 2025, if required.
Great Crested Newt	The desk study did not identify any GCN records within the study area of this Route Section. MAGIC shows one inconclusive GCN Pond survey result (eDNA survey) within the study area, approximately 350 m from the draft Order Limits, but there are no records of presence (Ref 8.47). Two of the three ponds identified within 250 m of Route Section 4 were not subject to an eDNA survey in Spring 2024 as one was found to be no longer a pond and the other was inaccessible. The third pond and the previously inaccessible pond will be visited in Spring 2025, if possible to do so. Discussions with Natural England are ongoing regarding whether the DLL route is an approach that could be applied to the Project. This area of the Project does fall within an available DLL scheme.
Bats	The desk study returned a record of a common pipistrelle day roost approximately 570 m from the draft Order Limits. There are also records of a common pipistrelle day roost, a brown long-eared day roost and a brown long-eared maternity roost within 1.2 km of the draft Order Limits, associated with Blacktoft Church. Mature trees within the draft Order Limits may support bat roosts; however, due to the short length of this Route Section and the habitats present, this is likely to be small in number compared to other

Species/species group	Description
	Route Sections. MAGIC shows one granted Natural England bat licence (for common pipistrelle and brown long-eared bat) within the study area, within approximately 1.2 km of Route Section 4 (Ref 8.47). GLTA surveys (which commenced in February 2024) and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Of the surveys conducted in 2024, none have been found to date within the draft Order Limits but are present in the immediate surrounding area.
Hazel Dormouse	There is no known hazel dormouse population in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 4.
Otter and Water Vole	The desk study did not identify any recent otter or water vole records within the study area. There are five historic water vole records within the study area, dated between 1989 to 1998, the closest being approximately 1.1 km from the draft Order Limits. An incidental sighting of an otter was recorded in October 2024 during a non breeding bird survey. The otter was observed foraging in the River Ouse and then exiting the water into the adjacent Blacktoft Sands RSPB site. The ongoing targeted surveys for otter and water vole have confirmed the presence of both species within this Route Section. Otter and water vole presence has been confirmed along an unnamed watercourse which runs south of Blacktoft Lane which connects to the River Ouse (via a sluice gate). The potential presence of water vole was also recorded along two ditches to the south of the River Ouse. Further surveys will be carried out in 2025 and the data will be used to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Badger	The desk study did not identify badger records within the study area for this Route Section. Badger surveys are ongoing and will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Up to the end of October 2024 a single possible badger latrine had been recorded just outside of the draft Order Limits, with no setts recorded. Route Section 4 offers less suitable habitat for badger than some of the other Proposed Overhead Line Route Sections but does include a network of agricultural hedgerows.
Species of Principal Importance	The desk study identified records of hedgehog within the study area, the closest record being approximately 40 m from the draft Order Limits. Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys.
Aquatic macroinvertebrates	The desk study did not identify any records of notable macroinvertebrates in the area, however, the Humber Estuary is known to contain notable species of aquatic invertebrates that are of high conservation value (Ref 8.74), including freshwater and brackish species. The East Riding of Yorkshire

Species/species group	Description
	BAP (Ref 8.71) and The Ouse and Humber Strategic Subcatchment Area Biodiversity Action Plan (Ref 8.73) all reference white-clawed crayfish as a Priority Species recorded within the respective areas of consideration.
Aquatic macrophytes	The desk study did not identify any records of notable macrophytes within this Route Section. The East Riding of Yorkshire BAP lists the following UK BAP species which could be associated with aquatic habitats: narrow small reed, divided sedge, greater water parsnip, marsh stitchwort, and tubular water dropwort.
Fish	The desk study returned records of protected and notable fish species in the River Ouse/Humber Estuary area. Smelt and Atlantic salmon were recorded near Little Reedness, located approximately 1.5 km west of the study area in this Route Section. Smelt was also recorded 3.5 km to the east of the study area along with herring (*Clupea harengus*). All three species are S41 NERC SPIs. The Ouse and Humber Strategic Subcatchment Area Biodiversity Action Plan (Ref 8.73) further references European eel as a UKBAP Priority Species present within the strategic sub-catchment area. The Humber Estuary is also a SAC, SPA, SSSI and Ramsar site. River lamprey and sea lamprey are listed as qualifying features (but not primary reason) for its SAC designation and reasons for notification for its SSSI status. There are no targeted fish surveys scheduled for this Route Section.
Invasive non-native species	The desk study identified a record of Jenkins' spire snail within the study area for this Route Section, approximately 1 km from the draft Order Limits. INNS are being recorded during the ongoing habitat surveys that will conclude in 2025. Any incidental sightings of non-native fauna species will also be recorded during the ongoing ecology surveys. None were recorded during the Phase 1 habitat surveys carried out in 2024.

Table 8.15 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section 5 River Ouse Crossing to Luddington

Species/species group	Description
Flora/Fungi	The desk study did not identify any protected or notable flora or fungi records within the study area. Targeted detailed botanical surveys will be undertaken in 2025, as required and any findings will be presented within the ES.
Terrestrial Invertebrates	The desk study did not identify any records of protected or notable invertebrates within the study area. This Route Section is dominated by agricultural fields, which are unlikely to support notable invertebrate assemblages. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Following on from this, targeted surveys would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study returned two grass snake records within approximately 1 km of the draft Order Limits, in the Adlingfleet area. A third grass snake record was returned, approximately 330 m from the draft Order Limits, in the Luddington area, along a drain. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. However, there are pockets of potentially suitable habitat within and adjacent to the draft Order Limits, including watercourse corridors and a small area of woodland adjacent to an area of marshy grassland west of Fockerby. Reptile surveys will be carried out in 2025, if required.
Great Crested Newt	The desk study did not identify any records of GCN presence within the study area. GCN presence was not confirmed in any of the waterbodies that were subjected to an eDNA survey in Spring 2024 in relation to this Route Section. GCN surveys will be undertaken in 2025 on an additional eight ponds, as required, to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Discussions with Natural England are ongoing regarding whether the DLL route is an approach that could be applied to the Project. This area of the Project does fall within an available DLL scheme.
Bats	The desk study identified a common pipistrelle bat roost record within the study area, approximately 1.7 km from the draft Order Limits. Mature trees within the draft Order Limits may support bat roosts, however due to the nature of the habitats in this Route Section the numbers are likely to be low compared to other Route Sections. Requirements for road widening could increase numbers of

Species/species group	Description
	affected trees. GLTA surveys (which commenced in February 2024) and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Of the surveys conducted to date, at least two trees with likely potential roost feature suitable for multiple bats (PRF-Ms) could be affected.
Hazel Dormouse	There is no known hazel dormouse population in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 5.
Otter and Water Vole	The desk study data included six otter records; however the exact locations of the records were withheld, therefore it is unknown how close to the draft Order Limits this species has been recorded. The desk study identified 96 water vole records. Again, the exact locations for three of these records were not provided. Six of the records lie within or adjacent to the draft Order Limits (due to the accuracy of the record grid references). One of the records (dated 2017) appears to be associated with Adlingfleet Drain. One record (dated 2023) is associated with Fockerby Drain South and four of the records (dated 2020) are associated with Carr Drain. The ongoing targeted surveys for otter and water vole have recorded the potential presence of water vole in an unnamed watercourse in the northern area of Section 5. Surveys will continue in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Badger	The desk study identified 91 badger records within the study area for this Route Section, however, the precise record locations were not provided. Badger presence has been identified within the draft Order Limits during the ongoing surveys. Badger surveys will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Species of Principal Importance	The desk study identified two hedgehog records within the study area for this Route Section, the closest being approximately 1.5 km from the draft Order Limits. Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys.
Aquatic macroinvertebrates	The desk study did not identify any records of notable macroinvertebrates within watercourses in this Route Section.
Aquatic macrophytes	The desk study did not identify any records of notable macrophytes within this Route Section. Aquatic macrophytes are scheduled for survey in 2025.
Fish	The desk study did not identify any records of fish species in this area. There are targeted fish surveys scheduled for 2025.

Species/species group	Description
INNS	The desk study identified records of Jenkins' spire snail within the study area, the closest record being approximately 600 m from the draft Order Limits. Jenkins' spire snail along with the invasive shrimp (*Crangonyx pseudogracilis/floridanus)* was also recorded in the aquatic macroinvertebrate samples collected during the Spring 2024 surveys in Addlington Fleet Drain within the draft Order Limits. Invasive non-native plant species are being recorded during the ongoing habitat surveys that will conclude in 2025. Any incidental sightings of non-native fauna species will also be recorded during the ongoing ecology surveys.

Table 8.16 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section 6 Luddington to M180 Motorway

Species/species group	Description
Flora/Fungi	The desk study did not identify any protected or notable flora or fungi records within the study area. Targeted detailed botanical surveys will be undertaken in 2025, as required and any findings will be presented within the ES.
Terrestrial Invertebrates	The desk study returned three records of large heath (*Coenonympha tullia*) butterfly within the study area (dated between 2018 and 2023). However, the accuracy of the grid references provided do not show precise locations where this species has been recorded. This Route Section is dominated by agricultural fields, which are unlikely to support notable invertebrate assemblages. However, areas of more suitable habitat may include riparian habitats associated with multiple watercourses and woodland within and adjacent to the draft Order Limits. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Following on from this, targeted surveys would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study returned one record of common lizard within the study area of this Route Section, however the accuracy of the grid reference does not provide the precise location where this species has been recorded. The desk study also returned four grass snake records, the closest (dated 2015) is approximately 180 m from the draft Order Limits, close to Eastoft Boundary Dyke. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. However, there are pockets of potentially suitable habitat within and adjacent to the draft Order limits, including watercourse corridors (including Hatfield Waste Drain and South Engine Drain) and grassland field margins. Reptile surveys will be carried out in 2025, if required.
Great Crested Newt	The desk study did not identify any records of GCN within the study area of this Route Section. In Spring 2024 GCN presence was confirmed through eDNA survey in one waterbody (P056, shown in **Figure 8.3 Phase 1 Habitat Survey Map**), located within approximately 50 m of the draft Order Limits, to the north of the Belton area. An indeterminate eDNA result was returned for one other waterbody (P055, shown in **Figure 8.3 Phase 1 Habitat Survey Map**), located within approximately 140 m of the draft Order Limits, also to the north of Belton. GCN presence has been assumed for this waterbody in the absence of further survey, due to the proximity to the waterbody with confirmed presence. Further survey will be undertaken in 2025, as required to inform the final assessments reported in the ES, and

Species/species group	Description
	any mitigation and licensing requirements. This will include visiting a further six ponds that were not visited in Spring 2025, if accessible. Discussions with Natural England are ongoing regarding whether the DLL route could be applied to the Project. This area of the Project does fall within an available DLL scheme.
Bats	The desk study returned 34 bat records within the study area of this Route Section. Records were provided for the following species: Whiskered/Brandt's (*Myotis mystacinus/Myotis brandti*), common pipistrelle, soprano pipistrelle, brown long-eared, Daubenton's (*Myotis daubentonii*), noctule, *Myotis* sp. and unidentified bat species. Three of the records lie within or just outside of the draft Order Limits (due to the accuracy of the record grid references), close to Stainforth and Keadby Canal (dated 2015) for Daubenton's, noctule and common pipistrelle. Five of the records specify that they are roost records, the closest is for a common pipistrelle roost, approximately 870 m from the draft Order Limits. MAGIC shows one granted Natural England bat licence (for common pipistrelle) within the study area, within approximately 900 m of Route Section 6 (Ref 8.47). Mature trees within the draft Order Limits may support bat roosts, however no trees with potential roost features have been identified inside the draft Order limits during the ongoing GLTA surveys. The GLTA surveys and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Hazel Dormouse	There is no known hazel dormouse population in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 6.
Otter and Water Vole	The desk study returned 17 otter records within the study area of this Route Section. This included four records within or just outside of the draft Order Limits (due to the accuracy of the record grid references), close to Pilfrey Bridge, which South Engine Drain passes under. The desk study returned 279 water vole records within the study area of Route Section 6. Of these, 27 lie within (or just outside of) the draft Order Limits. These are associated with Luddington Main Drain, Eastoft Main Parish Drain, Pademoor Drain, Bewcarrs Drain an unnamed ditch in the Keady area, Ealand Carr Drain, Folly Drain, South Engine Drain (name not given but grid references indicates this drain), Stealgoose Drain, North Moor Drain and a drain which passes under the M180. Some watercourses have been target noted as requiring further investigation during the Phase 1 habitat survey. Feeding remains, potentially from otter and a possible otter slide down to the water, were noted along South Engine Drain during the Phase 1 habitat survey. The ongoing targeted surveys for otter and water vole have recorded water vole field signs along an unnamed ditch and along Bewcarrs Drain in Route Section 6. Water vole field signs were also recorded along the boundary

Species/species group	Description
	ditches of an arable field to the south of Outgate Road in Route Section 6. Further surveys will be carried out in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Badger	The desk study returned 138 badger records within the study area of this Route Section; however, the exact record locations were not provided for the majority of these. Badger presence has been identified within the draft Order Limits during the ongoing surveys. The badger surveys will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Potential suitable habitat includes areas of woodland and a network of agricultural hedgerows.
Species of Principal Importance	The desk study returned one record of common toad approximately 37 m from the draft Order Limits. Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys, None were recorded during the surveys carried out up to and including October 2024.
Aquatic macroinvertebrates	The desk study identified records of the beetle (*Nebrioporus depressus)* on Paupers Drain within the draft Order Limits. There are no statutory designations associated with this species.
Aquatic macrophytes	The desk study did not identify any records of notable macrophytes within this Route Section. Paupers Drain is within this Route Section and forms part of Paupers Drain LWS which is known to support a rich diversity of wetland macrophytes (Ref 8.75).
Fish	The desk study did not identify any records of fish species in this area. Targeted fish surveys are scheduled for this area in September 2025.
Invasive non-native species	Jenkins' spire snail along with the invasive shrimp (*Crangonyx pseudogracilis/floridanus)* were recorded in the aquatic macroinvertebrate samples collected during the Spring 2024 surveys in an unnamed drain and Ealan Carr Drain in this Route Section. Invasive non-native plant species are being recorded during the ongoing habitat surveys that will conclude in 2025.

Table 8.17 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section 7 M180 Motorway to Graizelound

Species/species group	Description
Flora/Fungi	The desk study did not identify any protected or notable flora or fungi records within the study area. Targeted detailed botanical surveys will be undertaken in 2025, as required and any findings will be presented within the ES.
Terrestrial Invertebrates	The desk study did not identify any records of protected or notable invertebrates within the study area. This Route Section is dominated by agricultural fields, which are unlikely to support notable invertebrate assemblages. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Melwood Upper Quarry Local Geological Site (LGS) (as shown in **Figure 12.3 Geologically Designated Sites**) has been identified as offering a mosaic of habitats suitable habitat for invertebrates and brimstone (*Gonepteryx rhamni*) and peacock (*Aglais io*) butterfly were noted during the Phase 1 habitat survey. Targeted surveys will be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study returned one record of common lizard within the study area for this Route Section, however the accuracy of the grid reference does not give the precise location where this species has been recorded. Two grass snake records were returned, approximately 480 m and 1.3 km from the draft Order Limits. One adder record was also returned approximately 260 m from the draft Order Limits, in the Epworth area.. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. However, there are areas of potentially suitable habitat within and adjacent to the draft Order limits, including watercourse corridors (including Warping Drain and Ferry Drain), woodland and grassland field margins. Melwood Upper Quarry LGS (as shown in **Figure 12.3 Geologically Designated Sites**) was noted during the Phase 1 habitat survey to offer a mosaic of habitats formed from quarrying activities that are potentially suitable for reptiles, including: unvegetated slopes and mounds, scattered scrub, grassland and waterbodies. Reptile surveys will be carried out in 2025, if required.
Great Crested Newt	The desk study returned a record for an inconclusive eDNA result (dated 2018) approximately 470 m from the draft Order Limits and a record for a positive eDNA result (dated 2018) approximately 1 km from the draft Order Limits.

Species/species group	Description
	MAGIC shows one record for a positive eDNA result (dated 2018) within the study area for this Route Section, approximately 1 km west of the draft Order Limits (Ref 8.47). This is likely to be the same as the aforementioned record as provided by the local record centre. GCN presence was confirmed through eDNA survey in one waterbody (P064 shown in **Figure 8.3 Phase 1 Habitat Survey Map**), located adjacent to the draft Order Limits. Indeterminate eDNA results were returned for two other waterbodies (P063 and P063B shown in **Figure 8.3 Phase 1 Habitat Survey Map**), which both lie within the draft Order Limits. GCN presence has been assumed for these two waterbodies in the absence of further survey, due to the proximity to the waterbody with confirmed presence. All three waterbodies lie within the boundary of Melwood Upper Quarry. Further surveys will be undertaken in 2025, as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements. This will include visiting two ponds that were not accessed in Spring 2024 and potentially revisiting two ponds, one of which was almost dry in 2024 and another where access to the pond was not possible. Discussions with Natural England are ongoing regarding whether the DLL route could be applied to the Project. This area of the Project does fall within an available DLL scheme.
Bats	The desk study returned 134 bat records within the study area. This included records for the following species: brown long-eared, common pipistrelle, soprano pipistrelle, noctule, Daubenton's, Myotis sp., and unidentified bat species. Common pipistrelle and noctule have been recorded within or just outside of the draft Order Limits in Route Section 7, in the Epworth area. Two records specify that they are for roosts, for *Pipistrellus* sp and brown long-eared bats. However the exact locations of these records were withheld, therefore it is unknown how close to the draft Order Limits these records are. MAGIC shows two granted Natural England bat licences (for common pipistrelle) within the study area for this Route Section, within approximately 180 m and 200 m of Route Section 7 (Ref 8.47). The ongoing GLTA surveys have identified multiple trees with bat suitability inside the draft Order Limits. This includes trees located to the north of South Moor Covert and Fishpond Plantation LWS and trees which are part of an area of broadleaved semi-natural woodland located approximately 500 m south of Melwood Upper Quarry. Trees along Ferry Road and other field boundary trees were also recorded to have potential roost features. Further GLTA surveys and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Hazel Dormouse	There is no known hazel dormouse population in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 7.

Species/species group	Description
Otter and Water Vole	The desk study data included five otter records; however the exact locations of four of these records were withheld, therefore it is unknown how close to the draft Order Limits these records are. The fifth record (dated 2019) is located approximately 900 m from the draft Order Limits. The desk study returned 128 water vole records within the study area. Six of these records lie within or just outside of the draft Order Limits of this Route Section. The records are associated with the following watercourses: Kelfield Catchwater Drain, Littlecarr Drain and Doncaster Dyke. The ongoing targeted surveys for otter and water vole have recorded water vole field signs along an unnamed ditch and potential water vole field signs along a second ditch in Section 7. Surveys will continue in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Some watercourses were targeted and noted as requiring further investigation during the Phase 1 habitat survey, including Ferry Drain and Warping Drain.
Badger	The desk study returned 17 badger records within the study area of Route Section 7; the closest (dated 2020) is approximately 10 m from the draft Order Limits. Badger presence has been identified inside the draft Order Limits within Route Section 7 during the ongoing surveys s. Badger surveys are ongoing and will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Species of Principal Importance	The desk study did not return any relevant records within the study area. Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys. None were recorded during the surveys carried out up to and including October 2024.
Aquatic macroinvertebrates	The desk study did not identify any records of notable macroinvertebrates in this Route Section.
Aquatic macrophytes	The desk study identified records of the opposite-leaved pondweed (*Groenlandia densa*) in Ings Lane Drain, 1.5 km east of the draft Order Limits. This species is 'Vulnerable' on the vascular plant red list for England (Ref 8.77). The water violet (*Hottonia palustris*) was also recorded in this section on Tindale Drain, 800 m east of the draft Order Limits. This species is listed as 'Vulnerable' on the England Red List (but 'Least Concern' on the Great Britain (GB) Red List).
Fish	The desk study did not identify any records of fish species in this area. There are targeted fish surveys scheduled for this Route Section in 2025.
INNS	The desk study returned two records of Himalayan balsam within the study area, the closest is approximately 1.3 km from the draft Order Limits. INNS are being recorded during the ongoing habitat surveys that will conclude in 2025.

Table 8.18 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section 8 Graizelound to Chesterfield Canal

Species/species group	Description
Flora/Fungi	The desk study returned records of the following species within the study area: field garlic (*Allium oleraceum*), sand leek (*Allium scorodoprasum*), opposite-leaved pondweed (*Groenlandia densa*), common cudweed (*Filago vulgaris*), water violet (*Hottonia palustris*), rye brome (*Bromus secalinus*), white water-lily (*Nymphaea alba*), a hedge bindweed (*Calystegia sepium* ssp. *roseata*), greater duck weed (*Spirodela polyrhiza*), large-flowered Hemp-nettle (*Galeopsis speciosa*), dwarf spurge (*Euphorbia exigua*), common valerian (*Valeriana officinalis*), water soldier (*Stratiotes aloides*), heather (*Calluna vulgaris*) and field scabious (*Knautia arvensis*). Targeted detailed botanical surveys will be undertaken in 2025, as required and any findings will be presented within the ES. Chesterfield Canal SSSI supports a notable assemblage of aquatic plant species in addition to rich marginal vegetation.
Terrestrial Invertebrates	The desk study did not identify any records of protected or notable invertebrates within the study area. This Route Section is dominated by agricultural fields which are unlikely to support notable invertebrate assemblages. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Following on from this, targeted surveys would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study identified six grass snake records within the study area of Route Section 8, the closest record is approximately 460 m from the draft Order Limits. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. However, there are areas of potentially suitable habitat within and adjacent to the draft Order Limits, including watercourse corridors woodland and grassland field margins. Reptile surveys will be carried out in 2025, if required.
Great Crested Newt	MAGIC shows one granted GCN licence within the study area, approximately 940 m southeast of the draft Order Limits. GCN presence has been confirmed through eDNA survey in one waterbody (P073B, shown in **Figure 8.3 Phase 1 Habitat Survey Map**) inside Misterton golf course, within approximately 100 m of the draft Order Limits. Further surveys will be undertaken in 2025, as required, on four further ponds (if accessible) to inform the final assessments reported in the ES, and any mitigation and licensing requirements. The desk study returned three smooth newt records within the study area. The exact locations for two of these records are not provided, the other record is approximately 1 km from the draft Order Limits.

Species/species group	Description
	Discussions with Natural England are ongoing regarding whether the DLL route could be applied to the Project. However, this area of the Project does not fall within a DLL scheme.
Bats	The desk study returned 116 bat records within the study area of Route Section 8. This includes records of the following species: noctule, *Myotis* sp., common pipistrelle, soprano pipistrelle and brown long-eared. Common pipistrelle, noctule and soprano pipistrelle have been recorded within the draft Order Limits. The closest roost record is for common pipistrelle, approximately 60 m from the draft Order Limits. The ongoing GLTA surveys (which commenced in February 2024) have not yet identified trees with potential roost features inside the draft Order limits in Route Section 8. The GLTA surveys and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Hazel Dormouse	There is no known hazel dormouse population in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 8.
Otter and Water Vole	The desk study did not return any recent otter records (dated within the last ten years). Five historic records (dated 1995 and 2000) were returned, the closest is approximately 10 m from the draft Order Limits, in the Graizelound area. Thirty-two water vole records were returned. This includes two records inside the draft Order Limits, just north of Misterton Golf Course. No otter or water vole field signs were recorded on the watercourses/ditches surveyed in 2024. The ongoing targeted surveys for otter and water vole will continue in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Some watercourses have been targeted noted as requiring further investigation during the Phase 1 habitat survey, including the River Idle.
Badger	The desk study returned nine badger records within the study area of Route Section 8. One of these records lies within the draft Order Limits, west of the Walkeringham area. Badger presence has also been identified within the draft Order Limits during the ongoing surveys. Badger surveys are ongoing and will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Potential suitable habitat includes a network of agricultural hedgerows.
Species of Principal Importance	The desk study returned four hedgehog records within the study area, the closet of these is approximately 75 m from the draft Order Limits.

Species/species group	Description
	Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys. None were recorded during the surveys carried out up to and including October 2024.
Aquatic macroinvertebrates	The desk study did not identify any specific records of notable macroinvertebrates in this Route Section. However, Mother Drain flows through this Route Section with the Mother Drain SSSI located approximately 0.65 km east of the draft Order Limits. Mother Drain SSSI includes in its reason for designation: '*an exceptionally rich invertebrate fauna, which includes notable assemblages of dragonflies and water beetles, and a rare moth*'. Nottinghamshire Local Biodiversity Action Plan (Ref 8.52) references white-clawed crayfish and the depressed river mussel (*Pseudodonta complanta*) as Priority Species recorded within the respective areas of consideration.
Aquatic macrophytes	The desk study identified the following macrophytes at Chesterfield Canal, 2 km east of the draft Order Limits, these species are all 'Least Concern' on the England and GB vascular plant red list but the records are from the Nottingham Rare Plant Species list. These were giant duckweed (*Spirodela polyrhiza*), white water lily (*Nymphaea alba*), and water soldier (*Stratiotes aloide*). Chesterfield Canal flows through this Route Section and the SSSI is partially within the draft Order Limits, the citation (Ref 8.76) for the Chesterfield Canal SSSI references the canal supporting a nationally uncommon aquatic plant community including nationally scarce species. Opposite-leaved pondweed and water violet was also recorded in Tindale Drain, 300 m west of the draft Order Limits and large-flowered hemp-nettle (*Galeopsis speciosa*) was recorded in Misterton Carr Drain 1.8 km west. Mother Drain also flows through this Route Section with the Mother Drain, Misterton SSSI 0.65 km east of the draft Order Limits. Mother Drain SSSI supports a diverse abundance of macrophyte species and sand leek occurs in Nottinghamshire only. The desk study also identified a record of common valerian near Mother Drain, a species that is 'Near Threatened' on the England vascular plant red list but is 'Least Concern ' on the GB red list.
Fish	The desk study found records of European eel in Ferry Drain (600 m east of draft Order Limits), Weir Dike (1.5 km east of draft Order Limits) and the River Idle (1.5 km east of draft Order Limits) in this section. The Nottinghamshire Local Biodiversity Action Plan (Ref 8.52) lists thirteen fish species of conservation concern which includes Allis shad (*Alosa alosa*), twaite shad (*Alosa fallax*), European eel, spined loach, bullhead, river lamprey, sea lamprey and brook lamprey (*Lampetra planeri*), smelt, nine-spined stickleback (*Pungitius pungitius*), Atlantic salmon, brown trout and grayling (*Thymallus thymallus*). Targeted fish surveys are scheduled for this area in 2025.

Species/species group	Description
Invasive non-native species	The desk study recorded a number of aquatic invasive species in this Route Section, all within the River Idle which crosses the draft Order Limits. These included the demon shrimp (*Dikerogammarus haemobaphes*), the shrimp (*Crangonyx pseudogracilis/floridanus*), shrimp (*Gammarus tigrinus*), water fern (*Azolla filiculoides*), duckweed (*Lemna minuta*), Jenkins' spire snail, Nuttalls' waterweed (*Elodea* nutalli), a Polychaete (*Hypania invalida*), an Amphipod (*Chelicorophium curvispinum*), Asian clam (*Corbicula fluminea*), and a snail (*Physella acuta*). Chinese mitten crab (*Eriocheir sinensis*) was also recorded in the River Idle outside the draft Order Limits, 300 m upstream of its confluence with the River Trent. An invasive water fern (*Azolla filiculoides*) has also been recorded approximately 1.5 km from the draft Order Limits. There is a record of Himalayan balsam approximately 900 m from the draft Order Limits and five records of Japanese knotweed, the closest is approximately 40 m from the draft Order Limits. The invasive shrimp (*Crangonyx pseudogracilis/floridanus)* was recorded in the aquatic macroinvertebrate samples collected during the Spring 2024 surveys in Moates Drain within this Route Section. INNS are being recorded during the ongoing habitat surveys that will conclude in 2025. Two stands of Japanese knotweed were recorded inside the draft Order Limits during the ongoing Phase 1 habitat survey to the east of the A161, north of the railway. An incidental record of a potential marsh frog (*Pelophylax ridibundus*) (heard only) was also made during the Phase 1 habitat survey, inside Misterton Golf Course, close to the draft Order Limits.

Table 8.19 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route 9 Chesterfield Canal to A620 east of North Wheatley

Species/species group	Description
Flora/Fungi	The desk study returned records of the following species within the study area: round-fruited rush (*Juncus compressus*), rye brome, dwarf spurge, nettle-leaved bellflower (*Campanula trachelium*), large-leaved lime (*Tilia platyphyllos*), common cudweed, columbine (*Aquilegia vulgaris*), spiny restharrow (*Ononis spinosa*), heartsease (*Viola tricolor* subsp. *tricolor*), heather, field scabious, common valerian and wood sanicle (*Sanicula europaea*). Targeted detailed botanical surveys will be undertaken in 2025, as required and any findings will be presented within the ES. Chesterfield Canal SSSI (Ref 8.76) supports a notable assemblage of aquatic plant species in addition to rich marginal vegetation.
Terrestrial Invertebrates	The desk study returned one record of the notable brown hairstreak (*Thecla betulae*) butterfly and one record of the notable wood white (*Leptidea sinapis*) butterfly within the study area, approximately 1.58 km from the draft Order Limits. This Route Section is dominated by agricultural fields, which are unlikely to support notable invertebrate assemblages. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Following on from this, targeted surveys would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study returned seven grass snake records within the study area, the closest records are approximately 800 m from the draft Order Limits. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. However, there are pockets of potentially suitable habitat within and adjacent to the draft Order Limits, including watercourse corridors and grassland field margins. Reptile surveys will be carried out in 2025, if required.
Great Crested Newt	The desk study returned three GCN records within the study area, the closest is approximately 880 m from the draft Order Limits. GCN presence was not confirmed in the single waterbody subject to eDNA survey in Spring 2024 in relation to this Route Section. One pond was not accessed and one pond could not be surveyed due to dense vegetation preventing access. Further surveys will be undertaken in 2025, as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Discussions

Species/species group	Description
	with Natural England are ongoing regarding whether the DLL route could be applied to the Project. However, this area of the Project does not fall within a DLL scheme.
Bats	The desk study returned 111 bat records within the study area of this Route Section. Records were returned for the following species: common pipistrelle, *Myotis* sp., whiskered/Brandt's and soprano pipistrelle. Common pipistrelle and *Myotis* sp. have been recorded within the draft Order Limits. One of the records refers to a bat roost, for common pipistrelle, approximately 800 m from the draft Order Limits. Several trees within the draft Order Limits have been identified as having bat roost suitability during the ongoing GLTA surveys, along field boundaries. The GLTA surveys (which commenced in February 2024) and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Hazel Dormouse	There is no known hazel dormouse population in this in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 9.
Otter and Water Vole	The desk study did not identify any otter records within the study area of Route Section 9. Eight water vole records were returned within the study area of Route Section 9, the closest record is approximately 800 m from the draft Order Limits. No otter field signs were recorded on the watercourses/ditches surveyed in 2024. Potential water vole field signs were recorded along Saundby Beck, but outside of the draft Order Limits. The ongoing targeted surveys for otter and water vole will continue in 2025 to inform the final assessments reported in the ES, and any associated mitigation and licensing requirements.
Badger	The desk study returned 23 badger records within the study area. Two of the records are within the draft Order Limits, in the Walkeringham area. Badger latrines have been recorded inside Route Section 9 of the draft Order Limits. Badger surveys are ongoing and will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Potential suitable habitat includes areas of woodland and a network of agricultural hedgerows.
Species of Principal Importance	The desk study returned 24 hedgehog records within the study area; the closest record is approximately 580 m from the draft Order Limits. The data included 11 brown hare records, the closest is located just outside of the draft Order Limits, in the Walkeringham area.

Species/species group	Description
	Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys. None were recorded during the surveys carried out up to and including October 2024.
Aquatic macroinvertebrates	The Nottinghamshire Local Biodiversity Action Plan (Ref 8.52) references white-clawed crayfish as a Priority Species recorded within the respective areas of consideration. The Nottinghamshire LBAP also references the depressed river mussel on its list of species of concern.
Aquatic macrophytes	The desk study identified records of the round-fruited rush (*Juncus compressus*) in Chesterfield Canal and Bole Ings Drain (1.8 km east of draft Order Limits for both sites). This species is 'Vulnerable' on the England red list and 'Near Threatened' on the GB red list. A record for white water lily was found in the Saundby area but a more exact location is unclear. This species is 'Least Concern ' on the England and GB vascular plant red list but the records are from the Nottinghamshire Rare Plant Register Species. The Nottinghamshire Local Biodiversity Action Plan (LBAP) (Ref 8.52) lists several vascular plant species of conservation concern which include the Priority Species marsh stitchwort, although the locations of these records are not listed and therefore their proximity to the Proposed Overhead Line cannot be determined. Chesterfield Canal flows through this Route Section and the SSSI is partially within the draft Order Limits, the citation (Ref 8.76) for the Chesterfield Canal SSSI references the canal supporting a nationally uncommon aquatic plant community including nationally scarce species.
Fish	The desk study did not identify any records of fish species in this area. The Nottinghamshire Local Biodiversity Action Plan lists thirteen fish species of conservation concern which includes Allis shad, twaite shad, European eel, spined loach, bullhead, river lamprey, sea lamprey and brook lamprey, smelt, nine-spined stickleback, Atlantic salmon, brown trout and grayling. There are targeted fish surveys scheduled for this area in 2025.
Invasive non-native species	The desk study returned two records of Japanese knotweed within the study area of Route Section 9; the closest record is approximately 830 m from the draft Order Limits. INNS are being recorded during the ongoing habitat surveys that will conclude in 2025. Himalayan balsam (*Impatiens glandulifera*) has been recorded along a watercourse inside the draft Order Limits, approximately 200 m east of Tongs and Dogholes Woods LWS.

Table 8.20 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section 10 A620 east of North Wheatley to Fledborough

Species/species group	Description
Flora/Fungi	The desk study returned records of the following species within the study area of Route Section 10: corn marigold (*Glebionis segetum*), common cudweed, rye brome, annual beard-grass (*Polypogon monspeliensis*), green-winged orchid (*Anacamptis morio*) and short-leaved water-starwort (*Callitriche truncata*). The closest of these records is for green-winged orchid (dated 2019), just south of West Burton Power Station. Targeted detailed botanical surveys will be undertaken in 2025, as required and any findings will be presented within the ES.
Terrestrial Invertebrates	The desk study returned six records of the notable small heath (*Coenonympha pamphilus*) butterfly within the study area; all records are just under 2 km from the draft Order Limits, in the North Wheatley area. This Route Section is dominated by agricultural fields, which are unlikely to support notable invertebrate assemblages. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Following on from this, targeted surveys would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study returned four grass snake records within the study area of Route Section 10. This included one record within or just outside of the draft Order Limits (dated 2023), close to Retford Road.. The land within the draft Order Limits is largely arable, which is of limited value to reptiles. Reptile surveys will be carried out in 2025, if required.
Great Crested Newt	The desk study data included 22 GCN records within the study area of Route Section 10. However, the closest of these are four records (dated 2019) is located approximately 1.5 km from the draft Order Limits. There are also records for smooth newt in the study area. MAGIC shows seven GCN class licence survey returns within the study area, in the areas of West Burton and Rampton. However, the closest of these records is over 1.4 km from the draft Order Limits (Ref 8.47). MAGIC also shows two granted GCN licences within the study area, also in the West Burton and Rampton areas. The closest of these is approximately 1.45 km east of the draft Order Limits and is dated 2013 to 2015. One of the ponds located within 250 m of Route Section 10 was surveyed in 2023, as part of the High Marnham Substation Town and Country Planning Application,

Species/species group	Description
	which is proposed to be submitted 2025. The survey returned a negative eDNA result and a poor HSI score, and therefore is unlikely to have GCN present. GCN presence was not identified in any of the waterbodies subject to eDNA survey in Spring 2024 in relation to this Route Section. Further surveys will be undertaken in 2025 on an additional seven ponds that were not visited in 2024 (if accessible) and two ponds that were dry/holding very little water in 2024, as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Discussions with Natural England are ongoing regarding whether the DLL route is an approach that could be applied to the Project. However, this area of the Project does not fall within a DLL scheme.
Bats	The desk study returned 234 bat records within the study area of Route Section 10. This includes records of the following species: common pipistrelle, brown long-eared, Leisler's (*Nyctalus leisleri*), noctule, brown long-eared, Nathusius's Pipistrelle (*Pipistrellus nathusii*), *Myotis* sp., soprano pipistrelle, whiskered, Natterer's. Common pipistrelle (and an unidentified *Pipistrellus* sp.) has been recorded within and just outside of the draft Order Limits, in the West Burton area. No roost records have grid references which indicate they are within the draft Order Limits. MAGIC shows five granted bat licences within the study area. All of these appear to be associated with Rampton Hospital and cover the following species: common pipistrelle, soprano pipistrelle, whiskered and Brandt's (Ref 8.47). Several trees within the draft Order Limits have been identified as having potential roost features during the ongoing GLTA surveys. This includes (but is not limited to) trees along Hallogate Road and along North Beck. GLTA surveys (which commenced in February 2024) and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Hazel Dormouse	The desk study returned 61 hazel dormouse records within the study area of Route Section 10. The closest of these are 45 records located approximately 630 m from the draft Order Limits associated with Treswell Wood. The draft Order Limits are 290 m from Treswell Wood SSSI/LNR/Wildlife Trust Reserve (at the closest point), which is known to support hazel dormouse through a hazel dormouse reintroduction programme. Targeted surveys may be required within suitable habitats in the vicinity of the woodland (determined through Phase 1 habitat survey) to establish if they have expanded their range, if impacts to hazel dormouse are considered likely.

Species/species group	Description
Otter and Water Vole	The desk study returned one otter record approximately 2 km from the draft Order Limits. Twenty-seven water vole records were returned within the study area of Route Section 10. One record (dated 2014) is located within or just outside of the draft Order Limits, in the Fledborough area. No otter or water vole field signs were recorded on the watercourses/ditches surveyed in 2024. The ongoing targeted surveys for otter and water vole will continue in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. Some watercourses have been targeted noted as requiring further investigation during the Phase 1 habitat survey, including North Beck.
Badger	The desk study returned 137 badger records within the study area of Route Section 10. These include records within and just outside of the draft Order Limits in the areas of West Burton, Sturton le Steeple and Fledborough. Badger presence has been recorded both inside and close to the draft Order Limits in multiple locations. Badger surveys are ongoing and will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Species of Principal Importance	The desk study returned 36 brown hare records within the study area of Route Section 10. This includes six records within or just outside of the draft Order Limits. One harvest mouse record (dated 2024) was returned within the study area, which is within or just outside of the draft Order Limits, close to the A57, in the Darlton area. Forty-eight hedgehog records were returned within study area. Brown hare has been noted within the draft Order Limits during the ongoing Phase 1 habitat survey, in fields northwest of the East Drayton area.
Aquatic macroinvertebrates	The desk study did not identify any records of notable macroinvertebrates in this Route Section. The Nottinghamshire Local Biodiversity Action Plan references white-clawed crayfish and the depressed river mussel as Priority Species recorded within the respective areas of consideration.
Aquatic macrophytes	The desk study identified records of short-leaved water-starwort (*Callitriche truncata*) in Catchwater Drain and Fenton Lane Drain. Short-leaved water-starwort is listed as ‘Least Concern’ on the England and GB red lists but is listed on the Nottinghamshire Rare Plant Register Species. These records are outside the draft Order Limits (1.5 km) but these watercourses are hydrologically connected to watercourses within the draft Order Limits The Nottinghamshire Local Biodiversity Action Plan (LBAP) (Ref 8.52) lists several vascular plant species of conservation concern which include the Priority Species marsh stitchwort, although the locations of these records are not listed and therefore their proximity to the Proposed Overhead Line cannot be determined.

Species/species group	Description
Fish	The desk study identified records of European eel in this section. Records were from outside the draft Order Limits but the watercourses either cross the draft Order Limits or are hydrologically connected to watercourses within the draft Order Limits. The records were from Fledborough Beck, North Beck and Catchwater Drain and other minor unnamed drains. The Nottinghamshire Local Biodiversity Action Plan lists 13 fish species of conservation concern which includes Allis shad, twaite shad, European eel, spined loach, bullhead, river, sea and brook lamprey, smelt, nine-spined stickleback, Atlantic salmon, brown trout and grayling. Targeted fish surveys are scheduled for this area in 2025.
Invasive non-native species	There are records of American mink (*Neogale vison*) within the study area; the closet of these is approximately 1 km from the draft Order Limits, in the West Burton area. The desk study found records of Chinese mitten crab in this Route Section in Lee Beck, 1 km east of the draft Order Limits. Jenkins' spire snail was recorded in the Spring 2024 aquatic macroinvertebrate surveys in Wheatley Beck. INNS are being recorded during the ongoing habitat surveys that will conclude in 2025. Japanese knotweed has been recorded inside the draft Order Limits, along the Sheffield to Lincoln railway line corridor, in the Sturton le Steeple area. Giant knotweed (*Reynoutria sachalinensis*) has been recorded adjacent or possibly just within the draft Order Limits, in the Treswell area. Himalayan balsam has been recorded along an unnamed watercourse, inside the draft Order Limits, approximately 380 m east of Darlton Road. Possible signal crayfish (*Pacifastacus leniusculus*) burrows have also been noted along a watercourse in the Woodbeck area.

Table 8.21 Summary of baseline details for legally protected, notable and invasive non-native species within the study area of the Proposed Overhead Line for Route Section 11 Fledborough to High Marnham

Species/species group	Description
Flora/Fungi	The desk study returned records of the following species within the study area: columbine, rye brome, slender thistle (*Carduus tenuiflorus*), cudweed, wall bedstraw (*Galium parisiense*), tutsan (*Hypericum androsaemum*), smooth cat's ear (*Hypochaeris glabra*), small cudweed (*Logfia minima*), pennyroyal (*Mentha pulegium*), tasteless water-pepper (*Persicaria mitis*), hoary cinquefoil (*Potentilla argentea*), small-flowered buttercup (*Ranunculus parviflorus*), large-leaved lime (*Tilia platyphyllos*), whitebeam (*Sorbus aria*), common valerian (*Valeriana officinalis*), dark mullein (*Verbascum nigrum*) and heartsease. Dark mullein, tutsan and whitebeam have been recorded within or just outside of the draft Order Limits. Targeted detailed botanical surveys will be undertaken in 2025, as required and any findings will be presented within the ES. Fledborough to Harby Dismantled Railway LWS, which lies adjacent to the draft Order Limits, has a rich floristic diversity with areas of open grassland and scrub. The site supports a number of notable plant species including hoary cinquefoil , wild liquorice (*Astragalus glycyphyllos*), small flowered buttercup and fine-leaved vetch (*Vicia tenuifolia*). Marnham Railway Yard candidate LWS, which also lies adjacent to the draft Order Limits, includes areas of hardstanding that having been colonised by plants and lichens. It also includes tall ruderal, coarse grassland and scrub communities.
Terrestrial Invertebrates	The desk study did not identify any records of protected or notable invertebrates within the study area. Any areas within the draft Order Limits that are identified during the ongoing Phase 1 habitat survey as potentially suitable to support species of conservation concern will be subject to a scoping survey in 2025 to assess their potential importance to invertebrates. Following on from this, targeted surveys would be undertaken if required, to inform the final assessments reported in the ES, and any specific mitigation requirements.
Reptiles	The desk study did not return any reptile records within the study area of Route Section 11. Targeted surveys are unlikely to be required in Route Section 11 as it is a small section which is dominated by arable land, and is therefore sub-optimal for reptiles.
Great Crested Newt	The desk study did not return any GCN records within the study area of Route Section 11. Six records of negative eDNA results (indicating likely GCN absence) were returned, the closest of these is approximately 540 m from the draft Order Limits.

Species/species group	Description
	One of the ponds located within 250 m of Route Section 11 was surveyed in 2023, as part of the High Marnham Substation Town and Country Planning Application, which is proposed to be submitted 2025. The survey returned a negative eDNA result and a poor HSI score, and therefore is unlikely to have GCN present.
Bats	The desk study returned 146 bat records within the study area of Route Section 11. This included records of the following species: common pipistrelle, noctule, brown long-eared and *Myotis* sp. Common pipistrelle has been recorded within the draft Order Limits. Two of the records are for roosts, for common pipistrelle and brown long-eared, both are approximately 1.2 km from the draft Order Limits. MAGIC shows one granted bat licence (for common pipistrelle and brown long-eared) within the study area for this Route Section, approximately 1.5 km north-east of the draft Order Limits (Ref 8.47). Mature trees within the draft Order Limits may support bat roosts (Ref 8.47). Three trees to the east of Hollow Gate Lane (south of the access road to High Marnham Green Energy Business Park), were identified to have bat roost suitability during ecological surveys carried out as part of the High Marnham Substation Town and Country Planning Application, which is proposed to be submitted 2025. GLTA surveys (which commenced in February 2024) and any required follow up surveys for bats will be undertaken as required to inform the final assessments reported in the ES, and any mitigation and licensing requirements.
Hazel Dormouse	There is no known hazel dormouse population in this Route Section and associated study area. No surveys for hazel dormouse will therefore be carried out in Route Section 11.
Otter and Water Vole	The desk study did not return any otter records within the study area of Route Section 11. Two water vole records were returned within the study area, the closest record (dated 2016) is approximately 1.1 km from the draft Order Limits. The ongoing targeted surveys for otter and water vole will continue in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements. No watercourses have been surveyed in Route Section 11 to date.
Badger	The desk study returned 20 badger records within the study area of Route Section 11. The closest record is approximately 850 m from the draft Order Limits. A potential badger push under and partially used sett have been recorded within 30 m of the draft Order Limits. Badger surveys are ongoing and will conclude in 2025 to inform the final assessments reported in the ES, and any mitigation and licensing requirements.

Species/species group	Description
Species of Principal Importance	The desk study returned one hedgehog record and three brown hare records within the study area of Route Section 11. The closest of these records was for hedgehog, approximately 1.4 km from the draft Order Limits. Incidental sightings of any SPI will continue to be recorded during the ongoing ecology surveys.
Aquatic macroinvertebrates	The desk study did not identify any records of notable macroinvertebrates in the area, the Nottinghamshire Local Biodiversity Action Plan (Ref 8.52) references white-clawed crayfish and depressed river mussel as Priority Species recorded within the respective areas of consideration. No watercourses will be crossed in this Route Section of the Proposed Overhead Line. No surveys for aquatic macroinvertebrates will therefore be carried out in Route Section 11.
Aquatic macrophytes	The desk study did not identify any records of notable macrophytes within this Route Section. The Nottinghamshire Local Biodiversity Action Plan (LBAP) (Ref 8.52) lists several vascular plant species of conservation concern which include the Priority Species marsh stitchwort, although the locations of these records are not listed and therefore their proximity to the Proposed Overhead Line cannot be determined. No watercourses will be crossed in this Route Section of the Proposed Overhead Line. No surveys for aquatic macrophytes will therefore be carried out in Route Section 11.
Fish	The desk study identified records of European eel in this section. Records were from outside the draft Order Limits but the watercourses either cross the draft Order Limits or are hydrologically connected to watercourses within the draft Order Limits. The records were from Fledborough Beck, Old Trent, Sewer Dike other minor unnamed drains. No watercourses will be crossed in this Route Section of the Proposed Overhead Line. No fish surveys will therefore be carried out in Route Section 11.
Invasive non-native species	The desk study returned ten records of an invasive water fern (*Azolla filiculoides*), two records of New Zealand pigmyweed, one record of Himalayan balsam and one record of parrot's-feather within the study area of Route Section 11. The closest record is for the invasive water fern (*Azolla filiculoides*), approximately 1.3 km from the draft Order Limits. Other species may have been recorded closer to the draft Order Limits, but the grid references for some of the records provided are not to a scale where this can be determined. The desk study also returned four American mink records within the study area; the closest record is approximately 800 m from the draft Order Limits. INNS are being recorded during the ongoing habitat surveys that will conclude in 2025. None were recorded during the surveys carried out up to and including October 2024.

Future Baseline

8.5.63 Predicting a future baseline requires projecting forward any trends or changes and considering how they may affect the baseline conditions over time. The nature of the future baseline is influenced by a combination of natural and human processes, including climate change.

8.5.64 Professional judgement has been used to predict the natural and human influences that are likely to change the baseline conditions as set out in the previous section, prior to the proposed construction period (2028-2031, with reinstatement continuing into 2033).

8.5.65 The majority of the baseline conditions recorded between 2024 and 2025 are unlikely to change markedly by 2031. It is acknowledged that climate change can lead to changes in the distribution and abundance of some ecological features (habitats and species) at the local level; however, any such changes are likely to occur over a relatively long period of time. It is unlikely that there would be any significant changes to ecologically important features by 2031 as a result of climate change.

8.5.66 Should there be any large-scale changes in agricultural policies and practices by 2031, these may result in changes to the land use within and surrounding the draft Order Limits, which could possibly result in some changes in the extent of the agricultural land. Notwithstanding this, any such changes are unlikely to alter the importance of the ecological features recorded between 2024 and 2025, given that planning policy will likely continue to minimise the loss of biodiversity features and seek no net loss.

8.5.67 Future developments within the draft Order Limits are likely to be limited given the rural setting of most of the route and are likely to be localised, industrial-related developments on land close to existing development. Committed developments that have overlap with the draft Order Limits, or would change the baseline conditions of the habitats within and up to 50 m of the draft Order Limits are listed below and are detailed in section 21.6 of **Chapter 21 Cumulative Effects**[8].

- Land off Stealgoose Lane, Belton: planning application reference PA/2022/1520;
- Land off Stealgoose Lane, Belton: planning application reference PA/2022/1605; and
- Bumble bee solar farm and battery storage facility: planning application reference 22/00358/FUL.

8.6 Mitigation

8.6.1 As set out in **Chapter 5 Approach to Preparing the PEIR** mitigation measures fall into one of three categories: embedded measures; control and management measures; and additional mitigation measures. Those measures relevant to the assessment of effects on important ecological features are set out below.

[8] Proposals that are planned but not yet consented are considered in Chapter 21 Cumulative Effect

Embedded Measures

8.6.2 Environmental appraisal has been an integral part of the Project design from the outset, which has meant that the Project has been able to avoid environmentally sensitive features as far as reasonably practicable.

8.6.3 National Grid has also embedded measures into the design of the Project to avoid or reduce significant effects that may otherwise be experienced during construction and operation (and maintenance) of the Project.

8.6.4 Embedded measures are those that are intrinsic to and built into the design of the Project, which have been presented in Table 4.2 in **Chapter 4 Description of the Project**. Measures of relevance to the Ecology chapter include:

- Sensitive routeing and siting to develop the draft overhead line alignment, siting of substations and draft Order Limits to avoid and reduce, as far as practicable, impacts upon designated sites, areas of long established woodland, and Priority Habitats, as far as practicable, impacts on identified receptors, in line with the National Policy Statements EN-1 (Ref 8.16) and EN-5 (Ref 8.17).
- The crossing of the River Ouse has been designed to be upstream of its confluence with the River Trent to minimise the width of the crossing on the Humber Estuary SAC, SPA, Ramsar and SSSI, in addition to Blacktoft Sands RSPB Reserve.
- The Proposed Overhead Line has also been routed to be broadly parallel with the existing 400 kV overhead line (taking into account the other environmental, socio-economic and technical considerations) to minimise the potential for effects on the interest features of the Humber Estuary designated sites.
- The Project will utilise existing watercourse crossing points as far as practicable.
- The proposed design includes strategically located and optimised temporary haul roads along the Project alignment to support construction of the Project. Where possible the design of the temporary haul roads has sought to use existing bridges and culverts.
- Large or sensitive watercourses, for example those designated as a main river, and those with Water Framework Directive (WFD) status, will be crossed by the temporary haul road using temporary clear span bridges. This will reduce the effects on watercourses, their banks, and water quality as a result of removing works from within the watercourse.
- Siting of the proposed infrastructure within the draft Order Limits to minimise potential impacts on protected habitats and species. Micro-siting of pylons has taken into account swing of the overhead lines to avoid or minimise loss of woodland and trees as far as practicable.
- Appropriate stand-off distances have been applied to designated sites and Priority Habitats (including ancient woodland and long established woodland) and watercourses to avoid direct effects where practicable.
- Areas of permanent habitat loss would be calculated and considered during the BNG assessment. The Project will deliver 10% BNG or greater BNG.

Control and Management Measures

8.6.5 Control and management measures, comprising management activities and techniques, will be implemented during construction of the Project to limit effects through adherence to good site practices.

8.6.6 A Draft Outline Code of Construction Practice (CoCP) is provided in **Appendix 4.1 Draft Outline Code of Construction Practice** in Volume 3. Measures contained in the Outline CoCP that are relevant to the control and management of impacts that could affect the ecology assessment are:

- GG01: The Project will be run in compliance with all relevant legislation, consents and permits including the limitations and requirements set out in the DCO.
- GG03: The following environmental management plans will be produced prior to construction.
  - Code of Construction Practice (CoCP)
  - Register of Environmental Actions and Commitments (REAC)
  - Construction Traffic Management Plan (CTMP)
  - Soil Management Plan (SMP)
  - Public Rights of Way Management Plan
  - Materials and Waste Management Plan (MWMP)
  - Noise and Vibration Management Plan
  - Landscape and Ecology Management Plan (LEMP) including an Outline Landscape Maintenance and Management Plan
  - Archaeological Written Scheme of Investigation (WSI)
- GG04: The CoCP shall include measures to manage dust, waste, water, noise, vibration and soil during construction. The contractor(s) shall undertake site inspections to check conformance to the Management Plans.
- GG05: A suitably experienced Environmental Manager will be appointed for the duration of the construction phase. In addition, a qualified and experienced EnvCoW will be available during the construction phase to advise, supervise and report on the delivery of the mitigation methods and controls outlined in the CoCP. The EnvCoW will monitor that the works proceed in accordance with relevant environmental DCO requirements and adhere to the required good practice and mitigation measures. The EnvCoW will be supported as necessary by appropriate technical specialist advisors, including archaeologists, ecologists, soil scientists, and arboriculturists.
- GG06: Construction workers will undergo training to increase their awareness of environmental issues as applicable to their role on the Project. Topics will include but not be limited to:
  - Working hours;
  - Ecology: working in or adjacent to protected sites and priority habitats, protected species, management, mitigation and controls;
  - Water management: legislation, buffer zones, control mechanisms, flood risks and emergency response procedures;

  - Waste management: legislation, segregation, contamination, best practice;
  - Agreed traffic routes and access points;
  - Nuisance: dust, behaviour, noise, vibration, management and controls;
  - Working around trees: tree and root protection;
  - Contaminated land: recognising and dealing with contaminated material;
  - Pollution prevision and incident response; and
  - Spill and emergency response.
- GG07: A record of condition will be carried out (photographic and descriptive) of the working areas that may be affected by the construction activities, prior to works commencing. This record will be available for comparison following reinstatement after the works have been completed to ensure that the standard of reinstatement at least meets that recorded in the pre-condition survey.
- GG08: Land used temporarily will be reinstated where practicable to its pre-construction condition and use. Hedgerows, fences and walls (including associated earthworks and boundary features) will be reinstated to a similar style and of similar or higher quality to those that were removed, unless otherwise agreed.
- GG09: Where sensitive features are to be retained within or immediately adjacent to the draft Order Limits, an appropriate protective area will be established using appropriate fencing and signage and will be inspected, repaired and replaced as necessary. The protective areas will be shown on the Retention and Reinstatement Plans contained within the LEMP.
- GG11: Any activity carried out or equipment located within a construction compound that may produce a noticeable nuisance, including but not limited to dust, noise, vibration and lighting, will be located away from sensitive receptors such as residential properties or ecological sites where practicable.
- GG15: Fuels, oils and chemicals will be stored responsibly, away from sensitive water receptors. Where practicable, they will be stored >15 m from watercourses, ponds and groundwater dependent terrestrial ecosystems. Where it is not practicable to maintain a >15 m distance, additional measures will be identified. All refuelling, soiling and greasing of construction plant and equipment will take place above drip trays and also away from drains as far as is reasonably practicable. Vehicles and plant will not be left unattended during refuelling. Appropriate spill kits will be made easily accessible for these activities. Potential hazardous materials used during construction will be safely and securely stored including use of secondary containment where appropriate. Stored flammable liquids such as diesel will be protected either by double walled tanks or stored in a bunded area with a capacity of 110% of the maximum stored volume. Spill kits will be located nearby.
- GG16: Runoff across the site will be controlled through a variety of methods including header drains, buffer zones around watercourses, on-site ditches, silt traps and bunding. There will be no intentional discharge of site runoff to ditches, watercourses, drains or sewers without appropriate treatment and agreement of the appropriate authority (except in the case of an emergency).
- GG17: Wash down of vehicles and equipment will take place in designated areas, for example within construction compounds and intermittently along construction access roads. Wash water will be prevented from passing untreated into

watercourses and groundwater. Appropriate measures will include use of sediment traps.

- GG18: Wheel washing facilities will be provided at each main compound, where appropriate. Road sweepers will be deployed on public roads where necessary to prevent excessive dust or mud deposits.
- GG19: Earthworks and stockpiled soil will be protected by covering, seeding or using water suppression where appropriate.
- GG21: Construction lighting will be of the lowest luminosity necessary to safely perform each task. It will be designed, positioned and directed to reduce the intrusion into adjacent properties, protected species and habitats.
- GG22: A Site Waste Management Plan (SWMP) will be developed prior to construction. The SWMP shall include but not be limited to:
  - waste forecasts;
  - how waste will be reduced reused, managed and disposed of in accordance with the waste hierarchy;
  - identification of recovery routes; and
  - actual waste figures once work has begun.
  - Consideration will be given to the guidance in the Code of Practice developed by Contaminated Land: Applications in Real Environments (CL:AIRE), A Definition of Waste: Development Industry Code of Practice (DoWCoP).
  - Dedicated waste management areas will be designed to sufficiently accommodate the types and volumes of waste produced and to reduce the environmental risk of storing waste on-site (covered, secured and away from drainage).
- B01: The contractor(s) will comply with relevant protected species legislation. Appropriate licences will be obtained where necessary from Natural England for all works affecting protected species as identified by the Environmental Statement and through pre-construction surveys. All applicable works will be undertaken in accordance with the relevant requirements and conditions set out in those licences.
- B02: In the event that vegetation, structures, walls or pylons with the potential to support breeding birds is required to be removed or otherwise disturbed during the breeding bird season, the habitats affected will first be checked for signs of nesting by the ECoW (or a suitably experienced taxon specialist supporting the ECOW if required); works would also be supervised by an ECoW if definitive evidence to prove or disprove nesting cannot be determined. Appropriate protection measures will be put in place should active nests be found. These will include exclusion zones determined on a case by case basis by an ECOW under the advice of a taxon specialist if required, around active nests until chicks fledge or nests become inactive as determined by monitoring by the ECoW.
- B03: Pre-works checks for nesting birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) will be carried out prior to site clearance or construction works within a 500 m radius of mature trees and existing pylons, and a 200 m radius from nest boxes, buildings and trees with potential to support nesting birds. The EnvCOW will apply pre-construction measures on a case by case basis, as required.

- B04: Habitat checks for nesting barn owl, where required, will be carried out by an ornithologist in possession of an appropriate class licence issued by Natural England.
- B05: Where there will be a risk of animal entrapment, a means of escape will be installed into all excavations left open overnight.
- B06: To control the spread of invasive weeds in accordance with the Wildlife and Countryside Act 1981 (as amended), any plant or machinery that has been used in areas infested with invasive species (both terrestrial and aquatic), such as Japanese knotweed and Himalayan balsam, will be thoroughly cleaned. Water used to clean vehicles will be controlled to prevent the spread of the plant (through seeds, rhizomes, fragments for example.). The area will be cordoned off to prevent any inadvertent spreading.
- B07: All habitats suitable for common reptiles will be subject to two-stage habitat manipulation that will take place between mid-March and mid-October. Firstly, vegetation will be cut to approximately 150mm (with the arisings removed), overseen by an ECoW and the site left for a minimum of two days to allow reptiles to naturally disperse from the area. Secondly, vegetation will be cleared down to ground level, which will be overseen by the ECoW. Vegetation will be cleared using appropriate equipment based on the type of vegetation to be removed, the area affected, and the risk of mortality or injuring reptiles. Construction works could commence immediately after completion of the second stage. Reptile hibernacula will be retained and protected during construction where practicable. If unavoidable, the removal of vegetation and groundworks at hibernacula will be timed to avoid the hibernation season (late October to early March). Replacement hibernacula and refugia will be provided.
- B08: Alternative roost structures (bat boxes) will be provided (with landowner consent) on retained trees within the draft Order Limits or areas outside of the draft Order Limits agreed with landowners.
- B09: Any tree that requires maintenance and/or removal will be subject to a pre-works re-assessment by a suitably experienced and licenced ecologist, to check that the baseline conditions have not changed. Where the removal/reduction of a tree categorised as PRF-I or PRF-M cannot be avoided, and the presence of a bat roost has not been confirmed through survey, the tree will be soft felled/pruned under an ecological watching brief. The ecologist present will be registered to use the Level 2 Natural England Bat Survey Class Licence and will carry out a pre-construction check to confirm roost absence. All trees with confirmed bat roosts would be required to be felled under protected species mitigation licence from Natural England, and be subject to stated mitigation and procedures outlined within the said licence.
- B10: Where the works require the removal of sections of hedgerow, the gap will be reduced to a width required for safe working. Where hedge removals are necessary, ‘dead hedging’ should be used, where practicable, in the interim periods to retain connectivity during construction. Dead hedging can comprise vegetation arisings or artificial provision, such as willow screening panels or Heras fencing covered in camouflage netting. New hedgerow planting will contain native, woody species of local provenance.
- B11: All ponds will be retained, with minimum 10 m buffers applied where practicable. Stand-off buffers to all watercourses and land drains to 10 m will be

maintained where practicable, with the exception of those to be crossed with a new or modified crossing point.

- B12: Develop a method statement to ensure works within watercourse crossings include suitable measures to allow the passage of otters, water vole and fish throughout construction (i.e., during fluctuating water levels).
- B13: Where works require dewatering, of waterbodies known to contain fish, fish removal and relocation will be required (which will require appropriate permits such as an FR2 licence from the Environment Agency).
- B14: Where any in channel watercourse work are required, works will be completed outside of fish spawning season (March 16-June 16 inclusive) and fish migratory seasons (species specific, dependant on the waterbody) subject to likely fish presence confirmed through pre-construction fish surveys.
- W01: All works within main rivers or ordinary watercourses will be in accordance with a method approved under environmental permits issued under the Environmental Permitting Regulations or the protective provisions of the DCO for the benefit of the Environment Agency and the Lead Local Flood Authorities.
- W02: For open cut watercourse crossings and installation of vehicle crossing points, good practice measures will include but not be limited to, where practicable:
  - reducing the working width for open cut crossings of a main or ordinary watercourse whilst still providing safe working;
  - installation of a pollution boom downstream of open cut works;
  - the use and maintenance of temporary lagoons, tanks, bunds, silt fences or silt screens as required;
  - have spill kits and straw bales readily available at all crossing points for downstream emergency use in the event of a pollution incident;
  - the use of all static plant such as pumps in appropriately sized spill trays;
  - prevent refuelling of any plant or vehicle within 15 m of a watercourse;
  - prevent storing of soil stockpiles within 15 m of a main river;
  - inspect all plant prior to work adjacent to watercourses for leaks of fuel or hydraulic fluids; and
  - reinstating the riparian vegetation and natural bed of the watercourse, using the material removed when appropriate, on completion of the works and compacting as necessary. If additional material is required, appropriately sized material of similar composition will be used.
- W03: Riverbank and in-channel vegetation will be retained where not directly affected by installation works. Natural substrate will be provided through temporary watercourse crossings box culverts.
- W04: Where watercourses are to be crossed by construction traffic, measures to be applied include the use of temporary culverts or temporary clear spanned bridges. Once the temporary culvert is installed, the area above the temporary culvert will be backfilled and construction mats or stone placed over the backfilled area to permit the passage of plant, equipment, materials and people. Temporary culverts will be sized to reflect the span width and the estimated flow characteristics of the

watercourse under peak flow conditions and kept free from debris. Where used, temporary bridges will be designed specifically to consider the span length and the weight and size of plant and equipment that will cross the bridge.

- W05: The contractor(s) will comply with all relevant consent conditions or DCO provisions regarding de-watering and other discharge activities. This will particularly be with regard to volumes and discharge rates and will include discharges to land, water bodies or third-party drains/sewers.
- W06: Where new or additional surfacing is required on any access tracks and compound areas, these will be permeable surfaces where ground conditions allow. The Project will incorporate appropriate surface water drainage measures into its final design for the any access tracks so that they do not lead to a significant increase in flood risk. Temporary haul routes will be removed at the end of the construction phase and the ground surface will be reinstated to pre-Project levels.
- AQ02: Site Management. Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book. Hold regular liaison meetings with other high risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.
- AQ03: Monitoring. Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the Local Authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary. Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. Agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the Local Authority.
- AQ04: Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. Erect solid screens or barriers around dusty activities such as around the construction compounds so that they are at least as high as any stockpiles on site (where appropriate and practical). Keep site fencing, barriers and scaffolding clean using wet methods. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site, cover as described below. Cover, seed or fence stockpiles to prevent wind whipping (where needed and depending on duration).
- AQ10: Trackout. Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. Avoid dry sweeping of large areas. Ensure vehicles carrying dust generating materials entering and leaving sites are covered to prevent escape of materials during transport.
- NV01: Construction working will be undertaken within the agreed working hours set out within the DCO. Best practicable means to reduce construction noise and limit effects on perceptual aspects of landscape, such as tranquillity, will be set out within the CoCP.

- NV02: Contractor(s) will be required to follow good construction practices (referred to as best practicable means (BPM)) as outlined in BS 5228-1 and BS 5228-2 to control noise and vibration respectively. BS 5228-1 and BS 5228-2 have Approved Code of Practice status (in England) under the powers conferred by Sections 71(1)(b), (2) and (3) of the Control of Pollution Act 1974, as enacted under The Control of Noise (Code of Practice for Construction and Open Sites) (England) Order 2015. Compliance with the good practice noise and vibration requirements stated therein are a statutory obligation under the Act.

8.6.7 The CEMP will include other standard measures relating to ecology such as:

- Pre-construction surveys to validate and, where necessary, update the baseline survey findings. The purpose of these pre-construction surveys would be to ensure mitigation during the construction phase is based on the latest protected species information. This would also be required for any protected species licensing.
- Reasonable avoidance measures, including appropriate buffers around identified active badger setts (if present), or trees with bat roost suitability where possible throughout the site.

Additional Mitigation Measures

8.6.8 Additional mitigation comprises measures over and above any embedded and standard mitigation measures, for which assessment within this PEIR has identified a requirement to further reduce significant environmental effects. The preliminary assessment reported in this PEIR has not identified any requirements for additional mitigation at this stage, over and above the embedded or control and management measures identified. This will continue to be reviewed as the assessment progresses and the preliminary design develops further.

Enhancement

8.6.9 In addition to the mitigation described above, National Grid will look to implement habitat enhancement and creation through delivery of Biodiversity Net Gain (BNG).

8.6.10 Biodiversity Net Gain is a way of making sure the habitat for wildlife is in a measurably better state than it was before development. It requires a minimum 10% gain calculated using the government's Biodiversity Metric. BNG must be managed, monitored and reported on to the Local Planning Authority for 30 years. From November 2025 BNG will become mandatory for NSIP projects consented under the Planning Act 2008.

8.6.11 Where possible National Grid will deliver BNG through partnerships and seek to provide value-added BNG with wider benefits to communities, including access to nature, and help deliver national and local policies on health and wellbeing, environmental awareness, education, skills and jobs to ensure best value for money from consumer-funded BNG.

8.6.12 National Grid has already begun talking to landowners within several areas, where habitat enhancement and creation might be most beneficial, to explore what opportunities there might be. We are in early discussions with national conservation and environmental organisations to create partnerships to deliver BNG in ways that provide enduring benefit to communities.

8.7 Preliminary Assessment

8.7.1 This section first identifies the potential effects that could occur as a result of the construction, operation and maintenance of the Proposed Overhead Line. The preliminary assessment of the Proposed Overhead Line as described in **Chapter 4 Description of the Project.** The preliminary assessment of the Proposed Substation Works is presented in **Chapter 20 Substations and Associated Works.**

8.7.2 The preliminary assessment takes into account the embedded, control and management and additional mitigation measures set out in section 8.6.

Potential Effects

8.7.3 The potential for the Proposed Overhead Line to result in likely significant effects on ecology receptors was determined through the EIA Scoping process. This section lists those potential effects that have been scoped into the assessment within the EIA Scoping Report (Ref 8.32) taking into account the comments received within the Scoping Opinion (Ref 8.31). Where the scope has been amended since the Scoping Opinion, explanatory text has been included to provide justification for this change.

Construction

8.7.4 The potential effects that could result from the construction of the Proposed Overhead Line are:

- Temporary direct habitat loss and temporary disturbance and fragmentation of the Humber Estuary SAC/SPA/Ramsar/SSSI, Brantingham Dale SSSI and Chesterfield Canal SSSI. No permanent habitat loss is now predicted for these designated sites, which is a change since the EIA Scoping Report (Ref 8.32) was issued.
- Permanent and temporary direct habitat loss and temporary disturbance and fragmentation of non-statutory designated sites.
- Permanent and temporary direct habitat loss and temporary disturbance and fragmentation of Priority Habitats, long established woodland (no woodlands present on the ancient woodland inventory (Ref 8.68)) and ancient veteran trees.
- Permanent and temporary direct habitat loss and temporary disturbance and fragmentation of protected and notable species.
- Incidental mortality of protected and notable species.
- Disturbance to protected or notable species from noise, vibration, visual and lighting.
- Changes in air quality on designated sites and notable habitats within 200 m of the construction traffic routes.
- Pollution impacts on designated sites and notable habitats.
- Introduction of INNS leading to the degradation of the habitat quality of designated and protected sites and notable habitats and species.
- Loss/reduction in habitat quality of designated/Priority Habitats and habitat quality for protected/notable species from changes in groundwater levels.

Operation

8.7.5 The potential effects that could result from the operation of the Proposed Overhead Line includes effects on protected and notable species through habitat fragmentation by the Proposed Overhead Line, creating a barrier to species dispersal. However, this is discussed in **Chapter 9 Ornithology**.

Maintenance

8.7.6 Potential refurbishment works which could be required and would form part of Proposed Overhead Line maintenance are detailed in **Chapter 4 Description of the Project**. Refurbishment works would require temporary access tracks (as shown on **Figure 4.1 Proposed Project Design**), a small compound and potentially scaffolding to protect roads and other features during the work. Potential effects on important ecological features/receptors associated with refurbishment works or routine maintenance works (as described in **Chapter 4 Description of the Project**) would be equivalent to, or less than, those which could result from the construction of the Proposed Overhead Line. Therefore, potential impacts and resulting effects associated with potential refurbishment and routine maintenance works are not assessed separately to construction in Table 8.22, Table 8.23 and Table 8.24, with the exception of maintenance access routes, where these differ to the routes that would be used during construction and/or affect new ecological receptors.

8.7.7 It is understood that the proposed maintenance access routes which would be used for any routine maintenance or refurbishment (as described in **Chapter 4 Description of the Project**) would not be modified or used beyond their current capacity, and therefore would not result in any additional habitat loss or in the fragmentation of designated sites or habitats (including Priority Habitat). Therefore, the use of the proposed maintenance accesses is not anticipated to impact protected and notable species through direct mortality, habitat loss or fragmentation, or through disturbance above existing levels which would result in significant effects.

8.7.8 The potential effects that could result from the proposed maintenance access tracks, which could require interlocking track mat panels, are:

- Potential for temporary direct disturbance of habitats, including those which lie in designated sites and Priority Habitat.
- Potential for pollution impacts and the introduction of INNS, leading to the degradation of existing habitat quality and reduction in native species due to being outcompeted.

Preliminary Assessment Tables

8.7.9 Table 8.22, Table 8.23 and Table 8.24 present the preliminary assessment of effects on designated sites, habitats and species respectively. The potential effects set out in paragraphs 8.7.4 to 8.7.8 are included in the tables against individual receptors only where relevant, which means that for some receptors there will not necessarily be effects at all three stages of the Proposed Overhead Line (i.e., construction, operation, and maintenance).

8.7.10 This section provides a preliminary assessment of the Proposed Overhead Line. The preliminary assessment of the Proposed Substation Works at Birkhill Wood and Proposed Substation Works at High Marnham, are presented in **Chapter 20 Substations and Associated Works**.

8.7.11 The preliminary assessment of effects for the Proposed Overhead Line, takes embedded mitigation measures and control and management measures into account, which are set out in section 8.6 of this chapter.

8.7.12 The receptors included in Table 8.22 are listed in order of importance/value rather than by Route Section, starting with International statutory designated sites, then national and local statutory designated sites and local non-statutory designated sites. The receptors in Table 8.22 are illustrated in **Figure 8.1 International Sites Designated for Nature Conservation within 10 km and National and Local Statutory Designated Sites within 5 km**

8.7.13 Please refer to **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitat within 2 km** for the locations of the Priority Habitats assessed in Table 8.10. Refer to **Figure 8.3 Phase 1 Habitat Survey Map** and **Figure 8.4 Aquatic Survey Locations** for the habitats that have been recorded up to October 2024 during the ongoing Phase 1 habitat survey and aquatic surveys, which are assessed in Table 8.11 to Table 8.21. .

Table 8.22 - Preliminary assessment of effects on statutory and non-statutory designated sites

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
Humber Estuary SAC/SPA/ Ramsar of international importance Humber Estuary SSSI of national importance	Construction	Route Section 4	Temporary direct habitat loss, fragmentation and disturbance- construction access road and construction working areas within the River Ouse	Habitat loss will be kept to a minimum inside the designated sites. GG01, GG03, GG05, GG07, GG08, GG09	Significant	Low - Habitat Surveys ongoing and crossing method not finalised. Potential for scouring of habitats during low tide and disturbance caused for unknown duration, but details of crossing method unknown.
	Construction	Route Section 4	Degradation of habitat due to dust, pollution impacts and introduction of INNS	GG01, GG03, GG04, GG05, GG11, GG15-19, B04, AQ04, AQ13, AQ15	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the mitigation measures embedded into the evolving Project design are likely to be sufficient to avoid any likely significant indirect effects.
Humber Estuary SAC/Ramsar of international importance Humber Estuary SSSI	Construction	Route Section 4	Temporary disturbance to grey seal	GG04, NV01, NV02	Not significant	Moderate - The section of the SAC/Ramsar that lies within the draft Order limits is a considerable distance from Donna Nook, an area used by grey seal for breeding. The grey seal is generally associated with coastal habitats but could

[9] All potential effects related to birds are assessed in Chapter 9: Ornithology and are not repeated in this chapter.

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
of national importance						potentially swim up the River Humber/Ouse when foraging. It is however unlikely that the Proposed Overhead Line would result in significant effects on this species due to the localised area of the works, the distance inland, and the potentially short duration of works in the vicinity of the River.
Humber Estuary SAC/Ramsar of international importance Humber Estuary SSSI of national importance	Construction	Route Section 4	Temporary disturbance to sea and river lamprey due to potential degradation of habitat due to dust, pollution impacts and introduction of INNS. Incidental mortality or disturbance of fish species Temporary disturbance through noise/visual disturbance and lighting.	GG01, GG03, GG04, GG05, GG06, GG07, GG09, GG11, GG15, GG16, GG17, GG19, GG21, B01, B08, B09, B10, B11, W01, W02, W03, W04, W05	Not significant	Low - The final Proposed Overhead Line design has not been determined. Potential for scouring of habitats during low tide and disturbance caused for unknown duration, but details of crossing method unknown.
Humber Estuary Ramsar of	Construction	Route Section 4	Temporary direct habitat loss, temporary disturbance and incidental mortality of	N/A	Not significant	High - The section of the Ramsar that lies within the draft Order limits is likely to be unsuitable for natterjack toad. The most north-easterly

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
international importance			natterjack toad (*Epidalea calamita*)			breeding site in Great Britain is known to be present on the southern tip of the Ramsar along the coast, and not in this northwestern area along the River.
Humber Estuary SSSI of national importance	Construction	Route Section 4	Incidental mortality of vascular plants and invertebrates (qualifying species)	Habitat removal will be kept to a minimum inside the SSSI. GG01, GG03, GG05, GG07, GG08, GG09, W01, W02, AQ4, AQ13, AQ15	Not significant as not likely to be a large area affected, however it is unknown to full extent and type of direct effect.	Low - Not possible to reliably determine likely significance of effect at this stage. The potential for likely significant effects will be fully determined following completion of required surveys and design. This will be presented in the ES.
Brantingham Dale SSSI of national importance	Construction	Route Section 2	Temporary direct habitat loss and disturbance - tower working area	Micrositing of tower working area to minimise impacts to habitat inside the SSSI. GG01, GG03, GG05, GG07, GG08, GG09	Potential for significant effect as working area falls partially within remaining area of calcareous grassland	Moderate - The final Proposed Overhead Line design has not been determined.
	Construction	Route Section 2	Degradation of habitat due to dust, pollution	GG01, GG03, GG04, GG05,	Not significant	Moderate - The final Proposed Overhead Line design has not

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
			impacts and introduction of INNS	GG11, GG15-19, GH05, B04, AQ04, AQ13, AQ15		been determined. However, the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.
Crowle Borrow Pits SSSI	Construction and Maintenance (access track – use of existing track for maintenance purposes only through SSSI)	Route Section 6	Degradation of habitat due to dust, pollution impacts and introduction of INNS	GG01, GG03, GG04, GG05, GG11, GG15-19, GH05, B04, AQ04, AQ13, AQ15	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.
	Maintenance	Route Section 6	Temporary direct habitat disturbance - access route	Utilisation of existing access	Not significant	Moderate - The maintenance access would use the existing track, with no encroachment into the adjacent SSSI. The use of temporary interlocking track mat panels may be required.
Chesterfield Canal SSSI/ LWS of national importance	Construction	Route Section 8 and Route Section 9	Temporary direct habitat loss, fragmentation and disturbance	Retain habitat within 10 m of the canal as far as practicable. Temporary clear span bridge used for construction access track.	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the mitigation measures embedded into the evolving Proposed Overhead Line and design are likely to be sufficient to avoid any likely significant direct

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
				GG01, GG03, GG05, GG07, GG08, GG09, B09, B11		effects. It is anticipated that this will be a clear span bridge thereby retaining marginal and bankside habitat; however design is not confirmed.
	Construction	Route Section 8 and Route Section 9	Degradation of habitat due to dust, pollution impacts and introduction of INNS through working within (crossing point and access route) and adjacent to the SSSI.	An existing track though a section of the SSSI will be used for access for planting purposes but not modified. GG01, GG03, GG04, GG05, GG11, GG15-19 GH05, B04, AQ04, AQ13, AQ15	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the mitigation measures embedded into the evolving Proposed Overhead Line design together with the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.
Statutory designated sites within the study area, outside of the draft Order Limits (see Table 8.5, Table 8.6 and Table 8.7) , Up to	Construction	All Route Sections	Degradation of habitat due to dust and pollution impacts	GG01, GG03, GG04, GG05, GG11, GG15-19, GH05, AQ04, AQ13, AQ15	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
international importance.						
Jillywood Lane LWS, of county importance	Construction	Route Section 1	Permanent and temporary direct habitat loss and disturbance- third party asset undergrounding. Potential vegetation management required for overhead line.	GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Low - The final Proposed Overhead Line design has not been determined. Third party asset design which crosses this LWS is also still to be determined on route and method.
Brantingham Dale Historic LWS, up to county importance	Construction	Route Section 2	Permanent and temporary direct habitat loss, fragmentation and disturbance- overhead line vegetation clearance and management	GG01, GG03, GG05, GG09	Significant	Moderate - The final Proposed Overhead Line design has not been determined.
Broomfleet Pits LWS, of county importance	Construction	Route Section 3	Temporary direct habitat loss, fragmentation and disturbance - indicative visibility splay, associated with an indicative temporary bellmouth	Avoidance of habitat removal inside and along the boundary of the LWS where practicable. GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. Potential to not require any vegetation loss but could affect trees and scrub along edge of LWS where it borders Landing Lane.

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
Paupers' Drain LWS, of county importance	Construction	Route Section 6	Temporary direct habitat loss, fragmentation and disturbance- tower working area and new bridge drain crossing. To be removed upon completion of the works. Potential vegetation loss for working areas.	Maintain a minimum 10 m buffer from the watercourse, where practicable. GG01, GG03, GG05, GG07, GG08, GG09, B09, W01-W05	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the mitigation measures embedded into the evolving Project design together with the control and management measures are likely to be sufficient to avoid any likely significant direct effects. An additional maintenance access crosses the LWS at another location however it uses an existing track and crossing point.
Stainforth and Keadby Canal Corridor LWS, of county importance	Construction	Route Section 6	Temporary direct habitat loss and disturbance- vegetation loss for overhead line clearance and installation of pilot wires.	Maintain a minimum 10 m buffer from the watercourse, where practicable. GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Moderate - The LWS is designated for both the aquatic habitat and plants, and the bankside habitats, which includes scattered scrub and occasional trees. Three crossings will be required further east, however they are stated as existing and sufficient for proposed works.
Hatfield Waste Drain LWS, of county importance	Construction	Route Section 6	Temporary direct habitat loss and disturbance- installation of scaffolding and	Maintain a minimum 10 m buffer from the watercourse, where practicable.	Not significant	Low - Scaffolding for overhead line clearance lies partially within the LWS. Wide section of loss of bankside habitat on both banks potentially for 4 years for

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
			overhead line clearance.	GG01, GG03, GG05, GG07, GG08, GG09		all and permanent for taller vegetation due to oversailing. Two crossings will be required however they are stated as existing and sufficient for proposed works.
North Engine Drain, Belton LWS, of county importance	Construction	Route Section 6	Permanent and temporary direct habitat loss and disturbance-vegetation loss for overhead line clearance and installation of pilot wires.	Maintain a minimum 10 m buffer from the watercourse, where practicable. GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Low - This shorter section of LWS is designated for both the aquatic habitat and plants, and the bankside habitats, which includes scrub and trees. Wide section of loss of bankside habitat on both banks potentially for 4 years for all and permanent for taller vegetation.
River Torne LWS, of county importance	Construction	Route Section 6	Permanent and temporary direct habitat loss and disturbance-vegetation loss for overhead line clearance and installation of pilot wires. Construction access road runs within the LWS boundary for approximately 1 km. Additional two access	Maintain a minimum 10 m buffer from the watercourse, where practicable. GG01, GG03, GG05, GG07, GG08, GG09	Significant	Low - This LWS is designated for both the aquatic habitat and plants, and the bankside habitats, which includes scrub and trees. Wide section of loss of bankside habitat on both banks potentially for 4 years for all and permanent for taller vegetation due to oversailing. It is unknown as to the extent of improvements/widening or vegetation clearance or management required for use of

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
			routes require visibility splays immediately adjacent to LWS.			the existing track as a construction access route. Uncertain on extent and requirements of vegetation clearance for visibility splays at this time.
South Engine Drain, Belton LWS, of county importance	Construction	Route Section 6	Permanent and temporary direct habitat loss and disturbance-vegetation loss for new culvert, overhead line clearance and installation of pilot wires. New drain crossing- to be removed upon completion of the works. Construction access roads cross the LWS and also run within the LWS boundary for approximately 750 m and 430 m, potentially mostly existing tracks but could affect grassland banks. Temporary bellmouth also potentially just inside the LWS.	Maintain a minimum 10 m buffer from the watercourse, where practicable. GG01, GG03, GG05, GG07, GG08, GG09, B09,W01-W05	Significant	Low - This LWS is designated for both the aquatic habitat and plants, and the bankside habitats, which includes scrub and trees. Section of loss of aquatic and bankside habitat on both banks for culvert installation and overhead line installation, potentially for 4 years for all and permanent for taller vegetation due to oversailing. It is unknown as to the extent of improvements/widening or vegetation clearance or management required for use of the existing track as a construction access route, or the undergrounding of the third party assets within and across the LWS boundary.

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
			Undergrounding third party asset across the LWS.			
Folly Drain North LWS, of county importance	Construction	Route Section 6	Permanent and temporary direct habitat loss and disturbance-temporary vegetation loss for new culvert (to be removed after completion of the construction works), overhead line clearance and installation of pilot wires. One bridge and four further culverts on drains which possibly enter the LWS also have the potential to require works within the LWS boundary. Construction access roads cross the LWS and also runs within the LWS boundary for approximately 2.6 km, potentially mostly existing tracks but could affect grassland banks. Also associated visibility	Maintain a minimum 10 m buffer from the watercourse, where practicable. GG01, GG03, GG05, GG07, GG08, GG09, B09, W01-W05	Significant	Low - This LWS is designated for both the aquatic habitat and plants, and the bankside habitats, which includes scrub and trees. Section of loss of aquatic and bankside habitat on both banks for culvert installations and overhead line installation, potentially for 4 years for all and permanent for taller vegetation due to oversailing. Culvert within the LWS would be temporary and removed after 4 years, and the others would be permanent upgrades. It is unknown as to the extent of improvements/widening or vegetation clearance or management required for use of the existing track as a construction access route, or the undergrounding of the third party asset along and across the LWS boundary.

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
			splays may require vegetation loss. Undergrounding third party asset along the LWS for approximately 1.4 km.			
Sedge Hole Close Wildlife Trust Site/LWS Of County Importance	Construction	Route Section 7	Temporary direct habitat loss due to access for third party asset and planting across the top of the LWS but within root protection areas of trees within the LWS. Access road to the east of the LWS	Sufficient sized stand-off buffers to protect root protection areas of trees, where practicable. GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Moderate - The final Proposed Overhead Line design has not been determined.
South Moor Covert and Fishpond Plantation LWS, of county importance	Construction	Route Section 7	Temporary direct habitat loss and disturbance- third party asset and access.	Maintain a minimum 10 m buffer from the woodland, where practicable. GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Moderate - Habitat survey ongoing. It is unknown as to the extent of improvements/ widening or vegetation clearance or management required for use of the existing track as a construction access route, or the third party asset along the LWS boundary and within the root protection areas of trees within the LWS.
Warping Drain Corridor LWS,	Construction	Route Section 7	Permanent and temporary direct habitat loss and	GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Moderate - The final Proposed Overhead Line design has not been determined.

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
of county importance			disturbance- vegetation loss for overhead line clearance and installation of scaffolding. Construction access road runs within the LWS boundary for approximately 185 m.			
	Construction	Route Section 8 (across boundary)	Permanent habitat loss- Passing places and potential surface upgrades required for 125 m along Stockwith Road.	Minimise habitat loss as far as practicable GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Moderate - Habitat survey ongoing. It is unknown as to the extent of improvements/ widening or vegetation clearance or management required for use of the existing track as a construction access route,
Saundby Park Wood LWS, of county importance	Construction	Route Section 9	Temporary direct habitat loss and disturbance- third party asset and access	Utilisation of existing access	Not significant	High - It is anticipated that the access is likely to use the existing track, with no encroachment into the adjacent LWS, except for minor trimming of overhanging vegetation, should this be necessary.
Retford Gate Green Lane LWS, of county importance	Construction	Route Section 10	Temporary direct habitat loss and disturbance- temporary site access	GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the control and management measures are likely to be

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
			and associated bellmouth			sufficient to avoid any likely significant direct effects.
Fledborough to Harby Dismantled Railway LWS, of county importance	Construction	Route Section 11	Temporary direct habitat loss and disturbance- construction access and associated visibility splays (small overlap)	Use of existing road to avoid encroachment into LWS. GG01, GG03, GG05, GG07, GG08, GG09	Not significant	High -The final Proposed Overhead Line design has not been determined. However, the likely low area affected, if any, and the control and management measures are likely to be sufficient to avoid any likely significant direct effects
Non-statutory designated sites within the study area, of county importance (see **Figure 8.2 Nature Conservation Non-Statutory Designated Sites and Priority Habitat within 2 km)**	Construction	All Route Sections	Degradation of habitat due to dust and pollution impacts including Air Quality.	GG01, GG03, GG04, GG05, GG11, GG15-19 GH05, AQ04, AQ13, AQ15	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.

Receptor	Project stage	Relevant Route Section/s	Potential effect/s[9]	Mitigation	Preliminary significance of effect	Confidence in prediction
Statutory and Non-Statutory Designated Sites located within 200 m of the Construction Traffic Route	Construction	All Route Sections	Degradation of habitat due to dust and pollution impacts	AQ04, AQ13, AQ15	Not significant	Low - The final Proposed Overhead Line design has not been determined and the full Air Quality assessment has not yet been undertaken and will be completed for the ES. However, the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.

Table 8.23 - Preliminary assessment of effects on habitats

Receptor	Project stage	Relevant Route Section/s	Potential effect[10]	Mitigation	Preliminary significance of effect	Confidence in prediction
A1.3.2 - Mixed woodland – plantation A1.1.2 - Broadleaved woodland – plantation	Construction	All	Permanent direct habitat loss, fragmentation and disturbance- overhead line and associated vegetation clearance/management and new tower locations, permanent	GG01, GG03, GG05, GG09	Significant (woodland) Not significant (scrub)	Low - Habitat surveys ongoing and extents of vegetation clearance not finalised. Clearance of above ground vegetation such as woodland, where present, likely to be required more than ground level vegetation where over sailed by overhead

[10] All potential effects related to birds are assessed in **Chapter 9: Ornithology** and are not repeated in this chapter.

Receptor	Project stage	Relevant Route Section/s	Potential effect[10]	Mitigation	Preliminary significance of effect	Confidence in prediction
A1.1.1 - Broadleaved woodland - semi-natural, including Priority Habitat and long established woodland Up to national importance (ancient woodland) A2.1 - Dense/ continuous scrub and A2.2 - Scattered Scrub Local importance			road widening, undergrounding third party assets.			line. Therefore low level scrub is more likely to be retained in the long term beneath overhead lines.
	Construction	All	Temporary direct loss of habitat, fragmentation and disturbance where removal is required to facilitate construction works e.g., construction access routes and visibility splays, temporary road widening, stringing positions, scaffolding.	GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Low - Habitat surveys ongoing and vegetation clearance not finalised. Clearance of above ground vegetation such as woodland, where present, likely to be required more than ground level vegetation for visibility splays and scaffolding etc.
B4 – Improved grassland, site level importance B6 - Poor semi-improved	Construction	All	Permanent direct habitat loss- new tower locations, permanent road widening.	GG01, GG03, GG05, GG09	Not significant	Moderate - Habitat surveys ongoing and vegetation clearance not finalised. However, the ongoing Phase 1 habitat survey has recorded these grassland types in fewer locations when compared with arable land, so less is

Receptor	Project stage	Relevant Route Section/s	Potential effect[10]	Mitigation	Preliminary significance of effect	Confidence in prediction
grassland B2.2 - Neutral grassland - semi-improved (including arable field margins) Local importance						likely to be permanently lost.
	Construction	All	Temporary direct loss and disturbance of habitat where removal is required to facilitate construction works e.g., construction access routes and visibility splays, temporary road widening, stringing positions, scaffolding and undergrounding third party assets	GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Moderate - Habitat surveys ongoing and vegetation clearance not finalised
Hedgerows - with/without trees, intact and defunct Up to county importance	Construction	All	Permanent and Temporary direct loss, fragmentation and disturbance of habitat where removal is required to facilitate construction works, including road widening.	GG01, GG03, GG05, GG07, GG08, GG09, B07	Significant	Moderate - Habitat surveys ongoing and vegetation clearance not finalised
A3.1 - Broadleaved parkland /scattered	Construction	All	Permanent direct habitat loss - overhead line and associated clearance	GG01, GG03, GG05, GG07, GG08, GG09	Significant	Low - Habitat and Arboricultural surveys ongoing and vegetation clearance not finalised

Receptor	Project stage	Relevant Route Section/s	Potential effect[10]	Mitigation	Preliminary significance of effect	Confidence in prediction
trees, including veteran or ancient trees (not part of woodland or hedgerows) Up to national importance (veteran/ancient trees)			and new tower locations. Temporary removal/ management- construction access, scaffolding. Road widening and visibility splays.			
G1 - Open water - Standing water (Ponds) Up to county importance	Construction	All	Habitat loss	B08	Not significant	Moderate - Habitat surveys are ongoing, however there is a commitment to retain and buffer ponds.
G2 - Running water Up to national importance	Construction	All	Temporary direct loss, fragmentation and disturbance of habitat- temporary crossings, to be removed upon completion of the works.	GG01, GG03, GG05, GG07, GG08, GG09, W01-W05	Significant	Low - Habitat surveys ongoing
	Construction	All	Permanent direct loss of habitat- Permanent new or	GG01, GG03, GG05, GG09,	Significant	Low - Habitat surveys ongoing

Receptor	Project stage	Relevant Route Section/s	Potential effect[10]	Mitigation	Preliminary significance of effect	Confidence in prediction
			upgraded (extended) crossings (113 in total).	W01, W02, W03, W05		
Lowland calcareous grassland Up to county importance	Construction	Route Section 2	Temporary direct habitat loss and disturbance- tower working area	Micrositing of tower working area to minimise impacts to habitat inside Brantingham Dale SSSI. GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Low- Habitat surveys ongoing. Extent of this habitat to be confirmed. Stringing position working area reduced to avoid the habitat but tower working area not at present.
Coastal saltmarsh Priority Habitat Up to county importance	Construction	Route Section 4	Temporary direct habitat loss, fragmentation and disturbance - construction access route and working area	GG01, GG03, GG05, GG07, GG08, GG09	Significant	Low - Habitat surveys ongoing and access and crossing method not finalised.
Mudflats Priority Habitat Up to county importance	Construction	Route Section 4	Temporary direct habitat loss, fragmentation and disturbance - construction working area	GG01, GG03, GG05, GG07, GG08, GG09	Significant	Low - Habitat surveys ongoing and access and crossing method not finalised

Receptor	Project stage	Relevant Route Section/s	Potential effect[10]	Mitigation	Preliminary significance of effect	Confidence in prediction
Priority Habitat - 'No main habitat but additional habitats present' Up to county importance	Construction	Route Sections 4 and 8	Temporary direct habitat loss and disturbance- construction access route and working area. Also crossing habitat adjacent to Chesterfield canal	GG01, GG03, GG05, GG07, GG08, GG09	Significant	Low - Habitat surveys ongoing and access and crossing method not finalised. Extent of vegetation removal not yet confirmed.
Lowland dry acid grassland Priority Habitat Up to county importance	Construction	Route Section 6	Temporary direct habitat loss and disturbance- stringing area and access routes	GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Low - Habitat surveys ongoing and extent of vegetation removal not yet confirmed.
Good quality semi-improved grassland (non-priority) Up to county importance	Construction	Route Section 6	Temporary direct habitat loss and disturbance- construction access	GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Low - Habitat surveys ongoing
Lowland fens Priority Habitat and ''No main habitat but	Maintenance	Route Section 6	Temporary direct habitat disturbance- access route	Utilisation of existing accesses	Not significant	Moderate - The maintenance access would use the existing track unamended, with no

Receptor	Project stage	Relevant Route Section/s	Potential effect[10]	Mitigation	Preliminary significance of effect	Confidence in prediction
additional habitats present' Up to county importance						encroachment into the lowland fen habitat.
Traditional orchard Priority Habitat Up to county importance	Construction	Route Section 10	Temporary direct habitat loss and disturbance	GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Low - Habitat surveys ongoing Habitat will not be directly impacted if a suitably sized buffer can be applied.
Priority Habitat (deciduous woodland, lowland calcareous grassland, coastal saltmarsh, mudflats, lowland dry acid grassland, lowland fens and traditional orchard) located within	Construction	All	Degradation of habitat due to dust, pollution impacts and introduction of INNS	GG01, GG03, GG04, GG05, GG11, GG15-19 GH05, B04, AQ04, AQ13, AQ15	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the mitigation measures embedded into the evolving Project design together with the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.

Receptor	Project stage	Relevant Route Section/s	Potential effect[10]	Mitigation	Preliminary significance of effect	Confidence in prediction
the draft Order Limits Up to county importance						
Priority Habitat located outside the draft Order Limits, in the wider study area Up to county importance	Construction	All	Degradation of habitat due to dust, pollution impacts and introduction of INNS	GG01, GG03, GG04, GG05, GG11, GG15-19 GH05, B04, AQ04, AQ13, AQ15	Not significant	High - The final Proposed Overhead Line design has not been determined. However, the mitigation measures embedded into the evolving Project design together with the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.

Table 8.24 - Preliminary assessment of effects on protected and notable species

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
Flora/Fungi Up to national importance	Construction	All	Incidental loss	Avoidance of protected/ notable species, or translocation where avoidance not possible. GG01, GG03, GG04, GG05, GG08	Not yet assessed. The potential for likely significant effects will be determined following completion of the habitat surveys and any follow up surveys, should they be required. This will be presented in the ES.	Not possible to reliably determine likely significance of effect at this stage. This will be determined in the ES when surveys have been completed
Terrestrial Invertebrates Up to national importance	Construction	All	Temporary and permanent direct loss and fragmentation of habitat, used by protected/notable terrestrial invertebrates. Incidental mortality	Avoidance of habitat suitable for notable invertebrate assemblages, where possible. GG01, GG03, GG04, GG05, GG08	Not yet assessed. The potential for likely significant effects will be determined following completion of the habitat surveys and any follow up invertebrate surveys, should	Not possible to reliably determine likely significance of effect at this stage. This will be determined in the ES when surveys have been completed

[11] All potential effects related to birds are assessed in Chapter 9: Ornithology and are not repeated in this chapter.

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
					they be required. This will be presented in the ES.	
Reptiles Up to county importance	Construction	All	Temporary and permanent direct loss/fragmentation of terrestrial and aquatic habitats used by reptiles for foraging, breeding, or shelter.	Areas of habitat most suitable for reptiles will be avoided through design as far as practicable. GG01, GG03, GG04, GG05, GG07, GG08, GG09, B05, B07, B08	Not significant	Moderate - surveys to inform the EcIA are ongoing and a final package of mitigation and control measures has not been determined.
	Construction	All	Incidental mortality or temporary disturbance of reptiles	GG05, B03, B05	Not significant	Moderate - surveys to inform the EcIA are ongoing. However, it is considered likely that embedded mitigation and control measures can avoid a significant effect.
GCN Up to county importance – DLL may be applied for the project for all or in part where possible, in which case	Construction	Route Sections 1, 6, 7 and 8 (although surveys not yet complete, so may be applicable	Permanent and temporary direct loss/fragmentation of terrestrial and aquatic habitats used by GCN for foraging, breeding, or shelter.	Areas of habitat most suitable for GCN will be avoided through design as far as practicable. GG01, GG03, GG05, GG07, GG08, GG09	Not significant	Moderate - surveys to inform the EcIA are ongoing and a final package of mitigation and control measures has not been determined.

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
GCN may not be required to be assessed within the ES.		to other Route Sections)		B05, B07, B08, B01		
	Construction	Route Sections 1, 6, 7 and 8 (although surveys not yet complete, so may be applicable to other Route Sections)	Incidental mortality or temporary disturbance of GCN	Areas of habitat most suitable for GCN will be avoided through design as far as practicable. GG01, GG03, GG05, B01, B03, B05, B07, B08	Not significant	Moderate - surveys to inform the EcIA are ongoing. However, it is considered likely that a significant effect could be avoided through working under a licence where required.
Bats - Roosting	Construction	All	Direct loss of roosts through removal of trees. Incidental mortality or temporary disturbance of roosting bats present in roosts.	Trees with bat roost suitability will be avoided through design as far as practicable. However tree clearance will be unavoidable in certain areas, as detailed in **Chapter 4 Description of the Project** and outlined in Section 8.48.4 of this chapter.	Not yet assessed. The potential for likely significant effects will be determined following completion of the required bat surveys. This will be presented in the ES.	Not possible to reliably determine likely significance of effect at this stage. The number of trees which support roosting bats to be impacted is currently unknown. However, areas of woodland will need to be cleared to facilitate constriction of the Project, which may support bat roosts.

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
				GG01, GG03, GG05, GG09, B01, B06		
	Construction	All	Temporary disturbance to roosting bats due to construction noise/vibration and lighting	GG01, GG03, GG04, GG05, GG09, GG11, GG21, B01, NV01, NV02	Not yet assessed. The potential for likely significant effects will be determined following completion of the required bat surveys. This will be presented in the ES	Not possible to reliably determine likely significance of effect at this stage. This will be determined in the ES when surveys have been undertaken and a final package of mitigation measures has been determined.
Bats - Foraging and commuting	Construction	All	Temporary and permanent direct loss/fragmentation of foraging and commuting habitat	The loss of suitable habitat will be avoided through design as far as practicable. However vegetation clearance will be unavoidable in certain areas, for example, either side of the overhead line. GG01, GG04, GG05, GG08,	Not yet assessed. The potential for likely significant effects will be determined following completion of the required bat surveys. This will be presented in the ES	Not possible to reliably determine likely significance of effect at this stage. This will be determined in the ES when surveys have been completed and a final package of mitigation measures has been determined.

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
				GG09, GG21, B01, B07		
Hazel Dormouse	Construction	Route Section 10	Temporary direct loss/fragmentation of habitats used by hazel dormouse for foraging, breeding, or shelter. Incidental mortality or temporary disturbance of hazel dormouse	The draft Order Limits are 290 m from Treswell Wood SSSI/LNR (at the closest point), which is known to have supported hazel dormouse since reintroduction programmes. The removal of woodland and scrub will be avoided in this area and hedgerows will be retained as far as practicable. GG01, GG04, GG05, GG08, GG09, GG21, B01, B03, B07	Not significant	Low - Habitat suitability surveys for hazel dormouse have not yet been undertaken. However, it is considered likely that a significant effect could be avoided through the retention and protection of suitable habitat or by working under a licence, if required.
Otter	Construction	All	Permanent and temporary (where crossings removed after construction) direct habitat loss,	GG01, GG05, GG07- GG09, W01-W06, B01, B03, B09	Significant	Low - otter surveys to inform the EcIA are ongoing However, a worst case is assumed at this preliminary stage due to the number of

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
			disturbance and fragmentation, where the construction access tracks and working areas cross or lie near to watercourses. Incidental mortality or temporary disturbance of otter.			proposed watercourse crossings.
	Construction	All	Temporary disturbance of otter resting places/holts through noise/visual disturbance and lighting	GG01, GG03, GG04, GG05, GG09, GG11, GG21, NV01, NV02, B01, B09	Not yet assessed. The potential for likely significant effects will be determined following completion of the required surveys. This will be presented in the ES.	Not possible to reliably determine likely significance of effect at this stage. This will be determined in the ES when surveys have been undertaken and a final package of mitigation measures has been determined.
	Construction	All	Degradation of habitat due to dust, pollution impacts and introduction of INNS	GG01, GG03, GG04, GG05, GG15-19 GH05, B04, AQ04, AQ13, AQ15	Not significant	Moderate - The final Proposed Overhead Line design has not been determined. However, the mitigation measures embedded into the evolving Project design together with

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
						the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.
Water vole	Construction	All	Permanent and temporary (where crossings removed after construction) direct habitat loss, disturbance and fragmentation. Incidental mortality or temporary disturbance of water vole	GG01, GG05, GG07- GG09, W01-W06, B01, B03, B09	Significant	Low - water vole surveys to inform the EcIA are ongoing and the full distribution of water vole across the draft Order Limits is currently unknown. However,. a worst case is assumed at this preliminary stage due to the number of proposed watercourse crossings.
	Construction	All	Disturbance of water vole through noise/visual disturbance and lighting	GG01, GG03, GG04, GG05, GG09, GG11, GG21, NV01, NV02, B01	Not yet assessed. The potential for likely significant effects will be determined following completion of the required surveys. This will be presented in the ES	Not possible to reliably determine likely significance of effect at this stage. This will be determined in the ES when surveys have been undertaken and a final package of mitigation measures has been determined.
	Construction	All	Degradation of habitat due to dust, pollution impacts	GG01, GG03, GG04, GG05, GG15-19 GH05,	Not significant	Moderate - The final Proposed Overhead Line design has not been

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
			and introduction of INNS	B04, AQ04, AQ13, AQ15		determined. However, the mitigation measures embedded into the evolving Project design together with the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.
Badger	Construction	All	Direct loss/disturbance to active badger setts and incidental mortality of badger	Active badger setts will be avoided and buffered by at least 30 m where practicable. Works will be undertaken under licence where impacts cannot be avoided. GG01, GG03, GG05, B01, B03	Not yet assessed. The potential for likely significant effects will be determined following completion of the required surveys. This will be presented in the ES	Not possible to reliably determine likely significance of effect at this stage. This will be determined in the ES when surveys are complete, and a final package of mitigation measures has been determined.
	Construction	All	Permanent and temporary loss, disturbance and fragmentation of foraging and commuting habitat	Sufficient buffers from retained habitats will ensure that badger can move freely across the Site.	Not significant	Low - Further baseline is required to determine sett location(s) and severity of impact. A final package of mitigation and control

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
				GG01, GG03, GG05, GG07-09, B01, B07, B09		measures are yet to be determined.
SPI	Construction	All	Direct loss, disturbance and fragmentation of habitat Disturbance through noise/visual disturbance and lighting Degradation of habitat due to pollution impacts and introduction of INNS	Mitigation applied for other protected species will benefit SPI. GG01, GG03, GG05, GG07-09, GG11, GG21, B01, B07, B09	Not significant	Low - Surveys are ongoing and a package of mitigation measures are yet to be determined. However, the control and management measures are likely to be sufficient to avoid any likely significant indirect effects.
Aquatic macroinvertebrates	Construction	All	Permanent and temporary (where crossings removed after construction) direct habitat loss/degradation and fragmentation. Degradation of habitat due to pollution impacts and introduction of INNS	GG01, GG03, GG04, GG05, GG06, GG07, GG09, GG11, GG15, GG16, GG17, GG19, GG21, B01, B08, B09, W01, W02, W03, W04, W05	Not significant	Moderate - Surveys are ongoing and a package of mitigation measures are yet to be determined

Receptor	Project stage	Relevant Route Section/s	Potential effect[11]	Mitigation	Preliminary significance of effect	Confidence in prediction
Aquatic macrophytes	Construction	All	Permanent and temporary (where crossings removed after construction) direct habitat loss/degradation and fragmentation.	GG01, GG03, GG04, GG05, GG06, GG07, GG09, GG11, GG15, GG16, GG17, GG19, GG21, B01, B04, B08, B09, W01, W02, W03, W04, W05	Not significant	Low - Surveys are ongoing and a package of mitigation measures are yet to be determined
Fish	Construction	All	Permanent and temporary (where crossings removed after construction) direct habitat loss/degradation and fragmentation. Incidental mortality or disturbance of fish species Temporary disturbance through noise/visual disturbance and lighting Degradation of habitat due to pollution impacts and introduction of INNS	GG01, GG03, GG04, GG05, GG06, GG07, GG09, GG11, GG15, GG16, GG17, GG19, GG21, B01, B08, B09, B10, B11, W01, W02, W03, W04, W05	Not yet assessed. The potential for likely significant effects will be determined following completion of the required surveys. This will be presented in the ES	Low - Surveys are ongoing and a package of mitigation measures are yet to be determined.

Summary of the Preliminary Assessments of the Proposed Overhead Line with the Proposed Substation Works

8.7.14 The preliminary assessment of the Proposed Substation Works is presented in **Chapter 20 Substations and Associated Works**.

8.7.15 Shared receptors associated with the Proposed Substation Works at Birkhill Wood include the following:

- Humber Estuary Ramsar Site;
- Humber Estuary Special Protection Area;
- Humber Estuary Special Area of Conservation;
- Burton Bushes SSSI;
- Beverley Parks Local Nature Reserve;
- Jillywood Lane Local Wildlife Site LWS;
- Fishpond Wood, Risby Estate LWS;
- Birkhill Wood LWS;
- Drove Road Candidate LWS;
- Woodhill Path, Cottingham LWS;
- Bentley Moor Wood LWS;
- Mill Beck and Fields LWS;
- Two areas of ancient semi-natural woodland including Birkhill Wood and part of Benley Moor Wood LWS; and
- Priority habitats including deciduous woodland, traditional orchard and coastal and floodplain grazing marsh and no main habitat but additional habitats present located within a 1 km radius of both the Proposed Substation Works at Birkhill and the Proposed Overhead Line.

8.7.16 Shared receptors associated with the Proposed Substation Works at High Marnham include:

- Dunham Oxbow LWS;
- Dunham Dubs LWS;
- Fledborough Holme LWS;
- Fledborough to Harby Dismantled Railway LWS;
- Marnham Railway Yard Candidate LWS;
- Skegby Road Triangle LWS;
- Old Trent, Marnham LWS;
- North Clifton Church LWS;
- South Clifton Grassland LWS;

- Old Trent Oxbow, Spalford LWS;
- Priority habitats including deciduous woodland, traditional orchard, coastal and floodplain grazing marsh, and no main habitat but additional habitats present located within a 1 km radius of both the Proposed Substation Works at High Marnham and the Proposed Overhead Line.

8.7.17 Taking account of the embedded measures set out in **Chapter 4 Description of the Project** and the control and management measures as set out in **Appendix 4.1 Draft Outline Code of Construction Practice** any potential effects from the Proposed Substation Works are not likely to be significant, and, when considered together are unlikely to change the preliminary significance that is presented in this chapter.

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