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Yorkshire Green Energy Enablement (GREEN) Project

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8. Biodiversity

8.1 Introduction

8.1.1 This chapter presents the assessment of potentially[1] significant effects of the Yorkshire Green Energy Enablement Project (referred to as 'the Project' or Yorkshire GREEN throughout the ES) with respect to biodiversity, including terrestrial and aquatic ecology and ornithology. It should be read in conjunction with the Project description provided in **Chapter 3: Description of the Project (Volume 5, Document 5.2.3) and Chapter 4: Approach to Preparing the ES (Volume 5, Document 5.2.4)** and with respect to relevant parts of the following chapters:

- **Chapter 6 Landscape and Visual (Volume 5, Document 5.2.6)** (due to the close association between some landscape receptors and ecological features (habitats/flora) and the potential for overlapping embedded environmental measures);
- **Chapter 9: Hydrology** and **Chapter 10: Geology and Hydrogeology (Volume 5, Document 5.2.9)** (due to the close association between some habitats, flora and fauna, and local hydrology);
- **Chapter 12: Traffic and Transport (Volume 5, Document 5.2.12)** (due to the potential for disturbance associated with the Project to affect habitats, flora and fauna, potential for traffic/plant emissions associated with the Project to affect habitats, flora and fauna, and potential for road traffic collisions with fauna associated with the Project in the absence of embedded environmental measures);
- **Chapter 13: Air Quality (Volume 5, Document 5.2.13)** (due to the potential for emissions and dust associated with the Project to affect habitats, flora and fauna, in the absence of embedded mitigation measures); and
- **Chapter 14: Noise and Vibration (Volume 5, Document 5.2.14)** (due to the potential for fauna to be disturbed or displaced by noise and vibration associated with the Project, in the absence of embedded mitigation measures).

8.1.2 This chapter describes the following where relevant to biodiversity:

- the legislation, policy and technical guidance that has informed the assessment (**Section 8.2**);
- consultation and engagement that has been undertaken and how comments from consultees have been addressed (**Section 8.3**);
- the methods used for baseline data gathering (**Section 8.4**);

[1] NOTE – Other technical chapters use "likely significant effects" and "potential likely significant effects" to accord with the EIA Regulations 2017. Within the Biodiversity chapter the term "potentially significant effects" is used as it accords with CIEEM guidance to describe effects that have the potential to be significant prior to their assessment (i.e. until the end of the "scope of the assessment"), and the term "likely significant effects", only once assessment has determined that they would indeed be significant. This is not to be confused with Likely Significant Effects (LSEs) when used in the context of the Habitats Regulations Assessment.

- overall baseline (**Section 8.5**);
- embedded environmental measures (**Section 8.6**);
- the scope of the assessment (**Section 8.7**);
- the methods used for the assessment (**Section 8.8**);
- the assessment of effects (**Section 8.9**);
- assessment of cumulative effects (**Section 8.10**);
- a summary of the significance conclusions (**Section 8.11**); and
- additional measures proposed (**Section 8.12**).

8.1.3 This technical chapter has a structure that differs from others within this ES[1] to reflect Ecological Impact Assessment (EcIA) guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM)[2].

8.1.4 A separate Habitats Regulations Assessment (HRA) No Significant Effects Report (NSER) has been produced which has concluded that the Project would not have Likely Significant Effects (LSEs) on any European sites (see **Section 8.8** and **Habitat Regulations Assessment No Significant Effects Report, Volume 6, Document 6.4**).

8.1.5 The following documents (included in Appendices) have been used to inform this chapter:

- **Volume 5, Document 5.3.8B: Extended Phase 1 Habitat Survey Report**
- **Volume 5, Document 5.3.8C: Confidential Badger Survey Report**
- **Volume 5, Document 5.3.8D: Otter and Water Vole Survey Report**
- **Volume 5, Document 5.3.8E: 2021 Wintering Birds Survey Report**
- **Volume 5, Document 5.3.8F: 2021-2022 Wintering Birds Survey Report**
- **Volume 5, Document 5.3.8G: Confidential Schedule 1 Breeding Bird Survey Report**
- **Volume 5, Document 5.3.8H: Bat Survey Report**
- **Volume 5, Document 5.3.8I: GCN District Level Licensing Impact Assessment and Conservation Payment Certificate**

8.1.6 In addition, the following documents are referred to:

- **Volume 5, Document 5.3.3B: Code of Construction Practice**
- **Volume 5, Document 5.3.3D: Biodiversity Mitigation Strategy**
- **Volume 5, Document 5.3.3I: Arboricultural Impact Assessment**
- **Volume 6, Document 6.4: No Significant Effects Report**
- **Volume 7, Document 7.9: Biodiversity Net Gain Report**

[2] CIEEM (2018, updated 2019). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. (online). Available at: [redacted]
(Accessed October 2022).

Project overview

8.1.7 The maximum extent of development for which permission will be sought is indicated by the Order Limits, land within which is hereafter referred to as 'land within the Order Limits'.

8.1.8 A proportionate degree of flexibility has been incorporated into the Project design so that unforeseen issues that may be encountered following consent can be dealt with. For example, previously unidentified poor ground conditions may require a pylon to be re-sited slightly for geotechnical reasons. Therefore, to allow for this, new infrastructure would be constructed within specified Limits of Deviation (LoD) which identify a maximum distance or measurement of variation within which the works must be constructed; further detail is provided on LoD in **Chapter 3: Description of the Project, Volume 5, Document 5.2.3.**

8.1.9 The Project is divided into six sections for ease of reference as indicated in **Figure 1.2, Volume 5, Document 5.4.1.** In summary the Project comprises the following new infrastructure within the Order Limits:

- Section B (North-west of York Area):
  - Shipton North and South 400kV cable sealing end compounds (CSECs) and 230m of cabling;
  - the 2.8km YN 400kV overhead line (north of proposed Overton Substation);
  - Overton 400/275kV Substation; and
  - two new sections of 275kV overhead line south of Overton Substation: the XC 275kV overhead line to the south-west (2.1km) and the SP 275kV overhead line to the south-east (1.5km);
- Section D (Tadcaster Area): Tadcaster Tee West and East 275kV cable sealing end compounds and 350m of cabling; and.
- Section F (Monk Fryston Area): Monk Fryston 400kV Substation (adjacent to the existing substation).

8.1.10 Works to existing infrastructure within the Order Limits would comprise:

- Section A (Osbaldwick Substation): Minor works at Osbaldwick Substation comprising the installation of a new circuit breaker and isolator along with associated cabling, removal and replacement of one gantry and works to one existing pylon. All substation works would be within existing operational land.
- Section B (North west of York Area): Reconductoring of 2.4km of the 2TW/YR 400kV overhead and replacement of one pylon. A mixture of decommissioning, replacement and realignment of 5km of the existing XCP 275kV Poppleton to Monk Fryston overhead line between Moor Monkton and Skelton. To the south and south-east of Moor Monkton the existing overhead line would be realigned up to 230m south from the current overhead line and the closest pylon to Moor Monkton (340m south-east) would be permanently removed. A 2.35km section of this existing overhead line permanently removed between the East Coast Mainline (ECML) Railway and Woodhouse Farm to the north of Overton.
- Section C (Moor Monkton to Tadcaster): Works proposed to the existing 275kV Poppleton to Monk Fryston (XC) overhead line comprise replacing existing overhead

line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations.

- Section D (Tadcaster): Replacement of one pylon on the Tadcaster Tee to Knaresborough (XD) 275kV overhead line route.
- Section E (Tadcaster to Monk Fryston). Works proposed to the existing 275kV Poppleton to Monk Fryston (XC) overhead line comprise replacing existing overhead line conductors, replacement of pylon fittings, strengthening of steelwork and works to pylon foundations.
- Section F (Monk Fryston Area): Reconfiguration of the existing XC Monk Fryston to Poppleton overhead line at its southern end to connect into the new substation at Monk Fryston; Reconfiguration of the Monk Fryston to Eggborough 400kV 4YS overhead line to connect into the new substation at Monk Fryston.

8.1.11 Please refer to **Chapter 3: Description of the Project, Volume 5, Document 5.2.3** and **Figures 1.1 and 1.2, Volume 5, Document 5.4.1** for an overview of the different components of the Project.

Limitations and assumptions

8.1.12 Land access issues encountered during baseline surveys are outlined in the respective technical reports (see **Appendices 5.3.8B to 5.3.8H, Volume 5, Documents 5.3.8B to 5.3.8H**). These were primarily:

- Access was enabled to approximately 89%[3] of the survey area (land within the Order Limits and a buffer of 50m). For those areas that have not been fully accessible (including habitats separated via major roads for which there was no safe access), surveys have been carried out using binoculars where appropriate from adjacent land parcels/Public Rights of Way (PRoW)/nearby roads, and a review of recent satellite imagery to assist in habitat identification within inaccessible land parcels has been conducted[4].
- Access to static bat activity detectors in several locations was limited during several months due to access restrictions. In view of the extensive data collected at locations across land within the Order Limits, this is not considered to represent a constraint on the assessment.
- Thirty-two trees could not be surveyed fully or at all as a result of climber safety, access restrictions, or complex cavities where it was not possible to fully inspect the feature due to endoscope length and manipulation limits. Ash dieback was noted as a particularly prevalent issue throughout the survey area, thereby restricting the number of trees that could be safely climbed.
- This alternative survey approach to non-accessible land is considered sufficiently robust and representative to inform this assessment. The alternative approach was

[3] Incomplete access is typical of long linear schemes (including DCO applications) with many different land owners across multiple small parcels of land.
[4] Google (2021). Google Earth Pro, recent imagery dated between May 2020 and April 2021. (online) (Accessed August 2021).

discussed with relevant stakeholders including Natural England[5], and no concerns were raised.

- In addition, the date of water vole surveys at a small number of watercourses and water bodies fell just outside the recommended windows due to access restrictions. As the variation in each case was only a matter of days it does not represent a constraint on the survey results.

8.1.13 For the purpose of the assessment of effects on habitats and species, a 'reasonable worst-case' scenario has been assumed which considers the implementation of embedded environmental measures as part of the Project design during the assessment process.

8.1.14 Following the completion of the bat survey work, additional trees which require management were identified and as such have not been surveyed. Surveys are ongoing and any trees assessed to have moderate or high suitability to support roosting bats will be subject to a single aerial inspection over winter 2022/2023, and where considered necessary, further tree climbs and/or emergence/re-entry surveys in 2023 would be undertaken. For the purpose of this assessment, embedded environmental measures incorporate mitigation for a reasonable worst-case scenario based on the Project design and the results of extensive activity surveys, preliminary roost assessments and tree climbing surveys to date. The results of the surveys will be provided during the DCO examination phase in order to confirm the suitability of the proposed embedded environmental measures and whether the conclusion that there are no likely significant effects remains.

8.1.15 Detailed hedgerow assessments to confirm the presence of 'important' hedgerows as defined under the Hedgerow Regulations[6] are ongoing with surveys focused on all hedgerows to be removed (as listed in **Arboriculture Impact Assessment Document 5.3.3I, Volume 5, Document 5.3.3I**) and which have been identified as 'potentially important' based on archaeological desk study and extended Phase 1 habitat survey results. A report detailing results of the Important hedgerow assessment will be submitted as an addendum to this ES.

8.1.16 For the purpose of this assessment, all hedgerows are assumed to qualify as Habitats of Principal Importance (HPI) regardless of 'important' status. Further to this, it has been assumed that those hedgerows identified as 'potentially important' with respect to biodiversity criteria would qualify as 'important' following field-based hedgerow assessments. This represents approximately 14% of the hedgerows to be removed. The assessment has been conducted on this basis, in line with a reasonable worst-case approach.

8.2 Relevant legislation, planning policy and technical guidance

8.2.1 This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to biodiversity. Further information on

[5] Meeting between Debbie Hall (Natural England) and Bethany Kington and Simon Pepper (National Grid) 15 July 2021; E-mail from Bethany Kington (National Grid) to Debbie Hall (Natural England) setting out proposed alternative survey approach to inaccessible land, 16 July 2021.

[6] UK Government (1997). The Hedgerows Regulations 1997. (Online) Available at: https://www.legislation.gov.uk/uksi/1997/1160/contents/made (Accessed August 2021).

policies relevant to the Project is provided in **Chapter 5: Legislation and Policy Overview, Volume 5, Document 5.2.5**.

Legislation

8.2.2 A summary of the relevant legislation is given in **Table 8.1**.

Table 8.1 – Legislation relevant to the biodiversity assessment

Legislation	Legislative Context
The Environment Act 2021[7]	The Environment Act 2021 was passed into law at the end of 2021 and serves as enabling legislation for future regulations and policy making in respect of environmental protection. Section 99 and Schedule 15 of the Environment Act relate to the provision of a biodiversity net gain (BNG) assessment for nationally significant infrastructure projects. However, these sections of the Environment Act have not yet come into force, and there is currently no relevant secondary legislation in force stemming from the same. Similarly, the National Networks National Policy Statement (NN NPS) has not yet been updated to include a requirement to provide BNG or to include a "biodiversity gain statement". As such, it is not yet a legislative or policy requirement to provide BNG in new developments. Although legislation in respect of the BNG requirement for nationally significant infrastructure projects (NSIPs) is not yet in force, National Grid Electricity Transmission plc ("National Grid") is already instilling the concept of BNG into its design for the Project: a minimum target of 10% BNG has been set to be delivered as part of the DCO application.
Convention on Wetlands of International Importance 1972[8]	The UK Government is a signatory to the Convention on Wetlands of International Importance 1972 ("the Ramsar Convention"). The Ramsar Convention provides for the listing of wetlands of international importance. UK Government policy is to give sites listed under this convention ("Ramsar Sites") the same protection as European sites and the new national site network.
Conservation of Habitats and Species Regulations 2017 ('the Habitats	Council Directives 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora ("the

[7] UK Government (2021). Environment Act 2021, c. 30. (online) Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted (Accessed October 2022).
[8] United Nations. Convention on Wetlands of International Importance especially as Waterfowl Habitat. 1994. (Online) (Accessed August 2021)..

Legislation	Legislative Context
Regulations'), as amended by Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[9]	Habitats Directive") and 2009/147/EC on the conservation of wild birds ("the Birds Directive") provide for the designation of sites for the protection of certain species and habitats. The sites designated under these Directives are collectively termed European sites and form part of a network of protected sites across Europe, known as the Natura 2000 network. In the UK the Habitats Regulations transpose these Directives into national law and apply up to the 12 nautical mile limit of territorial waters. The Conservation of Habitats and Species Regulations 2017 (as amended) transposed the land and marine aspects of the Habitats Directive and certain elements of the Wild Birds Directive into domestic law. Changes were then made by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 such that Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) in the UK no longer form part of the EU's Natura 2000 ecological network. The 2019 Regulations have created a national site network on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes existing SACs and SPAs, and new SACs and SPAs designated under these Regulations. Any references to Natura 2000 in the 2017 Regulations and in guidance now refer to the new national site network. The Regulations make it an offence to deliberately capture, injure, kill or disturb any European Protected Species (EPS) listed in Schedule 2, or to damage or destroy a breeding site or resting place of such an animal, and plants listed in Schedule 5. The Habitats Regulations also provide protection for EPS flora and fauna. The regulations set out the process with regard to the assessment of development.
The European Union (EU) Water Framework Directive (2000/60/EC) (WFD)[10] as enacted into domestic law by the Water Environment WFD	The EU WFD is enacted into domestic law by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. A fundamental requirement of the WFD is to attain Good Ecological Status, or Good Ecological Potential within each defined waterbody, by December 2027 at

[9] UK Government (2019). The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. (Online) Available at: https://www.legislation.gov.uk/uksi/2019/579/contents/made (Accessed August 2021).
[10] European Commission (2000). Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy. (Online) (Accessed 12 July 2022).

Legislation	Legislative Context
(England and Wales) (Amendment) Regulations 2017[11]	the latest and to ensure that any deterioration in status is prevented.
Natural Environment and Rural Communities (NERC) Act 2006 (as amended)[12]	Section 40 states "*every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.*" The NERC Act also places a duty on the Secretary of State to maintain lists of species and habitats which are regarded as being of principal importance for the conservation of biodiversity in England. These Habitats of Principal Importance (HPI) and Species of Principal Importance (SPI) are used to guide decision makers in implementing their duties to have regard to the conservation of biodiversity in England when carrying out their normal functions.
Wildlife and Countryside Act 1981 (as amended)[13]	The Wildlife and Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in England. This legislation is the means by which the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/FFC) are implemented in England. It affords various levels of protection to species of plants and animals listed in Schedules one, five, six and eight of the Act, with Schedule nine listing species which it is an offence to allow to spread in the wild.
Badger Act 1992[14]	Provides legal protection for badgers (*Meles meles*) by making it illegal to kill or injure a badger, disturb a badger while occupying a sett, or to damage or obstruct a badger sett.

[11] UK Government (2017). The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. (Online) Available at: https://www.legislation.gov.uk/uksi/2017/407/contents/made (Accessed 12 July 2022).
[12] UK Government (2006). Natural Environment and Rural Communities (NERC) Act 2006 (as amended). (Online) Available at: https://www.legislation.gov.uk/ukpga/2006/16/contents (Accessed August 2021).
[13] UK Government (1981). Wildlife and Countryside Act 1981. (Online) Available at: https://www.legislation.gov.uk/ukpga/1981/69/contents (Accessed August 2021).
[14] UK Government (1992). Protection of Badgers Act 1992. (Online) Available at: https://www.legislation.gov.uk/ukpga/1992/51/contents (Accessed August 2021).

Legislation	Legislative Context
Countryside and Rights of Way Act 2000 ('the CRoW Act')[15]	The CRoW Act, amongst other elements, details further measures for the management and protection of Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation.
Hedgerow Regulations 1997[16]	Legislation that protects 'important' hedgerows from damage or destruction.
The Eels Regulations (England and Wales) 2009[17]	The Environment Agency must be notified of the construction, alteration or maintenance of any structure (or removal of) likely to affect the passage of eels (*Anguilla anguilla*). Where any such structure exists an eel pass must be constructed to allow free passage. Measures are also required at any water abstraction or discharge points.

Planning policy

8.2.3 A summary of the relevant national and local planning policy is given in **Table 8.2**.

8.2.4 In September 2021, the Department of Business, Energy and Industrial Strategy (DBEIS) consulted upon a review of energy National Policy Statements (NPS) with consultation closing on 29 November 2021. The energy NPS were reviewed to reflect the policies and broader strategic approach set out in the Energy white paper and ensure a planning framework was in place to support the infrastructure requirement for the transition to net zero.

8.2.5 Where relevant to the biodiversity aspect of the Project, updated policies within the draft NPS are included in **Table 8.2.**

Table 8.2 – Planning policy relevant to the biodiversity assessment

Policy	Policy Context	Where addressed in this ES
National planning policy		
Overarching National Policy Statement for Energy (EN-1)[18]	Section 4.3.1: Notes that prior to an order to grant development consent, due consideration must be given by the	These aspects are assessed in **Section 8.8 and**

[15] UK Government (2000). Countryside and Rights of Way Act 2000. (Online) Available at: https://www.legislation.gov.uk/ukpga/2000/37/contents (Accessed August 2021).
[16] UK Government (1997). The Hedgerows Regulations 1997. (Online) Available at: https://www.legislation.gov.uk/uksi/1997/1160/contents/made (Accessed August 2021).
[17] UK Government (2009). The Eels Regulations (England and Wales) 2009. (Online) Available at: https://www.legislation.gov.uk/uksi/2009/3344/contents (Accessed August 2021).
[18] Department of Energy and Climate Change (2011). Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf (Accessed August 2021)

Policy	Policy Context	Where addressed in this ES
	IPC (now the Secretary of State) as to whether the project may have a significant effect on a European site, or on any site to which the same protection is applied as a matter of policy, either alone or in combination with other plans or projects in respect of the Habitats Regulations.	**8.9**. The Habitats Regulations have been considered via the **No Significant Effects Report, Volume 6, Document 6.4**.
	Section 5.3: Discusses the generic biodiversity and geological conservation effects associated with energy infrastructure, recognising the need to protect the most important biodiversity and geological conservation interests. It states that the applicant should ensure the ES clearly sets out any effects on internationally, nationally and locally designated sites of ecological importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity. *International Sites*: most important sites for biodiversity identified through international conventions and European Directives. The Habitats Regulations provide statutory protection for these sites. Listed Ramsar Sites should also receive the same protection. *Sites of Special Scientific Interest (SSSIs)*: for development considered likely to have an adverse effect on an SSSI consent should not normally be granted. For adverse effects after mitigation, consent should only be made where the benefits clearly outweigh the impact on features of the site and the national network of SSSIs. *Regional/Local sites*: given the need for new infrastructure, these should not be used in themselves to refuse consent. *Ancient woodland*: consent should not be granted that results in loss/damage unless outweighed by the benefits. The loss of aged/veteran trees outside of	Geological interest is set out in **Chapter 10, Volume 5, Document 5.2.10** of this ES.

Policy	Policy Context	Where addressed in this ES
	areas of ancient woodland should be avoided and where affected all reasonable alternatives considered prior. *Species of Principal Importance (SPI) and Habitats of Principal Importance (HPI)*: important for the conservation of biodiversity in England and therefore should be protected from adverse effects.	
Draft Overarching National Policy Statement for Energy (EN-1)[19]	The Draft EN-1 contains section 4.5 Environmental and Biodiversity Net Gain, which is not present in the current EN-1. Paragraph 4.5.2 of Draft EN-1 states: "Although achieving biodiversity net gain is not an obligation for projects under the Planning Act 2008 ("the Act")[20], energy NSIP proposals should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity where possible". BNG should be applied in conjunction with the mitigation hierarchy and does not change or replace existing environmental obligations. In relation to the ancient woodland and ancient or veteran trees, the Draft EN-1 outlines in Paragraph 5.4.13 that applicants should provide a suitable compensation strategy in instances where the proposals would result in the loss or deterioration of ancient woodland and ancient or veteran trees. This is supplementary to the requirements detailed within the current EN-1.	These aspects are assessed in **Section 8.8 and 8.9**, embedded environmental measures are detailed in **Section 8.6**, BNG in Section 8.6 and the **BNG Report, Volume 7, Document 7.9,** and mitigation and reinstatement in the **BMS Appendix 5.3.3D, Volume 5, Document 5.3.3D**.

[19] Department of Energy and Climate Change (2011), Overarching National Policy Statement for Energy (EN-1). (online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf (Accessed August 2021)
[20] UK Government (2008). Planning Act 2008. (online) Available at: https://www.legislation.gov.uk/ukpga/2008/29/contents (Accessed October 2022).

Policy	Policy Context	Where addressed in this ES
	In addition to the requirements detailed within the EN-1 for protection and enhancement of habitats and other species, the Draft EN-1 adds that proposals should consider restoration, creation and enhancement opportunities of wider biodiversity. Improvements to and impacts on all habitats and species onsite and within the surrounding area should be considered for wider ecosystem services and natural capital benefits (Paragraph 5.4.16). While mitigation measures outlined within the Draft EN-1 are largely the same as those in the current EN-1, an additional measure which should be demonstrated by the applicant includes timing construction to avoid or limit disturbance to breeding birds. Supplementary mitigation is also given in the Draft EN-1 and includes the production and implementation of a Biodiversity Management Strategy as part of the applicant's development proposals; and that any habitat creation or enhancement delivered for BNG should be maintained for a minimum period of 30 years (Paragraph 5.4.22).	
National Policy Statement for Electricity Networks Infrastructure (EN-5)[21]	Section 2.7: States that consideration needs to be made of the potential for large birds to collide with overhead lines during flight or be electrocuted when perching, both with the potential to cause injury/death. If there is a risk of this occurring, avoidance or reduction measures should be implemented. Particular consideration should be given to feeding and hunting grounds,	Potential likely significant effects on birds are assessed in **Section 8.9**. Embedded environmental measures are detailed in **Section 8.6** and mitigation and

[21] Department of Energy and Climate Change (2011). National Policy Statement for Electricity Networks Infrastructure (EN-5). (online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37050/1942-national-policy-statement-electricity-networks.pdf (Accessed August 2021).

Policy	Policy Context	Where addressed in this ES
	migration corridors and breeding grounds and appropriate mitigation such as the placement of the line and its visibility should be proposed where necessary.	reinstatement in the **BMS, Volume 5, Document 5.3.3D**.
Draft National Policy Statement for Electricity Networks Infrastructure (EN-5)	Section 2.8 of Draft EN-5 is relevant to BNG and states: "When planning and evaluating the proposed development's contribution to environmental and biodiversity net gain, it will be important – for both the Applicant and the Secretary of State – to supplement the generic guidance set out in EN-1 (Section 4.5) [Environmental and Biodiversity Net Gain] with recognition that the linear nature of electricity networks infrastructure allows excellent opportunities to: i) reconnect important habitats via green corridors, biodiversity stepping zones, and reestablishment of appropriate hedgerows; and/or ii) connect people to the environment, for instance via footpaths and cycleways constructed in tandem with biodiversity enhancements." Section of 2.10 of Draft EN-5 is relevant to biodiversity: Consideration needs to be made of the potential for large birds to collide with the wires, causing injury/death. If there is a risk of this occurring, measures should be implemented to avoid or minimise this.	BNG is considered in Section 8.6 and the **BNG Report, Volume 7, Document 7.9,**. Potential likely significant effects on birds are considered in **Section 8.9**. Embedded environmental measures are detailed in **Section 8.6** and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**.
National Planning Policy Framework (NPPF)[22]	Section 15: Focuses on the natural environment. It requires planning policies and decisions to contribute to and enhance the natural and local environment by protecting and enhancing sites of biodiversity proportionately to statutory status or identified quality; recognising wider	These aspects are assessed in **Section 8.9**. Embedded environmental measures are detailed in

[22] Ministry of Housing, Communities and Local Government (2021). The National Planning Policy Framework (NPPF). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1004408/NPPF_JULY_2021.pdf (Accessed August 2021)

Policy	Policy Context	Where addressed in this ES
	benefits from natural capital and ecosystem services; and minimising impacts on and providing net gains for biodiversity (paragraph 174). Plans should identify, map and safeguard biodiversity interest and networks, including wildlife corridors, the hierarchy of designated sites, and areas identified by national and local, partnerships. They should also promote conservation, restoration and enhancement including HPI and SPI, as well as securing measurable net gain (paragraph 174). If significant harm to biodiversity will result from a development that cannot be avoided, adequately mitigated, or compensated for, permission will be refused. Developments within a SSSI or a development resulting in the loss or deterioration irreplaceable habitats should not be permitted unless the benefits of development outweigh impacts, or there are exceptional reasons and compensation applied. Opportunities to improve biodiversity should be in the development design, especially where this can secure measurable net gains or enhance public access (paragraph 180). Potential, possible, listed or proposed sites, and those that are an identified compensatory measure, are to be protected as the equivalent designation (paragraph 181). Potential impacts on sites requiring appropriate assessment will be considered ahead of the presumption for sustainable development (paragraph 182).	Section 8.6, BNG in the **BNG Report, Volume 7, Document 7.9, Volume 7**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Local planning policy		

Policy	Policy Context	Where addressed in this ES
Harrogate District Local Plan, 2014-2035[23]	Policy NE3: Protecting the Natural Environment states proposals that protect/ enhance and provide net gains in biodiversity will be supported. This will be achieved by considering the impacts of the proposal on statutory and non-statutory sites, habitats of nature conservation and protected/notable species and habitats and any net gain outcomes. Furthermore paragraph 9.25 notes that permission should be refused that likely adversely effects biodiversity unless the need for development clearly outweighs the loss. If avoidance/mitigation is not possible on-site, then off-site compensation may be required. Policy CC1: Flood Risk and Sustainable Drainage states that alternatives to culverts should be utilised, unless it can be suitably demonstrated that these are in the interest of safety or are essential infrastructure.	These aspects are assessed in **Section 8.9**. Embedded environmental measures are detailed in Section 8.6, BNG in the **BNG Report, Volume 7, Document 7.9**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Hambleton Local Plan, 2022[24]	Policy E3: The Natural Environment shows how the council will consider biodiversity and development in that any development that may impact a SINC, or a non-designated site or feature of biodiversity interest will only be supported where the mitigation hierarchy is followed, and the need outweighs the loss of any affected biodiversity features. Development that impacts an international site will only be supported where there will be no likely significant effects and no adverse effects on the integrity of the site unless there are no	These aspects are assessed in **Section 8.8** and **8.9**. Embedded environmental measures are detailed in Section 8.6, BNG in the **BNG Report, Volume 7, Document 7.9**,

23 Harrogate Borough Council (2020). Harrogate District Local Plan 2014-2035. (online). Available at: https://www.harrogate.gov.uk/planning-policy-guidance/harrogate-district-local-plan-2014-2035 (Accessed 31 March 2021).

24 Hambleton District Council (2022). Hambleton Local Plan – Adopted 22 February 2022. (Online) Available from: https://www.hambleton.gov.uk/downloads/file/2745/hambleton-local-plan-final-february-2022 (Accessed July 2022).

Policy	Policy Context	Where addressed in this ES
	alternatives, and it is justified by an 'imperative reasons of overriding public interest' (IROPI) assessment. A proposal that may either directly or indirectly negatively impact a Site of Special Scientific Interest (SSSI) will not normally be supported. The only exception will be where the benefits 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 network of Sites of Special Scientific Interest. All proposals should seek to protect and enhance SSSIs wherever possible. In addition, where a proposal is located within 2.5km of the North York Moors SPA, evidence must be provided of the extent to which the site and surrounding land is used by golden plover to ensure that loss of supporting habitat outside of the SPA does not occur. This may require a Phase 1 habitat survey to determine suitability of habitat and if required non breeding bird surveys to determine presence/absence of golden plover and population present. Multiple years data may be required to fully support the proposal. Policy RM1: Water Quality, Supply and Foul Drainage highlights that developments with potential to impact water quality, geomorphology, and ecology of value to the water environment, are required to demonstrate there are no adverse effects to water resources (quality or quantity), supports WFD objectives and the Habitats Directive. Policy RM2: Flood Risk states that opportunities to reduce the overall flood risk should be taken where possible, such as removing existing culverts. Policy RM3: Surface Water and Drainage Management states that	and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**

Policy	Policy Context	Where addressed in this ES
	culverting of watercourses should be avoided where possible.	
Draft Development Control Local Plan, 2005[25]	Policy NE1: Trees, Woodlands and Hedgerows Trees, woodlands and hedgerows which are of value will be protected. Policy NE2: River and Stream Corridors, Ponds and Wetland Habitats Development impacting river and stream corridors, ponds or wetland habitats will not be permitted. The policy also notes the detrimental nature of culverts and requests careful consideration be given to alternatives or mitigation to reduce impacts. Policy NE4a: International and National Nature Conservation Sites and Policy NE5a: Local Nature Conservation Sites Development adversely affecting a designated site will only be permitted where need outweighs the loss. Policy NE5b: Avoidance of, Mitigation and Compensation for Harm to Designated Nature Conservation Sites If development is allowed, compensation is a last resort and there needs to be a net gain to the overall nature conservation interest. NE6: Species Protected by Law Development having an effect on protected species/habitats will be expected to undertake an appropriate assessment demonstrating mitigation measures. Policy NE7: Habitat Protection and Creation Development should retain natural habitats and, where possible, enhance these. Policy NE8: Green Corridors Permission will not be granted where green corridors will be destroyed.	These aspects are assessed in **Section 8.8 and 8.9** and in the **Scoping of Assessment Summary, Volume 5, Document 5.3.8A**. Embedded environmental measures are detailed in Section 8.6, BNG in the **BNG Report, Volume 7, Document 7.9**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**

[25] City of York Council (2005). Local Plan Incorporating the 4th Set of Changes (April 2005). Available at: https://www.york.gov.uk/downloads/file/2822/the-local-plan-2005-development-control-local-plan-full-document-and-appendices (Accessed August 2021)

Policy	Policy Context	Where addressed in this ES
City of York Local Plan - Publication Draft, 2018[26]	Policy GI2: Biodiversity and Access to Nature Any development should avoid loss/harm to SINCs unless there is a need for the development that outweighs the loss. The mitigation hierarchy should be considered for loss and developments should where possible result in net gain to, and help to improve, biodiversity. Policy GI3: Green Infrastructure Network In order to protect and enhance green infrastructure, development should create/enhance 'steppingstones and new green corridors improving connectivity between existing biodiversity sites and other open space. Policy GI4: Trees and Hedgerows Development will be supported where it protects overall tree cover. In circumstances where the benefits outweigh retention of significant trees and there are no alternatives, mitigation/compensatory planting will be required.	These aspects are assessed in **Section 8.9** and the **Arboricultural Impact Assessment, Volume 5, Document 5.3.3I**. Embedded environmental measures are detailed in Section 8.6, BNG in the **BNG Report, Volume 7, Document 7.9**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Upper Poppleton and Nether Poppleton Neighbourhood Plan, 2016 – 2036[27]	Policy PNP 10: Protection of Wooded areas and hedgerows Protects woodland and hedgerows by not supporting removal.	These aspects are assessed in **Section 8.9** and the **Arboricultural Impact Assessment, Volume 5, Document 5.3.3I**. Embedded environmental measures are detailed in

[26] City of York Council (2018). Local Plan – Publication Draft. (Online) Available at: https://www.york.gov.uk/downloads/file/1314/cd001-city-of-york-local-plan-publication-draft-regulation-19-consultation-february-2018- (Accessed August 2021).
[27] Upper Poppleton Parish Council and Nether Poppleton Parish Council (2017). Upper Poppleton and Nether Poppleton Neighbourhood Plan, 2016 – 2036. (Online) Available at: https://www.york.gov.uk/downloads/file/2832/upper-and-nether-poppleton-neighbourhood-plan-submission-document-2016- (Accessed August 2021).

Policy	Policy Context	Where addressed in this ES
		Section 8.6, BNG in the **BNG Report, Volume 7, Document 7.97**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Leeds Saved UDP 2001 and UDP Review 2006 policies[28]	Policy N8: Development should enhance/retain/replace any corridor. Policy N39B Culverting and Canalisation of watercourses: sets out that culverting should be avoided and will not be permitted unless there are public safety concerns or if the development could not be completed without these features. The policy also promotes that removal of culverts be used to restore watercourses to a more natural state. Policy N50: Development will not be permitted which harms a designated wildlife site. Policy N51: Design of developments should enhance biodiversity.	These aspects are assessed in **Section 8.9** and the **Arboricultural Impact Assessment, Volume 5, Document 5.3.3I**. Embedded environmental measures are detailed in Section 8.6, BNG in the **BNG Report, Volume 5, Document 5.3.3D**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Leeds Natural Resources and Waste Local Plan (adopted January 2013 and revised September 2015)[29]	Policy LAND 2: Development and Trees Any development (relating to natural resources or waste) should retain trees	These aspects are assessed in **Section 8.9** and the

[28] Leeds City Council (2006). Leeds Unitary Development Plan (Review 2006). (Online) Available at: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/unitary-development-plan (Accessed August 2021).
[29] Leeds City Council (2015). Adopted Natural Resources and Waste Local Plan. Leeds Local Development Framework. (Online) Available at:

Policy	Policy Context	Where addressed in this ES
	and introduce new tree planting. Where trees are removed, replacement should be provided on a minimum three for one basis.	**Arboricultural Impact Assessment, Volume 5, Document 5.3.3I**. Embedded environmental measures are detailed in Section 8.6, BNG in the **BNG Report, Volume 7, Document 7.9**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Leeds Core Strategy, 2019[30]	Policy G2: Creation Of New Tree Cover Removal of ancient woodland or veteran trees will be resisted. Policy G8: Protection Of Important Species And Habitats Development will not be permitted which harms designated sites, protected species, HPI, SPI or WY BAP unless the need outweighs the loss and impacts are minimised via protection, mitigation, enhancement and compensatory measures. Policy G9: Biodiversity Improvements Requirement to demonstrate a net gain for biodiversity and there is no adverse impact on the Leeds Habitat Network.	These aspects are assessed in **Section 8.9** and the **Arboricultural Impact Assessment, Volume 5, Document 5.3.3I**. Embedded environmental measures are detailed in Section 8.6, BNG in the **BNG Report, Volume 7, Document 7.9**, and mitigation and reinstatement in the **BMS, Volume 5,**

https://www.leeds.gov.uk/docs/Adopted%20Consolidated%20NRWLP%20Inc%20Policies%20Mins%2013-14.pdf (Accessed August 2021).

Policy	Policy Context	Where addressed in this ES
		Document 5.3.3D.
Selby District Local Plan, 2005[31]	Development which would harm a Local Nature Reserve (LNR) or (Policy ENV9), ancient woodland (Policy ENV11), river, stream and canal corridors (Policy ENV12) or wildlife value of a pond (Policy ENV13) will not be permitted unless the need outweighs the biodiversity value.	These aspects are assessed in **Section 8.9**.
Selby District Core Strategy Local Plan, 2013[32]	Policy SP18: Protecting and Enhancing the Environment Quality of the natural environment will be sustained by safeguarding designated sites from inappropriate development and ensuring development retains and enhances biodiversity features and provides mitigation or as a last resort are compensated for as well as seeking to produce a net gain in biodiversity.	Embedded environmental measures are detailed in Section 8.6, BNG in the **BNG Report, Volume 7, Document 7.9** and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Selby Draft Local Plan - Preferred options, January 2021[33].	Preferred Approach NE4: Protecting Designated Sites and Species Sites/species will be protected by supporting proposals that protect, restore and enhance features of ecological interest. Preferred Approach NE5: Biodiversity Net Gain for Ecological Networks Support proposals that deliver at least a 10% net gain in biodiversity for ecological networks.	

[31] Selby District Council (2005). Selby District Local Plan. (Online) Available at: https://www.selby.gov.uk/selby-district-local-plan-sdlp-2005 (Accessed August 2021).
[32] Selby District Council (2013). Selby District Core Strategy Local Plan. (Online) Available at: https://www.selby.gov.uk/sites/default/files/Documents/CS_Adoption_Ver_OCT_2013_REDUCED.pdf (Accessed August 2021).
[33] Selby District Council (2021). Preferred Options Local Plan. (Online) Available at: [redacted] (Accessed August 2021).

Technical guidance

8.2.6 A summary of the technical guidance employed for the biodiversity assessment is given in **Table 8.3**.

Table 8.3 – Technical guidance relevant to the biodiversity assessment

Technical Guidance Document	Context
CIEEM (2019) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. Second Edition v1.1[2]	Provides guidance that is relevant to the assessment of potentially significant effects on biodiversity.
IEMA (1995) Guidelines for Baseline Ecological Assessment [34]	Provides guidance that is relevant to the assessment of potentially significant effects on biodiversity.
CIEEM (2017) Guidelines for Preliminary Ecological Appraisal: Second Edition [35]	Provides guidance that is relevant to the assessment of potentially significant effects on biodiversity.
BS 42020:2013. Biodiversity: Code of practice for planning and development[36]	British Standard 42020 "gives recommendations and guidance for those in the planning and development and land use sectors whose work might affect or have implications for the conservation or enhancement of biodiversity. As such it is applicable to professionals working in the fields of ecology, land use planning, land management, architecture, civil engineering, landscape architecture, forestry, arboriculture, surveying, building and construction." It provides guidance on how to produce ecological information to accompany planning applications. It recommends that ecological impacts should be assessed and recommendations for mitigation, compensation and enhancement should be made in accordance with the Guidelines for Ecological Impact Assessment, and provides guidance on the mitigation hierarchy.

[34] Institute of Environmental Assessment (1995). Institute of Environmental Assessment: Guidelines for Baseline Ecological Assessment. Taylor & Francis; London.
[35] CIEEM (2017). Guidelines for Preliminary Ecological Appraisal: Second Edition. (online) Available at: [redacted] (Accessed 11 August 2021).
[36] British Standards Institute (2013). BS 42020:2013. Biodiversity: Code of practice for planning and development. BSI; London.

Technical Guidance Document	Context
Natural England (2022) Standing Advice[37]	Natural England's standing advice provides guidance on how protected species should be dealt with in the planning system.
The Planning Inspectorate Advice Note 10, Annex C[38]	Provides information regarding the HRA process for NSIP applications.
The Planning Inspectorate Advice Note 11, Annex C[39]	Provides information regarding licensing of protected species for NSIP applications.

8.3 Consultation and engagement

Overview

8.3.1 The assessment has been informed by consultation responses and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Chapter 4: Approach to Preparing the ES, Volume 5, Document 5.2.4.**

Scoping Opinion

8.3.2 A Scoping Opinion was adopted by the Secretary of State, administered by the Planning Inspectorate, on 28 April 2021.

Table 8.4 – Summary of EIA Scoping Opinion responses for biodiversity

Consultee	Consideration	How addressed in this ES
Planning Inspectorate	Potential need to carry out an assessment under The Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations'), as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. This assessment must be co- ordinated with the EIA in accordance with Regulation 26 of the EIA Regulations.	The Habitats Regulations, as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[9] are referenced in **Table 8.1.** These have been considered via the **No Significant Effects Report, Volume 6, Document 6.4**, which has

[37] Natural England (2022). Standing Advice: Protected species and development: advice for local planning authorities. How to assess a planning application when there are protected species on or near a proposed development site. (online) Available at: https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications (Accessed 18 July 2022).

[38] Planning Inspectorate (2022). Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects. (online) Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-ten/ (Accessed 30 September 2022).

[39] Planning Inspectorate (2017). Advice Note 11, Annex C Natural England and the Planning Inspectorate. (online) Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/an11-annexc/ (Accessed 18 July 2022).

Consultee	Consideration	How addressed in this ES
		also informed the assessment of effects with respect to biodiversity for those qualifying features that are scoped into the EcIA.
Planning Inspectorate	Strensall Common SAC can be scoped out of the ES on the basis that significant effects on its qualifying features due to air quality impacts are unlikely to arise due to distance of the Proposed Development (ie approximately 4.71km east) from the SAC.	Strensall Common SAC is scoped out of the ES. Reference to this site was included in the Scoping Report for context only. As it is beyond the 2km area of search and the Planning Inspectorate has confirmed agreement with scoping out this site it is not referred to further within this ES chapter.
Planning Inspectorate	Micklefield Quarry SSSI and Tadcaster Mere SSSI: Given that no ecological features are cited on the designation, the Inspectorate agrees that both sites may be scoped out from further biodiversity assessment.	Micklefield Quarry SSSI and Tadcaster Mere SSSI are both outside the SSSI area of search from the Order Limits and are both scoped out of the ES.
Planning Inspectorate	Effects on dormice may be scoped out on the basis of the arguments presented.	Effects on dormice (*Muscardinus avellanarius*) are scoped out of the ES.
Planning Inspectorate	Insufficient information to reasonably conclude that there will be no likely significant effects for [reptiles]. Therefore, this matter should be scoped into assessment where significant effects are likely to occur.	**Scoping of Assessment Summary, Volume 5, Document 5.3.8A** provides the rationale for those features scoped in/out of the assessment. Reptiles have been scoped into the assessment and assessed in **Section 8.9**.
Planning Inspectorate	Significant effects on white-clawed crayfish populations are unlikely to occur. The Inspectorate is satisfied for this matter to be scoped out of assessment.	Effects on white-clawed crayfish (*Austropotamobius pallipes*) are scoped out the of ES[40] and are not referred

[40] Although one record of white-clawed crayfish was obtained in the Study Area after publication of the Scoping Report, this is ~1.47km outside the Order Limits and from a tributary of the River Wharfe (W9) which is dominated by signal crayfish within and upstream of the Order Limits. Consequently white-clawed crayfish remain scoped out of this assessment.

Consultee	Consideration	How addressed in this ES
		to further within this ES chapter.
Planning Inspectorate	In the absence of any physical ecological survey data to inform the baseline, and the potential for further changes to the design/extent of the Proposed Development, there is insufficient information to reasonably conclude that there will be no likely significant effects for [non-Schedule 1 nesting birds]. Therefore, this matter should be scoped into assessment where significant effects are likely to occur.	**Scoping of Assessment Summary, Volume 5, Document 5.3.8A** provides the rationale for those features scoped in/out of the assessment. Taking into account embedded environmental measures aimed at reducing the extent of any impacts, there are no potential impacts that would result in significant effects to non-Schedule 1 breeding birds. Therefore, non-Schedule 1 breeding birds are scoped out of the assessment.
Planning Inspectorate	In absence of any physical ecological survey data to inform the baseline, and the potential for further changes to the design/ extent of the Proposed Development, there is insufficient information to reasonably conclude that there will be no likely significant effects for [waterbird assemblage]. Therefore, this matter should be scoped into assessment where significant effects are likely to occur.	**Scoping of Assessment Summary, Volume 5, Document 5.3.8A** provides the rationale for those features scoped out of the assessment. Where significant effects are likely to occur to the waterbird assemblage, they are scoped into the assessment, and assessed in **Section 8.9**. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Planning Inspectorate	Paragraph 7.3.2 states that "During the Yorkshire Green Briefing #2 conference call (23 February 2021) it was confirmed that there was no requirement for bird flight activity surveys to be scoped into the survey schedule, and that the proposed approach to the ornithological survey scope was acceptable". No further information is provided in relation to the 'Yorkshire Green Briefing #2 conference call'; specifically, the	**Table 8.5** includes details of Natural England and local authority consultation on this matter and evidence of agreement to the scoping out of bird flight activity surveys.

Consultee	Consideration	How addressed in this ES
	Scoping Report does not provide a list of attendees or a summary of matters agreed/ not agreed. In absence of such information or evidence of agreement with the relevant statutory bodies, bird flight activity surveys cannot be excluded from the scope of assessment at this stage. This matter should be assessed within the ES where significant effects are likely to occur, or robust evidence and agreement with consultation bodies should be provided to justify its exclusion.	
Planning Inspectorate	Emissions of dust resulting in dust deposition and emissions associated with construction and operational traffic on ecological receptors can be scoped out of the ES, on the basis set out at ID 4.9.2, 4.9.4 and 4.9.5 respectively.	Effects associated with dust deposition and emissions as a result of construction and operational traffic are scoped out of the ES. Embedded environmental measures are detailed in Section 8.6, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Planning Inspectorate	Water quality during construction and operation should be scoped into the ES on the basis set out at ID 4.5.1. Therefore, the ES should consider the impact of change in water quality to designated sites and HPI with freshwater habitats and species associated with freshwater habitats where significant effects are likely to occur.	Significant effects on ecological features due to changes in water quality during construction and operation are scoped into the assessment (e.g., effects on designated sites and HPI with freshwater habitats and species associated with freshwater habitats) where they are likely to occur. Embedded environmental measures are detailed in Section 8.6, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Planning Inspectorate	The desk study assessment identifies European eel as a protected species present within the Scoping red line boundary and surrounding 2km (table 7.5). Table 7.2 (Legislation relevant to biodiversity) does not include reference	The ES includes reference to The Eels Regulations (England and Wales) 2009[17] and Eel Management Plans

Consultee	Consideration	How addressed in this ES
	to The Eels Regulations (England and Wales) 2009, nor does it include reference to Eel Recovery Plans or Eel Management Plans. The ES should include reference to the Eel Regulations and any relevant requirements. Where proposed works are anticipated to impact eel populations, the Applicant should agree the approach to meeting the requirements of the Eels Regulations with the EA and other relevant bodies, including any requirements for eel survey and the provision of eel and other fish pass facilities	(see **Table 8.1** and **Table 8.7** respectively) The potential for the Project to affect European eel (principally through in-channel works) has been assessed in **Section 8.9**. Based on the Project design, there has been no requirement for eel surveys. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Planning Inspectorate	At table 7.4 and figure 7.1, the River Derwent is classified as a SSSI; however, it is not reflected that the site is also a SAC. This should be updated in the ES and effects on its qualifying features should be assessed where significant effects are likely to occur.	The ES includes reference to the River Derwent SAC (see **Section 8.5**) and clarifies the rationale for it being scoped out of the assessment (it is outside the ZoI and therefore desk study area of search based on its designation features, as opposed to the SSSI which is subject to a greater ZoI based on its designation features). The River Derwent SAC is considered in the **No Significant Effects Report, Volume 6, Document 6.4,.**
Planning Inspectorate	The desk assessment identified several protected/ notable freshwater species within the Scoping red line boundary and surrounding 2km (table 7.5). The Scoping Report does not, however, set out individual Zones of Influence (ZoI) specific to these ecological features. Furthermore, table 7.11 does not include fish surveys despite the potential for impacts to watercourses and several protected/ notable fish species having been identified in table 7.5. The Scoping Report does not present a justification for the exclusion of fish surveys from the	Feature-specific ZoIs are given in **Table 8A.2, Scoping of Assessment Summary, Volume 5, Document 5.3.8A.** The potential for protected/notable freshwater fish species (principally through in-channel works) is assessed in **Section 8.9**. Based on the Project design including embedded environmental measures, there is limited potential for effects on fish, and as such

Consultee	Consideration	How addressed in this ES
	'Field survey programme' provided (table 7.11).	there has been no requirement for fish surveys. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Planning Inspectorate	There is potential for protected and migratory fish species to be present within watercourses potentially impacted by the Proposed Development, including species that move between freshwater and marine environments (eg European eel, Atlantic salmon (*Salmo salar*), brown/ sea trout (*Salmo trutta*), and sea lamprey (*Petromyzon marinus*), as identified in table 7.5) that may be functionally linked to other nearby protected sites. The ES should present this information and assess impacts associated with the construction and operation of the Proposed Development on freshwater species where significant effects are likely to occur.	The potential for the Project to affect protected/notable freshwater fish species (principally through in-channel works) is assessed in **Section 8.9**. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Planning Inspectorate	The ES should assess the potential for construction and operational activities within proximity of watercourses and/ or drainage ditches to facilitate the spread of INNS. The ES should fully describe any necessary mitigation and/ or biosecurity precautions required to prevent the spread of INNS. Any measures relied upon in the ES should be discussed with relevant consultation bodies, including Natural England and the Environment Agency, in effort to agree the approach. Measures relied upon in the ES should be adequately secured, eg through a CEMP.	The potential for Project to facilitate the spread of Invasive Non Native Species (INNS) (and thus result in legal breaches) has been scoped out in **Section 8.7**. Statutory consultation feedback from the Environment Agency with respect to INNS is outlined in **Table 8.5**. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**). These measures would be secured through the **Code of Construction Practice (CoCP), Volume 5, Document 5.3.3B.**

Consultee	Consideration	How addressed in this ES
Planning Inspectorate	The ES should explain the timing of the proposed construction and/or - operational activities and any measures to avoid key/sensitive periods for species, such as fish spawning seasons and fish migration periods. The ES should assess the duration of impacts in relation to the ecological cycles (e.g., life cycles, breeding/spawning seasons, etc.) of the receptors being assessed.	**Chapter 3: Description of the Project, Volume 5, Document 5.2.3** presents the proposed programme for construction, which has formed the basis for this assessment. **Section 8.9** includes assessment of effects on fish. Embedded environmental measures include mitigation with respect to timing of vegetation removal and effects on watercourses as detailed in **Section 8.6**, and mitigation and reinstatement is detailed in the **BMS, Volume 5, Document 5.3.3D.**
Planning Inspectorate	The Inspectorate notes that table 7.7 does not include any mitigation measures specific to the management of noise and vibration. The ES should provide detail of any proposed mitigation specific to noise and/ or vibration effects.	**Chapter 14: Noise and Vibration, Volume 5, Document 5.2.14** details embedded environmental measures to minimise the potential for effects on sensitive receptors to noise and vibration. Potential effects on biodiversity features sensitive to noise and vibration are addressed in the species-specific assessment **Section 8.9** where relevant. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Planning Inspectorate	The ES should state where alternative designs, other than a culvert, have been considered/assessed and clearly present the reasons why a culvert was chosen over the alternatives. Where	Embedded environmental measures are detailed in **Section 8.6**, including water crossing design and mitigation and reinstatement

Consultee	Consideration	How addressed in this ES
	significant effects are likely to occur, the ES should assess the potential construction and operation effects on aquatic/semi-aquatic species, including potential for culvert(s) to act as a barrier to movement or migration.	in the **BMS, Volume 5, Document 5.3.3D**. **Section 8.9** and **Chapter 9: Hydrology, Volume 5, Document 5.2.9** includes consideration of potential impacts and resulting effects on aquatic/semi-aquatic species. **Chapter 9: Hydrology, Volume 5, Document 5.2.9** includes consideration of alternatives to culverts based on watercourse sensitivity.
Planning Inspectorate	The ES should also consider the potential for culverts to negatively impact the ecological status of watercourses under the WFD. The results of the proposed WFD Assessment should be reported in the ES and/ or associated Technical Appendix.	**Chapter 9: Hydrology, Volume 5, Document 5.2.9** considers potential impacts and resulting effects on watercourses in relation to the WFD, including the potential for negative effects resulting from the use of culverts. Consideration of likely significant effects on ecological features which are used to determine 'ecological status' under the WFD: fish, aquatic invertebrate and aquatic macrophyte communities is included in **Section 8.9** under the assessment of effects on running water. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Planning Inspectorate	Table 7.7: The ES should clearly differentiate between essential mitigation and enhancement that is proposed as part of the DCO.	Differentiation of embedded environmental measures (essential mitigation forming part of the Project), additional mitigation measures and enhancement has been presented in

Consultee	Consideration	How addressed in this ES
		Section 8.6 and **Section 8.12**, with embedded environmental measures listed in **Table 8.12.** Mitigation and reinstatement is presented in the **BMS, Volume 5, Document 5.3.3D.** Note that biodiversity enhancements are not considered when determining whether effects are significant or not. BNG is considered in **Section 8.6** and the **BNG Report, Volume 7, Document 7.9.**
Planning Inspectorate	Table 7.9 identifies specific construction and operational activities alongside the ecological feature(s) likely to be impacted. For example, the potential for "noise and physical activities" (associated with general construction) to lead to the disturbance of Schedule 1 breeding birds. In such instances, there is no clear explanation as to why only this ecological feature, and no other features or "protected and/or notable species" in general, are anticipated to be impacted by the Proposed Development. This should be clarified in the ES.	Development activities and associated potential environmental changes (impacts), the relevant ecological features that could be affected and the rationale as to why features have been identified in relation to that change are included within this ES in **Section 8.7** of this Chapter and detailed within the **Scoping of Assessment Summary, Volume 5, Document 5.3.8A**.
Planning Inspectorate	The ES should clearly describe where dewatering activities will take place and assess any likely significant effects upon biodiversity. Information relation to dewatering design/ techniques and timetabling should also be included within the ES.	**Chapter 10: Geology and Hydrogeology, Volume 5, Document 5.2.10** presents proposed construction related dewatering activities. These aspects are assessed in **Section 8.9**. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D.**
Environment Agency	Approval of detail provided in Table 7.1 relating to National Policy Statement for Electricity Networks Infrastructure (EN-	Where significant effects are likely to occur, they are scoped into the assessment.

Consultee	Consideration	How addressed in this ES
	5) Section 2.7 which states that consideration needs to be made of the potential for large birds to collide with overhead lines during flight or be electrocuted when perching, both with the potential to cause injury/death. If there is a risk of this occurring, measures should be implemented to avoid or minimise this. Bird deflectors should be installed on power lines that cross all rivers, flood plains and other wetlands.	and assessed in **Section 8.9**. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**. In line with National Grid policy as there is no evidence to indicate a significant risk of collision, the use of bird divertors is not proposed. If evidence of collisions becomes apparent in the future, bird diverters can be fitted retrospectively.
Environment Agency	Approval of information in Table 7.7 which states that an environmental gain (EG) equivalent to a 10% uplift above the current baseline situation will be built into the Project through the design process.	BNG is considered in **Section 8.6, Section 8.12** and the **BNG Report, Volume 7, Document 7.9**[41]. Note that biodiversity enhancements are not considered when determining if effects are significant.
Environment Agency	The Construction Environmental Management Plan (CEMP) should state that all trenches and excavations should be covered at night to prevent mammals such as otters (*Lutra lutra*) and hedgehogs (*Erinaceus europaeus*) falling into them. If this is impossible, then means of allowing trapped mammals to escape should be included.	Embedded environmental measures (including avoidance of open excavations overnight) are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**. These measures would be secured through the **Code of Construction Practice, Volume 5, Document 5.3.3B.**
Environment Agency	Records show the presence of a badger set directly beneath one of the pylons in the vicinity of the Monk Fryston site.	The badger baseline is outlined in **Section 8.5**.

[41] Compensation and enhancements to biodiversity to be delivered as Biodiversity Net Gain (BNG) have been integrated within the project evolution to enable consideration through the design process and within stakeholder engagement. However, the proposed delivery of compensation and BNG has not been used to influence the assessment of significance as laid out in **Section 8.9** as these are applied following the identification of residual effects.

Consultee	Consideration	How addressed in this ES
	Whilst the record is over 10 years old it is likely that badgers may still be present; other parties may hold more up to date records for the set.	Where significant effects (or a potential breach of legislation) are likely to occur, they are scoped into the assessment, and assessed in **Section 8.9**. Embedded environmental measures are detailed in Section 8.6, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D5**. These measures would be secured through the **Code of Construction Practice, Volume 5, Document 5.3.3B.**
Environment Agency	BNG and Ecological Enhancement As detailed in 9.4.40 and 41 on page 208, opportunity should be taken within the red line area to deliver environmental enhancements in addition to any mitigation. There are lots of opportunities for low cost interventions for river restoration and habitat improvements including simple riparian buffer strips or culvert removal where land owner engagement is taking place. In line with NSIP guidance the application should show how the applicant has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests.	BNG is considered in **Section 8.6, Section 8.12** and the **BNG Report, Volume 7, Document 7.9**[41]. Note that biodiversity enhancements are not considered when determining if effects are significant.
Hambleton District Council	There does not appear to be reference to potential impact on migratory bird species.	**Scoping of Assessment Summary, Volume 5, Document 5.3.8A** provides the rationale for those features scoped out of the assessment such as wintering and passage birds. Where significant effects on bird species are likely to occur, they are scoped in and are assessed in **Section 8.9.** In line with National Grid policy as there is no evidence to indicate a

Consultee	Consideration	How addressed in this ES
		significant risk of collision, the use of bird divertors is not proposed. If evidence of collisions becomes apparent in the future, bird diverters can be fitted retrospectively.
Hambleton District Council	Concern that the matter of agglomeration of wildfowl species on the Ouse Floodplain appears to have been scoped out. From local observation is it clear that these areas are frequented by Swans and Geese and other visiting species.	**Scoping of Assessment Summary, Volume 5, Document 5.3.8A** provides the rationale for those features scoped out of the assessment such as wintering and passage birds. Where significant effects on bird species are likely to occur, they are scoped in and are assessed in **Section 8.9.** Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS Document 5.3.3D, Volume 5**. These measures would be secured through the **Code of Construction Practice Document 5.3.3B, Volume 5**.
Ministry of Defence	The implementation of this development may create a permanent or temporary attractant environment for those large and/flocking bird species that may form a hazard to aviation safety. As such the MOD request to be consulted when final designs are available in order that the impact of the development can, if necessary, be mitigated. This mitigation may require design changes or, where amendments are not possible, the drafting of planning obligations such as Section 106 agreements setting out measures to be taken to manage avian populations secured in perpetuity.	The MOD have been consulted on the final design freeze and no concerns were raised. **Scoping Assessment Summary, Volume 5, Document 5.3.8A** provides the rationale for those features scoped out of the assessment such as wintering birds. Where significant effects on birds are likely to occur, they are scoped in and are assessed in **Section 8.9**. Embedded environmental measures are detailed in **Section 8.6**, and mitigation

Consultee	Consideration	How addressed in this ES
		and reinstatement in the **BMS, Volume 5, Document 5.3.3D**. These measures would be secured through the **Code of Construction Practice, Volume 5, Document 5.3.3B.**
Natural England	The potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/enhancement should be included within this assessment in accordance with appropriate guidance on such matters. EcIA is the process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components. EcIA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal.	The ES follows CIEEM Guidance for EcIA[2]. Potential impacts upon features of nature conservation interest and opportunities for habitat creation/enhancement are considered within the assessment (see **Section 8.9**).
Natural England	The ES should thoroughly assess the potential for the proposal to affect designated sites. European sites fall within the scope of the Conservation of Habitats and Species Regulations 2017 (as amended). In addition, paragraph 176 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites. Under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) an appropriate assessment needs to be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site.	The ES assesses the potential of the Project to impact designated sites within the scope of the Habitats and Species Regulations 2017 and in reference to Overarching National Policy Statement for Energy (EN-1) [18] and NPPF[22] . The assessment in **Section 8.9** includes the potential for direct and indirect effects resulting from the Project. Embedded environmental measures outlined in **Section 8.6** are designed to avoid, minimise and reduce any adverse effects. The Habitats Regulations, as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[9] are referenced in **Table 8.1.** These have been considered via the **No Significant**

Consultee	Consideration	How addressed in this ES
	Should a Likely Significant Effect on a European/Internationally designated site be identified or be uncertain, the competent authority (in this case the Local Planning Authority) may need to prepare an Appropriate Assessment, in addition to consideration of impacts through the EIA process. The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest and should identify such mitigation measures as may be required in order to avoid, minimise or reduce any adverse significant effects. As advised in the scoping report, Natural England expects to be consulted on the draft Habitats Regulations Assessment Screening Report.	**Effects Report, Volume 6, Document 6.4**, which has also informed the assessment of effects with respect to biodiversity for those qualifying features that are scoped into the assessment. Natural England was consulted on the report and confirmed agreement with its conclusions as detailed in **Table 8.5**.
Natural England	As identified in the Scoping Report, the development site is in close proximity to several designated nature conservation sites: • Further information on SSSIs and their special interest features can be found at www.magic.gov and on our Designated Sites View website. The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest and should identify such mitigation measures as may be required in order to avoid, minimise or reduce any adverse significant effects.	Desk study data in **Section 8.4** includes data on SSSIs. Where significant effects are likely to occur, they are scoped in and assessed in **Section 8.9**. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**. These measures would be secured through the **Code of Construction Practice, Volume 5, Document 5.3.3B**.
Natural England	The EIA will need to consider any impacts upon local wildlife and geological sites. Local Sites are identified by the local wildlife trust, geoconservation group or a local forum established for the purposes of identifying and selecting local sites. They are of county importance for wildlife or geodiversity. The Environmental Statement should therefore include an assessment of the likely impacts on the wildlife and	Desk study data in **Section 8.4** includes data on local wildlife sites, sourced from various local records centres (detailed in **Table 8.7**). Where significant effects are likely to occur, they are scoped in and assessed in **Section 8.9**. Embedded environmental measures are detailed in

Consultee	Consideration	How addressed in this ES
	geodiversity interests of such sites. The assessment should include proposals for mitigation of any impacts and if appropriate, compensation measures.	Section 8.6, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**. These measures would be secured through the **Code of Construction Practice, Volume 5, Document 5.3.3B.** Where significant effects are likely to occur on geological conservation features, they are assessed in **Chapter 10: Geology and Hydrogeology, Volume 5, Document 5.2.10**.
Natural England	The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts (*Triturus cristatus*), reptiles, birds, water voles (*Arvicola amphibius*), badgers and bats). Records of protected species should be sought from appropriate local biological record centres, nature conservation organisations, groups and individuals; and consideration should be given to the wider context of the site for example in terms of habitat linkages and protected species populations in the wider area, to assist in the impact assessment.	Desk study data in **Section 8.4** includes data on local wildlife sites and protected and notable species within and up to 5km of the Order Limits, sourced from various local records centres (detailed in **Table 8.7**). A review of data sources such as OS maps and aerial photographs have been used to identify habitats types and linkages between land within the Order Limits and the wider area. Where significant effects are likely to occur, they are scoped in and assessed in **Section 8.9**. Consideration has been given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**. These measures would be secured through the **Code of Construction Practice,**

Consultee	Consideration	How addressed in this ES
		Volume 5, Document 5.3.3B.
Natural England	Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and where necessary, licensed, consultants. The ES should thoroughly assess the impact of the proposals on habitats and/or species listed as 'Habitats and Species of Principal Importance' within the England Biodiversity List. Section 40 of the NERC Act 2006 places a general duty on all public authorities, including local planning authorities, to conserve and enhance biodiversity. Government Circular 06/2005 states that Biodiversity Action Plan (BAP) species and habitats, 'are capable of being a material consideration…in the making of planning decisions'. Natural England therefore advises that survey, impact assessment and mitigation proposals for Habitats and Species of Principal Importance should be included in the ES. Consideration should also be given to those species and habitats included in the relevant Local BAP. Natural England advises that a habitat survey (equivalent to Phase 2) is carried out on the site, in order to identify any important habitats present. In addition, ornithological, botanical and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present. The Environmental Statement should include details of: Any historical data for the site affected by the proposal (e.g. from previous surveys); Additional surveys carried out as part of this proposal; The habitats and species present; The status of these habitats and species (e.g. whether priority species or habitat); The direct and indirect effects of the development upon those habitats and species; Full details	All surveys are being undertaken in accordance with the relevant best practice survey guidance (detailed in **Table 8.8**) by competent ecologists. Desk study data in **Section 8.4** includes data on local wildlife sites and protected and notable species, sourced from various local records centres (detailed in **Table 8.7**). Both HPIs and SPIs as well as species and habitats listed on the local BAP are considered within the assessment where potential for significant effects are considered to occur. Following initial extended Phase 1 habitats surveys, the requirement for more detailed botanical, ornithological and invertebrate surveys has been assessed. Where scoped in following this assessment, further detailed species-specific surveys have been undertaken. All surveys have been undertaken in accordance with best practice. Where significant effects are likely to occur, they are scoped into the assessment in Section 8.9. Embedded environmental measures are detailed in Section 8.6, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**. These measures would be secured through the **Code of**

Consultee	Consideration	How addressed in this ES
	of any mitigation or compensation that might be required.	**Construction Practice, Volume 5, Document 5.3.3B**.
Natural England	Where possible the development should seek to avoid adverse impact on sensitive areas for wildlife within the site, and provide opportunities for overall wildlife gain.	The design process has taken into account the presence of sensitive ecological receptors (such as ancient woodland and ponds) and has tried to avoid these features where possible. Embedded environmental measures including those to reduce adverse impacts on sensitive areas for wildlife are detailed in Section 8.6, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**. These measures would be secured through the **Code of Construction Practice, Volume 5, Document 5.3.3B.** BNG is considered in **Section 8.6**, **Section 8.12** and in the **BNG Report Document 7.9, Volume 7**[41]. Note that biodiversity enhancements are not considered when determining if effects are significant.
Natural England	Ancient woodland is an irreplaceable resource of great importance for its wildlife, its history and the contribution it makes to our diverse landscapes. Local authorities have a vital role in ensuring its conservation, in particular through the planning system. The ES should have regard to the requirements under the NPPF (Para. 175).	Areas of ancient woodland have been identified from the ancient woodland inventory and the mitigation hierarchy (with avoidance as the first priority) has been followed during the design process with respect to ancient woodland. The habitat has been scoped into the assessment in **Section 8.9**, with embedded environmental measures detailed in **Section 8.6**, and mitigation and reinstatement

Consultee	Consideration	How addressed in this ES
		in the **BMS, Volume 5, Document 5.3.3D**.
Natural England	The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The ES should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained. The NPPF requires that the planning system should contribute to the enhancement of the natural environment 'by establishing coherent ecological networks that are more resilient to current and future pressures' (NPPF Para 174), which should be demonstrated through the ES.	The ES **Chapter 17**, **Climate Change, Volume 5, Document 5.2.17** identifies how the Project's resultant effects on the natural environment will be influenced by climate change, incorporating the principles in the England Biodiversity Strategy. Embedded environmental measures are detailed in **Section 8.6**, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D** and take account of the NPPF[22] and Overarching National Policy Statement for Energy (EN-1)[18] requirements. BNG is considered in **Section 8.6**, **Section 8.12** and in the **BNG Report, Volume 7, Document 7.9**[41] using the latest metric (Defra v3.1). Note that biodiversity enhancements are not considered when determining if effects are significant.
North Yorkshire County Council	At Table 7.4 the River Derwent SSSI, however it is not reflected that the site is also a SAC. This needs to be updated and will also need to be taken into account in the Habitat Regulations Assessment process (7.7.13). Aside from this the approach to the Habitat Regulations Assessment (HRA) is supported.	The ES includes reference to the River Derwent SAC (see **Section 8.5**) and clarifies the rationale for it being scoped out of the assessment (it is outside the ZoI and therefore desk study area of search based on its designation features, as opposed to the SSSI which is subject to a greater ZoI based on its designation features). The River Derwent SAC is considered in the **No Significant Effects Report, Volume 6, Document 6.4**.

Consultee	Consideration	How addressed in this ES
North Yorkshire County Council	The approach to ecological assessment set out in the scoping document is supported as it follows current best practice guidance. At this stage most of the ecological information available is desk based from aerial photography and known designations. This gives an understanding of the types of habitats present within and surrounding the development site and the species supported by these habitats. It provides a good baseline and will help in the targeting of specific surveys. The surveys proposed within section 7.8 and Table 7.11 of the scoping report are supported and consideration of opportunities for biodiversity net gain (Table 7.7) at an early stage of the development is welcomed. Use of the most up to date version of the Defra Biodiversity Metric in presenting data on biodiversity losses and gains is encouraged	Comments in relation to the approach to the ecological assessment are welcome. BNG is considered in **Section 8.6**, **Section 8.12** and in the **BNG Report, Volume 7, Document 7.9**[41]. Using the latest metric (Defra v3.1). Note that biodiversity enhancements are not considered when determining if effects are significant.

Technical engagement

8.3.3 Statutory Consultation took place between 28 October and 9 December 2021 in accordance with the Act[20]. Prescribed and non-prescribed consultees and members of the public were consulted. Various methods of consultation and engagement were used in accordance with the Statement of Community Consultation (SoCC) including letters, website, public exhibitions, publicity and advertising in newspapers and webinar briefings.

8.3.4 National Grid prepared a Preliminary Environmental Information Report (PEIR) which was publicised at this consultation stage. National Grid sought feedback on the environmental information presented in that report. Feedback received during statutory consultation was considered by National Grid and incorporated, where relevant, into the design of the project and its assessment, and is presented in this ES.

8.3.5 An overview of the key stakeholders consulted following scoping, and relevant responses received during the statutory consultation alongside any ongoing discussions relating to biodiversity is presented below in **Table 8.5**. Technical engagement with consultees in relation to biodiversity remains ongoing.

Table 8.5 – Summary of statutory consultation responses and technical engagement

Consultee	Comments and consideration	How addressed in this ES
Statutory consultation		
Natural England	Supportive comment regarding the inclusion of embedded environmental measures within the Project. Confirmation of agreement with the draft Habitat Screening Report and scoping out of SSSIs from effects on interest features.	Embedded mitigation is detailed in Section 8.6. The draft Habitat Screening Report has been developed into a **No Significant Effects Report, Volume 6, Document 6.4**. Justification for scoping out SSSIs is given in Scoping Table 8A.2 **Scoping of Assessment Summary, Volume 5, Document 5.3.8A**.
Natural England	Comments referring to Natural England standing advice with respect to protected species, Natural England's Pre-Screening Service (PSS) with respect to draft wildlife licence applications and advice to liaise with the local authority with respect to locally designated wildlife sites.	Natural England's standing advice has been referred to in developing the approach to protected species including survey methodology in **Section 8.4** and assessment in **Section 8.9**. A meeting has been held with Natural England regarding possible licensing requirements as detailed in this **Table 8.5**. Consultation with local authorities is outlined in this **Table 8.5.**
Natural England	Supportive comment with reference to the inclusion of BNG and comments regarding the demonstration of measurable sustained net gain.	BNG is considered in **Section 8.6** and in the **BNG Report, Volume 7, Document 7.97**.
Environment Agency	Reference to the Environment Agency's Culverting Policy and presumption against culverts.	The approach to watercourse crossings is detailed in **Chapter 9 Hydrology and flood Risk, Volume 5, Document 5.2.9**, and in **Section 8.6** and Assessment of effects: Running Water within this chapter.
Environment Agency	Comment that approach to INNS is acceptable and requirement for detail on their eradication and the means of preventing their spread.	Presence of INNS is confirmed in the baseline **Section 8.5** and management is outlined in **Section 8.6** and **Table 8.11**. The **BMS, Volume 5, Document 5.3.3D** and **Code of Construction Practice, Volume 5, Document 5.3.3B**

Consultee	Comments and consideration	How addressed in this ES
		include outline measures to avoid spreading INNS which would be developed into detailed method statements (as required) subject to DCO consent.
Environment Agency	Comment on requirement to include reference to WFD and local authority culverting policy within legislation and policy section.	**Table 8.2** has been updated to include reference to local authority policies with respect to WFD and culverts.
Environment Agency	Supportive comment with reference to the inclusion of BNG including specific reference to the assessment of rivers and streams habitat.	Rivers and streams habitat is considered separately in the BNG assessment. BNG is considered in **Section 8.6** and in the **BNG Report, Volume 7, Document 7.9.**
North Yorkshire County Council	Supportive comments with respect to further engagement, clarification of reasons for scoping out River Derwent SAC, the inclusion of embedded mitigation measures and commitment to delivering BNG.	Meeting held 28 March 2022[42] and approach to biodiversity agreed as set out in 'Ongoing technical engagement' within this table. The ES clarifies the rationale for the River Derwent SAC being scoped out of the assessment in **Section 8.5**. Embedded mitigation is detailed in **Section 8.6** and BNG is considered in **Section 8.6** and in the **BNG Report, Volume 7, Document 7.9**.
North Yorkshire County Council	Reference made to the requirement for application of the mitigation hierarchy with respect to Sites of Importance for Nature Conservation (SINCs) including reinstatement or compensation and monitoring as necessary.	The assessment of effects on SINCs including the application of the mitigation hierarchy is detailed in **Section 8.9**.
Yorkshire Wildlife Trust	Supportive comments with respect to survey schedule and BNG.	Survey approach is detailed in **Section 8.4**. BNG is considered in **Section 8.6** and in the **BNG Report, Volume 7, Document 7.9**.

[42] Meeting between Jo Mosley (WSP), Sue Birnie (WSP), Colin Ormston (WSP) and Julia Casterton (North Yorkshire County Council).

Consultee	Comments and consideration	How addressed in this ES
Yorkshire Wildlife Trust	Specific comments on PEIR chapter referring to mitigation including requirement for an Ecological Clerk of Works (ECoW), pre-construction surveys, protection of sensitive habitat and production of a detailed CEMP.	Embedded environmental measures are detailed in **Section 8.6**, and mitigation measures which include the requirement for an ECoW, pre-construction surveys and protection and reinstatement of sensitive habitats is outlined in the **BMS, Volume 5, Document 5.3.3D**. These measures would be secured through the **Code of Construction Practice, Volume 5, Document 5.3.3B**.
Yorkshire Wildlife Trust	Comments regarding potential for effects on irreplaceable habitats (ancient woodland and veteran trees).	The mitigation hierarchy has been employed throughout the design process to avoid any loss of irreplaceable habitats as detailed in **Section 8.6**. Where significant effects are likely to occur, they are scoped in and are assessed in **Section 8.9**.
Ongoing technical engagement		
Natural England	A meeting to discuss the bird survey approach and no requirement for carrying out flight activity surveys in relation to potential risks to Derwent Valley SPA/Ramsar qualifying features was held on 23 February 2021, to which Natural England agreed, although advised that further discussion relating to non-designated areas should be sought with council ecologists.	Local council responses to bird survey and assessment approach were received through the scoping process and summarised in **Table 8.4** above. Where significant effects are likely to occur, they are scoped in, and assessed in Section 8.9. Embedded environmental measures are detailed in Section 8.6, and mitigation and reinstatement in the **BMS, Volume 5, Document 5.3.3D**. These measures would be secured through the **Code of Construction Practice, Volume 5, Document 5.3.3B**. North Yorkshire County Council ecologist confirmed agreement with the biodiversity survey approach as detailed in this

Consultee	Comments and consideration	How addressed in this ES
		table during a meeting held on 28 March 2022[42].
Natural England	In the absence of a Natural England case officer for the Project or Natural England availability to attend a meeting to discuss the approach to biodiversity surveys, a proposed alternative survey approach at land where access is restricted was detailed in an email to Natural England on 15 July 2021[5]. No concerns with this approach were raised.	Baseline data from desk studies and survey work is included in this ES including data obtained following the alternative survey approach as detailed in **Section 8.1**. A precautionary approach has been taken within the scoping assessment (**Scoping of Assessment Summary, Volume 5, Document 5.3.8A**) and assessment of effects (**Section 8.9**) where limitations to access and thus surveys remains. Natural England continues to be informed about the approaches to all feature-specific baseline surveys and on mitigation (embedded environmental measures and any additional measures) in respect of their statutory interests.
Natural England	The employment of the District Level Licensing (DLL) scheme to address potential effects on great crested newts was initiated on 23 June 2021. Further discussions to agree parameters and define temporary and permanent works were held. The DLL approach has been agreed with Natural England.	The approach to great crested newts is detailed in **Section 8.9**. The provisional great crested newt DLL conservation payment certificate is given in **Volume 5, Document 5.3.8I: GCN District Level Licensing Impact Assessment and Conservation Payment Certificate.**
Natural England	A meeting was held on 16 August 2022 to discuss the potential requirement for a Letter of No Impediment (LoNI) with respect to bats and otters.	It was agreed that based on survey results to date there was insufficient evidence of either species to indicate a potential breach of EPS legislation that would trigger the need for a derogation licence (and therefore LoNI at DCO submission). The licensing requirement would be re-assessed should evidence of bat roosts be recorded during ongoing bat surveys post-DCO

Consultee	Comments and consideration	How addressed in this ES
		submission. Further details are provided in **Section 8.9**.
Natural England	Natural England were consulted on the draft No Significant Effects Report (NSER) on 15 August 2022.	Natural England confirmed agreement with the draft **No Significant Effects Report, Volume 6, Document 6.4** conclusions.
Environment Agency	Invitations sent to Environment Agency requesting a meeting to discuss the approach to biodiversity and in particular water voles.	The Environment Agency did not attend meetings with respect to Biodiversity. In the absence of further technical engagement specifically with regard to biodiversity to date, best practice approach to surveys and mitigation has been followed as detailed in **Sections 8.4** and **8.6** respectively, with minor limitations detailed in **Section 8.1**.
North Yorkshire County Council[43]	A meeting was held on 28 March 2022 [44] to provide an overview of the Project, discuss the approach to biodiversity surveys, provide an update on results to date, discuss the approach to watercourse crossings and share local knowledge including opportunities for BNG.	Approach to surveys was agreed (including no requirement for reptile, fish or invertebrates) and methodology as detailed in **Section 8.4** Embedded mitigation was agreed with respect to protected and notable species and is detailed in **Section 8.6**. No opportunities for BNG within Council-managed land were identified.
Yorkshire Wildlife Trust	A meeting was held on 27 April 2022 to provide an overview of the Project, discuss the approach to biodiversity surveys, provide an update on results to date and share local knowledge including opportunities for BNG.	Approach to surveys was agreed (including no requirement for reptile, fish or invertebrates) and methodology as detailed in **Section 8.4**. Embedded mitigation was agreed with respect to protected and notable species and is detailed in **Section 8.6**. Discussion regarding opportunities for delivering BNG

[43] North Yorkshire County Council provides biodiversity services for Selby District Council by way of a Service Level Agreement and will formally represent Selby DC for this Project.
[44] York City Council, Leeds City Council and Harrogate Borough Council were invited to the meeting but were unable to attend and were subsequently sent copies of the minutes.

Consultee	Comments and consideration	How addressed in this ES
		within Yorkshire Wildlife Trust reserves is ongoing.
RSPB	A meeting was held on 10 May 2022 to provide an overview of the Project, discuss the approach to ornithology surveys, provide an update on results to date, and share local knowledge including opportunities for BNG	Approach to ornithology surveys was agreed and methodology as detailed in **Section 8.4**. Embedded mitigation was agreed with respect to protected and notable species and is detailed in **Section 8.6**. No opportunities for BNG within RSPB reserves were identified.

8.4 Data gathering methodology

Study Area

8.4.1 The Study Area encompasses the area over which all desk-based data was gathered to inform the biodiversity assessment presented in this chapter. Due to the presence of multiple ecological features[45] and many potential effects, the level and type of data collection varies across the Study Area. The Study Area comprises:

- land within the Order Limits (as shown on **Figure 1.1, Volume 5, Document 5.4.1**);
- the desk study areas (known as “areas of search”) for sites designated for their nature conservation interest at the international, European, national and local levels (as described in **Table 8.6**);
- the area of search for legally protected and notable ecological features (as described in **Table 8.6**);
- the area of search for any legally controlled species (as described in **Table 8.6**); and
- the survey areas for field surveys (see **Table 8.8**).

8.4.2 The extent of the desk study areas of search (see **Table 8.6**) and survey areas for field surveys (see **Table 8.8**) were determined based on best practice guidance and a high-level overview of the types of ecological features present (see **Figure 8.1, Volume 5, Document 5.4.8**), the environmental changes, and the potential effects that could occur. The Study Area was defined on a precautionary basis to ensure that the Zones of Influence (ZoI) relevant to all ecological features were covered during baseline data collection activities. ZoI are the areas within which a potentially significant effect associated with the Project may be identified for a particular ecological feature and vary from feature to feature.

8.4.3 The Study Area has been reviewed and amended in response to such matters as refinement of the Project design, the identification of additional impact pathways and

[45] The Chartered Institute for Ecology and Environmental Management (CIEEM) refer to biodiversity receptors within technical guidance (CIEEM 2018, updated 2019) as ‘ecological features’. This term is used throughout this chapter.

where appropriate in response to feedback from consultation, to ensure that there is sufficient data on which to conduct the assessment.

Desk study

8.4.4 An initial desk study was carried out in February/March 2021 to inform the scoping process, when the Study Area was based on the Scoping red line boundary. The Project design has been developed and refined since scoping with the red line boundary used for scoping replaced by the Order Limits (**Chapter 3: Description of the Project, Volume 5, Document 5.2.3**). A further data gathering exercise was undertaken in June 2021 to reflect this change and inform this ES. This involved obtaining information relating to relevant statutory and non-statutory biodiversity sites, habitats and species of principal importance (HPIs and SPIs respectively) legally protected and controlled species and other conservation-notable habitats or species that have been recorded over the previous ten years (2011 to 2021) within the relevant areas of search[46]. In addition, data from annual surveys (2017 to 2021) of the SPI tansy beetle (*Chrysolina graminis*) was obtained in August 2022 from The Species Recovery Trust. **Table 8.6** lists the data compiled within each area of search within the overall Study Area.

Table 8.6 – Data gathered during the desk study to inform the biodiversity assessment

Ecological feature	Example/definition	Area of search
Statutory sites designated under international conventions or European Directives	Wetlands of International Importance (also known as Ramsar Sites) and Special Areas of Conservation (SACs)	Inside and within 2km of the Order Limits[47].
	Sites with bat interest	Inside and within 10km of the Order Limits[48].
	Special Protection Areas (SPAs) and Ramsar Sites with ornithological interest	Inside and within 20km of the Order Limits[49].

[46]A conservation notable species is one that has some form of conservation designation (for example it is present on a red list) but has no specific legal protection.
[47] A 2km area of search is in line with guidance from the Institute of Environmental Assessment (1995): Guidelines for Baseline Ecological Assessment and based on the ZoI of those key ecological features potentially present within the designated site/Order Limits which could be affected by works as well as a high-level overview of the environmental changes and the potential effects that could occur during the Project.
[48] The area of search reflects the potential for effects on bats which are a mobile species. The area of search is based on the Core Sustenance Zones of bat species in line with guidance from the Bat Conservation Trust (Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidance (3rd edn)).
[49] The area of search reflects the maximum potential distance bird species may commute from roosting to foraging areas (the 20km distance specifically relates to certain goose species and is often less than 20km for other bird species). This is of reference to SPA qualifying features using functionally linked land located beyond the protection of the site boundary of the SPA. This distance is precautionary and based on guidance from NatureScot (2016) Assessing Connectivity with Special Protection Areas (SPAs) (Version 3).

Ecological feature	Example/definition	Area of search
Statutory sites designated under national legislation	Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs)	Inside and within 2km of the Order Limits[47].
	Nationally important sites with bat interest	Inside and within 10km of the Order Limits[48].
	Nationally important sites with ornithological interest	Inside and within 10km of the Order Limits[50].
Locally designated sites	In North Yorkshire these are termed as Sites of Importance for Nature Conservation (SINCs), and in West Yorkshire they are Local Wildlife Sites (LWSs) and/or Sites of ecological or geological interest (SEI/SGIs)[51].	Inside and within 2km of the Order Limits[47].
HPI and SPI, Red listed species[52] and legally protected species.	HPIs and SPIs, species recorded on The IUCN Red List of Threatened Species and/or local Red Lists for the UK or relevant sub-units (e.g. regions or counties) and legally protected habitats and species include those listed in Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended) [13] and those included in Schedules 2 and 5 of the Habitats Regulations. Badger and Hedgerows are provided protection under the Protection of Badgers Act 1992 [14] and the Hedgerows Regulations 1997[16] respectively	Inside and within 2km of the Order Limits[47].

[50] The area of search reflects a precautionary distance bird species notified as part of a SSSI may commute from roosting to foraging areas, and is based on guidance from NatureScot (2016) Assessing Connectivity with Special Protection Areas (SPAs) (Version 3).
[51] West Yorkshire Local Sites Partnership is currently going through a process of reassessing and merging previously designated local sites including SEIs and SGIs into a single LWS designation.
[52] Red listed species for the purposes of this assessment refer to those noted using IUCN criteria as being “Near Threatened”, “Vulnerable”, “Endangered” and “Critically Endangered”, and those on present on local Red Lists in the categories "Nationally Scarce” and “Nationally Rare”.

Ecological feature	Example/definition	Area of search
Legally controlled species	Legally controlled species include those listed in Schedule 9 of the Wildlife and Countryside Act 1981 [13] (as amended).	Inside and within 2km of the Order Limits[47].
Bat roosting locations	Bat roost locations are considered separately from other species records in accordance with guidance.	Inside and within 5km of the Order Limits[48].
Existing EPS mitigation licences	Where EPS mitigation licences have been granted from Natural England.	Inside and within 2km of the Order Limits, extended to 5km where licences relate to bat roosts[48].
Watercourse locations	Watercourses shown on OS maps at 1:10,000.	Inside and within 50m of the Order Limits[47].
Locations of ponds and ditches	Ponds and ditches shown on OS maps at 1:10,000.	Inside and within 250m of the Order Limits to inform great crested newt survey and assessment[53].

8.4.5 A summary of the organisations that have supplied data, together with the nature of that data is outlined in **Table 8.7**.

Table 8.7 – Data sources used to inform the biodiversity assessment

Organisation	Data source	Data provided
Multi Agency Geographic Information for the Countryside (MAGIC)	Magic maps website[54]	Statutory and non-statutory sites, HPIs and SPIs, network enhancement and expansion zones, watercourse, pond and ditch locations and EPS mitigation licence data.
Google Earth	A review of aerial photographs	Indicative habitat data and watercourse, ditch and pond locations.

[53] 250m is recognised as being towards the upper limit of the distance that most adult great crested newts typically disperse around breeding ponds as detailed within the Great Crested Newt Conservation Handbook (Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife).
[54] Defra (2021). Magic Maps (online). Available at: https://magic.defra.gov.uk/MagicMap.aspx (Accessed 4 August 2022).

Organisation	Data source	Data provided
UK Biodiversity Action Plan (UKBAP)[55]	JNCC website[55]	Habitats and species listed on UKBAP.
North Yorkshire County Council, Hambleton District Council and Leeds County Council	Hambleton District BAP[56] and Leeds BAP[57]	Habitats and species listed on local BAP.
North and East Yorkshire Ecological Data Centre (NEYEDC)	NEYEDC website[58]	All designated sites, protected and notable species records.
West Yorkshire Ecology Services (WYES)	WYES website[59]	All designated sites, protected and notable species records.
The Species Recovery Trust	Species Recovery Trust website[60]	Results of tansy beetle surveys 2017-2021.
Yorkshire and Humber Biodiversity Forum	Planning guidance document [61]and Regional Biodiversity Strategy[62]	Biodiversity opportunity areas and ecological networks, and regional biodiversity strategy.
Department for Environment Food and Rural Affairs	Eel Management Plans[63]	Details management measures to increase silver

[55] Joint Nature Conservation Committee (JNCC) (1994). UK Biodiversity Action Plan). (online) Available at: https://jncc.gov.uk/our-work/uk-bap/ (Accessed 4 August 2022).
[56] Hambleton District Council (2002). Hambleton Biodiversity Action Plan (online) Available at: https://www.hambleton.gov.uk/downloads/file/1162/hambleton-biodiversity-action-plan-april-2002 (Accessed 4 August 2022).
[57] Leeds.gov.uk (undated) Biodiversity Action Plan for Leeds (online) Available at https://www.leeds.gov.uk/docs/Leeds%20BAP%20combined.pdf (Accessed 4 August 2022).
[58] NEYEDC (2022). Waxcaps: the hidden jewels in Yorkshire's grasslands. (online) (Accessed 4 August 2022).
[59] WYES (2022). West Yorkshire Ecology Service (online). (Accessed 4 August 2022).
[60] The Species Recovery Trust (2022). Species Recovery Trust (online). (Accessed 4 August 2022).
[61] The Yorkshire and Humber Biodiversity Forum (2009). Planning Guidance: Mapping for Biodiversity in Yorkshire and Humber: A guide to identifying and mapping biodiversity opportunity areas and ecological networks. (online) Available at: https://www.rotherham.gov.uk/downloads/file/668/mapping-for-biodiversity-in-yorkshire-humber-2009 (Accessed October 2022).
[62] he Yorkshire and Humber Biodiversity Forum (2009). Yorkshire and Humber Regional Biodiversity Strategy (online). Available at: https://www.richmondshire.gov.uk/media/5037/yorkshire-and-humber-regional-biodiversity-strategy.pdf (Accessed October 2022).
[63] Defra (2010). Eel Management plans for the United Kingdom. Humber River Basin District (online). Available at: https://webarchive.nationalarchives.gov.uk/ukgwa/20130402151656/http:/archive.defra.gov.uk/foodfarm/fisheries/documents/fisheries/emp/humber.pdf (Accessed October 2022).

Organisation	Data source	Data provided
		eel escapement which would contribute to the recovery of the stock of European eel.
European Union	European Commission website[64]	Measures for the recovery of the stock of European eel.
WSP (formerly, Wood, formerly Amec Foster Wheeler), 2016	XCP Overhead Line Constraints Plan	Designated sites, protected and notable species.
The British Trust for Ornithology (BTO)	Wetland Birds Survey (WeBS)	WeBS five-year summary data 2014/2015-2018/2019 for Fairburn Ings Royal Society for the Protection of Birds (RSPB) Nature Reserve (BTO WeBS Location Code 51003).
Yorkshire Red Kites[65]	Public sightings of red kite 2018 - 2019	Online sighting map.
York Ornithological Club[66]	Bird Report 2019	Systematic report of all bird records in 2019.
Yorkshire Naturalists Union[67]	Yorkshire Bird Report 2015	Systematic report of all bird records in 2015.

Survey work

8.4.6 Contemporary survey data from field surveys (undertaken between February 2021 and September 2022) has been used to inform the ES. The parameters for these field surveys as outlined in **Table 8.8** are based on the results of the desk study, industry guidance and comments received during statutory and ongoing consultation. All surveys were undertaken in the appropriate season according to respective best practice guidelines unless stated otherwise. Where there are any outstanding data requirements, this is stated.

[64] European Commission (2007). Council regulation (EC) No 1100/2007 of 18 September 2007 establishing measures for the recovery of the stock of European eel. (online) Available at: [redacted] (Accessed October 2022).
[65] Yorkshire Red Kites (2020) Yorkshire Red Kites. (online) (Accessed 4 August 2022).
[66] York Ornithological Club (2021). York Ornithological Club. (online) (Accessed 4 August 2022).
[67] Yorkshire Naturalist Union (2020). Yorkshire Naturalist Union - Birds. (online) (Accessed 4 August 2022).

Table 8.8 – Surveys for biodiversity assessment

Survey	Summary	Survey area	Survey dates
Extended Phase 1 habitat survey	Habitats were classified and mapped in accordance with best practice[68]. As the standard Phase 1 habitat survey methodology is, in the main, concerned only with vegetation communities, the survey is being 'extended' to allow for the provision of information on other ecological features, particularly to identify the presence/ potential presence of legally protected species. In addition, habitats were mapped in accordance with UK Habitats Classification methodology and the condition criteria provided in the technical guidance that accompanies Biodiversity Metric 3.1[69,70].	Land within the Order Limits and a buffer of 50m[71].	An estimated 89% of land within the Order Limits and 50m buffer was surveyed as access became available during: May – August 2021; March 2022; and June – July 2022. The remaining land within the survey area was assessed using the alternative approach outlined in **Section 8.1**.
Hedgerow Regulations – preliminary survey	An initial assessment of hedgerows was undertaken during the extended Phase 1 habitat survey to identify those hedgerows with potential to be classified as 'important' under the Hedgerows Regulations 1997[16].	Initial assessment: Land within the Order Limits and a buffer of 50m[68].	Initial assessment was undertaken concurrently with the extended Phase 1 habitat survey (see dates above). Detailed hedgerow assessments are ongoing and will be assessed using the survey approach outlined in **Section 8.1**.

[68] Joint Nature Conservation Committee (JNCC) (2010). Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit (online) Available at: https://hub.jncc.gov.uk/assets/9578d07b-e018-4c66-9c1b-47110f14df2a (Accessed 4 August 2022).
[69] Natural England (2022). The Biodiversity Metric 3.1: Auditing and accounting for biodiversity; Calculation Tool. (online) (Accessed 4 August 2022).
[70] Field data was gathered in accordance with Biodiversity Metric 2.0 as this was the most up to date version when surveys commenced. Data was later modified to enable final calculations to be made using the updated Biodiversity Metric 3.1 (published April 2022).
[71] The buffer accounts for the potential for ecological features occurring outside of the Order Limits to be impacted by the Project (for example rest sites of species such as otter and badger which could potentially be indirectly disturbed by distant activities).

Survey	Summary	Survey area	Survey dates
Ancient and Veteran Tree assessments	An Arboricultural survey was carried out to BS5837 and as part of this survey trees with veteran or ancient characteristics were evaluated. As there is no universal definition or system of classification for veteran trees, professional judgement was used to record potentially veteran trees where they are at least of a mature life stage for the species and where significant veteran features such as extensive and long lasting decay are present. Potential ancient status is based on girth for the species with reference to the Ancient Tree Forum guidance tables.	Detailed surveys focus on trees within the arboriculture Study Area (see **Arboricultural Impact Assessment, Volume 5, Document 5.3.3I**) which includes all areas of the Project where trees are at risk of impact[72].	An estimated 89% of land within the Order Limits has been surveyed between: August 2021 – August 2022 Where trees were inaccessible (e.g. due to land access, topography or dense vegetation restrictions) they have been assessed from the nearest feasible vantage point. Where trees have not been visible from adjacent accessible areas tree features have been evaluated via aerial imagery, LiDAR based tree mapping and other available information sources to allow an estimate of quality and dimensions as detailed in **Arboricultural Impact Assessment, Volume 5, Document 5.3.3I**.
Bats – roosting (trees)[73]	Preliminary ground level roost assessments were carried out on trees considered likely to be affected by the Project in accordance with best practice[74].	Trees likely to be subject to direct effects within the Order Limits[76].	Preliminary ground level roost assessments were carried out: May – June 2022.

[72] This has been determined following the design review process and with guidance from National Grid. This includes areas for reconductoring where tree coppicing, removal or pruning may be required.

[73] No buildings or structures will be impacted by the Project and as such no surveys have been required to inform the assessment within this chapter.

[74] Bat Conservation Trust (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition. (online) (Accessed 4 August 2021).

[76] In view of the limited potential for indirect effects due to the nature of the project and embedded mitigation measure, tree roost inspection surveys were limited to those trees with potential for direct effects (e.g. felling, pollarding, coppicing or other management).

Survey	Summary	Survey area	Survey dates
	Following this, aerial inspection surveys were carried out on those trees assessed during the ground level roost assessment as having Moderate of High suitability to support roosting bats. Two aerial inspection surveys were conducted of 43 trees during the July and August. A single aerial inspection survey was conducted at 11 trees during the September climbs[75].		Tree climbing inspections were carried out: July – September 2022. At the point of writing, preliminary ground level roost assessments and tree climbing surveys are ongoing over winter 2022/23 and of the surveys will be provided during the DCO examination phase. However, this does not represent a significant constraint on the assessment of likely effects as outlined in **Section 8.1**.
Bats – foraging and commuting	In accordance with best practice[74], monthly bat activity surveys were carried out. These comprised: Manual walked transects at four locations; and static detector recording of bat activity at 14 locations.	Surveys were undertaken within the Order Limits and adjacent land at locations where proposed construction works have the potential to affect optimal habitat or important linking features.	Activity transect surveys were undertaken September/October 2021 and April to September 2022 subject to access. Five consecutive nights per month of automated monitoring data was analysed from each static detector between September 2021 and September 2022 with the aim of obtaining results for seven months (April to October) at each location. The availability of data for analysis was subject to monthly access to

[75] In the absence of defined methodology for tree climbing roost inspections, two climbs were conducted initially to maximise opportunities for roost detection. However, as no confirmed evidence of roost occupation was identified during any climbs during the period July to August, and as there was minimal change in roost suitability categorisation between the first and second climbs (only one tree had increased suitability from moderate to high due to removal of nesting material in cavity between climbs), a single inspection climb was carried out at remaining trees during September in the interests of taking a robust and pragmatic approach.

Survey	Summary	Survey area	Survey dates
			change batteries and download data/equipment performance. Data gaps have been detailed in the **Bat Survey Report, Volume 5, Document 5.3.8H**. However, these do not represent a significant constraint on the assessment of likely effects as outlined in **Sections 8.1** and **8.9**.
Great crested newts	District Level Licensing (DLL)[77] is employed on the Project for great crested newts. In line with Natural England and DEFRA guidance[78] a detailed assessment of great crested newts is not required in EIA. However, prior to confirmation of the DLL approach, Habitat Suitability Index (HSI) assessments[79] were undertaken to determine likely suitability of ponds and ditches for great crested newts. eDNA surveys[80] were undertaken at two ponds liable to direct impact (destruction/ damage) as a result of the Project.	HSI assessments: Ponds and ditches within 250m of the Order Limits[57]. eDNA: Ponds within footprint of the proposed Overton Substation that will be impacted by the works.	eDNA: Ponds within footprint of the proposed Overton Substation that will be impacted by the works. HSI assessments were undertaken concurrently with the extended Phase 1 habitat survey (see dates above). eDNA surveys were undertaken at P60 and P61 June 2021.

[77] Natural England and DEFRA (2022). Great crested newts: district level licensing schemes for developers and ecologists (online) Available at: https://www.gov.uk/government/publications/great-crested-newts-district-level-licensing-schemes-for-developers (Accessed 02 September 2022).
[78] Natural England and DEFRA (25 July 2022) Great crested newts: district level licensing for local planning authorities (online) Available at: https://www.gov.uk/guidance/great-crested-newts-district-level-licensing-for-local-planning-authorities (Accessed 23 August 2022).
[79] Oldham, R. S., Keeble, J., Swan, M. J. S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (Triturus cristatus). Herpetological Journal Vol 10 pp143-155.
[80] eDNA analysis is a technique using laboratory analysis of water samples collected from suitable water bodies to detect eDNA of great crested newts, and thus determine presence or likely absence of this species.

Survey	Summary	Survey area	Survey dates
HSI assessments: Ponds and ditches within 250m of the Order Limits.			
Otter	The suitability of watercourses and ditches for otter was determined during the desk study and extended Phase 1 habitat survey. Presence/likely absence otter surveys searching for holts and other resting sites/signs of activity was undertaken in line with best practice guidance[81].	Habitat suitability assessments: watercourses and ditches within the Order Limits and a buffer of 50m. Presence/likely absence surveys: stretches of suitable watercourses and ditches within and up to 100m up and downstream of the Order Limits where watercourse/ditch crossings or potentially disturbing bankside construction works are proposed82.	Habitat suitability assessments were undertaken concurrently with the extended Phase 1 habitat survey (see dates above). Presence/likely absence surveys were undertaken: May – July 2022.
Water vole	The suitability of watercourses, ditches and ponds for water vole was determined during the desk study and extended Phase 1 habitat survey. Water vole presence/likely absence surveys were undertaken to search for latrines, burrows and other signs of activity in line with best practice guidance[83].	Habitat suitability assessments: watercourses, ditches and ponds within the Order Limits and a buffer of 50m. Presence/likely absence surveys: stretches of suitable watercourses/ditches within	Habitat suitability assessments were undertaken concurrently with the extended Phase 1 habitat survey (see dates above). Presence/likely absence surveys were undertaken:

[81] Chanin, P. (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.
[82] The Zone of Influence for fragmentation/disturbance effects on otter is up to a maximum of 200m from the construction/operational works as detailed in the Scoping of Assessment Summary Document 5.3.8A, Volume 5. Given the nature of the final Project design (which minimises in-channel works and incorporates embedded environmental measures) a survey area comprising 100m up/downstream of construction/operational works along suitable watercourses and a 50m buffer of suitable terrestrial habitat is proportionate and sufficient to assess the potential effects of the Project on otter.
[83] Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016) The Water Vole Mitigation Handbook (Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. Mammal Society, London

Survey	Summary	Survey area	Survey dates
		and up to 100m up and downstream of the Order Limits where watercourse/ditch crossings are proposed or construction works are proposed within 10m of bank top; and the banks of suitable ponds located within 10m of potentially disturbing construction works[84].	Two surveys[85] undertaken at each watercourse; Visit 1: mid-April to June 2022 (subject to access); Visit 2: July 2022 with surveys at least two months apart where possible[86].
Reptiles	The suitability of habitat for reptiles was determined during the desk study and extended Phase 1 habitat survey. The requirement for reptile presence/ likely absence surveys was considered based on the habitat types present and the developing Project design. Based on the limited potential for impacts on reptiles, further surveys were not required.	Initial assessment: Land within the Order Limits and a buffer of 50m[68].	Initial assessment was undertaken concurrently with the extended Phase 1 habitat survey (see dates above). In view of the predominantly agricultural habitat present, proposed embedded measures and the nature of the works, presence/likely absence reptile surveys were not required. This approach was agreed during meetings with the Yorkshire Wildlife Trust on the

[84] Best practice survey guidance (Dean *et a*l, 2016) recommends that for small scale works affecting up to 15m of watercourse, surveys should extend 100m up and down stream of affected sections, or 100-200m for works with permanent impacts affecting 15-50m of watercourse, or 200m for works temporarily affecting up to 50m of watercourse. Due to the nature of the Project whereby impacts to watercourses are limited (see **Section 8.9**), a 100m survey length up and down stream of the affected area (e.g. temporary culverts) is proportionate.
[85] Unless one survey deemed sufficient in line with best practice guidance (Dean *et al*, 2016).
[86] See **Section 8.1** for survey limitations.

Survey	Summary	Survey area	Survey dates
			27 April 2022[87] and North Yorkshire County Council on 28 March 2022[42].
Badger	Badger surveys were undertaken in conjunction with the extended Phase 1 habitat survey at suitable habitat (typically woodland, scrub, hedgerows, tall ruderal and dry ditch banks). Surveys focussed on identifying setts and other evidence of activity in line with best practice guidance[88].	Land within the Order Limits and a buffer of 50m[68].	Surveys were undertaken concurrently with the extended Phase 1 habitat survey (see dates above).
Fish	The suitability of watercourses for notable fish populations was determined during the desk study and extended Phase 1 habitat survey. The requirement for targeted fish surveys was considered based on the suitability of water courses and the developing Project design. Based on the limited potential for impacts on fish, further surveys were not required.	Initial assessment: Land within the Order Limits and a buffer of 50m[68].	Initial assessment was undertaken concurrently with the extended Phase 1 habitat survey (see dates above). Given that the majority of water courses were considered suboptimal for fish species and due to the proposed embedded measures, targeted fish surveys were not required. This approach was agreed during meetings with the Yorkshire Wildlife Trust on the 27 April 2022[87] and North Yorkshire County Council on 28 March 2022[45].
Invertebrates	The potential of habitats to support notable or diverse invertebrate species/assemblages was determined during the desk study and extended Phase 1 habitat survey. The need for targeted invertebrate surveys, including within riparian habitat along the River Ouse	Initial assessment: Land within the Order Limits and a buffer up to 50m[68].	Initial assessment was undertaken concurrently with the extended Phase 1 habitat survey (see dates above). In view of the predominantly agricultural habitat present, proposed

[87] Meeting held by Jo Mosley (Wood), Sue Birnie (Wood), Colin Ormston (Wood), Ellen Milner (Yorkshire Wildlife Trust) and Jonathon Leadley (Yorkshire Wildlife Trust).
[88] Scottish Natural Heritage (2003) Best Practice Guidance – Badger Surveys. Inverness Badger Survey 2003. Commissioned Report No. 096.

Survey	Summary	Survey area	Survey dates
	for the SPI tansy beetle was considered with reference to best practice guidance[89], and based on the developing Project design. Based on the limited potential for impacts on invertebrates, and the large body of recent survey data available for tansy beetle[90], further surveys were not required.		embedded measures and the nature of the works, targeted invertebrate surveys were not required. This approach was agreed during meetings with the Yorkshire Wildlife Trust on the 27 April 2022[83] and North Yorkshire County Council on 28 March 2022[45].
Schedule 1 breeding birds	Walkover surveys were targeted in areas of suitable habitat for Schedule 1 breeding bird species such as kingfisher (*Alcedo atthis*), barn owl (*Tyto alba*), red kite (*Milvus milvus*) and peregrine (*Falco peregrinus*) in accordance with best practice guidance[91,92,93].	Land within the Order Limits where direct land take or indirect effects may occur and a buffer up to 500m[89,94,95]	Monthly surveys were undertaken April to August 2022.
Winter bird walkover surveys	Walked transect surveys were undertaken during which evidence of field use, distribution and abundance of wintering birds was recorded.	Transects along public highways and public rights of way (PRoWs) at two key areas of new infrastructure within the	February to March 2021 and October 2021 to March 2022.

[89] Natural England (2007). Research Report NERR005: Surveying terrestrial and freshwater invertebrates for conservation evaluation. (online) (Accessed 11 August 2021).
[90] Recent annual survey data obtained from The Species Recovery Trust (see **Section 8.5**) and requirement for targeted surveys discounted in discussion with North Yorkshire County Council (see **Table 8.5**).
[91] Gilbert, G., Gibbons, D.W., and Evans, J. (1998). Bird Monitoring Methods: a manual of techniques for key UK species. The Royal Society for the protection of Birds; Sandy, Bedfordshire, England.
[92] Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. and Thompson, D. (2013). Raptors: a field guide to survey and monitoring. Stationary Office; London.
[93] Shawyer, C. (2012). Barn owl *Tyto alba* Survey Methodology and techniques for use in Ecological Assessment. Wildlife Conservation Partnership; Wheathampstead, St Albans.
[94] Currie, F. & Elliott, G. (1997). Forests and Birds: a guide to managing forests for rare birds. RSPB/Forestry Authority; London.
[95] Ruddock, M. & Whitfield, D. P. (2007). A Review of Disturbance Distances in Selected Bird Species. A report from Natural Research (Projects) Ltd to Scottish Natural Heritage. Natural Research (Projects) Ltd; Banchory

Survey	Summary	Survey area	Survey dates
		Order Limits: Section B and Section F.	

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8.5 Overall baseline

Current baseline

Statutory biodiversity sites

8.5.1 The desk study has identified one Ramsar Site, one SPA and eight SSSIs within the Study Area, as outlined in **Table 8.** and illustrated on **Figure 8.1, Volume 5, Document 5.4.8**. None of the sites identified fall within the Order Limits.

8.5.2 It should be noted that the River Derwent is designated as both a SAC and SSSI. The SSSI is included within **Table 8.** as it lies within the ZoI (and hence the desk study area of search) for the Project, i.e. it is a nationally designated site with ornithological interest features within 10km of the Order Limits. However, the SAC has been scoped out of the EIA as it lies outside the ZoI (and hence the desk Study Area of search), i.e. it is a European site which is located more than 2km from the Order Limits and does not include bat or ornithological interest features. Furthermore, the Order Limits lie outside the River Derwent catchment, which negates any risk of pollution/disturbance effects on the Annex 1 habitat[96] for which the SAC is designated. Although the SAC does include mobile interest features (bullhead, river lamprey, sea lamprey and otter) which may also use the River Ouse, the potential for effects on these features is negligible in view of the embedded environmental measures to protect surface waters from pollution (see **Section 8.6**; also see **Chapter 9: Hydrology, Volume 5, Document 5.2.9**).

Table 8.9 - Current baseline – statutory biodiversity sites within Study Area

Site Name	Designated Feature Summary	Approximate distance and Direction from the Order Limits
Lower Derwent Valley Ramsar	• Criterion 1: Species-rich alluvial flood meadow habitat which plays a substantial role in the hydrological and ecological functioning of the Humber Basin. • Criterion 2: A rich assemblage of wetland invertebrates including 16 species of dragonfly and damselfly, 15 British Red Data Book wetland invertebrates and a leafhopper *Cicadula ornata* for which Lower Derwent Valley is the only known site in Great Britain. • Criterion 4: The site qualifies as a staging post for passage birds in spring, with nationally important	6.22km east of Section A

[96] Annex I habitat: Water courses of plain to montane levels with *Ranunculion fluitantis* and *Callitricho Batrachion* vegetation. (Rivers with floating vegetation often dominated by water crowfoot).

Site Name	Designated Feature Summary	Approximate distance and Direction from the Order Limits
	numbers of ruff (*Calidris pugnax*) and whimbrel (*Numenius phaeopus*). • Criterion 5: Winter waterfowl assemblage of international importance. • Criterion 6: Peak winter counts of: – wigeon (*Mareca penelope*); and – teal (*Anas crecca*).	
Lower Derwent Valley SPA	• The site qualifies under Article 4.1 by regularly supporting nationally important numbers during the non-breeding season for: – Bewick's swan (*Cygnus columbianus*); – Ruff; – golden plover (*Pluvialis apricaria*); – teal; and – wigeon. • The site also qualifies under Article 4.2 by regularly supporting a breeding population of: – shoveler (*Spatula clypeata*). • The site also qualifies under Article 4.2 by regularly supporting a waterfowl assemblage including: Bewick's swan, wigeon, teal, golden plover and ruff.	~6.19km east of Section A
Sherburn Willows SSSI[97]	• CG3 – Upright brome (*Bromus erectus*) lowland calcareous grassland. • S25 – Common reed (*Phragmites australis*) – hemp-agrimony (*Eupatorium cannabinum*) tall-herb fen.	~0.65km south-east of Section E

[97] Includes ornithological interest within SSSI citation.

Site Name	Designated Feature Summary	Approximate distance and Direction from the Order Limits
	• S26 – Common reed – common nettle tall-herb fen.	
Madbanks and Ledsham Banks SSSI	• CG4 – Tor-grass (*Brachypodium pinnatum*) lowland calcareous grassland. • CG5 – *Upright brome – tor-grass* lowland calcareous grassland.	~0.87km south-west of Section E
Fairburn and Newton Ings SSSI	• Aggregations of non-breeding birds – Gadwall (*Mareca strepera*), mallard (*Anas platyrhynchos*), shoveler, whooper swan (*Cygnus cygnus*). • M23 – Soft rush (*Juncus effusus*)/sharp flowered rush (*Juncus acutiflorus*) – marsh bedstraw (*Galium palustre*) rush pasture. • MG13 – Creeping bent (*Agrostis stolonifera*) – marsh foxtail (*Alopecurus geniculatus*) grassland. • S12 – Bulrush (*Typha latifolia*) swamp. • S14 – Branched bur-reed (*Sparganium erectum*) swamp. • S20 – Common club-rush (*Scirpus lacustris* ssp. *Tabernaemontani*) swamp–. • S4 - Common reed swamp and reed-beds. • S5 – Reed sweet grass (*Glyceria maxima*) swamp. • Variety of breeding bird species (70). • W1 – Grey willow (*Salix cinerea*) – marsh bedstraw woodland– • W16 - *Oak* spp.-birch spp.- wavy hair-grass (*Deschampsia flexuosa)* woodland.	~1.79km south-west of Section F

Site Name	Designated Feature Summary	Approximate distance and Direction from the Order Limits
Stutton Ings SSSI	• M22 – blunt-flowered rush (*Juncus subnodulosus*) – marsh thistle *(Cirsium palustre*) fen meadow. • S7 – Lesser pond sedge (*Carex acutiformis*) swamp.	~1.99km south-east of Section D
Heslington Tillmire SSSI	• Assemblages of breeding birds - Lowland damp grasslands. • M24 – Purple moor-grass (*Molinia caerulea*) – meadow thistle (*Cirsium dissectum*) fen meadow. • S27 – Bottle sedge (*Carex rostrata*) – marsh cinquefoil (*Potentilla palustris*) swamp.	~3.57km south of Section A
River Derwent SSSI	• Aggregations of non-breeding birds - Bewick's Swan. • Assemblages of breeding birds – Mixed. • Flowing waters - Type II: slow-flowing, naturally eutrophic lowland rivers, dominated by clays. • Invertebrate assemblage. • Otter. • Outstanding assemblage of native fish. • Outstanding dragonfly assemblage.	~5.79km east of Section A.
Derwent Ings SSSI	• Aggregations of breeding birds - Gadwall, garganey (*Spatula querquedula*), pochard (*Aythya ferina),* ruff, shoveler, tufted duck (*Aythya fuligula*). • Aggregations of non-breeding birds - Bewick's swan, golden plover, mallard, pochard, ruff, teal, whimbrel, and wigeon. • Assemblages of breeding birds - Lowland damp grasslands.	~7.63km south-east of Section A

Site Name	Designated Feature Summary	Approximate distance and Direction from the Order Limits
	• Invertebrate assemblage. • MG11 – red fescue (*Festuca rubra*) – creeping bent – silverweed (*Potentilla anserina*) grassland. • MG13 – Creeping bent – marsh foxtail grassland. • MG4 – Meadow foxtail – great burnet grassland. • MG8 – crested dog's-tail – marsh marigold grassland. • Outstanding dragonfly assemblage. • S28 – Reed canary grass tall-herb fen. • S5 – Reed sweet grass swamp. • Vascular plant assemblage.	
Melbourne and Thornton Ings SSSI	• Aggregations of breeding birds - gadwall, garganey and pintail (*Anas acuta*). • Aggregations of non-breeding birds - Bewick's swan, teal, and wigeon. • M22 – Blunt-flowered rush – marsh thistle fen meadow. • M23 – Soft rush/sharp flowered rush – marsh bedstraw rush pasture. • M27 - meadowsweet – wild angelica (*Angelica sylvestris*) mire. • MG13 – Creeping bent – marsh foxtail grassland. • MG8 – crested dog's-tail – marsh marigold grassland. • Otter. • Outstanding dragonfly assemblage.	~9.64km south-east of Section A

Site Name	Designated Feature Summary	Approximate distance and Direction from the Order Limits
	• S28 – Reed canary grass tall-herb fen. • S5 – Reed sweet grass swamp. • Variety of breeding bird species (70). • Variety of wintering bird species (90). • W6 – Black alder (*Alnus glutinosa*) – *common nettle* woodland. • W7 – Black alder – ash (*Fraxinus excelsior*) – yellow pimpernel *(Lysimachia nemorum*) woodland.	

Non-statutory biodiversity sites

8.5.3 The desk study identified 44 non-statutory biodiversity sites in or within 2km of the Order Limits comprising four LWS, two SEI, 30 SINCs, and eight candidate SINCs. Of these, two sites are located fully or partially within the Order Limits, with a further five sites within approximately100m.

8.5.4 A further 27 deleted[98] SINCs have also been identified inside or within 2km of the Order Limits, of which two are located partially within the Order Limits. Deleted SINCs are included in this assessment on a precautionary basis as although they no longer qualify against the SINC selection guidelines following the most recent botanical survey and assessment process, they may still have value for wildlife, and it may be possible to enhance deleted SINCs with appropriate management to return the site condition to a level which meets the SINC qualifying criteria[99].

8.5.5 Three Yorkshire Wildlife Trust (YWT) reserves (Ledsham Bank, Moorlands and Sherburn Willows) and one RSPB reserve (Fairburn Ings; parts of which are also designated as Fairburn and Newton Ings SSSI), have also been identified within the area of search; none are located within the Order Limits.

8.5.6 All non-statutory biodiversity sites located in or within 2km of the Order Limits are shown on **Figure 8.1, Volume 5, Document 5.4.8 5**. **Table 8.** provides information on the non-statutory biodiversity sites that are located within the Order Limits. Details of the remaining sites which lie outside the Order Limits are supplied in **Extended Phase 1 Habitat survey Report, Volume 5, Document 5.3.8B**.

[98] Deleted SINCs in North Yorkshire are former SINCs which have been assessed against the SINC selection guidelines by the North Yorkshire SINC panel and found not to qualify, though they are still likely to be of higher ecological quality than other land in the area.
[99] As stated by North & East Yorkshire Ecological Data Centre, data search 08 July 2021.

Table 8.10 - Current baseline – non-statutory biodiversity sites within the Order Limits

Site name	Interest feature summary based on citation
Overton Borrow Pits SINC	• The site comprises two linear borrow pits. • The eastern pit is fringed by false-oat grassland and dense scrub, with species-rich fen meadow on the pit floor. • The pit to the west is dominated by dense grey sallow scrub with species-poor grassland on the periphery. There is a small area of fen-meadow which supports fleabane, marsh orchids and sedges.
River Ouse candidate SINC	• The river is designated for migratory fish including Atlantic salmon, sea and river lamprey and eel. • The river is also known to support otter. • The river is likely to provide an important foraging resource for local bat populations including Daubenton's, noctule and pipistrelle breeding roosts within York city. • The river and its banks support several nationally uncommon riverine invertebrates the riparian zone is nationally important for tansy beetle.
Field nr Healaugh Manor Farm deleted SINC	• This site is bordered by a plantation of coniferous species (Scots Pine) with occasional deciduous species (crack willow, hawthorn, elder). • The predominant herb layer comprises tall neutral grassland and equates to MG1. • A dyke transverses the site and snowberry forms local enclaves.
Disused Quarry, Newthorpe deleted SINC	• Disused magnesium limestone quarry filled with dense scrub supressing calcareous flora. • The scrub consists of ash, hawthorn, elder and blackthorn. • There are only a few remnants of calcareous flora such as tor grass and upright brome found on grassy banks.

Habitats

8.5.7 The distribution of habitat types recorded within the Order Limits and 50m buffer is shown on **Figure 8.4, Volume 5, Document 5.4.8**. The broad habitat types identified include:

- woodland (broadleaved semi-natural, broadleaved plantation, mixed plantation and coniferous plantation);
- grassland (amenity, improved, poor semi-improved, neutral semi-improved, and marshy grassland);
- hedgerows;
- standing water (ponds/wet ditches);
- running water (rivers, streams and ditches);
- ditches (dry);
- scrub (dense and scattered);
- arable;
- ephemeral/short perennial; and
- other habitats (including tall ruderal; introduced shrub; scattered trees; fences; bare ground; hardstanding/tarmac; buildings).

Habitats of Principal Importance/ancient woodland

8.5.8 The desk study identified eight HPI or other conservation-notable habitat types either inside or within 2km of the Order Limits (**Figure 8.2, Volume 5, Document 5.4.8**):

- deciduous woodland (present within the Order Limits);
- traditional orchard (present within the Order Limits);
- coastal and floodplain grazing marsh (present within the Order Limits);
- lowland fens (present within the Order Limits);
- open mosaic habitats on previously developed land[100] (closest approximately18m south-east of the Order Limits);
- lowland calcareous grassland (closest approximately0.85km south-east of the Order limits); and
- wood pasture and parkland (closest approximately1.18km north of the Order limits).

8.5.9 The desk study also identified the presence of several parcels of ancient woodland, including Huddleston Old Wood, the southern boundary of which falls just inside the Order Limits and Overton Wood which lies approximately 18m to the west of the Order Limits, along with additional parcels of woodland within the wider Study Area (**Figure 8.2, Volume 5, Document 5.4.8**).

8.5.10 In addition to the habitats recorded on the Priority Habitat Inventory, several other HPI habitat types were recorded during the field survey, namely ponds, hedgerows and arable field margins.

8.5.11 Although traditional orchard HPI was identified within the Order Limits during the desk study, it was found not to be present on the ground during the extended Phase 1 habitat survey and has therefore been scoped out of this assessment.

[100] Dataset for open mosaic habitat on previously developed land on MAGIC is draft status.

8.5.12 According to the desk study, small parcels of mire/fen habitat (shown as lowland fen HPI on MAGIC) were noted to be present within the Order Limits at Overton Borrowpits SINC, and larger areas adjacent to the Order Limits at Healaugh Priory Marsh deleted SINC. The presence of HPI habitat cannot be ruled out at Healaugh Priory Marsh deleted SINC (outside the Order Limits) due to limited access, but the extended Phase 1 habitat survey results indicate that the HPI habitat has degraded at these locations. Habitat degradation was also reported in the citation for Healaugh Priory Marsh deleted SINC dated 2005[101] due to drying out (hence its deletion as a SINC), and therefore it is unlikely that habitat which fulfils the criteria for lowland fen HPI remains. As such, and as Healaugh Priory Marsh deleted SINC lies outside the ZoI for the Project, lowland fen HPI is scoped out of further consideration in this assessment.

8.5.13 HPIs open mosaic habitat on previously developed land, lowland calcareous grassland, and wood pasture and parkland are all scoped out of this assessment as although identified during the desk study as being present within the Study Area, they have not been recorded during the extended Phase 1 habitat survey within the Order Limits and are outside the ZoI for the Project.

8.5.14 The following HPIs remain scoped into the assessment process given that they have been identified within the survey area and the potential for effects on these habitats are assessed within Section 8.9 as follows:

- deciduous woodland (assessed with broad-leaved semi-natural woodland);
- coastal and floodplain grazing marsh;
- hedgerows;
- arable field margins; and
- ponds (assessed with standing water - ponds and wet ditches).

Woodland

8.5.15 A variety of woodland types have been identified during the extended Phase 1 habitat survey comprising:

- broadleaved semi-natural woodland;
- broadleaved plantation woodland;
- mixed plantation woodland; and
- coniferous plantation woodland.

8.5.16 Parcels of broadleaved semi-natural woodland dominated by semi-mature and mature trees exist throughout land within the Order Limits and 50m buffer, and typically comprise a range of species including ash, oak (*Quercus sp*.), willow (*Salix* sp*.),* sycamore (*Acer pseudoplatanus*), horse chestnut (*Aesculus hippocastanum*) and beech (*Fagus sylvatica*). Shrub layers include hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*), holly (*Ilex aquifolium*), field maple (*Acer campestre*), and hazel

[101] As The NVC match programme matches the sampled vegetation with M27 *Filipendula ulmaria – Angelica sylvestris* mire, but this habitat is being progressively degraded here and is in an intermediate stage of drying out, which is indicated by the progressive colonisation of *Epilobium hirsutum* and *Urtica dioica* and the apparent lack of any true wetland species. The proximity of the scrub woodland also indicates that the water table will progressively be lowered and new young scrub willow is likely to invade

(*Corylus avellana*). Ground flora diversity is generally low with bramble (*Rubus fruticosus agg*.), common nettle and Himalayan balsam *(Impatiens glandulifera*) often present, along with wood avens (*Geum urbanum*), bluebells (*Hyacinthoides non-scripta*), dog's mercury (*Mercurialis perennis*) and cleavers (*Galium aparine*) in some parcels.

8.5.17 Parcels of land with immature and semi-mature broadleaved plantation woodland are also present scattered throughout the survey area, the majority of which are small to moderate sized. Roadside plantations inaccessible on health and safety grounds (i.e. separated by major roads with no safe access) were viewed from adjacent land and noted to comprise predominantly broadleaved species. Plantation woodlands are also present along steep roadside verges.

8.5.18 Mixed plantation woodland is located around the edge of Field nr Healaugh Manor Farm deleted SINC and in several other locations throughout the survey area. Coniferous trees are typically Scots pine (*Pinus sylvestris*), with broadleaved trees including ash, oak, silver birch (*Betula pendula*) and sycamore. A shrubby layer is usually present within the mixed plantation woodlands, species typically include hawthorn, blackthorn (*Prunus spinosa*), elder, field maple and willow.

8.5.19 There are several areas of coniferous plantation woodland within the survey area, including a Christmas tree farm which will undergo regular felling.

8.5.20 Based on the results of the desk study and extended Phase 1 habitat survey, all 1.50ha of broadleaved semi-natural woodland within the Order Limits is considered to qualify as lowland mixed deciduous woodland HPI as a precaution.

8.5.21 Approximately 1.68ha of ancient woodland has been identified within the Order Limits and 50m buffer in the desk study consisting of four different woodlands: Overton Wood (ancient replanted woodland), Redhouse Wood (ancient replanted woodland), Shire Oaks (ancient and semi-natural woodland) and Huddleston Old Wood (ancient replanted woodland). Of this, less than 0.01ha of Huddleston Old Wood is within the Order Limits. The presence of veteran/ancient trees within the Order Limits was also recorded during the arboriculture survey (see **Arboricultural Impact Assessment, Volume 5, Document 5.3.3l**). A total of 12 veteran trees were identified within the Order Limits, of which nine are potentially ancient.

Grassland

8.5.22 Grassland types identified during the extended Phase 1 habitat survey include semi-improved neutral grassland, poor semi-improved grassland, improved grassland, marshy grassland and amenity grassland.

8.5.23 HPI coastal and floodplain grazing marsh has been identified during the desk study within the Order Limits at two locations, namely adjacent to the proposed access route for pylon XC462 and the span between pylons XC471 - XC472. Habitat at the first location was confirmed as arable during the extended Phase 1 habitat survey. Habitat at the second location had been partially mowed to a short sward at the time of survey. As the area is located within flood zone 3 of the River Wharfe floodplain Environment Agency flood map[102], and as historic aerial imagery shows livestock on the land[103], the area is classed as HPI habitat as a precaution.

[102] Environment Agency (2022). Get flood risk information for planning in England (online). Available at: https://flood-map-for-planning.service.gov.uk/ (Accessed 13 July 2022)
[103] Google (2022). Google Earth (online) (Accessed 13 July 2022)

8.5.24 The majority of grasslands subject to the extended Phase 1 habitat survey were species-poor. Poor semi-improved grassland fields occur throughout the survey area. These are associated largely with pasture fields that have not been managed to the extent that they are assessed as 'improved'. Although the majority of fields comprise perennial rye-grass (*Lolium perenne*), they also commonly contain grasses such as cocksfoot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus)*, bent (*Agrostis sp*.), false oat-grass (*Arrhenatherum elatius*), and barren and soft brome (*Bromus sterilis* and *Bromus hordeaceus*). This habitat contains a low diversity and abundance of forbs, with species typically including buttercup (*Ranunculus sp*.), clover (*Trifolium sp*.), dock (*Rumex spp*.), black medic (*Medicago lupulina*), creeping thistle (*Cirsium arvense*), and patches of common nettle. In some instances these strips of grassland are used as access tracks.

8.5.25 Poor semi-improved grassland is also commonly associated with arable field margins and at the base of hedgerows, usually with a higher proportion of tall ruderal species present such as common nettle, hogweed (*Heracleum sphondylium*), creeping and spear thistle (*Cirsium vulgare*), hemlock (*Conium maculatum*) and cow parsley (*Anthriscus sylvestris*).

8.5.26 Areas of neutral semi-improved grassland with a higher diversity of grasses and wildflowers exist in localised patches including an open area surrounding a pond (P85) in Overton Borrowpits SINC, within Field nr Healaugh Manor Farm deleted SINC, Moor Lane, Stutton Verges candidate SINC and to the north of XC498 around Cock Beck (W12). These areas contain a range of species such as Yorkshire fog, false oat-grass, fescues (*Festuca spp*.), bents, cocksfoot, sedges, and limited perennial rye-grass, with buttercup, vetches, ribwort plantain (*Plantago lanceolata*), hogweed, stichwort (*Stellaria spp*.), black medick, red clover, broad-leaved dock, creeping cinquefoil (*Potentilla reptans*), orchids, and occasional meadowsweet (*Filipendula ulmaria*). An area to the north of Cock Beck (W12) and east of XC496 and XC497 is identified as 'good quality grassland' non-priority habitat on MAGIC; however, following the extended Phase 1 habitat survey, large parts of this area are classed as poor semi-improved grassland, although an area immediately adjacent to Cock Beck (W12) is representative of neutral semi-improved grassland.

8.5.27 Areas with a moderately diverse grass assemblage and low abundance of perennial rye-grass (and therefore classified as semi-improved neutral rather than poor semi-improved grassland), but with a reduced diversity of wildflowers are also located within the survey area.

8.5.28 Marshy grassland is rare within the Order Limits and 50m buffer, being located predominately within Overton Borrowpits SINC and Healaugh Priory Marsh deleted SINC and in a field north of the River Ouse (W4). These areas contain extensive swathes of habitat dominated by species such as meadowsweet, reed canary grass, and yellow iris (*Iris pseudacorus*), with sedges and rushes also present.

8.5.29 Improved grassland is present within the Order Limits and 50m buffer associated with pasture fields, and sometimes field margins bordering arable land. Typically, the sward is dominated by perennial rye-grass with clover and occasional patches of common nettle and other common grasses such as cocksfoot and Yorkshire fog. There are localised patches of amenity grassland associated with residential areas, campsites and caravan parks present. These have regularly mown short swards with low diversity of common grass and herb species.

Hedgerows

8.5.30 Hedgerows are common throughout the Order Limits and 50m buffer as field boundaries. There is a mix of species-rich and species-poor hedgerows, intact and defunct hedgerows, and hedgerows with trees, all with varying levels of management.

8.5.31 Where hedgerows are classed as species-poor they are typically dominated by one or two native woody species, usually hawthorn or blackthorn. Within species-rich hedgerows, hawthorn and blackthorn are accompanied by other species such as elder, oak, dog rose, field maple, hazel, ash, sycamore, lime (*Tilia* x *europaea*), cherry (*Prunus avium*) and elm (*Ulmus minor*). Bramble is also present within most hedgerows.

8.5.32 Ground flora present along the base of the majority of hedgerows generally consists of poor semi-improved grassland and tall ruderal species that typically reflect the intensive agricultural practice within the adjacent fields; species include cocksfoot, perennial rye-grass, hogweed, cleavers, common nettle (*Urtica dioica*), cow parsley, ivy (*Hedera helix*), white deadnettle (*Lamium album*), hedge bindweed (*Calystegia sepium)*, and rosebay willowherb (*Chamaerion angustifolium*).

8.5.33 Similar hedgerows are present throughout the wider landscape, and there is typically connectivity into the surrounding area.

8.5.34 Approximately 85,202m of hedgerows have been mapped within the Order Limits during the extended Phase 1 habitat surveys, of which approximately 29,566m are located within the Order Limits. All native hedgerows over 20m in length, both species-rich and species-poor, are defined as HPI[104]; as a precaution it is therefore assumed that all hedgerows within the survey area qualify as HPI[105].

8.5.35 Of the hedgerows to be removed, approximately 90% are considered to be potentially important under the Hedgerow Regulations based on historic environment and/or biodiversity criteria. Surveys to confirm importance are ongoing (see **Section 8.1)** and results will be submitted as an addendum to this ES.

Standing water (ponds/wet ditches)

8.5.36 The desk study and extended Phase 1 habitat survey identified 69 ponds and 26 ditches holding standing water (no perceptible flow) within the Order Limits and 50m buffer; of these 26 ponds and 17 ditches holding standing water are present within the Order Limits. The ponds vary in shape and size, with the vast majority being less than a hectare in extent. As a precautionary measure all ponds are considered to fulfil the criteria for HPI[106] and are treated as such for the purpose of this assessment.

[104] JNCC (2016). UK Biodiversity Action Plan; Priority Habitat Descriptions: Hedgerows. (Online) Available at: https://data.jncc.gov.uk/data/ca179c55-3e9d-4e95-abd9-4edb2347c3b6/UKBAP-BAPHabitats-17-Hedgerows.pdf (Accessed 4 August 2022).

[105] The majority of hedgerows mapped during the extended Phase 1 habitat survey were able to be surveyed. A small number of hedgerows were mapped from distance (where access was not possible, or health and safety reasons prohibited survey). Where hedgerows could not be accessed they were therefore mapped based on adjacent hedgerows that could be surveyed, and are considered highly likely to be at least 80% of native origin and qualify as HPI.

[106] Ponds are all considered to be HPI as the criteria governing qualifications requires extensive data on the flora and fauna that inhabit them. This information is not available and hence a precautionary view has been taken.

Running water (rivers, streams and ditches)

8.5.37 The desk study and extended Phase 1 habitat survey identified 16 watercourses[107] within the Order Limits and 50m buffer (all of which bisect the Order Limits). Several major watercourses are present, principally the River Ouse (W4) (north-west of Nether Poppleton), the River Wharfe (W9) (north-west of Tadcaster, a tributary of the Ouse) and Cock Beck (W12) (north-west of Saxton, itself a tributary of the Wharfe). Also of note within the Order Limits are other watercourses which ultimately form tributaries of the River Ouse including Hurns Gutter (W3) and The Foss (W5). During the extended Phase 1 habitat survey a further ten ditches with running water were also recorded within the Order Limits and 50m buffer (of which six bisect the Order Limits).

Ditches (dry)

8.5.38 Nineteen dry ditches were identified within the Order Limits and 50m buffer during the extended Phase 1 habitat survey, of which ten bisect the Order Limits. Dry ditches are generally associated with field boundaries, along roads and within woodlands. Dry ditches were noted to support similar species to those in adjacent habitats (for example semi-improved grassland).

Arable

8.5.39 The dominant habitat type throughout the Order Limits and 50m buffer is arable. It is in various states of management and supports a variety of crops including corn and potato. Many arable fields in the Order Limits and 50m buffer had been recently planted at the time of survey. Fields are generally large creating open landscapes that are interspersed with ditches/hedgerows/scattered scrub, forming boundary features. Field margins are frequently no more than 1m wide, although occasionally they extend up to approximately 50m. The species recorded within arable field margins predominantly consists of poor semi-improved grassland and tall ruderal species, as described in association with hedgerows.

8.5.40 Arable field margin HPI[108] includes a variety of margin types that are managed specifically to benefit wildlife. The most relevant margin type to land within the survey area is "*Margins providing permanent, grass strips with mixtures of tussocky and fine-leaved grasses*." However, margins established as cross compliance requirements to protect hedgerows are excluded from HPI classification. MAGIC shows approximately 25% of the land within the Order Limits is under countryside or entry level/plus higher stewardship. Whilst the arable margins under these schemes may be more likely to be managed for wildlife, they could however be present for other reasons, such as for hedgerow protection. In addition, the species recorded within arable field margins are in the main indicative of poor semi-improved grassland and tall ruderal that typically reflect the intensive agricultural practice within the adjacent fields and that are widespread within the local area. Therefore, based on limited width, species composition and

[107] For ease of reference these are numbered W1 to W16 as detailed in the **Extended Phase 1 Habitat Survey Report**, **Volume 5, Document 5.3.8B**, and are not to be confused with WC1 to WC11 within **Chapter 9 Hydrology, Volume 5, Document 5.2.9**. The differences in numbering result from the requirement to identify individual watercourses and ditches to inform the biodiversity assessment as opposed to the identification of watercourses and ditch networks to inform the hydrology and flood risk assessment.

[108] JNCC (2016). UK Biodiversity Action Plan; Priority Habitat Descriptions: Arable field margins. (Online) Available at: https://data.jncc.gov.uk/data/529a621b-e1a6-4283-ba82-408744d079b4/UKBAP-BAPHabitats-02-ArableFieldMargins.pdf (Accessed 11 August 2021).

limitations due to cross-compliance requirements, it is likely that most arable margins within the survey area do not qualify as HPI.

8.5.41 However, there are several notable exceptions where wide margins with a range of species (for example cock's foot, crested dog's-tail, timothy grass, broad-leaved dock, clover, common birds-foot trefoil, spear thistle, yarrow, plantain sp., and poppy) are present, namely fields in which the following infrastructure is located/proposed:

- XC465 - up to ~40m wide and up to ~560m in length within the Order Limits and 50m buffer;
- XC497 - up to ~40m wide and up to 320m in length within the Order Limits and 50m buffer;
- SP007 - up to ~50m wide and up to ~510m in length within the Order Limits and 50m buffer;
- proposed pylon YN005 - up to ~40m wide and up to ~85m in length within the Order Limits and 50m buffer; and
- proposed pylon YN006 - up to ~15m wide and up to ~455m in length within the Order Limits and 50m buffer (also used for farm access).

8.5.42 Based on their dimensions and species present, as a precaution it is assumed these margins are managed for wildlife and are thus assumed to qualify as HPI. This equates to approximately 7ha of HPI arable field margins, of which approximately 2ha are located within the Order Limits.

Scrub – dense and scattered

8.5.43 Dense and scattered scrub is frequently present around the perimeter of agricultural/grassland field boundaries. There are also relatively extensive areas of dense scrub interspersed throughout the survey area, particularly in association with disturbed habitats such as existing and former quarries. Scrub species include bramble, hawthorn, blackthorn and elder. Buddleia (*Buddleja davidii*) is common at Jackdaw Quarry.

Ephemeral/short perennial

8.5.44 The extended Phase 1 habitat survey identified ephemeral/short perennial vegetation occupying patches of exposed ballast along the railways and within active and disused quarries, including Jackdaw Quarry where the desk study identified the presence of HPI open mosaic habitats on previously developed land[109,110]. Species in these areas include ribwort plantain, birds foot trefoil (*Lotus corniculatus*), coltsfoot (*Tussilago farfara*) and clover.

[109] Limited access at Jackdaw Quarry during the extended Phase 1 habitat survey meant that the full extent of HPI open mosaic habitats on previously developed land could not be confirmed on the ground.

[110] JNCC (2016). UK Biodiversity Action Plan; Priority Habitat Descriptions: Open Mosaic Habitats on Previously Developed Land. (Online) Available at: https://data.jncc.gov.uk/data/a81bf2a7-b637-4497-a8be-03bd50d4290d/UKBAP-BAPHabitats-40-OMH-2010.pdf (Accessed 11 August 2021).

Other habitats

8.5.45 The remainder of the areas within the Order Limits and 50m buffer support habitats including tall ruderal vegetation, boundary features including fences, areas of hardstanding and buildings (including roads, commercial and residential development), as well as introduced shrub associated with residential gardens.

Protected/SPI and other conservation-notable species

8.5.46 The desk study has identified the following legally protected/notable species/species groups as being present within the Order Limits and relevant area of search (see **Table 8.6**); these are considered for further assessment: bats, great crested newts, otter, water vole, reptiles, badger, fish, invertebrates and birds. Further details on the methods and findings of the field surveys undertaken together with the results of the desk study are given in the baseline reports within **Volume 5, Documents 5.3.8B-5.3.8H.** The baseline results are also shown on **Figures 8.1-8.26** within **Volume 5, Document 5.4.8.**

Bats

8.5.47 The desk study returned records of eight species of bats within 2km of the Order Limits: Brandt's bat (*Myotis brandtii*), brown long-eared (*Plecotus auritus*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Daubenton's bat (*Myotis daubentonii*), Leisler's bat (*Nyctalus leisleri*), noctule (*Nyctalus noctula*) and whiskered bat (*Myotis mystacinus*). The most recorded species from the desk study was soprano pipistrelle, followed by brown long-eared and common pipistrelle.

8.5.48 Seventeen bat roosts were recorded between 2-5km from the Order Limits including soprano pipistrelle, brown long-eared bat, common pipistrelle, whiskered bat, natterers bat (*Myotis nattereri*) and bats which could not be identified to species. Existing and expired European Protected Species (EPS) mitigation licences were recorded within 5km of the Order Limits including roosts for common pipistrelle, soprano pipistrelle, brown long-eared bats, Natterer's bat, Daubenton's bat, and whiskered bat.

8.5.49 Habitats within the Order Limits and a buffer of 50m were assessed for their suitability to be used as foraging resources and commuting routes for bats. Large areas of open arable land are of limited suitability and at times unsuitable for most species of bats as they provide little in the way of foraging habitat, or linear features/cover for commuting. However, hedgerows and treelines along field boundaries, watercourses, and parcels of grassland, woodland and scrub within the Order Limits and 50m buffer are likely to be used by foraging and commuting bats although these are not unique habitats locally. Areas of habitat which are most suitable for bats, occur in places where a range of habitat types coincide to provide a variety of ecotones for commuting and foraging, suitable for a variety of bat species. For example, habitats around Healaugh Priory Marsh deleted SINC and Field nr Healaugh Manor Farm deleted SINC, and along watercourses such as the River Ouse (W4) and The Foss (W5), which include a mix of habitats such as scrub, grassland, hedgerows, treelines, woodland and watercourses/ponds. Habitat in these locations is considered to have high suitability for commuting and foraging bats, though the majority of habitat within the Order Limits and 50m buffer is on balance, considered to have moderate suitability[111].

[111] The Bat Conservation Trust provide guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features in the landscape, and potential roost features in buildings, structures and trees. The guidance outlines

8.5.50 No confirmed bat roosts were identified during all survey work, however common pipistrelle, soprano pipistrelle and noctule were recorded within 30 minutes of sunset/sunrise during activity surveys suggesting roosts for these species may be present within close proximity to the Order Limits. Following aerial tree inspections 34 trees were assessed as having High suitability to support roosting bats while 26 were assessed as having Moderate suitability to support roosting bats. No buildings will be impacted by the Project.

8.5.51 In total, at least eight species of bat were confirmed within the survey area during all surveys: common pipistrelle, soprano pipistrelle, *Myotis* species, noctule, Leisler's bat, brown long-eared, serotine and Nathusius pipistrelle. The highest levels of activity recorded during surveys was from common pipistrelles (61.5% of all static detector recordings), common pipistrelle were recorded during every survey month, at every static detector location. Common pipistrelle was also the most recorded species across all transects during transect surveys.

8.5.52 Soprano pipistrelle was the third most recorded species during the static detector surveys and were recorded at every static detector location. Soprano pipistrelle were the second most recorded species during transects recorded during all four transects and in all months.

8.5.53 Bats from the *Myotis* genus were the third most recorded species during transect surveys and second most recorded species during static surveys accounting for just under 20% of all bat records returned during static detector surveys. *Myotis* species were recorded at every static location during the majority of months.

8.5.54 *Myotis* bats are grouped together, as these species have widely overlapping call parameters and therefore can't be identified from calls alone. Based on the habitats present and the results of the desk study it is considered *Myotis* activity recorded during surveys are most likely associated with whiskered, Brandt's, Daubenton's bat and Natterer's bat, Alcathoe are less common in Yorkshire and were not recorded in the desk study, whilst they may be present it is considered unlikely.

8.5.55 Passes from *Nyctalus* (noctule and Leisler's bat) accounted for 2.74% of all static detector passes during the entire survey period with the majority of these from noctules. During transect surveys noctule were recorded during most survey months and on all four transects however Liesler's bat was not recorded. One serotine pass was recorded only during all survey work on a transect survey.

8.5.56 A very low level of Nathusius' pipistrelle activity was recorded accounting for 0.1% of all passes recorded during the static detector survey, no passes were recorded during walked transects. During the entire survey period. 0.5% of all bat passes during static detector surveys were brown long-eared bat, this species were recorded at each static location, only four passes by brown long-eared were recorded during the transect surveys.

8.5.57 Static location 1a (located beneath the proposed YN 400kV overhead line (north of the proposed Overton Substation)) recorded the highest number of bat passes out of all static detector locations, with static location 4b (located beneath the existing XC 275kV overhead line (Tadcaster to Monk Fryston)) the second highest. Static location 2b (located between the proposed temporary XCP 275kV overhead line diversion and the

habitat features associated with negligible, low, moderate and high suitability for commuting, foraging and roosting by bats; based on the quality, extent and connectivity of suitable habitats and potential roost features which are present.

existing XCP 275kV overhead line (Poppleton to Monk Fryston)) recorded the third highest number of bat passes. All three detectors were placed on linear features such as treelines or hedges, and results indicate these have importance as a foraging and or commuting resource for bats, in a predominately arable landscape. Other static detector locations (2a, 3a, 3b, 4a, 5a, 5b, 6a, 6b, 7a, and 8a) had relatively low levels of activity by comparison. Transect 1 also recorded the highest level of activity during transect surveys which corresponds with the results of the static detector surveys where static 1a was placed, this route followed the edge of arable fields, but activity was recorded around field boundaries comprising ditches and treelines.

8.5.58 No bat roosts have been recorded within the Order Limits and survey results suggest the bat assemblage recorded is typical of the county. The dominant habitat type throughout the Order Limits is arable land which are of low value in terms of the foraging and commuting opportunities. Results indicate treelines, hedgerows and ditches which bound arable fields provide foraging and commuting opportunities for bats within this arable landscape although only a low number of these features recorded higher levels of activity indicating a greater level of importance to local bat populations.

Great crested newt

8.5.59 The desk study identified 15 records of great crested newt within 2km of the Order Limits and one record[112] within the Order Limits.

8.5.60 As a DLL approach to great crested newts has been confirmed for the Project, detailed surveys for great crested newts were not required to inform the assessment in line with Natural England and DEFRA guidance[78]. However, results of the desk-based pond search, initial HSI assessments and eDNA surveys are given below as these were supplied to Natural England during discussions regarding DLL (see **Table 8.5**) to provide context regarding the suitability of the land within the Order Limits for great crested newts and are used to inform the assessment of effects in **Section 8.9**.

8.5.61 The results of the desk-based review of Ordnance Survey maps and aerial imagery, and the results of the extended Phase 1 habitat surveys (including HSI assessments at accessible ponds and ditches and the negative results of eDNA surveys at ponds P28 and P29[113]) indicate a total of 137 ponds and 38 ditches are present within 250m of the Order Limits that have potential to support great crested newts.

8.5.62 Of these, 20 ponds and 13 ditches with potential to support great crested newts are located within the Order limits.

8.5.63 Habitats such as arable field margins, grassland, hedgerow, dense scrub, woodland and a network of ditches provide suitable terrestrial habitat for foraging, refuging, commuting and hibernating. Often, there are no major barriers to prevent great crested newt dispersal between suitable water bodies and surrounding terrestrial habitats. However, the most extensive habitat within the Order Limits is arable, with pasture fields also common, and these are either unsuitable or unfavourable for great crested newts.

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[112] Amec Foster Wheeler (2016) XCP Constraints Plan – one location with great crested newts identified during previous ecology surveys carried out by WSP to inform proposed reconductoring on the existing 275kV Poppleton to Monk Fryston (XC/XCP) overhead line.
[113] eDNA surveys were conducted at P28 and P29 as a precaution prior to DLL confirmation as they were the only ponds expected to be permanently lost as a result of the proposed Overton Substation based on the preliminary Project design. The Project design has since been amended to avoid the loss of P29.

Otter

8.5.64 The desk study returned 22 records of otter within 2km of the Order Limits, of which a single record is within the Order Limits on the A659 (and therefore assumed road casualty) beneath the span XD001T-XD002. In addition, anecdotal records were received from local residents regarding otter presence at stocked fish ponds and a garden pond within 50m of the Order Limits close to proposed access routes to pylon XC435 and pylon XC427, respectively; and also at a farm approximately 100 to 200m north of the River Ouse/Order Limits[114].

8.5.65 The dominant habitat within the Order Limits and 50m buffer (arable) is unsuitable for otter, however, the River Ouse (W4), the River Wharfe (W9) and Cock Beck (W12) provide optimal habitat for foraging, commuting and resting otter, along with smaller tributaries with plentiful bankside cover such as The Foss (W5) and The Foss Catchment (tributary of Wharfe) (W8). Wet ditches throughout the Order Limits and 50m buffer generally have low suitability for commuting or foraging as water quality is variable and water levels are frequently low.

8.5.66 Although no confirmed resting sites were recorded during the otter surveys, one site highly likely used for resting was recorded within the Order Limits beneath the roots of a large willow along the northern bank of the River Ouse (W4). A second site highly likely used for resting was recorded approximately 80m west of the Order Limits beneath a bridge along the northern bank of The Foss Catchment (tributary of Wharfe) (W8). At both locations fresh spraint was present along with a footprint and feeding remains at the Ouse and The Foss Catchment (tributary of Wharfe) locations respectively.

8.5.67 A further 20 potential resting sites were also identified within the Order Limits and 50m buffer. No confirmed evidence of otter was present at these sites, although the nature of the features and their location adjacent to suitable watercourses suggest they could be used by otter. These were also predominately along the River Ouse (W4) and The Foss (W5). Seven of these potential resting sites are within the Order Limits.

8.5.68 Additional evidence of otter recorded during field surveys includes spraint, feeding remains, potential slides, and/or footprints along watercourses including Moor Gutter (W2), Hurns Gutter (W3), River Ouse (W4), The Foss (W5), White Sike (W6), Redwith Beck (W7), The Foss Catchment (tributary of Wharfe) (W8), River Wharfe (W9) and Cock Beck (W12). This widespread evidence indicates that otters are likely to use suitable watercourses throughout land within the Order Limits as part of a network of habitat within individual home ranges.

Water vole

8.5.69 The desk study returned three records of water vole within 2km of the Order Limits, none of which were within the Order Limits (the closest being over 0.5km outside).

8.5.70 No water voles or conclusive evidence such as latrines were observed during the extended Phase 1 habitat survey or targeted water vole surveys to confirm the species being present.

8.5.71 Potential feeding remains were recorded along ditch D96, though these could be attributable to other vole species. Inconclusive evidence in the form of potential burrows was recorded at five locations: Stream Dike (W14), ditches D33, D73 and D76, and

[114] Personal communication between local residents and WSP Ecologist Tim Kell, 5 July 2022, 6 July 2022 and 25 August 2022.

pond P39. However, in the absence of any latrines across the survey stretches it is likely these are old redundant burrows or are used by other species.

8.5.72 Given that no conclusive evidence of water vole has been recorded within surveyed habitat; the fact that mink is known to be present within the locale; and the paucity of water vole records in the desk study area of search, it is considered unlikely that water vole are present within the Order Limits or 50m buffer.

8.5.73 There is however potential for water vole to be present within the survey area along a small number of watercourses/water bodies to which access has not been granted. In addition, the water vole is a mobile species that responds to habitat changes and may use different watercourses and water bodies at different times of the year[83].

Reptiles

8.5.74 The desk study returned one reptile record (grass snake (*Natrix natrix*)) within 2km of the Order Limits, but outwith land within the Order Limits.

8.5.75 No reptiles or evidence of their presence was recorded in the Order Limits and 50m buffer at the time of survey. The majority of land within the Order Limits and 50m buffer comprises large arable fields which are unsuitable for reptiles. However, arable field margins, parcels of woodland, hedgerows, dense scrub and a network of ditches provide suitable habitat for reptiles with opportunities for basking, foraging, refuging and hibernating though features such as these are at times sparse and isolated within the open arable landscape.

8.5.76 Habitat outside the Order Limits but within the 50m buffer that is likely to be favourable for reptiles is the mosaic of habitats on previously disturbed ground at Jackdaw Quarry.

8.5.77 However, based on the geographical location of the Project, the predominantly sub-optimal habitat within the Order Limits and limited desk study records, reptiles are assumed to be present in low numbers in the limited areas of suitable habitat present within the Order Limits as a reasonable worst-case scenario.

Badgers

8.5.78 The desk study returned 12 records of badgers inside and within 2km of the Order Limits. Specific locations are not provided for reasons of confidentiality.

8.5.79 Badger surveys were undertaken in conjunction with the extended Phase 1 habitat survey, with much of the land assessed as providing suitable habitat for sett creation, foraging and/or commuting; suitable habitats for sett creation are present throughout land within the Order Limits and 50m survey buffer including the banks of dry ditches, hedgerows, dense scrub and woodland. The habitats within the Order Limits and 50m buffer provide extensive opportunities for foraging including large areas of arable land (and margins) and grasslands with a series of ditches and hedgerows providing connective habitat.

8.5.80 During the field surveys, 13 setts with evidence of badger activity were recorded throughout land within the Order Limits and 50m survey buffer, of which seven were present within the Order Limits. A further ten potential badger setts were also identified within the Order Limits and 50m survey buffer, but there was no clear evidence at the time of survey to show they were being actively used.

Additional evidence of badgers recorded during the field surveys includes latrines, footprints, mammal paths, scratch marks and evidence of badger pushing under fence lines. SPI and other conservation-notable–species - mammals

8.5.81 Ten records of three SPI mammal species were identified during the desk study within 2km of the Order Limits; none were within the Order Limits. Recorded species were:

- brown hare (*Lepus europaeus*);
- harvest mouse (*Micromys minutus*); and
- hedgehog (*Erinaceus europaeus*).

8.5.82 During the extended Phase 1 habitat survey, brown hare were recorded on 18 occasions, predominately within arable fields within the Order Limits. Although habitats within the Order Limits and 50m buffer are suitable to support SPI mammal species, the habitats are generally common and widespread in the wider landscape.

SPI and other conservation-notable–species - amphibians

8.5.83 Four records of common toad (SPI) were identified during the desk study within 2km of the Order Limits, no records were in the Order Limits.

8.5.84 During the extended Phase 1 habitat survey, one dead common toad was found close to pylon YR039.

SPI and other protected or conservation-notable–species - fish

8.5.85 The desk study returned 22 records of three fish SPI (brown/sea trout, sea lamprey, and European eel), a further two protected species (barbel (*Barbus barbus*) and grayling (*Thymallus thymallus*))[115] and one conservation-notable species (bullhead (*Cottus gobio*)) were recorded within 2km of the Order Limits. In addition, the River Ouse candidate SINC designation also includes Atlantic salmon and river lamprey (both SPI).

8.5.86 Although no records are from within the Order Limits, records are present in watercourses which bisect land both up and downstream of the Order Limits. Therefore, given their mobile nature, the species are assumed to be present within (or to migrate through) continuous lengths of watercourses within the Order Limits, including the River Ouse (W4) (Atlantic salmon, sea lamprey, river lamprey, bullhead and European eel), the River Wharfe (W9) (barbel, brown/sea trout and grayling), and Cock Beck (W12) (bullhead and European eel).

8.5.87 There are several other watercourses within the Order Limits which offer suitable habitat for a variety of SPI and other conservation-notable freshwater fish species as detailed in the **Extended Phase 1 Habitat Survey Report, Volume 5, Document 5.3.8B**.

SPI and other conservation-notable–species - invertebrates

8.5.88 The desk study returned 222 records of nine species of terrestrial invertebrates within 2km of the Order Limits, one species of which accounted for the majority of the records (213), including within the Order Limits. The remaining records outside the Order Limits were for eight moth species.

[115] Listed on Schedule 4 of Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations'), as amended by Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

8.5.89 Riparian habitat adjacent to the River Ouse (W4) containing the tansy plant (*Tanacetum vulgare*) is one of only two known locations in the UK to support the tansy beetle[116]. Although records of tansy beetle within the Order Limits were obtained during the desk study, no confirmed tansy beetles or tansy plants were recorded during the extended Phase 1 habitat survey.

8.5.90 There were three records of two species of aquatic invertebrate within 2km of the Order Limits; none are in the Order Limits. Two records of depressed river mussel (*Pseudanodonta complanate)* and a single record of a caddis fly (*Ceraclea senilis*) were present along the River Ouse. The closest record of depressed river mussel record is located ~640m north of the Order Limits; the caddis fly is located ~740m south of the Order Limits.

8.5.91 There was one record of white-clawed crayfish from the Bramham Beck ~1.47km outside the Order Limits. Bramham Beck flows into Carr Beck and then Firgreen Beck, and eventually into the River Wharfe (W9). Non-native signal crayfish dominate the River Wharfe downstream of this location (including within the Order Limits) and there is a corresponding absence of white-clawed crayfish from watercourses within the Order Limits according to Environment Agency distribution maps[117], thus, this species has been scoped out of this assessment (see **Table 8.4**).

8.5.92 With the exception of riparian tansy plants along the River Ouse, habitats within the Order Limits and to a 50m buffer are predominantly unfavourable or unsuitable to support important invertebrate assemblages, being dominated by arable land. Short stretches of other watercourses and relatively isolated areas of neutral semi-improved grassland with a higher diversity of grasses and wildflowers, ephemeral/short perennial/mosaic and semi-natural woodland offer habitat suitable for invertebrates but in view of the limited connectivity and small size of habitat patches, important assemblages of SPI and other conservation-notable invertebrates are unlikely to be present.

SPI and other protected/conservation-notable–species - plants

8.5.93 The desk study identified 123 records of 32 species of conservation-notable vascular plant species within 2km of the Order Limits. All species records are outside the Order Limits.

8.5.94 Occasional conservation-notable plant species have been recorded during the extended Phase 1 habitat survey within the Order Limits and 50m buffer; bluebell within woodlands, cowslip along road banks, and cowslip and crosswort within Moor Lane, Sutton verges candidate SINC.

8.5.95 Habitat within the Order Limits and to a 50m buffer is dominated by arable land. Only relatively isolated areas of neutral semi-improved grassland with a higher diversity of grasses and wildflowers, ephemeral/short perennial/mosaic and semi-natural woodland offer habitat suitable for conservation-notable plant species, but in view of the limited connectivity and small size of habitat patches, important areas of SPI and other protected/conservation-notable plants are unlikely to be present.

[116] Buglife (2021). Tansy Hub. (online) (Accessed 11 August 2021).
[117] Environment Agency (2020) Yorkshire Area Biosecurity Protocol – Crayfish Distribution Maps. Environment Agency; London.

Birds

8.5.96 The desk study is detailed within **Extended Phase 1 Habitat Survey Report, Volume 5, Document 5.3.8B** and identified a range of bird species from within the Study Area[118], including Schedule 1 listed species such as barn owl, kingfisher, peregrine and red kite; as well as the following SPIs: corn bunting (*Emberiza calandra*), grey partridge (*Perdix perdix*), lapwing (*Vanellus vanellus*), linnet (*Linaria cannabina*), skylark (*Alauda arvensis*), spotted flycatcher (*Muscicapa striata*), tree sparrow (*Passer montanus*), yellow wagtail (*Motacilla flava*) and yellowhammer (*Emberiza citrinella*).

8.5.97 BTO data from the five-year WeBS summary for Fairburn Ings indicates that the Fairburn Ings RSPB Nature Reserve supports a large and diverse assemblage of non-breeding waterfowl, including whooper swan, lapwing and curlew (*Numenius arquata*).

8.5.98 Winter bird survey methods and results from February to March 2021 inclusive and October 2021 to March 2022 inclusive, are fully detailed within **Appendices 5.3.8F and 5.3.8G (Volume 5, Document 5.3.8F and 5.3.8G)** respectively. The key findings from the winter bird surveys are as follows:

- Golden plover was the only qualifying species of the Lower Derwent Valley SPA that was recorded, with a single flock of 29 individuals observed in late February 2021 and five flocks recorded across four visits during winter 2021-22, with a peak count of 58 birds. All records of golden plover relate to Ornithological Study Area (OSA) 1.
- OSA 1 also supported a typical wintering farmland bird assemblage of the wider area with SPIs including grey partridge, lapwing, curlew, skylark, tree sparrow, linnet and yellowhammer.
- OSA 2 supported a more limited wintering farmland bird assemblage, with SPIs including smaller numbers of lapwing, skylark, linnet and yellowhammer than recorded at OSA 1.
- Flight activity recorded at OSA 1 and OSA 2 during February to March 2021 was low.

8.5.99 Breeding bird surveys focussing on recording Schedule 1 listed species were conducted between April and August 2022 inclusive, with the following species recorded within the survey area: barn owl, hobby, kingfisher, peregrine falcon and red kite. The findings of the surveys are fully detailed within **Confidential Appendix 5.3.8H (Volume 5, Document 5.3.8H)**. A summary of surveys is documented below:

- A single barn owl nest was found within an outbuilding 20 m from the Order Limits;
- Two watercourses were identified as potential kingfisher breeding locations through habitat suitability assessments;
- A pair of peregrine falcon were found holding territory within 500m of the Order Limits. Although no nests were located, juvenile birds observed in July 2022 were indicative of a successful nesting attempt within the local area;
- Hobby were recorded displaying territorial behaviour over a woodland within 20 m of the Order Limits at its closest point. Aggressive behaviour towards both red kite and

118 Some bird records are taken from: Aecom ltd (First Draft 2020) Yorkshire GREEN Project. Wintering Bird Ornithological Desk Study and Survey Strategy

buzzard was observed, and it is assumed therefore that this is a probable breeding site, based on Rare Breeding Birds Panel (RBBP) breeding hobby criteria[119]; and

- Juvenile red kite were recorded in two locations along the XC route, with two nest sites identified within 300 m of the Order Limits.

INNS

8.5.100 During the extended Phase 1 habitat surveys undertaken to date, stands of Himalayan balsam, Japanese knotweed (*Reynoutria japonica*), variegated archangel (*Lamiastrum galeobdolon argentatum*), snowberry (*Symphoricarpos albus*), giant hogweed (*Heracleum mantegazzianum*), Japanese rose (*Rosa rugosa*) and *Cotoneaster*[120] sp. have been recorded within the Order Limits and 50m buffer.

Future baseline

8.5.101 The future baseline is likely to remain relatively constant within the Order Limits and the various areas of search through the lifetime of the Project in the majority of locations. This is because most land is in agricultural usage, typically in longer term use. Across some of the agricultural land, changes in farming policy may see further benefits for biodiversity and natural capital secured (e.g. hedgerow establishment and tree planting). However, these are likely to be relatively localised and unlikely to be implemented at scale prior to the construction phase for the Project, and thus would not be expected to affect the outcome of the assessment. Changes in future baseline from neighbouring developments is accounted for in the cumulative assessment section.

8.5.102 In the longer term it is possible that the range of some species may be altered due to climate change, with ranges expanding or retreating depending on adaptions, though this is unlikely to occur at scale within the lifetime of the Project.

8.6 Embedded environmental measures

8.6.1 **Chapter 4: Approach to Preparing the ES, Volume 5, Document 5.2.4** sets out the approach to the environmental measures as applied in the ES. As part of the project design process, a number of embedded environmental measures are proposed to reduce the potential for negative effects on biodiversity interests, and/or provide positive effects (see **Table 8.11**). These measures would be secured through the **Code of Construction Practice (CoCP), Volume 5, Document 5.5.3B** or **BMS, Volume 5, Document, 5.3.3D**. These have evolved over the development process as the EIA has progressed and in response to consultation. These measures typically include those that have been identified as good or standard practice and include actions that would be undertaken to meet existing legislation requirements.

8.6.2 As there is a commitment to implementing these embedded environmental measures, and also to various standard sectoral practices and procedures, they are considered

119 Rare Breeding Birds Panel (2020). Criteria for categorising Hobby breeding evidence in the UK. (online). (Accessed 4 August 2022).

120 Several Cotoneaster species are listed under Schedule 9 to the Wildlife and Countryside Act 1981 (as amended). Cotoneaster is a broad group of wild and horticultural varieties, and it is very difficult to reliably identify these to species level, and typically requires identification by a dedicated Cotoneaster specialist. In the absence of reliable identification, the species present within the Order Limits and to 50m are treated as potentially being a Schedule 9 species as a precaution.

inherently part of the design of the Project and have, therefore, been considered in the scoping assessment (and are noted in **Table 8.12**).

8.6.3 General principles of these measures are summarised below in **Table 8.11**, followed by feature-specific measures (where relevant) described in **Table 8.12. Table 8.12** outlines how these embedded environmental measures will influence the biodiversity assessment. **Section 8.13** describes the mechanism by which they would be implemented (e.g. DCO requirement) and the party responsible for their implementation.

Table 8.11 - Relevant general biodiversity embedded environmental measures

General embedded environmental measures proposed
1. **Pre-construction update surveys:** Pre-construction update surveys would be undertaken for protected species where relevant and necessary[121].
2. **Standard best practice:** The Project would be subject to standard best practice mitigation measures employed to avoid and minimise potential effects to habitats and species under the supervision of an Ecological Clerk of Works (ECoW)[122]. These would include (but not be exclusive to) the establishment of buffer zones to key habitats and species, seasonally sensitive construction, minimising the removal of vegetation, covering excavations over night or providing a means of escape, and considered location of works.
3. **Minimise land take and micro-site:** Detailed design would aim to minimise the land take for works and locate (through micro-siting within working areas inside the Limits of Deviation (LoD) which will form part of the DCO works plans) those works away from the more important habitat and species features, particularly woodland, boundaries including ditches and hedgerows, as well as ponds and other wetland features, which would consequently limit effects on associated species interest. Where practicable, works within HPI and sensitive sites (i.e. SINCs[123] including candidate and deleted SINCs) would be avoided and/or minimised when micro-siting within the proposed working areas.
4. **Dust management:** In line with good practice, the CoCP would ensure that any risk of effects on ecological features from dust emission is negligible by detailing methods for the employment of standard dust suppression.
5. **Sensitive vegetation removal:** Vegetation would be retained where possible. To avoid destruction of active nests, where practicable, in any areas where vegetation clearance is required, such works would be undertaken outside the breeding bird season (outside March-August). Where this is not practicable, vegetation removal would be undertaken under supervision by an ornithologist or suitably qualified ecologist and appropriately managed to remove the risk of damaging or destroying active nests, young or eggs. Suitable methods would also be used to ensure vegetation with potential to support other legally protected species (e.g. great crested newts and reptiles) is removed sensitively and in compliance with legal requirements.

[121] For example, to maintain up-to-date baseline data for known ecological features to inform mitigation requirements and European Protected Species licensing, or to identify potential additional ecological features which may become established within the Study Area (i.e. mobile species).
[122] The role and responsibilities of the ECoW (and Principal Contractor's ecologists) are detailed in the **BMS, Volume 5, Document 5.3.3D.**
[123] No other designated nature conservation sites (such as SSSIs) are present within the Order Limits.

General embedded environmental measures proposed
6. **Maintaining habitat connectivity:** Habitat connectivity would be retained wherever possible by maintaining links within and to green corridors such as hedgerows and watercourses. Where effects on connectivity are unavoidable, the affected habitat would be artificially supplemented by, for instance the creation of temporary brash hedges as appropriate.
7. **Protection of ancient/veteran trees:** All identified ancient/veteran trees have been avoided by micro-siting the design. A suitable root protection zone (with reference to BS 5837)[124] has been identified and used to site infrastructure with the Order Limits.
8. **Sensitive tree management for electrical safety clearance:** Where tree loss is required to achieve electrical safety clearances, pollarding or coppicing (where regrowth would occur within a season) would be used to avoid total loss of habitat where possible. A suitable root protection zone (with reference to BS 5837[124]) would protect trees adjacent to working areas.
9. Protection of retained habitats: Appropriate delineation would be installed around those retained habitat features within the construction area, to protect them from direct effects during the works. Such delineation would be designed to avoid isolation/obstruction of protected species as necessary. The specific measures set out in the **BMS (Volume 5, Document 5.3.3D),** will require mapping illustrating the location of all retained areas of semi-natural habitat, as well as newly created habitats, where needed.
10. **Management of INNS:** The use of tried and tested invasive species control and biosecurity measures to avoid the spread of INNS and infested materials would be applied.
11. **Habitat reinstatement:** Areas of temporary habitat loss would be reinstated, wherever practicable, following the completion of construction in each area. Wherever possible, reinstatement would be back to the type of habitat affected.
12. **Sensitive access and enabling works:** At sensitive crossing locations (e.g. rivers), existing access routes would be used as far as possible and the width of any required working area reduced as far as practicable. WFD watercourse crossings would involve temporary clear span bridges, involving no in channel works. Where required, temporary culverts (or temporary culvert upgrades) would be used on smaller watercourses (ordinary watercourses)/ditches but these will be sensitively designed to affect the minimum length possible, retaining the natural bed of the watercourse/ditch. Alternatively, they would be installed with the invert set below the natural bed level for a semi-natural bed to establish within the culvert. Habitat would be re-instated to pre-works condition or better following the removal of temporary bridges and culverts.
13. **Protection of aquatic features:** A minimum stand-off from all watercourses, ditches and ponds would be adopted where possible on a location-specific basis. This would be in line with regional Environment Agency and IDB requirements, excluding required access crossing points. In line with good practice, pollution prevention plans would be drawn up to detail how ground and surface waters would be protected during construction and operation. These would include information on the storage of any fuels, oils and other chemicals and pollution incidence response planning.
14. **Sensitive lighting design:** A lighting design of all temporary and permanent lighting would be developed prior to commencement and informed by the joint guidance provided by the Bat

[124] British Standard Institute (2012). BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. BSI; London.

General embedded environmental measures proposed
Conservation Trust and Institution of Lighting Professionals[125]. The lighting design will account for the potential effects on terrestrial ecology by taking measures to minimise lighting usage, minimise light spill, use most appropriate wave lengths of light and locate lighting in the most appropriate locations – this is to decrease the potential displacement effects on light sensitive fauna such as bats.
15. **Construction traffic speed limits:** Speed limits would be imposed on all construction haul roads and access tracks (as opposed to public/private roads with existing speed limits in place) to minimise the risk of road traffic collisions with fauna such as badgers, otters, bats and barn owls.
16. **Protected species licences:** A DLL licence with respect to great crested newts would be obtained from Natural England prior to Project commencement. Should pre-construction surveys indicate likely impacts on other protected species (bats, otter or badger) including habitat loss/disturbance/replacement, a licence from Natural England would be sought prior to Project commencement in order to avoid contravening legislation[126].
17. **Installation of bat boxes:** Where loss of a feature suitable for bat roosting is unavoidable, for example due to essential management for electrical safety clearance or visibility splays, bat boxes will be installed at suitable locations (including trees, buildings or free-standing poles as close as practicably possible to the lost roosting feature) at a replacement ratio of 2:1 for each tree with high/moderate potential to support roosting bats (but no evidence of confirmed roosting). Box type and location will be selected to mimic the conditions of the lost roosting feature as directed by the ECoW.

[125] Institution of Lighting Professionals and Bat Conservation Trust (2018). Bats and artificial lighting in the UK. Bats and the Built Environment series (Guidance Note 08/18). (online) (Accessed 11 August 2021).

[126] With the exception of great crested newt DLL, no other protected species licences are required based on current survey results.

Table 8.12 – Summary of the embedded environmental measures

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
Construction			
Habitats and non-statutory designated sites (SINC, candidate SINC and deleted SINCs)	Permanent or temporary land take/land use change resulting in habitat loss or degradation. Fragmentation of habitats resulting in a reduction in connectivity.	**General measures (Table 8.11):** 2 – Standard best practice 3 – Minimise land take and micro-site 4 – Dust management 6 – Maintaining habitat connectivity 8 – Sensitive tree management for electrical safety clearance 9 – Protection of retained habitats 10 – Management of invasive species 11 – Habitat reinstatement 12 – Sensitive access and enabling works 13 – Protection of aquatic features **Specific measures:** The Project layout has been optimised so that designated sites and important habitats would be avoided where possible and alternative options preferred. Where appropriate, habitat reinstatement would be reflective of the type and extent of habitats affected by the Project, as well as local conservation objectives and initiatives. The requirement for any habitat compensation would be identified through EcIA process in line with the EcIA mitigation hierarchy[31].	**CoCP, Volume 5, Document 5.3.3B** (for dust management) and accompanying **BMS, Volume 5, Document 5.3.3D** (for all other measures), (secured by DCO Requirement 5).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		Standard Pollution Prevention Guidelines (PPGs) would be followed for works adjacent to water-dependent habitats[127]. Also see embedded environmental measures within **Chapter 9: Hydrology, Volume 5, Document 5.2.9**. Successful implementation of these measures would minimise the loss, damage or fragmentation of habitats during construction and compliance with legislation and policy.	
Ancient/ veteran trees	Permanent or temporary land take/land use change resulting in ancient/veteran tree loss or degradation.	**General measures (Table 8.11):** 2 – Standard best practice 3 – Minimise land take and micro-site 4 – Dust management 7 – Protection of ancient/veteran trees 8 – Sensitive tree management for electrical safety clearance 9 – Protection of retained habitats 12 – Sensitive access and enabling works **Specific measures:** Access and construction activities have been sited within the Order Limits to avoid veteran trees and control measures to protect retained veteran trees such as root protection zones would be implemented during the construction phase to avoid damage to veteran trees. These specific measures are included within the BMS and the tree and hedgerow protection strategy.	**CoCP, Document 5.3.3B** (for dust management) and accompanying **BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5), and Tree and hedgerow protection strategy (secured by DCO Requirement 6).

[127] DEFRA (2019). Guidance: Pollution prevention for businesses. (online). Available at: https://www.gov.uk/guidance/pollution-prevention-for-businesses (Accessed 03 October 2022).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		Successful implementation of these measures avoid the loss of or damage to veteran trees.	
Bats	Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to roosts, kill/injure bats, and/or affect distribution. Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting bats, and/or disturbance to roosts.	**General measures (Table 8.11):** 1 – Pre-construction update surveys 2 – Standard best practice 3 – Minimise land take and micro-site 5 – Sensitive vegetation removal 6 – Maintaining habitat connectivity 7 – Protection of ancient/veteran trees 9 – Protection of retained habitats 11 – Habitat reinstatement 12 – Sensitive access and enabling works 13 - Protection of aquatic features 14 – Sensitive lighting design 15 – Construction traffic speed limits 16 – Protected species licences 17 – Installation of bat boxes **Specific measures:** A method statement and tool-box talk that would include details of pre-construction verification surveys for bats and would describe the approach that would be followed to minimise the risk of contravening the Wildlife and Countryside Act 1981 (as amended)[13] and the Conservation of Habitats and Species Regulations 2017 (as amended)[9]. Best practice guidelines would be followed during the works. These specific measures are included within the BMS.	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5) and lighting scheme (secured by DCO Requirement 6).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		Successful implementation of these measures would minimise the risk of affecting bats, their roosts and activity, and ensure compliance with legislation and policy.	
Great crested newts	Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to hibernacula/refugia/breeding habitat/terrestrial habitat, kill/injure GCN, and/or affect distribution.	**General measures (Table 8.11):** 2 – Standard best practice 3 – Minimise land take and micro-site 5 – Sensitive vegetation removal 6 – Maintaining habitat connectivity 9 – Protection of retained habitats 11 – Habitat reinstatement 12 – Sensitive access and enabling works 13 – Protection of aquatic features 16 – Protected species licences **Specific measures:** A DLL licence would be obtained from Natural England should the Project be consented. The licence would include measures to be implemented by Natural England to compensate for all potential impacts on great crested newts including habitat creation at an as yet unspecified location. In addition, standard best practice measures would be implemented during construction works in accordance with Natural England guidance[128].	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5).

[128] Natural England (2019) Guidance for works carried out under great crested newt district level licensing. (online) (Accessed 07 September 2022)

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		Successful implementation of these measures would minimise the risk of affecting great crested newts and their habitats, and contravening legislation.	
Otter	Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to holts, kill/injure otters, and/or affect distribution. Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting otter, and/or disturbance to holts.	**General measures (Table 8.11):** 1 – Pre-construction update surveys 2 – Standard best practice 3 – Minimise land take and micro-site 6 – Maintaining habitat connectivity 8 - Sensitive tree management for electrical safety clearance 9 – Protection of retained habitats 11 – Habitat reinstatement 12 – Sensitive access and enabling works 13 – Protection of aquatic features 14 – Sensitive lighting design 15 – Construction traffic speed limits 16 – Protected species licences **Specific measures:** A method statement and tool-box talk to minimise the risk of contravening the Wildlife and Countryside Act 1981 (as amended)[13] and The Conservation of Habitats and Species Regulations 2017 (as amended) [9]. Best practice guidelines would be followed including making all contractors aware of the potential presence of otters, and not leaving trenches uncovered overnight (or leaving an escape plank if excavations cannot be covered). Any obvious mammal trails would be kept clear of obstruction. As far as possible, all works would be	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5) and lighting scheme (secured by DCO Requirement 6).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		undertaken between dusk and dawn. A pre-works check for holts and resting sites would be undertaken at each culvert/bridge location. These specific measures are included within the BMS. Successful implementation of these measures would minimise the risk of affecting otters, their rest sites/habitats, and activity, and ensure compliance with legislation and policy.	
Water vole	Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to burrows, kill/injure water vole, and/or affect distribution. Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting water vole, and/or disturbance to burrows.	**General measures (Table 8.11):** 1 – Pre-construction update surveys 2 – Standard best practice 3 – Minimise land take and micro-site 6 – Maintaining habitat connectivity 8 – Sensitive tree management for electrical safety clearance 9 – Protection of retained habitats 11 – Habitat reinstatement 12 – Sensitive access and enabling works 13 – Protection of aquatic features **Specific measures:** A method statement and tool-box talk would be prepared detailing the required approach to minimise the risk of contravening the Wildlife and Countryside Act 1981 (as amended)[13]. Best practice guidelines would be followed during the works. This includes pre-works check and avoidance of active burrows if present. All site infrastructure and activities (with the exception of water course crossing points) would be located at least 9m from water courses wherever possible to	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5) and lighting scheme (secured by DCO Requirement 6).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		minimise disturbance of water voles and their burrows. These specific measures are included within the BMS. Successful implementation of these measures would minimise the risk of affecting water voles, their burrows/habitats, and ensure compliance with legislation and policy.	
Reptiles	Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to hibernacula/refugia/commuting and foraging habitat, kill/injure reptiles, and/or affect distribution.	**General measures (Table 8.11):** 1 – Pre-construction update surveys 2 – Standard best practice 3 – Minimise land take and micro-site 5 – Sensitive vegetation removal 6 – Maintaining habitat connectivity 9 – Protection of retained habitats 11 – Habitat reinstatement 12 – Sensitive access and enabling works 13 – Protection of aquatic features **Specific measures:** A method statement and tool-box talk would be prepared to avoid contravening the Wildlife and Countryside Act 1981 (as amended)[13]. Best practice guidelines would be followed during the works. Removal of suitable habitat would be designed to avoid the risk of injury to reptiles, through measures such as timing ground works to avoid the reptile hibernation period and the gradual removal of habitat. Construction along the Project would be progressive and designed to avoid isolating or fragmenting reptile habitat. These specific measures are included within the BMS.	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		Successful implementation of these measures would minimise the risk of affecting reptiles and ensure compliance with legislation and policy.	
Badger	Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to setts, kill/injure badger, and/or affect distribution. Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting, resting badger, and/or disturbance to setts.	**General measures (Table 8.11):** 1 – Pre-construction update surveys 2 – Standard best practice 3 – Minimise land take and micro-site 5 – Sensitive vegetation removal 6 – Maintaining habitat connectivity 8 – Sensitive tree management for electrical safety clearance 9 – Protection of retained habitats 11 – Habitat reinstatement 14 – Sensitive lighting design 15 – Construction traffic speed limits 16 – Protected species licences **Specific measures:** A method statement and tool-box talk would include details of pre-construction surveys to check on the presence of badgers and the approach that would be followed to minimise the risk of contravening the Protection of Badgers Act 1992[14]. Access and construction activities would be micro-sited where possible to avoid impacts on badgers and their setts. Measures would include making all contractors aware of the potential presence of badgers, minimising artificial lighting during the hours of darkness, and not leaving trenches uncovered overnight (or leaving an escape plank if excavations cannot be covered).	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5) and lighting scheme (secured by DCO Requirement 6).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		Any obvious mammal trails would be kept clear of obstruction. These specific measures are included within the BMS. Successful implementation of these measures would minimise the risk of affecting badgers and their setts and ensure compliance with legislation and policy.	
Nesting birds (including Schedule 1 species)	Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to nests, kill/injure nesting birds, and/or affect distribution. Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting nesting birds, and/or disturbance to nesting Schedule 1 birds.	**General measures (Table 8.11):** 1 – Pre-construction update surveys 2 – Standard best practice 3 – Minimise land take and micro-site 5 – Sensitive vegetation removal 9 – Protection of retained habitats 12 – Sensitive access and enabling works 14 – Sensitive lighting design 15 – Construction traffic speed limits **Specific measures:** Where possible, vegetation clearance would be timed to avoid nesting bird season (that is March – August inclusive), otherwise nesting bird checks and avoidance of active nests may be necessary. The construction works programme would incorporate and account for all Schedule 1 species nests and avoid, amend or reduce works during sensitive periods i.e. breeding season. Where works are unavoidable during the nesting bird season, appropriate control measures would be followed including pre-works surveys for nests. If a nest is found, measures would be	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5) and lighting scheme (secured by DCO Requirement 6).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		implemented appropriate to the species and associated level of protection, and may include a protective buffer, a behavioural method statement with ecological monitoring, and if necessary, suitable screening around working areas to avoid significant human disturbance. These specific measures are included within the BMS. Successful implementation of these measures would minimise the risk of affecting nesting birds and disturbing Schedule 1 species, and ensure compliance with legislation (Wildlife and Countryside Act 1981 (as amended)[13] and policy.	
All other species identified within the baseline (including legally protected species, SPI and other conservation-notable species)	Permanent or temporary land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, kill/injure species, and/or affect distribution.	**General measures (Table 8.11)**: 2 – Standard best practice 3 – Minimise land take and micro-site 6 – Maintaining habitat connectivity 12 – Sensitive access and enabling works 13 – Protection of aquatic features 16 - Protected species licences **Specific measures:** The general ecological method statement outlines ecological good practice measures to minimise impacts to all other species and their habitats. The ecological method statement would be briefed to site personnel through a tool-box talk to ensure site activities are conducted with awareness and sensitively for biodiversity. These specific measures are included within the BMS.	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5) and lighting scheme (secured by DCO Requirement 6).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		Successful implementation of these measures would minimise the risk of affecting these species and contravening legislation and policy.	
All species and habitats identified in the baseline	Changes in air quality resulting in damage to habitats and/or species through excessive dust	**General measures (Table 8.11):** 4 – Dust management **Specific measures:** Dust control measures have been assessed in **Chapter 13: Air Quality, Volume 5, Document 5.2.13** and would be implemented during the construction phase of work. These specific measures would be included within the CoCP. Successful implementation of these measures would minimise the risk of dust damage and ensure compliance with legislation and policy.	**CoCP, Volume 5, Document 5.3.3B** (secured by DCO Requirement 5).
All species identified in the baseline	Increased noise, vibration, light and movement levels resulting in disturbance to foraging, commuting and resting species, and/or disturbance to resting places.	**General measures (Table 8.11):** 2 – Standard best practice **Specific measures:** Noise control measures have been assessed in **Chapter 14: Noise and Vibration, Volume 5, Document 5.2.14**. These would include maintaining buffer distances to sensitive receptors, use of best technology, dampers on vibrating or noise emitting equipment, timing of works. These specific measures are included within the CoCP, and accompanying BMS. Successful implementation of these measures would minimise the risk of disturbance and contravening legislation and policy.	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5).

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
All species and habitats identified in the baseline	Pollution events resulting in damage to habitats and/or species through pollution (terrestrial and aquatic)	**General measures (Table 8.11):** 4 – Dust management 13 – Protection of aquatic features **Specific measures:** Pollution prevention control measures would be detailed in a method statement and implemented during the construction phase to avoid damage to habitats/species. Construction practices would comply with the Environment Agency's Pollution Prevention Guidelines[129] with a view to preventing the pollution of ground and surface water. **Chapter 9: Hydrology** (**Volume 5, Document 5.2.9**) details further measures. These specific measures are included within the CoCP (dust management) and BMS. Successful implementation of these measures would minimise the risk of damage through pollution and ensure compliance with legislation and policy.	**CoCP, Volume 5, Volume 5, Document 5.3.3B and BMS, Volume 5, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5).
Operation			
All species identified in the baseline	Increased noise and vibration, resulting in disturbance to foraging, commuting, resting species, and/or disturbance to resting places.	**Specific measures:** Noise control measures have been assessed in **Chapter 14: Noise and Vibration, Volume 5, Document 5.2.14**. The Noise and Vibration Management Plan (NVMP) (**Appendix 5.3.3H, Volume 5, Document 5.3.3H**) sets measures to control and limit operational noise from the Project.	**NVMP, Volume 5, Document 5.3.3H** (secured by DCO Requirement 5).

[129] DEFRA (2019). Guidance: Pollution prevention for businesses. (Online). Available at: https://www.gov.uk/guidance/pollution-prevention-for-businesses (Accessed August 2021)

Receptor	Potential Changes and Effects	Embedded Environmental Measures	Compliance Mechanism
		Successful implementation of these measures would minimise the risk of disturbance and contravening legislation and policy.	
All species identified in the baseline	Increased light resulting in disturbance to foraging, commuting species, and/or disturbance to resting places.	**Specific measures:** A Lighting Scheme would be designed in accordance with best practice guidance. Successful implementation of these measures would minimise the risk of affecting features, and contravening legislation.	Lighting scheme (secured by DCO Requirement 6).
All species identified in the baseline	Permanent land take/land use change and fragmentation of habitats resulting in potential habitat loss or degradation, potential loss/damage to resting places, kill/injure species, and/or affect distribution.	**General measures (Table 8.11):** 3 – Minimise land take and micro-site 5 – Sensitive vegetation removal 6 – Maintaining habitat connectivity 9 – Protection of retained habitats 11 – Habitat reinstatement 12 – Sensitive access and enabling works The measures set out in the BMS would avoid or minimise long-term effects once construction works were complete. Successful implementation of these measures would minimise the risk of disturbance and contravening legislation and policy.	**BMS, Volume 5, Document 5.3.3D** (secured by DCO Requirement 5).

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8.7 Scope of the assessment

The Project

8.7.1 The scope of the assessment has been refined as the Project design has evolved and responds to feedback received to date as set out in **Section 8.3**.

8.7.2 The starting point for defining the scope of the biodiversity assessment was to use the baseline data collected through the desk study and field surveys (see **Section 8.5**) to determine which of the identified ecological features are 'important'. Following CIEEM guidance[2], the importance of each ecological feature was determined using a geographic scale (see **Table 8.13**). The importance of the ecological features has been described in relation to UK legislation and policy and with regard to the extent of habitat or size of population that may be significantly affected by the Project.

8.7.3 The importance of ecological features can therefore differ from that which would be conferred solely by legislative protection or identification as a conservation notable species. For example, house sparrow is important at a national level (in policy terms) because it is a SPI and features on the BoCC Red list[130]. However, a small population that could be affected by a development might be assessed as only being of local importance due to the large, albeit declining, UK population (in excess of five million pairs). Similarly, a small length of hedgerow (a HPI), even if deemed to be 'important' with regard to the Hedgerow Regulations[16], is unlikely to be considered to have greater than 'local' importance due to the extent of this habitat type across a given county.

8.7.4 Wherever possible, information regarding the extent and population size, population trends and distribution of the ecological features was used to inform their categorisation and determine their importance at the project level. Where detailed criteria or contextual data were not available at this stage of the Project, professional judgement was used to determine importance.

Table 8.13 - Defining importance of ecological features

Geographic context of importance	Description
International or European	National site network constituents including SPAs, SACs, candidate SACs and Sites of Community Importance (SCI). Potential SPAs (pSPA), possible SACs (pSACs), Ramsar Sites (designated under international convention) and proposed Ramsar Sites are also considered in the same manner in accordance with national planning policy.

[130] The IUCN red list provides taxonomic, conservation status and distribution information on taxa that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight those taxa that are facing a higher risk of global extinction - those listed as Critically Endangered, Endangered and Vulnerable. (Online) (Accessed August 2022).

Geographic context of importance	Description
	Areas of habitat or populations of species which meet the published selection criteria based on discussions with Natural England and field data collected to inform the EcIA for designation as a European site, but which are not themselves currently designated at this level.
National (UK context)	A nationally designated site including SSSIs and NNRs. Areas (and the populations of species which inhabit them) which meet the published selection criteria guidelines for selection of biological SSSIs but which are not themselves designated based on field data collected to inform the EcIA, and in consultation with Natural England. SPIs and HPIs, Red listed and legally protected species that are not addressed directly in Part 2 of the "Guidelines for Selection of Biological SSSIs"[131] but can be determined to be of national importance using the principles described in Part 1 of the guidance. Areas of ancient woodland, for example woodland listed within the Ancient Woodland Inventory and ancient and veteran trees.
Regional (Northern England)	Regularly occurring HPI or populations of SPI, Red listed and legally protected species may be of regional importance in the context of published information on population size and distribution.
County (Yorkshire)	LNRs and Non-Statutory Designated sites including: SINCs, LWSs and notable roadside verges. Areas which, based on field data collected to inform the EcIA, meet the published selection criteria for those sites listed above (for habitats or species, including those listed in relevant Local Biodiversity Action Plans) but which are not themselves designated.
Local	HPI and SPI, Red listed and legally protected species that based on their extent, population size, quality and so on are determined to be at a lesser level of importance than the geographic contexts above. Common and widespread semi-natural habitats occurring within the Study Area in proportions greater than may be expected in the local context.

[131] JNCC (2019). Guidelines for Selection of SSSI: Part 2. (Online) Available at: https://jncc.gov.uk/our-work/guidelines-for-selection-of-sssis/#part-2-habitat-chapters (Accessed 05 August 2022)

Geographic context of importance	Description
	Common and widespread native species occurring within the Study Area in numbers greater than may be expected in the local context.
Negligible	Common and widespread semi-natural habitats and species that do not occur in levels elevated above those of the surrounding area. Areas of heavily modified or managed land uses (for example, hard standing used for car parking, as roads and so on.)

8.7.5 Where protected species are present and there is the potential for a breach of the legislation, those species are considered 'important' features. Except for such species receiving specific legal protection, or those subject to legal control (for example, invasive species), all ecological features determined to be 'important' at negligible level are scoped out of the assessment. This approach is consistent with that described in CIEEM guidance[2]. Specific justification for exclusion of each of these ecological features is provided in the **Scoping of Assessment Summary, Volume 5, Document 5.3.8A**.

8.7.6 Legally protected species and ecological features that are of sufficient importance that effects upon them as a result of the Project could be significant or result in a legal breach, were then taken through to the next stage of the scoping assessment. Through an understanding of the activities associated with the Project and the resulting environmental change, it is possible to identify ecological features that may be subject to potentially significant effects. To identify such ecological features, all the activities and consequent environmental changes associated with the construction and operation of the Project have been considered.

Spatial scope

8.7.7 The spatial scope of the assessment of biodiversity covers the area of the Project contained within the Order Limits, together with the ZoIs that have formed the basis of the Study Area described in **Section 8.4**.

8.7.8 The construction and operational stages of the Project may result in the following environmental changes that could significantly affect ecological features:

- **Permanent or temporary land take/land use change** (resulting in habitat loss or degradation and/or loss of fauna);
- **Fragmentation of habitats** (resulting in a reduction in connectivity);
- **Increased noise, vibration, light and movement levels** (resulting in disturbance/displacement);
- **Changes in hydrology** (resulting in the effects of habitat loss or degradation and/or loss of fauna);
- **Changes in air quality** (e.g. dust or vehicle emissions resulting in habitat degradation);

- **Pollution events** (including the liberation of sediments and chemicals resulting in habitat loss or degradation and/or loss of fauna); and
- **Introduction of INNS** (resulting in habitat degradation).

8.7.9 Key to establishing which environmental changes may result in likely significant effects, is the determination of a ZoI for each important ecological feature identified. ZoI have been determined in line with best practice[2] and differ depending on the type of environmental change (i.e. the change from the existing baseline) as a result of the Project and the ecological feature being considered.

8.7.10 The most straightforward ZoI to define is the area affected by land-take and direct land-use changes associated with the Project. This ZoI is the same for all affected ecological features.

8.7.11 By contrast, for each environmental change that can extend beyond the area affected by land-take and land-use change (e.g. increased noise associated with construction activities within the land-take area), the ZoI may vary between ecological features, dependent upon their sensitivity to the change and the precise nature of the change. For example, a water vole might only be disturbed by noise generated very close to its burrow, while nesting marsh harrier might be disturbed by noise generated at a much greater distance, and other species (e.g. many invertebrates) may be unaffected by changes in noise. In view of these complexities, the definition of the ZoI that extends beyond the land-take area was based upon professional judgement informed (as far as possible) by a review of published evidence (e.g. disturbance criteria for various species) and discussions with the technical specialists who are working on other chapters of the ES.

8.7.12 The ZoIs for each broad environmental change are specified below:

- **Permanent or temporary land take/land use change** – ZoI within the Order Limits for habitats and sedentary species; mobile species may be affected beyond that if land within the Order Limits overlaps their typical home-ranges;
- **Fragmentation of habitats** – ZoI within the Order Limits for habitats and sedentary species; mobile species may be affected beyond that if land within the Order Limits overlaps their typical home-ranges;
- **Increased noise, vibration, light and movement levels** – ZoI for sensitive species is up to 500m from the construction works, noting that for mobile features of designated sites this is related to the species' habitat use and associated foraging home range distance, as opposed to designation boundary;
- **Changes in hydrology** – ZoI for sensitive habitats and/or species is within the sensitive surface and ground water features described within **Chapter 9: Hydrology Document 5.2.9, Volume 5** and **Chapter 10: Geology and Hydrogeology Document 5.2.10, Volume 5**;
- **Changes in air quality** – ZoI for sensitive habitats is up to 350m from the construction works;
- **Pollution events** – ZoI for habitats and species is up to 500m from the Order Limits, or further if the source and the ecological feature are directly linked via the river system; and

- **Introduction of INNS** – ZoI for habitats and species is up to 500m from the Order Limits, or further if the source and the ecological feature are directly linked via the river system.

8.7.13 Each ZoI takes into account embedded environmental measures which have been implemented to avoid or reduce potentially significant effects through the design process as well as standard construction best practice measures (as tried and tested).

8.7.14 The ZoI for each environmental change with respect to each ecological feature is given in **Table 8A.2, Scoping of Assessment Summary, Volume 5, Document 5.3.8A.**

8.7.15 When scoping in or out ecological features from further assessment, embedded environmental measures (see **Section 8.6**) associated with general good practice have been taken into account (e.g. dust suppression, appropriately scheduled vegetation removal and so on) and referenced in the **Scoping of Assessment Summary, Volume 5, Document 5.3.8A** where appropriate.

8.7.16 The following environmental changes are scoped out for all ecological features.

- **Changes in hydrology - Chapter 9: Hydrology, Volume 5, Document 5.2.9** and **Chapter 10: Geology and Hydrogeology, Volume 5, Document 5.2.10** does not identify any notable changes and thus resulting likely significant effects on the hydrological regimes across designated biodiversity sites or water-dependent habitats due to construction or operational activities associated with the Project. Therefore, the ecological features that these designated biodiversity sites and habitats support would also not be subject to likely significant effects.
- **Changes in air quality - Chapter 12: Traffic and Transport, Volume 5, Document 5.2.12** does not identify any likely significant effects as a result of emissions associated with traffic and plant during construction or operational activities. The risk of dust deposition resulting from construction activities would be controlled via the implementation of embedded environmental measures (see **Section 8.6** and **Chapter 13: Air Quality, Volume 5, Document 5.2.13**). These measures would be effective in negating the risk to ecological features.
- **Pollution events -** The risk of pollution from construction and operation activities associated with the Project will be controlled via the implementation of embedded environmental measures (see Section 8.6 and **Chapter 9: Hydrology, Volume 5, Document 5.2.9**). These measures would be effective in negating the risk to ecological features.
- **Introduction of INNS -** The risk of spreading INNS across and beyond the Order Limits from increased movement of traffic and construction or operational activities associated with the Project, would be controlled via the implementation of embedded environmental measures (see Section 8.6). These measures would be effective in negating the risk to ecological features.

8.7.17 Ecological features which have been scoped in or out of the assessment are detailed in the **Scoping of Assessment Summary, Volume 5, Document 8.3.8A**. An assessment of effects is detailed in **Section 8.6** for each of those ecological features that are scoped into the assessment (i.e. those of sufficient importance occurring within a relevant ZoI that could be subject to likely significant effects).

Temporal scope

8.7.18 The temporal scope of the assessment of biodiversity is consistent with the period over which the Project would be carried out and covers the changes in construction and operational period as appropriate.

8.7.19 Construction is scheduled to commence in 2024 and complete in 2028, with some elements of the Project becoming operational in 2027. The assessment has been based on the construction programme set out in Section 3.10 in **Chapter 3: Description of the Project, Volume 5, Document 5.2.3** of which an indicative programme is set out in **Table 3.1**.

8.7.20 As detailed in **Chapter 3: Description of the Project, Volume 5, Document 5.2.3**, the works required during the operational phase would consist of maintenance to and refurbishment of the existing and proposed overhead lines, the most frequent activity comprising annual inspections, which would be followed where necessary by small scale works to repair elements of the line and maintenance of the safety clearance between trees and the conductors. Inspections may infrequently identify the need for larger scale refurbishment which would require temporary works similar to those involved in the Project construction phase with respect to the overhead line elements.

8.7.21 The Project is expected to have a life span of more than 80 years. If decommissioning is required at the end of its lifetime, then activities and consequent effects associated with the decommissioning phase are expected to be of a similar or lesser level to those during the construction phase works. As such, the likely significance of effects relating to the construction phase assessment would be applicable to the decommissioning phase.

8.7.22 Pursuant to requirement 16 of the draft DCO (**Volume 3, Document 3.1**), National Grid is required to submit a written scheme of decommissioning to the relevant planning authority, at least six months prior to any decommissioning works being carried out. Any decommissioning works required would then be carried out in accordance with the approved scheme which would incorporate environmental measures with respect to biodiversity and in line with legislation at the time. Therefore, the decommissioning phase and resultant effects are not discussed further in this chapter.

8.8 Assessment methodology

8.8.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 4: Approach to Preparing the ES, Volume 5, Document 5.2.4**. However, whilst this has informed the approach that has been used in this biodiversity assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this biodiversity assessment. The assessment is based upon the results of the desk study and field surveys, and relevant published information (for example on the status, distribution, sensitivity to environmental changes and ecology of the features scoped into the assessment, where this information is available), technical engagement with stakeholders (see **Section 8.3**), and professional knowledge of ecological processes and functions.

8.8.2 The assessment methodology is aligned with the standard industry guidance provided by CIEEM[2]. The assessment is based upon not only the results of the desk study and field surveys, but also relevant published information (for example on potential ecological features' status, distribution, sensitivity to environmental changes and ecology, where this information is available), technical engagement with Natural

England and other key consultees, and professional knowledge of ecological processes and functions.

8.8.3 For each scoped-in ecological feature, effects are assessed against the baseline conditions for that ecological feature during construction and operation. Throughout the assessment process, the initial results of the assessment regarding potentially significant effects have been used to inform the definition of requirements for additional baseline data collection and the identification of embedded environmental measures to avoid or reduce adverse effects or to deliver enhancements. Measures to comply with relevant policies and legislation are included. The results of the assessment reflect the final Project design (i.e. incorporating the embedded environmental measures).

8.8.4 The spatial extent of the assessment of each potentially significant effect reflects the area occupied by the ecological feature that is being assessed and the ZoI associated with the environmental changes that are likely to affect it. Thus, if part of a designated biodiversity site is located within the ecological ZoI relating to a particular environmental change, an assessment will be made of the effects on that site as a whole. A similar approach is taken for areas of important habitat. For species that occur within an ecological ZoI that relates to a change that could significantly affect the species, an assessment is carried out on the total area that is used by the affected individuals or population of the species (for example for foraging or as breeding territories).

8.8.5 For each ecological feature, the assessment deals with the effects of construction and operation. As progressively more information became available about the Project and about the populations of important and legally protected species, and throughout the consultation process, an ongoing detailed scoping exercise has been undertaken to identify which ecological features have the potential to be significantly affected by the Project. Each scoped-in ecological feature has been subject to further assessment work that addresses how it is likely to be affected by the Project, allowing for environmental changes that could affect it during construction and operational stages.

Significance evaluation methodology

8.8.6 CIEEM[2] defines a significant effect as one “that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general”.

8.8.7 When considering potentially significant effects on ecological features, whether these are negative or positive, the following characteristics of environmental change are taken into account:

- **extent** – the spatial or geographical area over which the environmental change may occur;
- **magnitude** – the size, amount, intensity or volume of the environmental change;
- **duration** – the length of time over which the environmental change may occur;
- **frequency** – the number of times an environmental change may occur;
- **timing** – the periods of the day/year/season during which an environmental change may occur; and
- **reversibility** – whether the environmental change can be reversed through restoration actions or regeneration.

8.8.8 Although the characteristics described above are all important in assessing effects, the magnitude of the environmental change as a result of the Project is used, as described in **Table 8.14**, to provide a contextual understanding of the relative scale of change from the baseline position.

Table 8.14 - Guidelines for the assessment of the scale of magnitude

Magnitude	Criteria and Resultant Effect
High	The change permanently (or over the long-term) affects the conservation status of a habitat/species, reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a large area of habitat or large proportion of the wider species population is affected. For designated sites, integrity is compromised. There may be a change in the level of importance of the ecological feature in the context of the Project.
Medium	The change permanently (or over the long term) affects the conservation status of a habitat/species reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a small-medium area of habitat or small-medium proportion of the wider species population is affected. There may be a change in the level of importance of this ecological feature in the context of the Project.
Low	The quality or extent of designated sites or habitats or the sizes of species' populations, experience some small-scale reduction or increase. These changes are likely to be within the range of natural variability and they are not expected to result in any permanent change in the conservation status of the species/habitat or integrity of the designated site. The change is unlikely to modify the evaluation of the ecological feature in terms of its importance.
Very Low	Although there may be some effects on individuals or parts of a habitat area or designated site, the quality or extent of sites and habitats, or the size of species populations, means that they would experience little or no change. Any changes are also likely to be within the range of natural variability and there would be no short-term or long-term change to conservation status of habitats/species ecological features or the integrity of designated sites.
Negligible	A change, the level of which is so low, that it is not discernible on designated sites or habitats or the size of species' populations, or changes that balance each other out over the lifespan of a project and result in a neutral position.

Negative effects

8.8.9 A negative effect is assessed as being significant if the favourable conservation status of an ecological feature would be compromised or lost as a result of the Project. Conservation status is defined by CIEEM[2] as being:

- for habitats – "*the sum of the influences acting on the habitat and its typical species, that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area*"; and

- for species – "*the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area.*"

8.8.10 The decision as to whether the conservation status of an ecological feature has been compromised will be made using professional judgement, drawing upon the results of the assessment of how each feature is likely to be affected by the Project.

8.8.11 A similar procedure will be used for designated sites that may be affected by the Project, except that the focus will be on the effects on the integrity of each site, defined by CIEEM[2] as:

- "*the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified*."

8.8.12 The assessment of effects on integrity will draw upon the assessment of effects on the conservation status of the features for which the site has been designated.

Positive effects

8.8.13 A development may result in positive effects where there is a resulting change from baseline that improves the quality of the environment (for example increases species diversity, increases the extent of a particular habitat and so on), or halts or slows down a pre-existing decline. For a positive effect to be considered significant, the level of importance of an ecological feature determined at the baseline state would need to increase by one or more geographical levels (for example where an ecological feature of district importance becomes of county importance following delivery of the Project).

Limits of Deviation

8.8.14 The assessment of effects focuses on works to be conducted within the LoD as described in **Chapter 3: Description of the Project, Volume 5, Document 5.4.3**. The proposed LoD for the Project are shown on **Figures 3.1 to 3.6 within Volume 5, Document 5.4.3.**

8.8.15 As the design evolved, where valued ecological features were identified along the proposed development, the Order Limits were reduced or otherwise altered, to exclude these features where possible, for example to avoid the loss of, or impacts on, veteran trees and woodland. In terms of the assessment of effects, the potential flexibility introduced by the LoD has been fully considered, with the 'reasonable worst-case scenario' assessed for each receptor.

8.8.16 With respect to vegetation clearance within the LoD as described in the **Arboricultural Impact Assessment, Volume 5, Document 5.3.3I,** the potential for effects has been considered with respect to vegetation to be 'removed' (which may be permanent or temporary removal followed by re-instatement depending on location), and vegetation to be 'affected/managed' (which ranges from coppicing to minor trimming).

8.8.17 Vegetation identified as 'potentially affected' comprises that which may require temporary or permanent removal should there be a need to amend the Project design within the Limits of Deviation post-consent, for example the lateral movement of a pylon. Its implementation is very unlikely and would only be triggered if it becomes necessary to adjust the footprint of works within the LoD should any unforeseen issues be encountered.

8.8.18 Therefore, 'potentially affected' vegetation removal is only considered within the assessment where a greater effect would be likely to result from a lateral shift in the location of vegetation management within the LoD. This is consistent with the approach to assessing the 'reasonable worst-case scenario'.

Biodiversity net gain

8.8.19 Whilst the provision of BNG does not form part of the DCO being sought, the Applicant is committed to seeking to deliver a 10% net gain in biodiversity above the current baseline. Habitat creation and enhancement required to deliver 10% net gain are detailed in **BNG Report, Volume 7, Document 7.9**. Specific locations and mechanisms for delivery are the subject of ongoing discussions with key stakeholders and would align with local initiatives such as biodiversity opportunity mapping and ecological networks where reasonably practicable, appropriate and relevant.

8.8.20 Enhancements resulting from the implementation of BNG are not considered in the basis of assessment of the significance of effects.

Habitat Regulations Assessment

8.8.21 In line with the Planning Inspectorate's Advice Note 10 (see Table 8.3), the relevant Secretary of State is the competent authority for the purposes of the Habitats Regulations in relation to applications for NSIPs. The Habitats Regulations require competent authorities, before granting consent for a plan or project, to carry out an Appropriate Assessment (AA) in circumstances where the plan or project is likely to have a significant effect on a European site (either alone or in combination with other plans or projects).

8.8.22 HRA screening has been undertaken to screen-out sites within the National Site Network and elements of works from further assessment on the basis that significant effects are unlikely (for example if sites or interest features are clearly not vulnerable (exposed and/or sensitive) to the outcomes of the Project due to the absence of any reasonable impact pathways).

8.8.23 The screening process has concluded that the Project, alone or in combination with other developments, would result in no LSE on any of the qualifying features of any sites within the National Site Network within the Study Area, and a NSER (which includes all relevant sites designated for their international importance as agreed with Natural England during the screening stage) has been prepared for the Project (see **No Significant Effects Report, Volume 6, Document 6.4**). Natural England has confirmed agreement with the NSER and its conclusions (see **Table 8.5**).

8.9 Assessment of biodiversity effects

Introduction

8.9.1 The following sections present the assessment of effects as a result of the Project for those ecological features which remain scoped in for assessment (see **Scoping of Assessment Summary, Volume 5, Document 5.3.8A**), and the significance of effects.

8.9.2 As described in **Section 8.1**, bat roost surveys are ongoing and a supplementary report will be submitted as an addendum to this assessment post-submission. Therefore, a precautionary reasonable worst-case scenario has been assumed with respect to the importance of bats at the Project level and the extent and magnitude of environmental

change based on data collated at the time of submission. The assessment of effects on bats has been undertaken on this basis.

Assessment of effects: Overton Borrowpits SINC/Field nr Healaugh Manor Farm deleted SINC/Disused Quarry, Newthorpe deleted SINC

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.3 Approximately 1.50ha of the 6.72ha Overton Borrowpits SINC site lies within the Order Limits. Pylon XC013 is located within the SINC and as such, the working area to enable dismantling of this pylon also falls within the SINC. In addition, scaffolds would be required within the SINC either side of the railway. These works would necessitate the temporary loss, coppicing or cutting back of up to 0.67ha of predominantly willow and hawthorn scrub (interspersed with marshy grassland). Areas of scrub immediately adjacent to these construction activities may also be subject to indirect effects including root damage. Scrub management and temporary loss due to these construction activities would result in temporary loss of connectivity between the northern and southern areas within the SINC.

8.9.4 Approximately 0.04ha of the 2.39ha Field nr Healaugh Manor Farm deleted SINC lies within the Order Limits. Of that, a very small area (<0.01ha) of the plantation shelter belt within the north-western boundary may require management (coppicing or cutting back). However, the SINC was originally designated due to the value of its neutral grassland (now degraded leading to deletion of the site's SINC status) which lies outside the proposed area of works and would remain unaffected. Therefore, there would be no effect on any remaining habitat of value within the deleted SINC.

8.9.5 Approximately half of the 0.49ha Disused Quarry, Newthorpe deleted SINC lies within the Order Limits. A scaffold and temporary access track would be required within the deleted SINC which would result in the temporary loss or degradation of up to 0.05ha of poor semi-improved grassland. In addition, reconductoring of the existing XC overhead line would require the management through coppicing or cutting back of up to 0.03ha of young/semi-mature trees and a mature ash growing along the southern boundary of the deleted SINC adjacent to the quarry wall and approximately 0.03ha of young/semi-mature trees along the northern boundary. The SINC (now degraded leading to deletion of the site's SINC status) was originally designated for calcareous grassland which is no longer evident due to enrichment and succession. Therefore, there would be no effect on any habitat for which the SINC was designated.

8.9.6 Embedded environmental measure **2 – Standard best practice**, **3 – Minimise land take and micro-site**, **4 – Dust management**, **6 – Maintaining habitat connectivity** and **12 – Sensitive access and enabling works** (see **Section 8.6**) would minimise the temporary habitat loss and reduction in connectivity within the SINC and deleted SINCs as far as possible. However, some temporary vegetation clearance is unavoidable due to the location of existing infrastructure, and the necessity of installing temporary scaffolding as a safety measure to protect the railway (in the case of Overton Borrow Pits) and a road (in the case of Disused Quarry, Newthorpe deleted SINC) from the

accidental dropping of conductors and any of the associated equipment during the dismantling works.

8.9.7 In addition to the above measures, the use of embedded environmental measure **9 – Protection of retained habitats** would protect retained habitat (including retained scrub within Overton Borrow Pits SINC) adjacent to working areas, reducing the magnitude of change and thus the effect. Embedded environmental measure **8 – Sensitive tree management for electrical safety clearance** is intended to reduce the magnitude of the change through management practices such as coppicing or pollarding trees instead of removal where possible, thus minimising the effects of habitat loss. Embedded environmental measure **11 – Habitat reinstatement** would ensure that losses and degradation are suitably compensated with an appropriate selection of species and follow-on management. Tree removal would be mitigated with a scheme of new tree planting which would ensure no net loss in tree cover as detailed in the **CoCP Document 5.3.3B and BMS, Volume 5, Document 5.3.3D**.

8.9.8 With respect to Overton Borrow Pit SINC, considering the embedded environmental measures described, the magnitude of change is assessed to be **low** and temporary. Therefore, the effect of construction is assessed as **negative** and **Not Significant**.

8.9.9 As no habitat for which the deleted SINCs were originally designated would be affected, there is no pathway for environmental change on these sites.

Operation

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.10 As Pylon XC013 currently located within Overton Borrow Pits SINC and the section of 275kV overhead line which currently oversails the SINC would no longer be present (due to dismantling) there would be no pathway for adverse environmental change on this SINC during operation.

8.9.11 As the effects resulting from the operational phase would be akin (or less) to those involved in the Project construction phase, and as no habitat for which the deleted SINCs were originally designated is currently present (nor would be likely to develop based on the future baseline described in **Section 8.5**) within the footprint of construction works, there is no pathway for environmental change on these deleted SINCs during Operation.

Summary effects

8.9.12 Given the low level of temporary negative change during construction, and the lack of any change during operation, the overall magnitude of change on Overton Borrowpits SINC/Field nr Healaugh Manor Farm deleted SINC/Disused Quarry, Newthorpe deleted SINC is **low negative,** and the resultant effect on conservation status is **Not Significant** on ecological features of County importance.

Assessment of effects: River Ouse candidate SINC

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.13 Along the majority of its length (including within the Order Limits), the candidate SINC boundary provided during the desk study includes the river channel but excludes adjacent floodplain/terrestrial habitat.

8.9.14 The Order Limits include two separate linear stretches (each of approximately 100m) of the River Ouse candidate SINC. Within these, a new stretch of 275kV XC overhead line is to be constructed across the river corridor, and approximately 380m further downstream, an existing section of 275kV XCP overhead line is to be removed.

8.9.15 The footprint of scaffolds and pylon construction/dismantling areas are located outside the candidate SINC boundary which negates the risk of direct habitat loss. The stringing of the conductor wires for the proposed 275kV XC route and the retrieval of the 275kV XCP route's conductors during dismantling above the river channel would involve a short duration of activity immediately above the river channel, with netting to protect the river from the accidental dropping of conductors and any of the associated equipment during the stringing/dismantling works in place for several months. Due to the relatively short duration and low levels of activity associated with these works, there is negligible potential for temporary degradation or fragmentation of habitat within the candidate SINC.

8.9.16 Based on the candidate SINC faunal interest features (migratory fish, otter, foraging bats and invertebrates), a very low temporary potential for disturbance/displacement of faunal interest features as a result of construction works (stringing/dismantling of conductor wires and scaffold erection/vegetation management adjacent to the candidate SINC) is assumed as a precaution. However, the incorporation of embedded environmental measures including **2 – Standard best practice**, **3 – Minimise land take and micro-site**, **4 – Dust management**, **6 – Maintaining habitat connectivity**, **8 – Sensitive tree management for electrical safety clearance**, **9 – Protection of retained habitats**, **12 – Sensitive access and enabling works**, **13 – Protection of aquatic features**, and specific measures outlined in **Section 8.6** (i.e. maintaining an appropriate construction buffer from watercourses; using existing access points where possible) would minimise the potential for disturbance/displacement of faunal species.

8.9.17 Embedded environmental measure **14 – Sensitive lighting design** would further reduce the potential for disturbance of any light-sensitive faunal interest features including bats and otter).

8.9.18 See **Section 8.9 Assessment of Biodiversity Effects** with respect to potential for effects on otter, tansy beetle and fish.

8.9.19 Considering the embedded environmental measures described the magnitude of change due to the effects of increased noise/vibration/light/movement on faunal interest features is assessed to be **very low** and temporary. Therefore, the effect of construction is assessed as **negative** and **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.20 As the section of 275kV XCP overhead line which currently oversails the candidate SINC would no longer be present (due to dismantling) there would be no pathway for adverse environmental change on the candidate SINC in that location during operation.

8.9.21 Effects resulting from the maintenance and refurbishment of the proposed 275kV XC route (including the conductor wires which would oversail the candidate SINC) would be akin (or less) to those involved in the Project construction phase. Where necessary, Method Statements would be developed and employed to reflect the legislation and the biodiversity conditions in the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur. As such, the magnitude of change due to the effects of increased noise/vibration/light/movement on faunal interest features is assessed to be **very low** and temporary. Thus, the effect of operation is assessed as negative and **Not Significant**.

Summary effects

8.9.22 Given the very low level of temporary negative change during construction and operation, the overall magnitude of change on the River Ouse candidate SINC is **very low negative**, and the resultant effect of the Project on conservation status is **Not Significant** on an ecological feature of County importance.

Assessment of effects: Broadleaved semi-natural woodland

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.23 There are multiple relatively small parcels of broad-leaved semi-natural woodland within the Order Limits which amount to approximately 1.50ha in total, all of which is considered to qualify as HPI lowland mixed deciduous woodland based on a precautionary assessment of the results of the desk study and extended Phase 1 habitat survey.

8.9.24 Vegetation management associated with construction activities at pylon working areas, scaffold locations and visibility splays adjacent to access routes, along with vegetation management to achieve safety clearance beneath the existing and proposed overhead lines throughout land within the Order Limits could temporarily affect up to 0.82ha of broad-leaved semi-natural woodland likely to qualify as HPI.

8.9.25 Although the Project design has evolved to avoid woodland where possible, due to the location of existing infrastructure some minor temporary habitat loss/degradation and loss of connectivity is unavoidable. Proposed works with potential for the greatest effect involve vegetation management beneath the span between temporary pylons XCP006AT – XCP006BT, existing pylons to be dismantled XCP006 – XCP007, and

proposed pylons XC422 – XC423 which could result in the temporary loss and reduction in connectivity of riparian woodland adjacent to The Foss (W5); and installation of scaffolding and a temporary access track along with vegetation management within woodland beneath the span between pylons XC472 - XC473.

8.9.26 Proposed works could involve coppicing of trees as a reasonable worst-case, though in practice and with embedded environmental measures **2 – Standard best practice, 3 – Minimise land take and micro-site, 6 – Maintaining habitat connectivity, 8 – Sensitive tree management for electrical safety clearance,** and **12 – Sensitive access and enabling works** (see **Section 8.6**), management would be reduced to pruning/removal of overhanging branches wherever possible. Furthermore, embedded environmental measure **11 – Habitat reinstatement** would ensure replacement of temporarily lost habitat in situ wherever possible.

8.9.27 Broad-leaved semi-natural woodland is also present immediately adjacent to access routes for several pylons/working areas. Areas of habitat immediately adjacent to these construction activities may be subject to effects, including management of overhanging canopies and root damage (potentially resulting in tree loss). Embedded environmental measure **9 – Protection of retained habitats** would protect retained woodland habitat and would thus minimise the effect.

8.9.28 Considering the embedded environmental measures described, the magnitude of change due to land take and fragmentation is assessed to be **low** and temporary. Therefore, the effect of construction is assessed as **negative** and **Not Significant**.

Operation

8.9.29 Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin to (or less) than those involved in the Project construction phase. Where necessary, Method Statements would be developed and employed to reflect the legislation and the biodiversity conditions in the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur. As such, the magnitude of change due to land take and fragmentation is assessed to be **low** and temporary. Thus, the effect of operation is assessed as negative and **Not Significant**.

Summary effects

8.9.30 Given the low level of temporary negative change during construction, and low level of temporary negative change during operation, the overall magnitude of change on broadleaved semi-natural woodland is **low negative,** and the resultant effect on conservation status is **Not Significant** on an ecological feature of County importance.

Assessment of effects: Ancient and semi-natural woodland/ancient replanted woodland/ancient/veteran trees

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation)

8.9.31 As detailed in the **Arboricultural Impact Assessment (Volume 5, Document 5.3.3),** the Project design has been amended to avoid all ancient woodland and to ensure proposed access routes in proximity to Overton Wood and Redhouse Wood are outside the 15m buffer zone thereby avoiding any effects on these woodlands. However, due to the position of the existing XC/XCP 275kV overhead line, a scaffold to facilitate a railway crossing and an access route to facilitate reconductoring work are required within 15m of Huddleston Old Wood. In practice the scaffolding will be achieved with the minimum impact to trees within the buffer zone and will be erected and installed working around tree positions where possible. As a reasonable worst-case affected areas would be limited to a short section of semi mature hawthorn hedgerow and a small group of young to semi-mature ash and hazel which would all readily regenerate from coppicing. This does not represent a significant change from the existing management of vegetation within the buffer zone associated with the existing overhead line (necessary to achieve safety clearance). The temporary access route would preferentially avoid the 15m ancient woodland buffer and where this is not feasible soil structure would be protected via ground protection boards.

8.9.32 No veteran or ancient trees identified by the Woodland Trust's Ancient Tree Inventory would be removed by the Project. Eight veteran trees identified during the Arboriculture survey have the potential to be impacted by the Project. The design of access routes has been amended to avoid any changes within the root protection area (RPA) of five of these trees. The remaining three trees are in close proximity to the existing XC/XCP 275kV overhead line and any pruning or management required to facilitate reconductoring work would not represent a change from the existing management of these trees in relation to the existing infrastructure, and embedded environmental measure **8 – Sensitive tree management for electrical safety clearance** would reduce the magnitude of any effects. Therefore, no new impacts are anticipated in association with the Project.

8.9.33 Embedded environmental measure **2 – Standard best practice, 3 – Minimise land take and micro-site, 4 – Dust management, 6 – Maintaining habitat connectivity, 7 – Protection of ancient/veteran trees,** and **12 – Sensitive access and enabling works** (see **Section 8.6**) would avoid the loss of ancient woodland/veteran or ancient trees, would protect retained woodland habitat close to working areas and would reduce the extent of any effects.

8.9.34 Embedded environmental measure **9 – Protection of retained habitats** would protect retained woodland habitat and individual veteran trees close to working areas including the use of temporary tree protection fencing.

8.9.35 Considering the embedded environmental measures described, the magnitude of change due to land take is assessed to be **negligible**. Therefore, the effect of construction is assessed as **Not Significant**.

Operation

8.9.36 Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. As such, the magnitude of change due to land take is assessed to be **negligible**. Thus, the effect of operation is assessed as **Not Significant**.

Summary effects

8.9.37 Given the negligible level of change during construction and operation, the overall magnitude of change on ancient and semi-natural woodland/ancient replanted woodland/ancient/veteran trees is **negligible**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of National importance.

Assessment of effects: Hedgerows

Predicted effects and their significance

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.38 The design of the Project has been developed to avoid hedgerow loss through use of existing access routes through field boundaries wherever possible. However, loss and damage of hedgerows would occur during the construction phase due to works associated with access routes (permanent loss of 8m of hedgerow at bellmouths and 4m at new access routes is assumed), construction areas and safety clearance beneath the existing and proposed overhead lines.

8.9.39 The project is likely to result in a total permanent loss of approximately 953m of native hedgerows[132], comprising approximately:

- Intact species-rich: 228m
- Hedgerow with trees species-rich: 60m
- Defunct species-rich: 9m
- Intact species-poor: 190m
- Hedgerow with trees species-poor: 41m
- Defunct species-poor: 424m

8.9.40 Given the baseline of approximately 29,566m of hedgerows within the Order Limits, this represents a permanent loss of approximately 3.2%.

8.9.41 In addition, up to 17,036m of native hedgerow may be temporarily affected which as a reasonable worst-case is likely to involve minor management works to parts (not all) of the hedgerows such as pruning tall growth to maintain safety clearance with occasional

[132] It should be noted that the **Arboricultural Impact Assessment (Volume 5, Document 5.3.3l)** does not use Phase 1 habitat survey methodology to record and map hedgerows and may map a section of hedgerow (in Phase 1 terms) as a combination of individual trees/groups of trees/hedge. Therefore, baseline hedgerow lengths and linear measurements of hedgerow loss are reported differently.

coppicing. Thus, the actual lengths subject to direct temporary effects would be significantly less.

8.9.42 The embedded environmental measures **3 – Minimise land take and micro-site, 4 – Dust management, 6 – Maintaining habitat connectivity, 9 – Protection of retained habitats and 12 – Sensitive access and enabling works** and other specific measures (see Section 8.6) would minimise the loss and damage of habitat as far as possible. Where hedgerows are spanned by overhead lines, embedded environmental measure **8 – Sensitive tree management for electrical safety clearance** would seek to minimise hedgerow removal by using management measures such as trimming and coppicing to enable regrowth.

8.9.43 The embedded environmental measure **11 – Habitat reinstatement** would seek to reinstate all areas of hedgerow which are temporarily crossed during construction with an emphasis on reinstating with species-rich mixes to increase species-diversity in agreement with landowners.

8.9.44 Hedgerow removal would be mitigated within the Order Limits by hedgerow planting and reinforcement which has been embedded into the Project design. This would comprise approximately 1027m of new hedgerow planting at Overton Substation (Section B), Tadcaster (Section D) and Monk Fryston Substation (Section F) (see **Figures 3.10 to 3.12, Volume 5, Document 5.4.3)**. In addition, approximately 849m of hedgerow reinforcement (comprising thickening, gapping up, and planting trees within existing hedgerows) would be implemented at these locations. Reinforcement would increase the biodiversity value of the hedgerows by ensuring no gaps (except for access), at least a double stagger in width, and trees on average 1 every 10m length (see **Chapter 6: Landscape and Visual Amenity, Volume 5, Document 5.2.6**). Therefore, the Project would result in a net increase in hedgerow length of approximately 74m, with an additional approximate length of 849m reinforced. Although this would ultimately result in a net length of new planting/reinforcement equivalent to approximately 3.1% of baseline, there would be a temporary loss in net hedgerow length during the construction period (approximately four and a half years) followed by a period of approximately five to ten years for the new/reinforced hedgerows to mature. In addition there would be (mostly short) permanent gaps remaining in hedgerows across land within the Order Limits due to permanent land take, for example new permanent access routes.

8.9.45 Therefore, considering the embedded environmental measures described the magnitude of change due to land take/degradation and fragmentation is assessed to be **low** and permanent. Therefore, the effect of construction is assessed as **negative** and **Not Significant**.

Operation

8.9.46 Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. As there would be no additional permanent loss of hedgerows during the operational phase (and no associated re-planting/reinforcement), with all potential effects limited to minor temporary loss/degradation to enable temporary access to existing structures, the magnitude of change due to land take and fragmentation is assessed to be **low** and temporary. Therefore, the effect of operation is assessed as **negative** and **Not Significant**.

Summary effects

8.9.47 Given the low level of permanent negative change during construction and the low level of temporary negative change during operation, the overall magnitude of change on hedgerows is **low negative**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of County importance.

Assessment of effects: Standing water (ponds and wet ditches)

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.48 There are 26 ponds and 17 ditches holding standing water located within the Order Limits. All ponds are classed as HPI as a precaution[106].

8.9.49 The construction of the proposed Overton Substation would result in the permanent loss of one pond (P28) during the construction phase. The pond is located in the middle of a large arable field, lacking connectivity to semi-natural terrestrial habitat, and eDNA survey at the pond indicated an absence of great crested newts. No other ponds would be permanently lost as a result of the Project.

8.9.50 Twenty additional ponds are located within the temporary working areas associated with the construction phase including pylon/stringing working areas and proposed access routes. However, in practice the ponds would be retained in situ and the potential for temporary habitat degradation would be mitigated as a result of embedded environmental measures: **2 – Standard best practice, 3 – Minimise land take and micro-site** and **9 – Protection of retained habitats**. Therefore, effects would be limited to temporary reduction in connectivity to surrounding terrestrial habitat as a reasonable worst-case scenario.

8.9.51 The **Outline Landscape Strategy Plans** (**Figures 3.10 to 3.12, Document 5.4.3, Volume 5**) incorporate the construction of a new pond within a proposed wildflower meadow at Overton Substation (within approximately 300m of the pond to be lost during construction).

8.9.52 Furthermore, embedded measure **16 – Protected species licences** would ensure that effects on ponds (in relation to their value as potential great crested newt habitat) is compensated by creation of high quality replacement habitat via the grant of a DLL. Although this measure specifically relates to avoiding effects on the favourable conservation status of great crested newts, it also ensures that adequate compensation for effects on pond habitat (as an important ecological feature in its own right) is embedded into the Project.

8.9.53 All ditches holding standing water within the Order Limits have been retained within the Project design. However, there would be temporary degradation of habitat and minor reduction in connectivity at ditches holding standing water in seven locations[133] resulting from the construction of three new temporary culverts (located in D10, D26 and D33), and the minor extension/upgrade of five existing culverts (located in D35, D38, D56 and two locations in D96) to enable access to existing infrastructure. The extent of affected ditch habitat would be approximately 6m in length in each case (inclusive of existing culvert locations). All affected ditches are of low ecological value comprising uniform agricultural channels with limited aquatic or bankside vegetation and limited potential to support protected species and/or no confirmed evidence of protected species during surveys for otter and water vole. However, see **Section 8.9 Assessment of Effects: Water vole** with respect to potential for effects on water vole.

8.9.54 In addition, a temporary clear span bridge would be used to cross D81 to enable access to existing pylon XC472. The use of a clear span bridge reduces the potential for effects on in-channel habitat connectivity to negligible. Installation of the bridge would result in management of bankside vegetation along up to 12m of ditch habitat but once installed effects would be limited to localised shading of bankside and in-channel vegetation which would be likely to result in temporary degradation of a very low magnitude. D81 feeds into the River Wharfe with the proposed bridge location being approximately 20m from the main river. Although considered to provide optimal habitat for water vole and otter, no evidence was found during surveys for these species. However, see **Section 8.9 Assessment of Effects: Water vole** and **Assessment of Effects: Otter** with respect to potential for effects on water vole and otter.

8.9.55 Embedded environmental measures: **2 – Standard best practice, 3 – Minimise land take and micro-site, 12 – Sensitive access and enabling works, 10 – Management of INNS** and **11 – Habitat reinstatement** would ensure the sensitive installation and design of all temporary culverts to affect the minimum length possible (up to approximately 6m), retaining the natural bed of the ditch where possible or alternatively installing the culvert with the invert set below the natural bed level to enable a semi-natural bed to establish within the culvert. Habitat would be re-instated to pre-works condition or better following the removal of temporary culverts.

8.9.56 There is a requirement to divert existing third party assets (comprising an existing 33kV overhead line above ditch D90) to facilitate construction works in the span between pylons XC497-XC498. As a precaution it is assumed that open trenching will be used which would result in temporary habitat loss, degradation and reduction in connectivity within the ditch. However, in line with the assessment of effects in **Chapter 9: Hydrology and Flood Risk, Volume 5, Document 5.2.9** (including relevant embedded environmental measures described therein for managing open trenching within a watercourse), the effects on the ditch would be minor and temporary followed by reinstatement to previous condition.

8.9.57 In addition, embedded environmental measure **13 – Protection of aquatic features** would minimise the potential for habitat degradation at retained ditches.

8.9.58 Considering the embedded environmental measures described, the magnitude of change is assessed to be **very low** due to land take (permanent loss of one pond with

[133] It should be noted that additional culvert requirements are referred to in **Chapter 9: Hydrology and Flood Risk, Volume 5, Document 5.2.9** which affect running water (see **Section 8.9 Assessment of Effects: Running water**) and other habitat such as dry ditches not scoped into the biodiversity assessment due to negligible biodiversity value.

subsequent creation of one new on-site pond), and temporary degradation of up to approximately 54m of ditch habitat) and temporary fragmentation. Therefore, the effect of construction is assessed as negative and **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.59 There would be no further permanent loss of standing water habitat during the operational phase. Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. As such, the magnitude of change due to land take and fragmentation is assessed to be **very low** and temporary. Thus, the effect of operation is assessed as negative and **Not Significant**.

Summary effects

8.9.60 Given the low level of permanent and temporary negative change during construction and the very low level of temporary change during operation, the overall magnitude of change on standing water (ponds and ditches) is **very low negative**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of County importance.

Assessment of effects: Running water (rivers, streams and ditches)

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.61 There are 16 watercourses (rivers and streams) and six ditches with running water located within the Order Limits, none of which are classed as HPI. An assessment of effects on the River Ouse has been carried out separately as part of the River Ouse candidate SINC assessment and is therefore not considered here.

8.9.62 As the environmental changes: pollution events and changes in hydrology have been scoped out for all ecological features (see **Section 8.7** and **Chapter 9: Hydrology and Flood Risk, Volume 5, Document 5.2.9)** this section will therefore assess the effects of land take/land use change and fragmentation on running water habitats.

8.9.63 Existing access routes are used to cross rivers and streams wherever possible and the Project design avoids any permanent loss of running water habitat.

8.9.64 There would be temporary degradation of up to 6m of habitat and minor reduction in connectivity at one ditch with running water (D83) resulting from the construction of a new temporary culvert to enable access to a scaffold required to facilitate overhead line

restringing works above the A659 in the span XC472-473[134]. The ditch is located close to woodland in connectivity to the River Wharfe (W9) which enhances its value for otter, though no evidence of this species was recorded during surveys. See **Section 8.9 Assessment of Effects: Water vole** and **Assessment of Effects: Otter** with respect to potential for effects on water vole and otter.

8.9.65 As stated in **Chapter 9: Hydrology and Flood Risk**, **Volume 5, Document 5.2.9**, temporary open span bridges would be used in four[135] locations with running water which reduces the potential for reduction of in-channel habitat connectivity to negligible at these rivers and streams (Moor Gutter (W2), Hurns Gutter (W3), The Foss Catchment (tributary of Wharfe) (W8) and a tributary of Hurns Gutter (D11). Installation of the bridges would result in management of bankside vegetation along up to 12m of habitat at each location but once installed effects would be limited to localised shading of bankside and in-channel vegetation which would be likely to result in temporary degradation of a very low magnitude. See **Section 8.9 Assessment of Effects: Water vole** and **Assessment of Effects: Otter** with respect to potential for effects on water vole and otter.

8.9.66 Where access is required across running water habitat, embedded environmental measure **12 – Sensitive access and enabling works** would ensure the sensitive design and installation of all temporary culverts (or culvert upgrades) to minimise temporary habitat loss, degradation and reduction in connectivity, including limiting works to the minimum length possible, retaining the natural bed of the watercourse/ditch, or installing the culvert with the invert set below the natural bed level to enable a semi-natural bed to establish. Habitat would be re-instated to pre-works condition or better following the removal of temporary bridges and culverts.

8.9.67 Embedded environmental measures **6 – Maintaining habitat connectivity,** and **13 – Protection of aquatic features** ensure a minimum stand-off from all watercourses and ditches has been embedded into the Project design which minimises the potential for riparian or in-channel habitat loss/degradation or reduction in riparian habitat continuity due to construction works. However, due to the location of existing infrastructure, some watercourses and ditches are located within the temporary working areas associated with the construction phase including pylon/stringing working areas, diversion of existing third party utilities and proposed access routes.

8.9.68 There is a requirement to divert existing third party assets comprising a 33kV overhead line above Cock Beck (W12) and an 11kV overhead line above the upper reaches of Hurns Gutter (W3) to facilitate construction works. As a precaution it is assumed that open trenching will be used which would result in temporary habitat loss, degradation and reduction in connectivity within the ditch. However, in line with the assessment of effects in **Chapter 9: Hydrology and Flood Risk, Volume 5, Document 5.2.9** (including relevant embedded environmental measures described therein for managing open trenching within a watercourse), the effects on the watercourses would be minor and temporary followed by reinstatement to previous condition. Diversion of existing

[134] It should be noted that additional culvert requirements are referred to in **Chapter 9: Hydrology and Flood Risk, Volume 5, Document 5.2.9** which affect standing water (see **Section 8.9 Assessment of Effects: Standing water**) and other habitat such as dry ditches not scoped into the biodiversity assessment due to negligible biodiversity value.

[135] A fifth bridge location is also identified which is on D81 and its effects are discussed in **Section 8.9 Assessment of Effects: Standing water**.

third party utilities adjacent to several other watercourses may result in minor temporary disturbance to riparian habitats.

8.9.69 Construction works adjacent to The Foss (W5) associated with dismantling pylon XCP005 could result in temporary loss/degradation of riparian scrub, and vegetation management beneath the span between temporary pylons XCP006AT – XCP006BT, existing pylons to be dismantled XCP006 – XCP007, and proposed pylons XC422 – XC423 could result in the temporary loss of riparian woodland. Further temporary loss of riparian scrub and trees is likely adjacent to Cock Beck (W12) during construction works at pylon XC498.

8.9.70 However, in practice the potential for temporary riparian habitat loss/degradation would be mitigated as a result of embedded environmental measures: **2 – Standard best practice, 3 – Minimise land take and micro-site, 8 – Sensitive tree management for electrical safety clearance, 9 – Protection of retained habitats, 10 – Management of INNS,** and **11 – Habitat reinstatement**. Therefore, effects would be limited to temporary degradation of a low magnitude as a reasonable worst-case scenario.

8.9.71 Due to the short stretches of flowing water habitat liable to minor effects only, and the incorporation of embedded mitigation measures, effects on the aquatic invertebrate, macrophyte and fish communities present in these watercourses would be negligible. The potential for effects on SPI and other conservation-notable fish species is assessed separately in **Section 8.9**.

8.9.72 Considering the embedded environmental measures described, the magnitude of change due to land take and fragmentation is assessed to be **low** and temporary. Therefore, the effect of construction is assessed as **negative** and **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.73 There would be no loss of flowing water habitat during the operational phase. Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. As such, the magnitude of change due to land take and fragmentation is assessed to be **low** and temporary. Thus, the effect of operation is assessed as negative and **Not Significant**.

Summary effects

8.9.74 Given the low level of temporary negative change during construction and operation, the overall magnitude of change on flowing water (rivers, streams and ditches) is **low negative**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of Local/County importance.

Assessment of effects: Coastal and floodplain grazing marsh

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.75 Based on the results of the desk study and extended Phase 1 habitat survey, the only location where coastal and floodplain grazing marsh HPI is present[136] within the Order Limits is a field to the south of the River Wharfe (W9) in which pylon XC472 is located. Approximately 1.29ha of this habitat is present within the Order Limits.

8.9.76 Construction works associated with reconductoring at pylon XC472 are unavoidable due to the location of existing infrastructure and would comprise a temporary working area around the pylon, a temporary access track to the pylon, and a scaffold (and its temporary access track) adjacent to the southern river bank at span XC471-XC472. These works would result in the temporary loss or degradation of up to 0.48ha of HPI coastal and floodplain grazing marsh. However, the use of temporary trackway panels would minimise damage to this habitat.

8.9.77 Temporary fragmentation of this parcel of habitat may also occur due to the proposed footprint of works bisecting the field, though this would not be expected to have any effect on the value of the HPI in the medium or long term.

8.9.78 In addition, up to 0.33ha of HPI coastal and floodplain grazing marsh beneath the overhead line in the span XC471-XC472 could be temporarily degraded during works to upgrade the conductor system. However, in practice, this is likely to be much less due to the incorporation of embedded environmental measures.

8.9.79 Embedded environmental measures **2 – Standard best practice**, **3 – Minimise land take and micro-site**, **4 – Dust management**, and **6 – Maintaining habitat connectivity** (see **Section 8.6**) would avoid or minimise the degradation and fragmentation of coastal and floodplain grazing marsh HPI, and the embedded environmental measure **9 – Protection of retained habitats** would protect retained HPI habitat close to working areas and would reduce the extent of any effect. Embedded environmental measure **11 – Habitat reinstatement**, with an appropriate selection of species and follow-on management, would ensure that temporary effects are suitably mitigated.

8.9.80 Considering the embedded environmental measures described, the magnitude of change due to land take and fragmentation is assessed to be **very low** and temporary. Therefore, the effect of construction is assessed as negative and **Not Significant**.

[136] Presence of the HPI coastal and floodplain grazing marsh is assumed on a precautionary basis as discussed in **Section 8.5**.

Operation

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.81 Effects resulting from the maintenance and refurbishment of the 275kV XC route (including pylon XC472 and the overhead line within span XC471-XC472 which oversails the HPI) would be akin (or less) to those involved in the Project construction phase. As such, the magnitude of change due to land take and fragmentation is assessed to be **very low** and temporary. Thus, the effect of operation is assessed as negative and **Not Significant**.

Summary effects

8.9.82 Given the very low level of temporary negative change during both construction and operation, the overall magnitude of change on coastal and floodplain grazing marsh HPI is **very low negative**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of County importance.

Assessment of effects: Arable field margins

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.83 Arable fields are the dominant habitat within the Order Limits. The majority of arable field margins are narrow and species-poor and therefore unlikely to qualify as HPI. However, there are occasional fields with wide margins (in some cases up to 50m) which may meet HPI criteria[108].

8.9.84 Construction/undergrounding/stringing working and/or undergrounding/stone access associated with XC465, XC497, SP007, YN005 and YN006 would result in the temporary loss or degradation of up to 0.82ha of assumed HPI arable field margin.

8.9.85 Temporary fragmentation of this parcel of habitat may also occur due to the proposed footprint of works bisecting the arable field margins, though this would not be expected to have any effect on the value of the HPI in the medium or long term.

8.9.86 Embedded environmental measures **2 – Standard best practice**, **3 – Minimise land take and micro-site**, **4 – Dust management**, and **6 – Maintaining habitat connectivity** (see **Section 8.6**) would avoid or minimise the degradation and fragmentation of arable field margin HPI, and the embedded environmental measure **9 – Protection of retained habitats** would protect retained HPI habitat close to working areas and would reduce the extent of any effect. Embedded environmental measure **11 – Habitat reinstatement**, with an appropriate selection of species and follow-on management, would ensure that temporary effects are suitably mitigated.

8.9.87 Considering the embedded environmental measures described, the magnitude of change due to land take and fragmentation is assessed to be **very low** and temporary. Therefore, the effect of construction is assessed as negative and **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.88 Effects resulting from the maintenance and refurbishment of the 275kV XC route would be akin (or less) to those involved in the Project construction phase. As such, the magnitude of change due to land take and fragmentation is assessed to be **very low** and temporary. Thus, the effect of operation is assessed as negative and **Not Significant**.

Summary effects

8.9.89 Given the low level of temporary negative change during construction and operation, the overall magnitude of change on arable field margins HPI is **very low negative**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of County importance.

Assessment of effects: Bats (all species)

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation, loss/damage to roosts, kill/injure bats); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.90 Habitats of particular value to bats such as woodland, hedgerows, watercourses and ditches have been retained within the Project design as far as possible. The vast majority of habitat to be permanently lost as a result of the Project is arable and improved/poor semi-improved grassland which is generally unfavourable for bats.

8.9.91 Relatively short stretches of permanent hedgerow loss would be unavoidable where new permanent access routes are required. Locations are dispersed throughout land within the Order Limits and would be up to 8m where permanent bellmouths are required, but 4m for field gates. This would result in a minor reduction in connectivity of bat commuting and foraging habitat, though plentiful alternative linear habitat (hedgerows and watercourses/ditches) would be retained and would provide alternative commuting/foraging routes, thereby minimising effects.

8.9.92 There are two locations within the Order Limits where the loss of longer continuous lengths of permanent hedgerow loss is likely to be unavoidable due to the construction of new permanent infrastructure. At the northern end of the new YN 400kV overhead line, the construction of two CSECs (Shipton North 400kV CSEC and Shipton South 400kV CSEC) could result in the permanent loss of approximately 65m of intact species-rich hedgerow. As a result of the new Monk Fryston Substation two separate stretches of two defunct species-poor hedgerows totalling up to 430m could be lost at the southern end of the Order Limits. Removal of these hedgerows would represent a loss of foraging and commuting habitat for bats within the Order Limits, albeit a relatively small proportion of the retained available network of linear habitats. It would also result in a minor reduction in connectivity between small woodland blocks within

and adjacent to the Order Limits, though alternative linear connective habitat is retained and therefore isolation of potentially valuable habitat would not occur.

8.9.93 In addition to permanent loss of linear foraging/commuting habitat, there would be a small permanent loss of predominantly poor or sub-optimal foraging habitat (arable/improved/poor semi-improved grassland/immature coniferous plantation woodland) at the proposed Overton and Monk Fryston Substations and the proposed CSECs at Shipton and Tadcaster, though any losses would be mitigated through the creation of more favourable habitats including woodland, wildflower meadow, ponds and hedgerows as part of the **Outline Landscape Strategy Plans** (**Figures 3.10 to 3.12, Volume 5, Document 5.4.3**).

8.9.94 In addition to the relatively small lengths/areas of permanent foraging/commuting habitat loss, there would also be temporary loss of foraging/commuting habitat across land within the Order Limits associated with pylon working areas, scaffold locations, visibility splays adjacent to access routes, and construction of temporary access routes, along with vegetation management to achieve safety clearance beneath the existing and proposed overhead lines. Embedded environmental measures: **2 – Standard best practice, 3 – Minimise land take and micro-site, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 - Sensitive tree management for electrical safety clearance, 9 – Protection of retained habitats, 11 – Habitat reinstatement, 12 – Sensitive access and enabling works,** and **13 - Protection of aquatic features** would minimise loss and fragmentation of habitat as far as practicable.

8.9.95 In terms of bat roosting habitat, there is potential for the vegetation management required to facilitate construction activities including maintenance of safety clearance beneath the existing and proposed overhead lines to cause damage or destruction to bat roosts and death/injury of individuals in suitable trees. However, no bat roosts have been confirmed during targeted surveys of trees to be removed or managed within the Order Limits to date, and although surveys of affected trees are ongoing (see **Section 8.1 Limitations** and **Section 8.5 Current baseline - Bats**), based on the results of bat activity transect and static surveys, and the results of tree-climbing surveys to date, the likelihood of any important roosts being identified in the outstanding tree surveys is low, with any roosts likely to be of relatively common species. Furthermore, embedded environmental measure **7 – Protection of ancient/veteran trees** ensures protection of the most mature trees within the Order Limits which are more likely to have suitable roosting cavities due to their age. In addition, tree removal would be mitigated with a scheme of new tree planting which would ensure no net loss in tree cover as detailed in the **CoCP, Volume 5, Document 5.3.3B**.

8.9.96 In order to mitigate the potential loss of available roosting features throughout the Order Limits, embedded environmental measure **17 – Installation of bat boxes** outlines that bat boxes would be erected at suitable locations as close as practicably possible to any trees with roosting potential which are removed. Boxes would be erected at a ratio of 2:1 for each tree removed with high/moderate potential to support roosting bats (but no evidence of confirmed roosting). The number of required boxes would be determined after completion of ongoing tree climbing surveys.

8.9.97 Should any confirmed bat roosts be identified during ongoing surveys, if it is assessed that the aforementioned embedded environmental measures cannot sufficiently avoid negative effects on individual bats, bat roosts, and/or habitat connectivity for bats, an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)[9]) from Natural England would be obtained in line with embedded environmental measure **16 – Protected species licences** in order for the Project to

proceed while avoiding contravening legislation. By default, an EPS licence does not allow for a significant negative effect on the favourable conservation status of those species affected.

8.9.98 There is potential for bats to be disturbed by noise, vibration, lighting and movement associated with construction. This disturbance may result in temporary localised exclusion of bats from adjacent habitats during construction, though effects would be minimised through embedded environmental measures: **2 – Standard best practice** and **14 – Sensitive lighting design**.

8.9.99 Further to this, the embedded environmental measure **15 – Construction traffic speed limits** would reduce the small risk of killing/injury of bats through construction traffic collision to negligible.

8.9.100 Due to their mobile nature there is potential for use of habitat by roosting bats to change prior to construction. Embedded environmental measure **1 – pre-construction update surveys** involving tree-climbing surveys as required prior to tree removal/management would ensure any change in roosting habitat is identified and mitigated accordingly in line with embedded environmental measure.

8.9.101 Following pre-construction update surveys, if it is assessed that the aforementioned embedded environmental measures cannot sufficiently avoid negative effects on individual bats, bat roosts, and/or habitat connectivity for bats, an EPS licence would be obtained following the same approach detailed in **paragraph 8.9.97.**

8.9.102 Therefore, considering the embedded environmental measures described, the magnitude of change due to land take, fragmentation and increased noise, vibration, light and movement levels is assessed to be **low** and temporary. Therefore, the effect of construction is assessed as **negative** and **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation, loss/damage to roosts, kill/injure bats); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.103 There would be no further permanent loss of bat habitat during the operational phase. Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. Where necessary, these works would be subject to appropriate Method Statements which would be developed and employed to reflect the legislation and biodiversity conditions within the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur.

8.9.104 The proposed new substations at Overton and Monk Fryston would be unmanned on a permanent basis. Visual checks would be undertaken on approximately a monthly inspection visit to the substations and would be undertaken approximately every three years if required. Should maintenance work be required at substation buildings with potential to support roosting bats, pre-works surveys would be undertaken to confirm roosting status at the time, and where necessary works would be subject to Method Statements or protected species licences to ensure that no significant effects or legal breaches occur.

8.9.105 Although there is only a limited requirement for artificial lighting at the substations (security lighting on sensors), embedded environmental measure **14 - Sensitive**

lighting design would ensure that where required its design would follow best practice principles to minimise light spill on to sensitive habitats likely to be used by bats including hedgerows, woodland edge and watercourses, thereby reducing the potential for any displacement effects on commuting/foraging bats to negligible.

8.9.106 Any bat boxes installed at substations in line with embedded environmental measure **17- Installation of bat boxes** would be located in positions that would negate the risk of disturbance during the operational phase of the Project.

8.9.107 As such, considering the embedded environmental measures described, the magnitude of change is assessed to be **very low**. Therefore, the effect of operation is assessed as **negative** and **Not Significant**.

Summary effects

8.9.108 Given the low level of temporary negative change during construction and operation, the overall magnitude of change on bats is **low negative**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of County importance.

Assessment of effects: Great crested newts

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation, loss/damage to hibernacula/refugia/breeding habitat, kill/injure great crested newts); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.109 The Project design avoids the permanent loss of all ponds and ditches except for a single pond P28 which had a negative eDNA result for great crested newts. Therefore, there would be no permanent loss of great crested newt breeding habitat as a result of the Project. Furthermore, the **Outline Landscape Strategy Plans** (**Figures 3.10 to 3.12, Volume 5, Document 5.4.3**) incorporate the construction of a new pond within a proposed wildflower meadow at Overton Substation (within approximately 300m of the pond to be lost during construction).

8.9.110 However, there are 20 ponds and 13 ditches with potential to support great crested newts within the Order limits (as detailed in **Volume 5, Document 5.3.8B: Extended Phase 1 Habitat Survey Report**), and although the majority of surrounding terrestrial habitat is either unsuitable or sub-optimal for great crested newts (arable), optimal habitats such as arable field margins, grassland, hedgerow, dense scrub and woodland are also present. Although embedded environmental measures minimise effects on important habitats within the Order Limits, some localised permanent loss and temporary loss and degradation of terrestrial habitats suitable for great crested newts is unavoidable, as well as severance of connected habitats.

8.9.111 Activities associated with construction works including vegetation clearance, the establishment of working areas and the installation of permanent and temporary access tracks also have potential to kill/injure individual great crested newts (should they be present).

8.9.112 However, embedded environmental measure **16 – Protected species licences** would ensure that potential effects on great crested newt habitat and the potential for

killing/injury of individuals is compensated via the grant of a DLL with respect to great crested newts, the provisional payment certificate for which is supplied in **Volume 5, Document 5.3.8I: GCN District Level Licensing Impact Assessment and Conservation Payment Certificate**[137].

8.9.113 In addition, the embedded environmental measures **2 – Standard best practice, 3 – Minimise land take and micro-site, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 9 – Protection of retained habitats, 11 – Habitat reinstatement, 12 – Sensitive access and enabling works,** and **13 – Protection of aquatic features** would minimise habitat loss or degradation and limit reduction in connectivity between terrestrial and breeding habitat, as well as minimising the risk of killing/injuring great crested newts.

8.9.114 By default, a DLL licence does not allow for a significant negative effect on the favourable conservation status of the species. Therefore, considering the grant of DLL and the additional embedded environmental measures, the magnitude of change due to land take and fragmentation is assessed to be **very low**. Therefore, the effect of construction is assessed as **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation, loss/damage to hibernacula/refugia/breeding habitat, kill/injure great crested newts); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.115 There would be no further permanent loss of great crested newt habitat during the operational phase. Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. Where necessary, these works would be subject to appropriate Method Statements which would be developed and employed to reflect the legislation and biodiversity conditions within the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur.

8.9.116 As such, considering the embedded environmental measures described, the magnitude of change due to land take and fragmentation is assessed to be **very low**. Therefore, the effect of operation is assessed as **Not Significant**.

Summary effects

8.9.117 Given the negligible level of change during construction and operation, the overall magnitude of change on great crested newts is **very low negative**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of County importance.

[137] National Grid are committed to the DLL process and the Impact Assessment and Conservation Payment Certificate is in the process of being signed and formalised.

Assessment of Effects: Otter

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation, loss/damage to holts/resting sites, kill/injure otters); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.118 Evidence of otter has been recorded on the larger watercourses within the Order Limits and 100m survey buffer. These watercourses, and to a lesser extent larger ditches, are likely to form a small part of the much larger home ranges typically used by otter.

8.9.119 The Project design has been amended to minimise the risk of effects on a potential resting site beneath the roots of a large riparian willow on the northern bank of the River Ouse (W4) which is considered highly likely to be used by otter. The potential resting site is located beneath proposed XC 275kV overhead line span between pylon XC420-XC421 and the installation of scaffolding is required to protect the river from the accidental dropping of conductors and any of the associated equipment during the stringing work. The location of the scaffold has been amended to achieve a 30m stand off from the potential resting site to avoid habitat loss and minimise the risk of disturbance to otter. A temporary access track (trackway panels) to the scaffold would be required to pass within approximately 17m of the site, which has limited potential to disturb otter should they be present during its installation, removal and use during scaffold erection and dismantling, as the route is already in use as a farm access track.

8.9.120 However, vegetation management of riparian trees along the River Ouse (W4) to facilitate erection of the proposed new overhead line (with the necessary safety clearance) do have the potential to damage the potential resting site. The works may also disturb any otter using the site at the time. Embedded environmental measure **8 - Sensitive tree management for electrical safety clearance** would ensure management was restricted to the minimum necessary to achieve the required safety clearance (i.e. pollarding or coppicing rather than removal) in order to retain the tree and surrounding vegetation. The works would be overseen by an ECoW and carried out in accordance with a Method Statement using soft-felling techniques in accordance with embedded environmental measure **2 – Standard best practice** thereby avoiding loss of or damage to the potential resting site. Given that a typical otter home range can include up to around 35km of watercourse, the potential resting site is just one of numerous suitable resting site locations within favourable connected habitat in the wider area. As such, although the likelihood of otter being present at the time of works is very low, an updated otter survey would be carried out in advance of the works (including camera trapping as necessary) to assess any change in the status of the habitat for otter and frequency of use prior to tree management activities in line with embedded measure **1 – Pre-construction update surveys**. Following pre-construction update surveys, if it is assessed that embedded environmental measures cannot sufficiently avoid negative effects on individual otter or the resting site, separate specific mitigation in the form of an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)) from Natural England would be obtained in line with embedded environmental measure **16 – Protected species licences** in order for the Project to proceed while avoiding contravening legislation. By default, an EPS licence

does not allow for a significant negative effect on the favourable conservation status of those species affected.

8.9.121 Existing access routes are used to cross rivers and streams wherever possible and the Project design avoids any permanent loss of river/stream/ditch habitat. The use of temporary open span bridges in five locations would minimise temporary loss and degradation of potential bankside and in-channel otter habitat, and also avoid a reduction of in-channel habitat connectivity at these locations: (Moor Gutter (W2), Hurns Gutter (W3), The Foss Catchment (tributary of Wharfe) (W8), a tributary of Hurns Gutter (D11), and a tributary of the Wharfe (D81)). Installation of the bridges would require management of bankside vegetation along up to 12m of habitat at each location but as no evidence of otter resting sites was recorded within 30m of these locations, the potential for effects on otter (in terms of habitat degradation and disturbance) is very low.

8.9.122 There is a requirement to install four new temporary culverts (located in D10, D26, D33 and D83) and construct minor extensions/upgrades at five existing culverts (located in D35, D38, D56 and two locations in D96) to enable access to existing infrastructure[138]. No evidence of otter was recorded on these ditches during surveys and as the habitat represents a very minor proportion of any individual's home range, effects on otter would be negligible.

8.9.123 It is assumed that the diversion of existing third party assets in the span between pylons XC497-XC498 will require open trenching at Cock Beck (W12) and ditch D90, both of which showed evidence of use by otter (spraint and suitable habitat for resting sites). However, there were no confirmed resting sites within 30m of the proposed works, and in view of the very small proportion of habitat within an otter's home range the affected stretches of watercourse/ditch would represent, and in line with the assessment of effects in **Chapter 9: Hydrology and Flood Risk, Volume 5, Document 5.2.9** (including relevant embedded environmental measures described therein for managing open trenching within a watercourse), any effects on otter would be negligible.

8.9.124 Construction works adjacent to The Foss (W5) associated with dismantling pylon XCP005, and scaffold erection and vegetation management beneath the span between pylons XC471 - XC472 either side of the River Wharfe (W9), and beneath the span to be dismantled between pylons XCP008 – XCP009 either side of the River Ouse (W4) could result in temporary loss/degradation of riparian scrub. Further temporary loss of riparian scrub and trees is likely adjacent to Cock Beck (W12) during construction works at pylon XC498. Due to the temporary small scale nature of these works, there would be negligible potential for effects on otter habitat.

8.9.125 Otters may be disturbed by noise, vibration, lighting and movement associated with construction activities, for example within the construction and stringing area for new build pylons SP005 to SP007 adjacent to Hurns Gutter (W3), and the diversion of existing third party assets (undergrounding cables) required approximately 30m south of the River Ouse (W4) and adjacent to several other watercourses. Embedded environmental measure **14 – Sensitive lighting design** would negate the potential for disturbance of otter due to lighting. Furthermore, otters are extremely tolerant species, and very mobile with large territories compared to the small areas of habitat which may be affected, and there is likely to be ample opportunity to avoid such disturbance during resting, foraging and commuting without suffering a loss of fitness.

[138] Reference to culvert construction at dry ditches or wet ground is not included due to habitat being unsuitable for otter.

8.9.126 There would be a very low volume of construction traffic associated with the construction phase and embedded environmental measure **15 – Construction traffic speed limits** would minimise the potential for killing/injury of otter due to collision with construction vehicles to very low/negligible.

8.9.127 Embedded environmental measures applied throughout the construction phase including: **2 – Standard best practice**, **3 – Minimise land take and micro-site**, **6 – Maintaining habitat connectivity, 8 - Sensitive tree management for electrical safety clearance, 9 – Protection of retained habitats, 11 – Habitat reinstatement, 12 – Sensitive access and enabling works** and **13 – Protection of aquatic features** would minimise temporary loss and fragmentation of terrestrial and aquatic habitat, and avoid features which are suitable for resting sites as far as practicable.

8.9.128 Due to their mobile nature there is potential for otter use of habitat to change prior to construction. Embedded environmental measure **1 – pre-construction update surveys** would ensure any change in habitat use is identified. Following pre-construction update surveys, if it is assessed that the aforementioned embedded environmental measures cannot sufficiently avoid negative effects on individual otter, otter holts/resting sites, and/or habitat connectivity for otter, an EPS licence (under the Conservation of Habitats and Species Regulations 2017 (as amended)[9]) from Natural England would be obtained in line with embedded environmental measure **16 – Protected species licences** in order for the Project to proceed while avoiding contravening legislation. By default, an EPS licence does not allow for a significant negative effect on the favourable conservation status of those species affected.

8.9.129 Therefore, considering the embedded environmental measures described, the magnitude of change due to land take, fragmentation and increased noise, vibration, light and movement levels is assessed to be **low** and temporary. Therefore, the effect of construction is assessed as **negative** and **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation, loss/damage to holts/resting sites, kill/injure otters); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.130 Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. Where necessary, these works would be subject to appropriate Method Statements which would be developed and employed to reflect the legislation and biodiversity conditions within the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur.

8.9.131 The substations are unmanned on a permanent basis. Visual checks would be undertaken on approximately a monthly inspection visit to the substation and maintenance would be undertaken approximately every three years if required. As the proposed Overton Substation is located over 250m from the nearest river (Hurns Gutter (W3)), and Monk Fryston and Osbaldwick Substations are over 2.5km from the nearest rivers, no effects on otter are likely to result from their operation.

8.9.132 As such, considering the embedded environmental measures described, the magnitude of change is assessed to be **very low**. Therefore, the effect of operation is assessed as **negative** and **Not Significant**.

Summary effects

8.9.133 Given the low level of temporary negative change during construction and operation, the overall magnitude of change on otters is **low negative**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of Local importance.

Assessment of effects: Water voles

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation, loss/damage to burrows, kill/injure water voles); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.134 Although it is considered unlikely that water vole are present within the Order Limits or 100m survey buffer, this is a mobile species which can repopulate temporarily unoccupied watercourses/ditches and there is potential for small remnant populations to remain undetected in the small number of watercourses/ditches within the Order Limits to which access for surveys has not been given.

8.9.135 Existing access routes are used to cross rivers and streams wherever possible and the Project design avoids any permanent loss of river/stream/ditch habitat. No evidence of water vole was recorded at any proposed watercourse/ditch crossing requiring the use of temporary open span bridges (five locations), the installation of new temporary culverts (four locations), or the minor extension/upgrade of existing culverts (five locations)[138].

8.9.136 The only location where direct effects on a watercourse are possible and water vole presence is unknown (due to lack of access for surveys) is the headwaters of Hurns Gutter (W3) where undergrounding of an existing 11kV overhead line is required. Although water vole presence is highly unlikely given the lack of any confirmed evidence at any surveyed location, as a precaution it is assumed that open trenching would be used which could result in temporary habitat loss, and reduction in connectivity within the watercourse, along with a risk of killing/injury of water voles if present.

8.9.137 Embedded environmental measure **1- pre-construction update surveys** would ensure that water vole surveys are conducted at the open trenching location prior to any works affecting habitat suitable for water voles. Due to the mobile nature of the species, update surveys would also be conducted prior to construction works at the limited number of locations where in-channel works are proposed to facilitate access (temporary culvert installation/upgrades) or enable diversion of third party utilities as on Cock Beck (W12), none of which had any evidence of water vole during surveys to date.

8.9.138 Potential burrows were recorded at five watercourses/ditches within the Order Limits (Newthorpe Beck (W14), and ditches D33, D39, D73 and D76), though it is unlikely these are used by water voles (due to a lack of any previous records or other evidence such as latrines). Embedded environmental measure **13 – Protection of aquatic features** would incorporate a buffer zone between proposed works and

watercourses/ditches wherever possible thereby negating the risk of loss or damage to burrows or harm to water voles (should they be present)[139].

8.9.139 However, due to the location of existing infrastructure, a number of watercourses and ditches are within the temporary working areas associated with the construction phase including pylon/stringing working areas, diversion of existing third party utilities and proposed access routes, meaning that construction works adjacent to watercourses/ ditches have the potential to cause temporary damage to burrows should they be present. Furthermore, though noise, lighting and visual disturbance are not likely to significantly affect water voles [53], vibration from construction works may cause disturbance to individuals if works are in close proximity to watercourses/ditches with active water vole burrows.

8.9.140 In practice the potential for temporary effects on water voles and their burrows would be greatly reduced as a result of embedded environmental measures: **2 – Standard best practice, 3 – Minimise land take and micro-site, 6 – Maintaining habitat connectivity, 8 – Sensitive tree management for electrical safety clearance, 9 – Protection of retained habitats, 11 – Habitat reinstatement**, and **12 – Sensitive access and enabling works**. However, in view of the mobile nature of the species and in line with embedded environmental measure **1- pre-construction update surveys,** updated water vole surveys would be conducted at any locations where the presence of existing infrastructure means that the embedded buffer cannot be maintained during construction works.

8.9.141 In the unlikely event that water vole are recorded during pre-construction update surveys, if it is assessed that the aforementioned embedded environmental measures cannot sufficiently avoid negative effects on water voles, a licence from Natural England (Class licence CL31 – intentional disturbance of water voles and damage or destruction of water vole burrows by means of displacement to facilitate development activities) would be obtained in line with embedded environmental measure **16 – Protected species licences** in order for the Project to proceed while avoiding contravening legislation. By default, Class licence CL31 would require a demonstrable net conservation gain for water voles and therefore would not allow for a significant negative effect on the species.

8.9.142 Considering the embedded environmental measures described, the magnitude of change due to land take, fragmentation and increased noise, vibration, light and movement levels is assessed to be **negligible**. Therefore, the effect of construction is assessed as **negligible** and **Not Significant**

Operation

Land take/land use change (resulting in habitat loss or degradation, loss/damage to burrows, kill/injure water voles); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.143 Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. Where necessary, these works would be subject to appropriate Method Statements which would be developed and employed to reflect the legislation

[139] Reference to culvert construction at dry ditches or wet ground is not included due to habitat being unsuitable for water vole.

and biodiversity conditions within the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur.

8.9.144 The substations are unmanned on a permanent basis and the monthly inspection visits and three-yearly maintenance works (if required) would have no potential to affect water voles (if present) or their habitat. Therefore, no effects on water voles are likely to result from their operation.

8.9.145 As such, considering the embedded environmental measures described, the magnitude of change is assessed to be **negligible**. Therefore, the effect of operation is assessed as **negligible** and **Not Significant**.

Summary effects

8.9.146 Given the negligible level of change during construction and operation, the overall magnitude of change on water voles is **negligible**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of Local importance.

Assessment of effects: Reptiles

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation, loss/damage to hibernacula/refugia/, kill/injure reptiles); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.147 Although embedded environmental measures minimise effects on important habitats within the Order Limits, some localised permanent loss and temporary loss and degradation of terrestrial habitats suitable for reptiles is unavoidable, as well as severance of connected habitats.

8.9.148 During construction, there would be a small permanent loss of suitable foraging, commuting and refuging habitat for reptiles at the proposed Overton Substation and proposed Monk Fryston Substation and the footings of new pylons, although the majority of habitat to be lost permanently to the new substations is arable and grazed poor semi-improved grassland which is generally unsuitable for reptiles.

8.9.149 Activities associated with construction works including vegetation clearance, the establishment of working areas and the installation of temporary access tracks would lead to the temporary loss of relatively small isolated habitat patches which are suitable for low numbers of reptiles. In addition, in association with permanent access works there would be permanent loss of small areas of scrub and short individual sections of hedgerow suitable for occasional foraging, commuting and refuging reptiles.

8.9.150 The suitability of habitats within the construction footprint are not unique and areas of suitable connected habitat would remain surrounding the working areas and the footprint of proposed new infrastructure which would minimise the effect of any reduction in connectivity.

8.9.151 Activities associated with construction works including vegetation clearance, the establishment of working areas and the installation of permanent and temporary access tracks also have potential to kill/injure individual reptiles.

8.9.152 However, embedded environmental measures **2 – Standard best practice, 3 – Minimise land take and micro-site, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 9 – Protection of retained habitats, 11 – Habitat reinstatement, 12 – Sensitive access and enabling works,** and **13 – Protection of aquatic features** would minimise habitat loss or degradation and limit reduction in connectivity between habitats, as well as minimising the risk of killing/injuring reptiles. In addition, embedded environmental measure **1 – Pre-construction update surveys** would identify any changes in the potential for reptiles to occur within the construction footprint.

8.9.153 Considering the embedded environmental measures described, the magnitude of change due to land take and fragmentation is assessed to be **negligible**. Therefore, the effect of construction is assessed as **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation, loss/damage to hibernacula/refugia/, kill/injure reptiles); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.154 There would be no further permanent loss of reptile habitat during the operational phase. Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. Where necessary, these works would be subject to appropriate Method Statements which would be developed and employed to reflect the legislation and biodiversity conditions within the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur.

8.9.155 As such, considering embedded environmental measures described, the magnitude of change due to land take and fragmentation is assessed to be **negligible**. Therefore, the effect of operation is assessed as **Not Significant**.

Summary effects

8.9.156 Given the negligible level of change during construction and operation, the overall magnitude of change on reptiles is **negligible** and the resultant effect on conservation status is **Not Significant** on an ecological feature of Local importance.

Assessment of effects: Badger

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation, loss/damage to setts, kill/injure badgers); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.157 Of the 13 confirmed and ten potential badger setts identified within the Order Limits and 50m buffer, none are at risk of loss or damage as a result of the Project. However, in view of their location relative to the proposed construction works, there is potential for disturbance of badgers which may be occupying the following setts:

- two well-used main/annex setts;
- three well-used subsidiary setts; and
- two potential outlier setts.

8.9.158 Given their location relative to the above setts, activities associated with construction comprising the establishment of pylon refurbishment and restringing working areas, erection of scaffolding, the installation of permanent and temporary access tracks, and vegetation management to facilitate these activities have the potential to disturb badgers using these setts (should they be present at the time).

8.9.159 However, badgers are widespread and common and appear tolerant of significant amounts of noise or activity near their setts without appearing to be disturbed[140]. Furthermore, embedded environmental measure **2 – Standard best practice** would ensure supervision of works in close proximity to setts by an ECoW who would oversee the implementation of best practice and embedded environmental measures: **3 – Minimise land take and micro-site, 5 – Sensitive vegetation removal, 6 – Maintaining habitat connectivity, 8 – Sensitive tree management for electrical safety clearance, 9 – Protection of retained habitats,** and **11 – Habitat reinstatement** which would reduce the risk of disturbance to negligible.

8.9.160 In addition to the seven setts referenced above, four additional setts are sufficiently far from the main construction works to avoid disturbance but are located within approximately 10m of proposed temporary access routes. These comprise one well-used outlier sett, one potential outlier sett and two potential day nests. However, as these routes follow existing farm access tracks along field edges (and so are assumed to be used by agricultural vehicles), any risk of increased disturbance resulting from construction traffic at the locations in question would be negligible.

8.9.161 Further to this, the embedded environmental measure **15 – Construction traffic speed limits** would reduce the small risk of killing/injury of badgers through construction traffic collision to negligible.

8.9.162 As a result of land take/land use change during construction, there would be a very small permanent loss of sub-optimal foraging and commuting habitat (arable and poor semi-improved/improved grassland) at the proposed Overton Substation and proposed Monk Fryston Substation. The Project could also result in limited temporary habitat loss and reduced connectivity of habitat which is suitable for foraging and commuting badgers (for example within new temporary access routes and temporary working areas). However, given the retention of plentiful alternative habitat within the Order Limits and surrounding areas, and the creation of more favourable habitats including woodland, wildflower meadow, ponds and hedgerows as part of the **Outline Landscape Strategy Plans** (**Figures 3.10 to 3.12, Volume 5, Document 5.4.3**), the permanent and temporary land take associated with the Project would not be of a sufficient area or in suitable habitat to significantly affect badgers.

8.9.163 Due to their mobile nature there is potential for badger use of habitat to change prior to construction. Embedded environmental measure **1 – pre-construction update surveys** would ensure any change in habitat use is identified. Following pre-construction update surveys, if it is assessed that the aforementioned embedded environmental measures cannot sufficiently avoid disturbance of badgers while occupying their setts, or loss of/damage to their setts, a licence (under the Protection of

[140] Natural England (2009) Interpretation of 'Disturbance' in relation to badgers occupying a sett. Natural England., Peterborough.

Badgers Act 1992[9] from Natural England would be obtained in line with embedded environmental measure **16 – Protected species licences** in order for the Project to proceed in accordance with legislation.

8.9.164 Therefore, considering the embedded environmental measures described, the magnitude of change due to land take, fragmentation and increased noise, vibration, light and movement levels is assessed to be **very low** and temporary. Therefore, the effect of construction is assessed as **negative** and **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation, loss/damage to setts, kill/injure badgers); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.165 There would be no further permanent loss of badger habitat during the operational phase. Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin to (or less) than those involved in the Project construction phase. Where necessary, these works would be subject to appropriate Method Statements which would be developed and employed to reflect the legislation and biodiversity conditions within the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur.

8.9.166 The substations will be unmanned on a permanent basis with monthly inspection visits and three-yearly maintenance works (if required) during operation. Although there is only a limited requirement for artificial lighting at the substations (security lighting on sensors), embedded environmental measure **14 - Sensitive lighting design** would ensure that where required its design would follow best practice principles to minimise light spill on to sensitive habitats most likely to be used by badgers including hedgerows and woodland edge, thereby reducing the potential for any future disturbance effects within setts. Furthermore, badgers are common around existing operational electrical infrastructure suggesting that they would likely adapt and that new substations would not cause disturbance during operation.

8.9.167 As such, considering the embedded environmental measures described, the magnitude of change is assessed to be **very low**. Therefore, the effect of operation is assessed as **negative** and **Not Significant**.

Summary effects

8.9.168 Given the low level of temporary negative change during construction and operation, the overall magnitude of change on badgers is **very low negative**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of Local importance.

Assessment of effects: SPI and other protected or conservation-notable species – fish

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation, loss/damage to fish breeding sites, kill/injure notable fish); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.169 As the environmental changes: pollution events and changes in hydrology have been scoped out for all ecological features (see **Section 8.7** and **Chapter 9: Hydrology and Flood Risk, Volume 5, Document 5.2.9)** this section will therefore assess the effects of land take/land use change and fragmentation on SPI and other protected or conservation-notable fish species.

8.9.170 Existing access routes are used to cross rivers and streams wherever possible and the Project design avoids any permanent loss of river/stream/ditch habitat. The use of temporary open span bridges in five locations would minimise temporary loss and degradation of fish habitat, and also avoid a reduction of in-channel habitat connectivity at these locations: (Moor Gutter (W2), Hurns Gutter (W3), The Foss Catchment (tributary of Wharfe) (W8), a tributary of Hurns Gutter (D11), and a tributary of the Wharfe (D81)). Installation of the bridges would result in temporary changes in shading within the channels due to the requirement for management of bankside vegetation and due to the presence of the structures themselves. However, changes would be very localised and very minor and the potential for effects on fish (in terms of habitat degradation and disturbance) is negligible.

8.9.171 There is a requirement to install four new temporary culverts (located in D33 and D83) and construct minor extensions/upgrades at five existing culverts (located in D35, D38, D56 and two locations in D96) to enable access to existing infrastructure[141]. Although agricultural ditches with good water quality may support a range of freshwater fish, they are generally unsuitable for the SPI and other conservation-notable species recorded in the area of search, with the exception of European eel. Therefore, as a precaution, the potential for temporary loss and degradation of habitat and/or reduced in-channel habitat connectivity is assumed as a result of culvert installation for European eel.

8.9.172 Embedded environmental measure **12 – Sensitive access and enabling works** would ensure the sensitive design and installation of all temporary culverts (or culvert upgrades) to minimise temporary habitat loss, degradation and reduction in connectivity, including limiting works to the minimum length possible, retaining the natural bed of the watercourse/ditch, or installing the culvert with the invert set below the natural bed level to enable a semi-natural bed to establish, and habitat would be re-instated to pre-works condition or better following the removal of culverts. Furthermore, as the affected habitat represents a very minor proportion of the equivalent or better quality connected habitat in the surrounding area, effects on European eel would be negligible.

8.9.173 There is a requirement to divert existing third party assets comprising sections of 33kV overhead line above Cock Beck (W12) and a ditch (D90), and an 11kV overhead line above the upper reaches of Hurns Gutter (W3) to facilitate construction works. As a

[141] Reference to culvert construction at dry ditches or wet ground is not included due to habitat being unsuitable for fish.

precaution it is assumed that open trenching will be used which would result in temporary loss of potential fish habitat, and reduction in connectivity within the watercourses and ditch. However, in line with the assessment of effects in **Chapter 9: Hydrology and Flood Risk, Volume 5, Document 5.2.9** (including relevant embedded environmental measures described therein for managing open trenching within a watercourse), the effects on the watercourses would be minor and temporary followed by reinstatement to previous condition. Furthermore, the works would be overseen by an ECoW in line with embedded environmental **2 – Standard best practice** and as such, effects on SPI and other protected or conservation-notable fish species would be negligible.

8.9.174 Fish may be temporarily disturbed by noise, vibration, lighting and movement associated with construction adjacent to watercourses/ditches. However, fish are mobile and as a transient species in any particular section of watercourse/ditch, there is likely to be ample opportunity to avoid such disturbance without suffering a loss of fitness. Furthermore, embedded environmental measure **14 – Sensitive lighting design** would negate the potential for disturbance of fish due to lighting.

8.9.175 Embedded environmental measures applied throughout the construction phase including: **2 – Standard best practice**, **3 – Minimise land take and micro-site**, **6 – Maintaining habitat connectivity, 8 - Sensitive tree management for electrical safety clearance, 9 – Protection of retained habitats, 11 – Habitat reinstatement, 12 – Sensitive access and enabling works**, and **13 – Protection of aquatic features** would minimise temporary loss, degradation and fragmentation of fish habitat.

8.9.176 Therefore, considering the embedded environmental measures described, the magnitude of change due to land take, fragmentation and increased noise, vibration, light and movement levels is assessed to be **negligible**. Therefore, the effect of construction is assessed as **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation, loss/damage to fish breeding sites, kill/injure notable fish); fragmentation of habitats (resulting in a reduction in connectivity); increased noise, vibration, light and movement levels (resulting in disturbance/displacement)

8.9.177 Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin (or less) to those involved in the Project construction phase. Where necessary, these works would be subject to appropriate Method Statements which would be developed and employed to reflect the legislation and biodiversity conditions within the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur.

8.9.178 The substations will be unmanned on a permanent basis. Visual checks would be undertaken on approximately a monthly inspection visit to the substation and maintenance would be undertaken approximately every three years if required. As the proposed Overton Substation is located over 250m from the nearest river (Hurns Gutter (W3)), and Monk Fryston and Osbaldwick Substations are over 2.5km from the nearest rivers, no effects on fish are likely to result from their operation.

8.9.179 As such, considering embedded environmental measures described, the magnitude of change is assessed to be **negligible**. Therefore, the effect of operation is assessed as **Not Significant**.

Summary effects

8.9.180 Given the negligible level of change during construction and operation, the overall magnitude of change on SPI and other protected or conservation-notable fish species is **negligible**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of Local importance.

Assessment of effects: Tansy beetle

Predicted effects and their significance

Construction

Land take/land use change (resulting in habitat loss or degradation; loss/damage to food plants; kill tansy beetles); fragmentation of habitats (resulting in a reduction in connectivity)

8.9.181 Tansy beetles are very specific to their food plant tansy, typically spending their entire lifecycle associated with the plant which is found along the banks of the River Ouse (W4). The Order Limits include two linear stretches of approximately 100m each of the River Ouse. Habitat within the Order Limits adjacent to the river is dominated by arable and improved grassland fields with riparian trees and scrub, and although no tansy plants or confirmed tansy beetles were recorded during the extended Phase 1 habitat surveys, there are records of tansy beetles within the Order Limits within the last ten years.

8.9.182 The existing section of 275kV XCP overhead line (to be removed) and a proposed new stretch of 275kV XC overhead line (to be constructed) both cross the river corridor. The footprint of scaffolds, pylon construction/dismantling areas, temporary access routes and a cable undergrounding route associated with the diversion of third-party utilities are located predominantly within unsuitable habitat (arable and improved grassland fields) adjacent to the River Ouse which minimises the risk of habitat loss/harm to tansy beetles or reduction in habitat connectivity.

8.9.183 Embedded environmental measure **13 – Protection of aquatic features** would ensure a minimum stand-off from the River Ouse, thereby avoiding the loss of any tansy plants within the riparian corridor. Although no tansy plants have been identified within the proposed construction footprint, this would be confirmed within any areas requiring vegetation removal prior to construction in line with embedded environmental measure **1- pre-construction update surveys.** Should any tansy plants be recorded, these would be retained within an undisturbed buffer of at least 2m if at all possible (to protect plants and surrounding soil which may be used by overwintering beetles) in accordance with embedded environmental measures: **2 – Standard best practice, 3 – Minimise land take and micro-site, 6 – Maintaining habitat connectivity, and 9 – Protection of retained habitats.**

8.9.184 Should loss of tansy plants be unavoidable, vegetation would be removed outside the most sensitive period of the beetles' life cycle (i.e. removal over winter during the period October to February), and re-planting would take place following completion of works in line with embedded environmental measures: **5 – Sensitive vegetation removal** and **11 – Habitat reinstatement,** thereby minimising effects of habitat loss/fragmentation and harm to tansy beetles.

8.9.185 Considering the embedded environmental measures described, the magnitude of change due to land take and fragmentation is assessed to be **negligible**. Therefore, the effect of construction is assessed as **negligible** and **Not Significant**.

Operation

Land take/land use change (resulting in habitat loss or degradation, loss/damage to food plants; kill tansy beetles); fragmentation of habitats (resulting in a reduction in connectivity);

8.9.186 Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin to (or less) than those involved in the Project construction phase. Where necessary, these works would be subject to appropriate Method Statements which would be developed and employed to reflect the legislation and biodiversity conditions within the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur.

8.9.187 The substations are unmanned on a permanent basis and the monthly inspection visits and three-yearly maintenance works (if required) would have no potential to affect tansy beetles (if present) or their habitat. Therefore, no effects on tansy beetles are likely to result from their operation.

8.9.188 As such, considering the embedded environmental measures described, the magnitude of change is assessed to be **negligible**. Therefore, the effect of operation is assessed as **negligible** and **Not Significant**.

Summary effects

8.9.189 Given the negligible level of change during construction and operation, the overall magnitude of change on tansy beetles is **negligible**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of Local importance.

Assessment of effects: Schedule 1 breeding birds

Predicted effects and their significance

Construction

Increased noise, vibration, light and movement levels (resulting in disturbance)

8.9.190 Both pre-construction enabling works and construction activities have the potential for increased noise, vibration, light and movement that may result in disturbance to breeding Schedule 1 bird species. Schedule 1 bird species are protected from disturbance while nesting and therefore any construction-related disturbance to such receptors would constitute an offence, as well as potentially resulting in the failure of any nesting attempt.

8.9.191 However, proposed construction works within the Order Limits and associated species-specific disturbance buffers[142] will not disturb breeding Schedule 1 birds due to the implementation of embedded environmental measures: **1 – Pre-construction update surveys, 2 – Standard best practice, 3 – Minimise land take and micro-site, 5 –**

[142] Disturbance buffers are identified as the following: quail 25m, Cetti's warbler 50m, barn owl and kingfisher 100m, red kite and hobby 300m and peregrine falcon 500m.

Sensitive vegetation removal, 9 – Protection of retained habitats, 12 – Sensitive access and enabling works, 14 – Sensitive lighting design, and **15 – Construction traffic speed limits**.

8.9.192 The construction works programme would incorporate and account for all Schedule 1 species nests and avoid, amend or reduce works during sensitive periods i.e. nesting season. Where works are unavoidable during the bird nesting season, appropriate control measures would be followed including pre-works surveys (embedded environmental measure **1 – Pre-construction update surveys**) for nests. If a nest is found, embedded environmental measure **5 – Sensitive vegetation removal** would ensure the implementation of mitigation appropriate to the species and may include a defined disturbance minimisation protective buffer, a behavioural method statement with ecological monitoring, and if necessary, suitable screening around working areas to avoid significant human disturbance. The exact nature of the measures would be informed by current best practice for each relevant species. Successful implementation of these measures would minimise the risk of disturbing Schedule 1 species, and contravening legislation (Wildlife and Countryside Act 1981 (as amended)[13]. Following pre-construction update surveys, if it is assessed that disturbance of Schedule 1 breeding birds that are listed on the National Grid Organisational licence TP228 from Natural England cannot be avoided, the licence may be enacted if it is considered applicable based on the licence conditions.

8.9.193 Therefore, considering the embedded environmental measures described, the magnitude of change due to increased noise, vibration, light and movement levels is **negligible**. Therefore, the effect of construction is assessed as **negligible** and **Not Significant**.

Operation

Increased noise, vibration, light and movement levels (resulting in disturbance)

8.9.194 Temporary effects resulting from the maintenance and refurbishment of the 275kV XC route and 400kV YN route would be akin to (or less) than those involved in the Project construction phase. Where necessary, these works would be subject to appropriate Method Statements which would be developed and employed to reflect the legislation and biodiversity conditions within the Order limits prevalent at that time to ensure that no significant effects or legal breaches occur.

8.9.195 The substations are unmanned on a permanent basis although there are monthly inspection visits and can be three-yearly maintenance works (if required).

8.9.196 Operational activities have the potential for increased noise, vibration, light and movement (albeit on a reduced scale compared to the construction phase) that may result in disturbance to breeding Schedule 1 bird species. Therefore, as for the construction phase, the operational works programme avoid, amend or reduce works during sensitive periods i.e. nesting season. Where works are unavoidable during the bird nesting season, appropriate control measures would be followed including pre-works surveys (embedded environmental measure **1 – Pre-construction update surveys**) for nests. If a nest is found, measures would be implemented appropriate to the species and may include a defined disturbance minimisation protective buffer, a behavioural method statement with ecological monitoring, and if necessary, suitable screening around working areas to avoid significant human disturbance. The exact nature of the measures would be informed by best practice at the time for each relevant species. Successful implementation of these measures would minimise the risk of

disturbing Schedule 1 species, and contravening legislation (Wildlife and Countryside Act 1981 (as amended)[13]. Following pre-works update surveys, if it is assessed that disturbance of Schedule 1 breeding birds that are listed on the National Grid Organisational licence TP228 from Natural England cannot be avoided, the licence may be enacted if it is considered applicable based on the licence conditions.

8.9.197 As such, considering the embedded environmental measures described, the magnitude of change is assessed to be **negligible**. Therefore, the effect of operation is assessed as **negligible** and **Not Significant**.

Summary effects

8.9.198 Given the negligible level of change during construction and operation, the overall magnitude of change on Schedule 1 breeding birds is **negligible**, and the resultant effect on conservation status is **Not Significant** on an ecological feature of National importance.

8.10 Assessment of cumulative effects

Inter-project (combined with other development) cumulative effects

8.10.1 An assessment of the effects which could result from the Project in cumulation with other developments in the vicinity of the Project is provided in **Chapter 18: Cumulative Effects Assessment (Volume 5, Document 5.2.18).**

Intra-project (within the Project) cumulative effects

8.10.2 Intra-related effects have been considered in this assessment, i.e. where effects in one environmental area could give rise to effects in others. The greatest potential for biodiversity effects that are inter-related with other aspects is considered to be with **Hydrology, (Chapter 9, Volume 5, Document 5.2.9), Noise and vibration (Chapter 14, Volume 5, Document 5.2.14) and Air Quality (Chapter 13, Volume 5, Document 5.2.13)**.

8.10.3 There are potential inter-related effects relating to biodiversity, as follows:

- changes to water quality, quantity and flood risk has the potential to impact sensitive habitats or species that may be dependent on specific water-related conditions; such as designated conservation sites. This provides a potential inter-related effect between hydrology and biodiversity receptors, which is discussed in this Chapter and in **Chapter 9 Hydrology, Volume 5, Document 5.2.9**;
- changes in noise levels, particularly during construction, can disturb protected species This provides a potential inter-related effect with receptors considered in **Noise and vibration, Chapter 14, Volume 5, Document 5.2.14**; and
- generation of dust and sediments from soil works in dry conditions, or wind erosion, leading to adverse effects on biodiversity. This provides a potential inter-related effect with receptors considered in **Air Quality, Chapter 13, Volume 5, Document 5.2.13**.

8.10.4 Further review of intra-project effects can be found in **Chapter 18: Cumulative Effects (Volume 5, Document 5.2.18)**.

8.11 Significance conclusions

8.11.1 A summary of the results of the biodiversity assessment is provided in **Table 8.15**.

Table 8.15 – Summary of significance of effects

Ecological feature and summary of predicted effects	Importance of ecological feature at Project level[1]	Magnitude of change[2]	Significance[3]	Summary rationale
Ecological feature: Overton Borrow Pits SINC/Field nr Healaugh Manor Farm deleted SINC/Disused Quarry, Newthorpe deleted SINC **Predicted effects:** Effects on cited habitats within the SINC resulting from: land take/land use change; fragmentation of habitat	County	Low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the features' Favourable Conservation Status
Ecological feature: River Ouse candidate SINC **Predicted effects:** Effects on potential cited habitats/species within the SINC resulting from: land take/land use change; fragmentation of habitat; increased noise, vibration,	County	Very low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.

Ecological feature and summary of predicted effects	Importance of ecological feature at Project level[1]	Magnitude of change[2]	Significance[3]	Summary rationale
light and movement levels				
Ecological feature: Broadleaved semi-natural woodland **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat	County	Low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Ancient and semi-natural woodland/Ancient replanted woodland/Ancient and/or veteran trees **Predicted effects:** Effects resulting from: land take/land use change	National	Negligible	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Hedgerows **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat	County	Low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.

Ecological feature and summary of predicted effects	Importance of ecological feature at Project level[1]	Magnitude of change[2]	Significance[3]	Summary rationale
Ecological feature: Standing water (ponds and wet ditches) **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat	County	Very low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Running water (river, streams and ditches **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat	Local/ County	Low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Coastal floodplain and grazing marsh **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat	County	Very low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Arable field margins	County	Very low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level

Ecological feature and summary of predicted effects	Importance of ecological feature at Project level[1]	Magnitude of change[2]	Significance[3]	Summary rationale
Predicted effects: Effects resulting from: land take/land use change; fragmentation of habitat				which would not affect the feature's Favourable Conservation Status.
Ecological feature: Bats **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat; increased noise, vibration, light and movement levels	County	Low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Great crested newt **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat	County	Very low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Otter **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat; increased noise, vibration,	Local	Low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.

Ecological feature and summary of predicted effects	Importance of ecological feature at Project level[1]	Magnitude of change[2]	Significance[3]	Summary rationale
light and movement levels				
Ecological feature: Water vole **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat; increased noise, vibration, light and movement levels	Local	Negligible	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Reptiles **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat	Local	Negligible	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Badger **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat; increased noise, vibration, light and movement levels	Local	Very low	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: SPI and	Local	Negligible	Not Significant	Embedded environmental measures

Ecological feature and summary of predicted effects	Importance of ecological feature at Project level[1]	Magnitude of change[2]	Significance[3]	Summary rationale
other conservation-notable species – fish **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat; increased noise, vibration, light and movement levels				and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.
Ecological feature: Tansy beetle **Predicted effects:** Effects resulting from: land take/land use change; fragmentation of habitat; increased noise, vibration, light and movement levels	Local	Negligible	Not Significant	Embedded environmental measures and habitat/species-specific measures would render effects to a level which would not affect the feature's Favourable Conservation Status.

Ecological feature and summary of predicted effects	Importance of ecological feature at Project level[1]	Magnitude of change[2]	Significance[3]	Summary rationale
Ecological feature: Breeding Schedule 1 birds **Predicted effects:** Effects resulting from; increased noise, vibration, light and movement levels	National	Negligible	Not Significant	Embedded environmental measures and species-specific disturbance mitigation measures would render effects to a negligible level and there would be no disturbance to breeding Schedule 1 bird species.

1. The sensitivity/importance/value of an ecological feature is defined using the criteria set out in **Section 8.8** and is defined as local, county, regional, national, international or European.
2. The magnitude of change on an ecological feature resulting from activities relating to the development is defined using the criteria set out in **Section 8.8** and is defined as negligible, very low, low, medium, and high.
3. The significance of the environmental effects is based on the combination of the sensitivity/importance/value of an ecological feature and the magnitude of change and is expressed as significant or not significant, subject to the evaluation methodology outlined in **Section 8.8**. This represents the residual effect, following the employment of embedded environmental measures/specific mitigation as described.

8.12 Additional measures

8.12.1 All relevant and implementable general and feature-specific measures including protected species licences if required have been embedded into the Project and are assessed above in this chapter. These measures are considered to be likely to be effective, deliverable, and to address the likely significant effects of the Project on all biodiversity features.

8.12.2 Further to this, whilst not part of the DCO the Applicant is committed to seeking to deliver a 10% BNG through habitat enhancement/creation, and if provided this would amount to an overall low magnitude positive effect on all habitats included within Metric 3.1 as detailed in **BNG Report (Volume 7, Document 7.9)**.

8.13 Further work to be undertaken

8.13.1 This section describes the further work to be undertaken to support the biodiversity assessment presented in the ES.

Baseline Surveys

8.13.2 An extensive programme of field surveys has been used to inform the assessment provided in this ES. The survey scope, programme and methodology (described in **Table 8.8**) has been informed by feedback from technical stakeholders where supplied (see **Section 8.3**).

8.13.3 As described in **Section 8.1** surveys are ongoing with respect to Important hedgerows and potential bat roosting habitat. The results of these surveys would be supplied as an addendum to this ES. In view of the approach taken to the assessment (based on the reasonable worst-case) and embedded environmental measures incorporated into the Project, the results of ongoing surveys would be unlikely to affect the outcome of the assessment for either hedgerows or bats and the addendum reports would be expected to confirm this.

8.13.4 In addition, the bat addendum report would be used to inform the detailed mitigation design such as the precise number of supplementary bat boxes to be installed based on the 2:1 ratio for lost roost features of moderate/high potential that has been embedded into the Project, and the requirement for any protected species licensing also embedded into the Project.

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