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1. Introduction

1.1 Purpose of the report

- 1.1.1 This Biodiversity Mitigation Strategy (BMS) has been produced to document the environmental measures that National Grid Electricity Transmission plc (“National Grid”) would implement during the construction phase of the Yorkshire Green Energy Enablement (GREEN) Project (referred to as the Project or Yorkshire GREEN in this report). This BMS forms part of the Environmental Statement (ES) which accompanies an application for development consent (‘the Application’) by National Grid for powers to construct, operate and maintain the Project.
- 1.1.2 The works covered by this BMS include the installation of both the temporary and permanent aspects of the Project as well as the refurbishment and reconductoring works needed for the existing overhead line. Further details of the construction phase are detailed within **Chapter 3: Description of the Project Volume 5, Document 5.2.3**.
- 1.1.3 This report sets out the environmental measures that are required to ensure that Yorkshire GREEN avoids, reduces and compensates for negative effects, and thus ensure the Project complies with legislation and best practice in respect of biodiversity. It should be read in conjunction with the environmental measures outlined within the **Code of Construction Practice (CoCP) (Volume 5, Document 5.3.3B)**.

1.2 Summary of the Project

- 1.2.1 The Project is located within the administrative boundaries of Hambleton District Council, City of York Council, Harrogate Borough Council, Selby District Council, Leeds City Council and North Yorkshire County Council¹, as shown on **Figure 1.1, Volume 5, Document 5.4.1**.
- 1.2.2 The Project is sited within Yorkshire, with the most northerly components located approximately 1.5km north-east of the village of Shipton and approximately 10km north-west of York city centre. The most southerly components are at the existing Monk Fryston Substation, located to the east of the A1 and immediately south of the A63. **Figure 1.2, Volume 5, Document 5.4.1** shows the key components for the proposed Project.
- 1.2.3 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):

¹ The local authorities' boundaries and titles are correct at the time of submission November 2022. North Yorkshire County Council, Hambleton District Council, Selby District Council, Ryedale District Council, Scarborough Borough Council, Harrogate Borough Council, Craven District Council and Richmondshire District Council are expected to form a new single council (North Yorkshire Council) on 1 April 2023 as a result of Local Government Reorganisation.

- 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 275 kV 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 CSECs and 350m of cabling; and.
- Section F (Monk Fryston Area): Monk Fryston 400kV Substation (adjacent to the existing substation).

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

- Section A (Osballdwick Substation): Minor works at Osballdwick 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 line 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 Area): 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.

1.2.5 Please refer to **Chapter 2: Project need and alternatives, Volume 5, Document 5.2.2** for further information on why the Project is required and **Chapter 3: Description of the Project, Volume 5, Document 5.2.3** for a more detailed description of the Project.

1.3 Embedded environmental measures

1.3.1 All works activities undertaken during the construction phase of the Project have been individually assessed within **ES Chapter 8: Biodiversity, Volume 5, Document 5.2.8** and where legal breaches or negative effects have been assessed, each provided with an appropriate suite of corresponding embedded environmental measure. The series of environmental measures from the **ES Chapter 8: Biodiversity, Volume 5, Document 5.2.8** pertaining to biodiversity that have been embedded into the Project to reduce the potential for negative effects on biodiversity are listed below:

- 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;
- 8. Sensitive tree management for electrical safety clearance;
- 9. Protection of retained habitats;
- 10. Management of invasive non-native species;
- 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; and
- 17. Installation of bat boxes.

1.4 Structure of this BMS

1.4.1 This BMS has been produced to support relevant work activities associated with the construction phase of the Project. The BMS details general mitigation measures and species and/or habitat-specific mitigation measures that have been designed to either partly² or wholly deliver the embedded measures identified, and which will be implemented during the construction phase of the Project.

² i.e., in conjunction with environmental measures detailed in other documents and set out in **ES Chapter 8: Biodiversity, Volume 5, Document 5.2.8** (such as the **CoCP Document, Volume 5, 5.3.3B** and the Tree and Hedgerow Protection Strategy which will be secured by draft DCO Requirements 5 and 6 (**Volume 3, Document 3.1**) and prepared in accordance with the **Arboricultural Impact Assessment Volume 5, Document 5.3.3I**), or which have been embedded in the design of the Project (such as stand-off distances from sensitive ecological biodiversity features).

- 1.4.2 General mitigation measures detailed within **Section 3** will be applied at all work locations during the construction phase of the Project as good practice.
- 1.4.3 **Section 4** details species/habitat-specific mitigation measures that will be applied in areas where sensitive biodiversity features are known to be present as indicated by baseline reporting (see **Appendices 8A to 8H, Volume 5, Documents 5.3.8A to 5.3.8H**) or where there is potential for them to occur (i.e. based on the presence of suitable habitat within or close to working areas).
- 1.4.4 The general and species/habitat specific mitigation measures detailed within this BMS will be embedded in delivery of the Project. The BMS forms part of the **CoCP (Volume 5, Document 5.3.3B)** which will be secured through Requirement 5 of the draft DCO (**Volume 3, Document 3.1**).
- 1.4.5 This BMS does not detail location specific mitigation that will be informed by detailed construction working area and layout design (such as information on micro-siting the works within construction working areas to further reduce impacts or additional mitigation measures that may be needed as a result of the pre-construction survey findings). In circumstances when location specific mitigation measures will be required these will be provided in a separate method statement where potential effects on biodiversity require a greater level of consideration and are not sufficiently minimised by the general and species/habitat specific mitigation measures detailed within this BMS. These locations specific Method Statements will be prepared by the Principal Contractor ecologist in agreement from the Ecological Clerk of Works (ECoW) (see below details in **Section 2.2 and 2.3**).

1.5 Biodiversity features

- 1.5.1 A desk study, an extended Phase 1 habitat survey and further additional surveys undertaken in 2021 and 2022 (see **Appendices 8A to 8H, Volume 5, Documents 5.3.8A to 5.3.8H** in the Environmental Statement) identified 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 and species as being present within the Order Limits and relevant areas of search (see **Table 8.6 in Chapter 8: Biodiversity, Volume 5, Document 5.2.8**)³. Construction activities for the Project therefore have the potential to adversely impact on a range of biodiversity features.
- 1.5.2 The following biodiversity features that have the potential to be within or adjacent to the working areas during the construction phase of the Project:
- Breeding birds (Wildlife and Countryside Act 1981 (as amended)⁴);
 - Bats (Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017 (as amended)^{4,5});

³ 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.

⁴ UK Government (1981). The Wildlife and Countryside Act 1981. SI 1981 c.69. (Online) Available at: <https://www.legislation.gov.uk/ukpga/1981/69> (Accessed October 2022).

⁵ UK Government (2017). The Conservation of Habitats and Species Regulations 2017. SI 2017 No. 1012. (Online) Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made> (Accessed October 2022).

- Badgers (Protection of Badgers Act 1992⁶);
- Great crested newt (Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017 (as amended)^{4,5});
- Reptiles (Wildlife and Countryside Act 1981 (as amended)⁴);
- Otter (Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017 (as amended)^{4,5});
- Water vole (Wildlife and Countryside Act 1981 (as amended)⁴);
- Invasive species (Wildlife and Countryside Act 1981 (as amended)⁴); and
- Other notable species (e.g., brown hare, hedgehog and common toad, which are Species of Principal Importance for the purpose of conserving biodiversity in England, listed under Section 41 of the Natural Environment and Rural Communities Act 2006 (as amended)⁷).

1.5.3 In the absence of mitigation, there is potential for negative effects upon protected or notable species which occur throughout land within the Order Limits. Species are not limited to 'green' habitats, and there is potential for construction activities to inadvertently create habitat for species in areas that would otherwise be unsuitable. For example, vegetation and rubble piles produced during clearance works have the potential to be used by sheltering and hibernating protected species such as great crested newt and reptiles.

1.5.4 Mitigation measures that are embedded into the Project, that will negate or minimise the risk of any potential impacts on these species, and therefore reduce the risk of breaching the relevant legislation, have been outlined within this BMS.

⁶ UK Government (1992). Protection of Badgers Act 1992 c.51. (Online) Available at: <https://www.legislation.gov.uk/ukpga/1992/51/contents> (Accessed October 2022).

⁷ UK Government (2006). The Natural Environment and Communities Act 2006. SI 2006 c.16. (Online) Available at: <https://www.legislation.gov.uk/ukpga/2006/16/contents> (Accessed October 2022).

2. Roles and Responsibilities

2.1 Responsibilities

- 2.1.1 This BMS sets out the mitigation measures that the Applicant, their appointed Principal Contractor(s) and any other appointed Contractor(s) will be required to adhere to, the delivery of which will be overseen by the Ecological Clerk of Works (ECoW).
- 2.1.2 It is their joint responsibility to carry out the works in a manner which will not contravene legislation, including the DCO; will not endanger protected species; and with due care to any other wildlife. Any variations from the BMS may contravene legislation and therefore risk prosecution. Thus, it is their joint responsibility that no changes to the timings or methods detailed in this BMS, nor any identified working areas, are made without prior agreement from the ECoW.
- 2.1.3 The Principal Contractor's ecologists may need to obtain agreement from the relevant local authority if any changes are likely to result in a negative effect on biodiversity features.
- 2.1.4 This BMS is based on the scope of works as defined within **Chapter 3: Description of the Project Volume 5, Document 5.2.3** and assessed within **Chapter 8: Biodiversity Volume 5, Document 5.2.8** the ES.
- 2.1.5 The BMS may need to be amended should the scope of works change.

2.2 Ecological Clerk of Works

- 2.2.1 An ECoW (who will report to the National Grid Project Manager) will lead the management of ecological issues in delivery, will advise and provide support to National Grid, and liaise with the Principal Contractor(s), which will have the responsibility to deliver all construction and maintenance activities. The ECoW will oversee and quality-control the implementation of the ecological tasks (i.e. those tasks described in **Section 3 and 4**) undertaken by the Principal Contractor's ecologists. The specific ecological tasks that the ECoW is required to undertake are described below.
- 2.2.2 The ECoW will determine when the measures outlined within this BMS will be applied to work activities and how they will be communicated to the Principal Contractor(s)/Contractor(s); this will be done in conjunction with the National Grid Project Management Team.
- 2.2.3 In summary, the ECoW will be responsible for the following activities:
 - Overseeing, in conjunction with the National Grid Project Management Team, the delivery of all measures detailed in this BMS, including inspection, monitoring and quality control, of the embedded environmental (ecological) measures implemented by the Principal Contractor(s)/Contractor(s) during the construction phase;
 - Reviewing relevant documents, including risk assessments, method statements and evidence relating to all proposed work activities that may impact upon ecology to ensure they comply appropriately;

- Advising the Applicant and its Principal Contractor(s) in relation to how legal and contractual ecological management measures should be met;
- Reviewing the content of toolbox talks (TBTs) or other ecological briefings provided by the Principal Contractor's ecologists);
- Reviewing the Site Ecology Register (SER) of works conducted, from site establishment through to demobilisation which will be maintained by the Principal Contractor's ecologists. The SER will include weekly updates and a photographic record of activities carried out (and recommendations of future works); and
- On request of the Applicant and/or Principal Contractor Project Management Teams, meet landowners and occupiers to describe this BMS, its intentions, and its implications for their land interests.

2.3 Principal Contractor's ecologists

2.3.1 The Principal Contractor's ecologists will be responsible for the following activities:

- Undertaking pre-construction update surveys for protected species where relevant and necessary (see **Section 4.2** for further details);
- Preparing location specific Method Statements where this is necessary to capture any additional mitigation measures identified as a result of pre-construction surveys such as micro-siting of works to further reduce impacts;
- Obtaining European Protected Species licences where identified by pre-construction update surveys to be necessary;
- Conducting TBT's or other ecological briefings with the Principal Contractor(s)/Contractor(s);
- Recording and reporting any ecological non-compliances to the ECoW, Applicant and Principal Contractor, with advisory actions and responsibilities as appropriate;
- Conducting tasks outlined within **Section 3 and 4** including pre-work checks of working areas and supervision of vegetation clearance; and
- Maintaining a SER of works conducted, from site establishment through to demobilisation.

2.3.2 The ECoW (and/or as appropriate members of the Principal Contractor/Contractor(s) team) will be licensed for overseeing of work activities in relation to those protected species relevant to the embedded measures required of the Project works. They may, if appropriate, appoint supporting team members to their licences (or vice versa).

2.4 Roles during post-construction ecological monitoring

2.4.1 Based on the current baseline no specific ecological monitoring is required during post-construction (during the first 5 years of the operational phase) except the landscape monitoring of any habitat reinstatement to ensure this has established. Any post-construction monitoring and other management measures required for the first 5 years, such as the monitoring of any habitat reinstatement, will be undertaken by the Applicant or their appointed Principal Contractor depending on the terms of contract. Should pre-construction survey identify the need for any additional protected species licences that

would include post-construction monitoring then it will be the responsibility of the Applicant or their appointed Principal Contractor to ensure that these are carried out.

- 2.4.2 The Applicant or their appointed Principal Contractor(s) who will implement the operational phase of the Project beyond the first 5 years, will be required to appoint an ecologist post-construction during any maintenance and refurbishment of the existing and proposed overhead lines to ensure that ecological constraints present at the time will be identified and mitigated accordingly.

3. General Mitigation

3.1 Overview

- 3.1.1 This section outlines general mitigation measures that will be applied throughout the Project as good practice to protect biodiversity and negate or minimise the risk of contravening legislation.

3.2 General measures

- 3.2.1 The following general measures will be adopted.

- In advance of any works commencing all site operatives should receive a TBT, confirming their understanding of, and agreement with, this BMS. This TBT will identify the species and constraints relevant to the location, outlining the procedures and environmental measures to be followed in order to avoid breaches of legislation and/or adverse impacts on species that could occur within or in the vicinity of the working area. Any queries raised should be passed back to the Principal Contractor's ecologist for response.
- Where necessary (i.e., in areas where there is a high or moderate risk of impacting ecological habitats/features as detailed within the baseline reporting (**Appendices 8A to 8H, Volume 5, Documents 5.3.8A to 5.3.8H**) and as determined by the Principal Contractor's ecologist) the Principal Contractor's ecologist will undertake a walkover (to an appropriate buffer around the proposed works) with the Principal Contractor at this time in order to identify any ecological constraints which may be present, and to micro-site locations of access and working areas where appropriate to avoid ecological habitats/features of interest (e.g. badger setts, trees with potential bat roost features and habitats of principal importance), and minimise loss and fragmentation of habitats. Appropriate delineation with, for example, protective fencing or cones with rope, 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. If appropriate delineation is not possible, additional mitigation may be required. This would be provided in a separate method statement or licence application as appropriate that will be prepared by the Principal Contractor's ecologist in agreement with the ECoW.
- All works and associated activities should be strictly limited to clearly defined working site boundaries, and under no circumstances should the habitats outside the agreed boundaries be damaged or impacted by the work. Works should be restricted to the minimum possible footprint so as to avoid unnecessary disturbance of species/habitats or fragmentation of habitat.
- If the Principal Contractor's ecologist identifies potential for localised fragmentation of a habitat features, they will advise on mitigation measures that should be implemented (e.g., the creation of temporary brush hedges to maintain connectivity of linear features for commuting bats).
- In accordance with Requirement 6 of the draft DCO (**Volume 3, Document 3.1**), a lighting design will be prepared for the Project for all temporary and permanent

lighting once a Principal Contractor is appointed and should be followed throughout works. The lighting design would be informed by the joint guidance provided by the Bat Conservation Trust and Institution of Lighting Professionals⁸. The lighting design will decrease the potential displacement effects on light-sensitive nocturnal fauna such as badgers and bats, and will follow the principles of minimising lighting usage, minimising light spill, using the most appropriate wave lengths of light, and locating lighting in the most appropriate locations to provide lighting which is targeted and necessary.

- If any protected species mentioned during the TBT's are observed within the Order Limits or the surrounding habitats, work should stop immediately if safe to do so at that location and within an approximate 50m buffer and the Principal Contractor's ecologist notified. The Principal Contractor's ecologist will provide advice on how best to progress with the works while minimising the risk of contravening legislation. Although these measures are necessary specifically in relation to protected species, all site personnel should treat any animals with due care and attention.
- All site personnel should be aware that protected species may be found sheltering amongst refugia such as rubble, wood, chippings or rubbish and as a result should maintain a tidy working area and remain vigilant for species when moving such materials.
- All machinery, materials (e.g. spoil and chippings), chemicals and equipment should be stored safely and securely to prevent foraging and commuting animals coming into contact with these, and to prevent spillage of chemicals. They should be stored on hard standing, bare ground or short grassland where possible. If not possible, materials should be raised off the ground.
- Fuel should be stored in appropriate capacity bunded tanks/bowsers, and drip trays used beneath equipment such as generators.
- Chemicals should be used in strict accordance with manufacturer's instructions, and appropriate spill kits should be provided, and site personnel appropriately trained to use these.
- Chemicals in the form of herbicides, pesticides and fertilisers should be avoided wherever possible.
- Vegetation clearance should be minimised, and all vegetation clearance should be carried out in line with the species/habitat specific mitigation measures outlined in **Section 4**.
- Works should maintain a minimum stand-off in line with regional Environment Agency and Internal Drainage Board requirements where reasonably practicable (noting species/habitat specific mitigation measures for otter and water voles in **Section 4.8-4.9**). Works that occur within the minimum stand-off distance or within watercourses should be discussed and agreed in advance with the Principal Contractor's ecologist.
- At watercourse crossing locations, existing crossings and access routes would be used as far as possible, and the width of any required working area reduced as far as practicable. All Environment Agency Main Rivers and WFD reportable

⁸ 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 28 September 2022).

waterbodies crossings would be temporary clear span bridges, involving no in channel works. Where required for ordinary watercourses, temporary culverts would be used 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.

- Works should be carried out in accordance with government (GOV.UK) and Environment Agency (EA) guidance for pollution prevention⁹ during any works that occur within approximately 10m of a watercourse or water dependent habitats to minimise the risk of pollution incidents.
- Any obvious mammal trails through the site should remain clear of obstruction.
- Any excavations should be back-filled by the end of each working day. If this is not possible, then one of the following measures should be used:
 - A means of escape for any animals that may become entrapped should be placed in the open excavations (i.e. one side of the excavation at a 1 in 2 or shallower angle or with a ramp left in place such as a wooden plank);
 - Small excavations should be covered at the end of the day (e.g. with road plates); and/or
 - Larger excavations should be fenced off at the end of the day using a suitable material to prevent access by small and large animals.
- Prior to any sections of the Site being cleared or excavated, or any works being carried out that will cause disturbance to the ground, site personnel should carry out a visual inspection of working areas for any potential protected or notable species including badger setts or bird nests during the breeding season. This should also be undertaken immediately prior to each "shift" of work on an area (e.g., after a lunch break and at the start of each day).
- Speed limits will be imposed on all construction haul roads and access tracks to minimise the risk of road traffic collisions with fauna.
- Once works are complete, all temporarily lost or degraded habitats should be reinstated. Reinstatement of habitat should be undertaken in a timely manner once works are complete in each area, to minimise periods of habitat loss. Wherever possible, reinstatement would be back to the type of habitat affected or where possible, reinstated with species-rich mixes to increase species-diversity in agreement with landowners.
- If changes to the programme and scope of work are required at any stage of construction, this would need to be reassessed in consultation with the Principal Contractor's ecologist prior to the works taking place.

⁹ Guidance on pollution prevention for businesses is available on the GOV.UK website: Defra and Environment Agency (2022). Pollution prevention for businesses (Online). Available at: <https://www.gov.uk/guidance/pollution-prevention-for-businesses> (Accessed October 2022). Further to this, the Environment Agency previously published a series of pollution prevention guidance (PPG) notes. The PPGs were withdrawn in December 2015 and now reside in The National Archives; however, they contain a mix of regulatory requirements and advice, much of which remains relevant good practice:

3.3 Site clearance and vegetation management

3.3.1 Prior to any site clearance and vegetation management works, the Principal Contractor's ecologist should undertake a walkover of the site to identify any particularly ecologically sensitive areas as well as updating the current ecological baseline. The walkover would identify areas of vegetation clearance or management where supervision by the Principal Contractor's ecologist would be required (in addition to any locations identified elsewhere within this BMS, e.g., species/habitat specific mitigation in **Section 4**), and where the following measures should be applied:

- All trees, shrubs and hedgerows to be removed or managed will be identified on the Tree Removal and Protection Plan (provided in **Annex 31.3** to the **Arboricultural Impact Assessment, Appendix 31, Volume 5, Document 5.3.31**), and any deviations from the plan will be agreed in advance with the ECoW and relevant stakeholders (i.e. Local Planning Authority) where necessary, with advice from an appropriately experienced and qualified arboriculturist where required.
- All vegetation clearance and management should be completed between September and February inclusive where possible and subject to any other site specific constraints noted by the Principal Contractor's ecologist. Any vegetation clearance and management between March and August inclusive requires a pre-works nesting bird assessment by the Principal Contractor's ecologist (see **Section 3.2**) and may require pre-work checks and supervision to determine whether nesting birds are present (if an active nest is found, additional mitigation measures may be required and these would be documented within a separate method statement or licence applications as appropriate).
- Site clearance of rubble, brash, logs etc. that is deemed suitable as refugia for amphibians and reptiles by the Principal Contractor's ecologist should be carried out under suitable weather conditions as defined by the Principal Contractor's ecologist (e.g. following five days above 5°C overnight).
- Immediately prior to site clearance, hand searching (where necessary) of suitable habitats should be undertaken by the Principal Contractor's ecologist.
- If there is potential for hibernating animals (advised by the Principal Contractor's ecologist but generally features such as root bases, log or stone piles) the cut to ground level and/or uprooting should be delayed until the animals are likely to be out of hibernation (March - May depending on species and weather conditions) or the refugia should first be inspected by the Principal Contractor's ecologist.
- Vegetation will be directionally cleared, moving towards suitable areas of retained habitat, as advised by the Principal Contractor's ecologist. This will encourage any animals present within the working area to move into suitable adjacent habitat outside of the working area.
- Any coarse vegetation (scrub, trees, semi-improved grassland, tall ruderal) that requires removal within the working area should be cut to a short sward/stump (~30cm in height), this initial cut may be conducted without supervision if agreed with the Principal Contractor's ecologist.
- After the first cut, hand searching (as required) of suitable habitats should again be undertaken by the Principal Contractor's ecologist.
- All cut vegetation should immediately (before sunset on the same day) be cleared out of the working area (for example, blown or raked) and disposed of at a location

away from the working area or chipped and spread thinly if agreed with the Principal Contractor's ecologist.

- Any branches/rubble/boulders etc. should be lifted (not dragged) off site immediately. Any branches must be lowered gently and not allowed to fall to the ground.
- Clearance of vegetation to ground should only be undertaken following agreement from and/or under supervision by the Principal Contractor's ecologist.
- Any vegetation within the working areas must be maintained at ground level height during the works or until the roots etc. can be removed to minimise the risk of re-population
- Where vegetation management is required for the purposes of maintaining electrical safety clearance from overhead line infrastructure, pollarding or coppicing of trees and shrubs (where regrowth would occur within a season) should be used to avoid total loss of habitat where possible.

4. Species/Habitat Specific Mitigation

4.1 Overview

- 4.1.1 This section details species/habitat specific mitigation which will be applied specifically in areas where certain sensitive features are known to be present or where there is potential for them to occur based on the habitat present as documented within the baseline reports (**Appendices 8A to 8H, Volume 5, Documents 5.3.8A to 5.3.8H**). The Principal Contractor's ecologist will guide where the mitigation measures in this section should be applied.

4.2 Pre-construction surveys

- 4.2.1 Pre-construction update surveys would be undertaken by the Principal Contractor's ecologist for protected species where relevant and necessary, i.e. in locations where protected species have previously been identified or where habitat has been assessed as particularly favourable as detailed within the baseline reporting (**Appendices 8A to 8H, Volume 5, Documents 5.3.8A to 5.3.8H**). This will maintain up-to-date baseline data for known biodiversity features to inform mitigation requirements and European Protected Species licensing, or to identify potential additional biodiversity features which may become established within the Order Limits (i.e., mobile species) prior to construction commencing. Pre-construction update surveys are likely to be required for badger, bats, breeding Schedule 1 birds, otter and water vole.
- 4.2.2 Surveys would adhere to the relevant species/habitat specific best practice guidance at the time of survey¹⁰, and would be undertaken during appropriate survey periods in accordance with the relevant guidance.

4.3 Protected species licencing

- 4.3.1 A District Level Licence (DLL) with respect to great crested newts would be obtained from Natural England prior to Project commencement. No further licences are anticipated to be required based on survey information to date. However, should pre-construction surveys indicate likely impacts on other protected species (badger, bats, breeding Schedule 1 birds or otter) including habitat loss/disturbance/displacement, a licence from Natural England would be sought by the Principal Contractor's ecologist prior to commencement of the Project in order to avoid contravening legislation
- 4.3.2 Where protected species licencing is required, any mitigation, compensation and monitoring requirements, licence conditions and work schedule required, as detailed within the associated licence documentation, must be adhered to during the works in order to ensure compliance with legislation. The implementation of any licencing requirements would be guided by the Licensee and their Named Ecologist on the

¹⁰ The Chartered Institute of Ecology and Environmental Management provide guidance on sources of best practice survey methodology: Chartered Institute of Ecology and Environmental Management (2019). Resource Hub (Online). Available at: [REDACTED] (Accessed October 2022).

respective licence (and/or any Accredited Agents or Assistants authorised by the Named Ecologist).

4.4 Habitat

- 4.4.1 Through design, the construction of the new infrastructure will avoid ancient woodland, veteran and ancient trees. All retained trees, as identified on the Tree Removal and Protection Plan (provided in **Annex 3I.3** to the **Arboricultural Impact Assessment, Appendix 3I, Volume 5, Document 5.3.3I**), will be protected with appropriate root protection zones in accordance with the **Outline Arboricultural Method Statement (Annex 3I.4** of the **Arboricultural Impact Assessment, Appendix 3I, Volume 5, Document 5.3.3I**).
- 4.4.2 Where existing infrastructure is within 15m of ancient woodland, working areas or the erection of scaffolds would be installed working around tree positions where possible to minimise impacts.
- 4.4.3 Where practicable, sensitive habitats within Sites of Importance for Nature Conservation (SINCs) (including candidate and deleted SINCs) and habitats of principal importance known to be present within the Order Limits would be avoided. If this is not possible, works within these areas would be minimised where possible when micro-siting the proposed working areas.

4.5 Breeding birds

- 4.5.1 Suitable habitat for breeding birds is present throughout the Order Limits. The most suitable areas of habitat include areas of scrub, trees and hedgerow, however other habitats are also suitable such as areas of grassland and stands of dense vegetation along verges and ditches. As outlined in **Section 3.3**, vegetation clearance should, where possible, be completed between September and February inclusive (i.e. outside of the main bird breeding season). Where vegetation removal is necessary during the main bird breeding season (approximately March to August inclusive) the following mitigation should be undertaken:
- The construction works programme would incorporate and account for all Schedule 1 species nests identified during previous Schedule 1 breeding bird surveys undertaken in 2021-22 and avoid, amend or reduce works within these areas during sensitive periods i.e. breeding season.
 - Breeding bird checks should be undertaken by the Principal Contractor's ecologist prior to the work commencing for each discrete area of vegetation clearance (within no more than 24 hours prior).
 - To minimise the risk of works disturbing breeding activity by Schedule 1 birds¹¹, Schedule 1 breeding bird walkovers should be undertaken monthly during the main breeding season (March to August inclusive) covering all working areas and an appropriate surrounding buffer.
 - The following emergency procedure should be implemented by all site personnel if breeding birds or a nest is encountered. All work within 50m radius should

¹¹ Several species of bird are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). 'Schedule 1' species receive increased protection; protecting them and their dependent young from disturbance during breeding.

immediately cease if safe to do so and the Principal Contractor's ecologist be notified. The Principal Contractor's ecologist should inspect the site and define if any mitigation is required and liaise with ECoW. The ECoW should review whether the nest is active, identify the species present, and if construction activities are likely to affect it and, if so, what mitigation options are available. Priority should be given to assessing and mitigating impacts to species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) which receive increased protection from disturbance during breeding, along with their dependent young.

- Following the identification of an active nest, a protection zone should be set out by the Principal Contractor's ecologist in order to avoid destruction to that nest. No works should be carried out within these zones whilst birds are using the nest or young are still dependent on the nest site. Monitoring of the nest should be undertaken by the Principal Contractor's ecologist.
- For key protected species, appropriate protection zones based upon industry standard guidance (i.e. Ruddock and Whitfield, 2007¹²) should be established upon confirmation of breeding taking place in order to avoid any risk of disturbance.
- In all cases, the Principal Contractor/Contractor(s) should be advised of existing/new constraints together with mitigation options by the Principal Contractor's ecologist.
- If it is not possible to maintain a protection zone around an active nest, additional mitigation may be required. This may include obtaining a licence or the production of a separate method statement.

4.6 Bats

4.6.1 Suitable habitat for bats is present throughout the Order Limits. The most suitable areas of habitat occur in places where a range of habitat types coincide to provide a variety of ecotones for commuting foraging, and roosting bats. This includes habitats around Healaugh Priory Marsh deleted SINC and Field near Healaugh Manor Farm deleted SINC, and along watercourses such as the River Ouse and The Foss, which include a mix of habitats such as scrub, grassland, hedgerows, treelines, woodland and watercourses/ waterbodies. Suitable foraging, commuting and roosting habitat such as hedgerows and tree lines along field boundaries, watercourses, parcels of grassland, woodland and scrub are also present throughout other parts of the Order Limits.

Lighting

4.6.2 As outlined in **Section 3.2**, a lighting strategy will be prepared for the Project (in accordance with Requirement 6 of the **draft DCO (Volume 3, Document 3.1)** for all temporary and permanent lighting once a Principal Contractor is appointed. The lighting design will minimise impacts on bats and should be followed throughout works.

Felling of trees

4.6.3 Where tree felling or reduction is to take place, all trees should undergo a preliminary ground level roost assessment for Potential Roost Features (PRFs) prior to works by a suitably qualified and experienced ecologist. This should be undertaken in accordance

¹² Ruddock, M. & Whitfield, D. P. (2007) A review of disturbance distances in selected bird species. Natural Research Projects Ltd report to Scottish Natural Heritage.

with the Bat Conservation Trust (BCT) Surveys: Best Practice guidance (2016)¹³; to determine whether the tree has negligible, low, moderate or high suitability for roosting bats.

4.6.4 Trees assessed by the Principal Contractor's ecologist as having **negligible suitability for roosting bats** during pre-construction or pre-works checks can be pruned or removed following the general mitigation measures outlined in **Section 3**.

4.6.5 Should a tree, or any section of a tree be directly or indirectly affected, be assessed by the Principal Contractor's ecologist as having **low suitability for roosting bats** during pre-construction or pre-works checks and/or previously identified as having low suitability within baseline reporting, (**Bat Survey Report Volume 5, Document 5.3.8H**) the works should proceed in accordance with the below mitigation. These mitigation measures will be covered within the TBT provided by the Principal Contractor's ecologist.

- All works should be completed under the supervision of a suitably licensed and experienced Principal Contractor's ecologist. The trees for supervised felling/pruning should be clearly marked as such.
- All trees should be inspected for signs of roosting bats from the ground by an ecologist prior to removal, and where possible¹⁴, this should be followed by an aerial assessment by a qualified tree climber (under supervision of a bat licenced ecologist) prior to felling.
- Each limb or tree section containing a potential roost feature, or if left to fall would affect a potential roost feature, should be soft felled and lowered slowly and carefully to the ground by rope rather than dropped, to cover the low residual risk of harm to individual bats being present. These sections should be checked for evidence of roosting bats by the Principal Contractor's ecologist prior to stacking/chipping.
- As per the Joint Nature Conservation Committee (JNCC) Bat Workers Manual¹⁵, if cracks are kept open by stress, "*care must be taken when cutting so that the crack does not close*" (potentially crushing any bats within). In addition, "*care must be taken not to cut directly into holes or directly above them*".
- Should bats be found at any point during works, work should cease immediately if safe to do so and the Principal Contractor's ecologist should advise on the most appropriate course of action. The advice given would depend on each individual situation and may involve leaving the bat to depart the roost of its own accord or removal of the bat by an appropriately licenced bat ecologist. Liaison with Natural England may be required to determine if a licence is required.
- All site personnel are explicitly forbidden from handling, harming or disturbing bats in any way.
- The works should take place during suitable weather conditions in accordance with the Principal Contractor's ecologist's recommendations and the BCT and Natural England guidance. The Principal Contractor's ecologist should monitor conditions to

¹³ Bat Conservation Trust (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). Bat Conservation Trust; London.

¹⁴ An aerial assessment may not be possible where it is determined the tree is unsafe to climb. For example, where the tree is considered dead or if it is considered too close to power lines.

¹⁵ Mitchell-Jones, A.J, & McLeish, A.P. Ed 3rd Edition Bat Workers' Manual (2004). Joint Nature Conservation Committee; Peterborough.

ensure they remain suitable, and works may need to be suspended if conditions deteriorate significantly.

4.6.6 Should a tree, or section of tree subject to works, be assessed as having **moderate or higher suitability for roosting bats** during pre-construction or pre-works checks and/or previously identified as having moderate or high suitability within baseline reporting (**Bat Survey Report Volume 5, Document 5.3.8H**), the mitigation measures outlined below must be followed.

4.6.7 Where pruning or removal of such trees is unavoidable, there is potential to affect bats and their roosts. Other site work in locations where a tree with moderate or higher suitability has been identified in close proximity could also potentially indirectly affect roosting bats (e.g., through noise disturbance). Therefore:

- Tree removal and other site activities in locations where a tree with **moderate or higher suitability for roosting bats** has been identified must be discussed in advance with the Principal Contractor's ecologist, prior to works commencing. Additional surveys and/or mitigation may be required, potentially including working under a Natural England protected species licence where impacts to roosting bats are unavoidable.
- Bat boxes will be installed at suitable locations (for example 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), where loss of a feature suitable for roosting is unavoidable, for example due to essential management for electrical safety clearance or visibility splays. Box type and location will be selected to mimic the conditions of the lost roosting feature as directed by the ECoW.

4.7 Badger

4.7.1 During the field surveys, setts have been recorded throughout land within the Order Limits. Where setts have previously been identified as detailed in the **CONFIDENTIAL Badger Survey Report Volume 5, Document 5.3.8C**, the mitigation measures outlined below must be followed:

- Where a badger sett has been identified, a buffer distance determined by the Principal Contractor's ecologist should be marked off to avoid interference. This should be done with rope, fencing or wire. Plastic tape can be very disturbing to badgers in windy weather and should be avoided. No works or vehicular access should be carried out within this protection zone.
- Disturbances, such as loud noises or vibrations with the potential to disturb badgers within the sett should be minimised or limited to areas at least 30m away from the sett where this is reasonably practicable. Where use of noisy machinery cannot be avoided, it should be used before midday if possible. This allows badgers to settle down afterwards and minimises the risk of foraging activity being disrupted.
- Should works within the protection zone be required, advice should be sought from the Principal Contractor's ecologist in advance of works, as further assessment/mitigation may be required. Works within close proximity to a sett may require mitigation under a licence, and this would be limited to the period between 1 July to 30 November to avoid the 'closed season' (during which exclusion/capture of adult badgers prior to the disturbance/destruction of a sett could starve young cubs below ground).

4.7.2 Badgers are a highly mobile species and suitable habitat is present for foraging, commuting and/or creation of new setts throughout the Order Limits. Where habitat is particularly favourable for sett creation as determined by the Principal Contractor's ecologist, the following species/habitat specific mitigation should be implemented, regardless of whether a sett has previously been identified, to minimise the risk of harm to badgers or damage/disturbance to their setts:

- Prior to vegetation clearance and site strip, a pre-works check by the Principal Contractor's ecologist should be undertaken of the proposed working area as well as an approximate 30m buffer to check for the presence of newly created setts or evidence of badger activity.
- Those general mitigation measures outlined in **Section 3** specifically in relation to nocturnal mammals should be followed (e.g., minimising nocturnal lighting and keeping mammal paths clear).

4.8 Great Crested Newts and Reptiles

4.8.1 There are 20 ponds and 13 ditches with potential to support great crested newts within the Order Limits as detailed within the **Extended Phase 1 Habitat Survey Report Appendix 8B, Volume 5, Document 5.3.8B**.

4.8.2 The majority of the Order Limits comprises large arable fields which are unsuitable for great crested newt (GCN) and reptiles. However, arable field margins, parcels of woodland, hedgerows, dense scrub and a network of ditches provide suitable habitat with opportunities for foraging, refuging and hibernating.

4.8.3 Due to the presence of suitable habitat, GCN and/or reptiles could potentially be present in low numbers in limited areas of habitat present within the Order Limits. The following mitigation should be implemented to minimise the risk of harm or other affects to these species.

GCN District Level Licensing

4.8.4 Natural England DLL will be employed on the Project for GCN. By working under a licence issued by Natural England under a DLL scheme, activities affecting GCN are authorised which would otherwise be unlawful. Natural England provides guidelines¹⁶ for developers to minimise harm to GCN in areas where works are carried out under DLL licence¹⁷, and the measures in the following sections align with these guidelines where relevant.

4.8.5 There is a requirement for the Licensee to report action taken under a DLL licence to Natural England, and a record of the following actions must be recorded to enable this:

- A record of any GCN captured and where they were released;
- A record of any dead/injured GCN encountered;

¹⁶ Natural England (2019). Guidance for works carried out under great crested newt district level licensing. Natural England; London.

¹⁷ Although these measures are not a requirement or condition of a DLL licence, they are recommended by Natural England as good practice to minimise harm to GCN. The guidance includes reasonable avoidance measures, other detailed measures (including hand/destructive searching, trapping, pond drain down, and capture/release of GCN), monitoring, and biosecurity measures.

- How many ponds were retained, damaged and/or destroyed;
 - How much terrestrial habitat has been damaged and/or destroyed and details of any terrestrial habitat created; and
 - Any other recording requirements identified by the Licensee or Principal Contractor's ecologist.
- 4.8.6 The above actions should be recorded by the Principal Contractor's ecologist in the SER, and be reported to the Licensee.
- 4.8.7 Works should adhere to any additional requirements of the DLL licence, as advised by the Licensee (or the Principal Contractor's ecologist as instructed by the Licensee).

Site Clearance

- 4.8.8 Habitat manipulation should be undertaken to displace GCN and reptiles from areas of suitable habitat that will be lost where adequate adjoining surrounding suitable habitat will remain to support a viable population. This includes areas of trees, scrub and rank grassland.
- 4.8.9 Habitat manipulation for the purposes of displacement of GCN and reptiles should be undertaken while adhering to the general mitigation measures outlined in **Section 3** and under the supervision of the Principal Contractor's ecologist, in addition to the following mitigation measures:
- The working area should be hand-searched for GCN/reptiles where habitat is suitable, and the presence of these species is likely. This should be undertaken immediately prior to works commencing, and/or the works would be directly supervised by the Principal Contractor's ecologist, as determined by the Principal Contractor's ecologist.
 - The minimum amount of vegetation clearance possible to enable the works to proceed safely should be undertaken at each location. This will be assessed through discussions with the Principal Contractor and Principal Contractor's ecologist.
 - Phased vegetation clearance:
 - During the winter when reptiles and GCN are hibernating (approximately November to February inclusive, although this is weather dependent and will be determined by the Principal Contractor's ecologist). The requirement for multi-staged vegetation clearance should be determined by the Principal Contractor's ecologist (i.e. where phased clearance is required to enable the Principal Contractor's ecologist to search dense vegetation to identify potentially suitable hibernacula which should be retained and protected). Clearance to ground should only be undertaken during winter when the Principal Contractor's ecologist is satisfied that there is sufficiently low risk of hibernating animals being present/harmed by the work.
 - During the GCN and reptile active period (usually March to October inclusive) a multi-stage cut should be used as a minimum requirement when removing vegetation to ground level under the guidance and supervision of the Principal Contractor's ecologist. A pre-works check by the Principal Contractor's ecologist (finger-tip search) should be undertaken at the start of each stage. All vegetation to be removed should be cut down to 30cm and removed from site – the site should then be left undisturbed for two suitably mild and dry days; this would then be repeated taking the vegetation down to no less than 10cm. Finally, the

vegetation should be taken down as close to the ground as possible and maintained in this condition for the duration of the works (to avoid favourable habitat re-establishing due to vegetation regrowth).

- The timing of the cutting stages may be adjusted by the Principal Contractor's ecologist to reflect the vegetation and site conditions where necessary.
- All vegetation cuttings and/or chippings will be removed from the working area on the same day and left in a designated area as agreed between the Principal Contractor's ecologist and Principal Contractor. This must be located at an appropriate distance from any nearby water courses which are suitable for GCN. Site personnel should be aware that stored chippings/arisings can provide GCN/reptile refugia.
- Any potential reptile breeding sites should be dismantled by hand outside the breeding season as advised by the Principal Contractor's ecologist. Where possible, habitat features such as hibernacula or egg-laying sites which are to be lost should be reconstructed (or replaced) within the replacement habitats.
- Clearance of suitable refugia habitat in areas with increased risk of encountering GCN (i.e., close to known GCN ponds), as advised by the Principal Contractor's ecologist, should be supervised by a GCN licenced Principal Contractor's ecologist.

Trackway Installation/Removal

4.8.10 Where the requirement for temporary trackway panels has been identified by the Principal Contractor within suitable habitat for GCN and/or reptiles as determined by the Principal Contractor's ecologist, the following mitigation measures should be followed:

- Any trackway used should be of a suitable specification to negate the potential for GCN/reptiles to shelter within/beneath.
- Installation and removal of trackway should be supervised by the Principal Contractor's ecologist.
- Trackway should be sealed to the ground (if the ground is not flat) using earth/sandbags to ensure that no GCN/reptiles are able to enter any gaps underneath the trackway. Sealing will be focused to sections where gaps are present. This should be done by compacting earth along the edge of the trackway, so no gaps are present, or by placing sand bags along the edges to ensure trackway is sealed. This sealing of trackway should be done on the same day as that the trackway is installed. Trackway should undergo regular inspection by the Principal Contractor's ecologist to ensure no gaps/cracks appear, and if present these should be resealed promptly.

Pond Drain Down

- Damaging or destructive works affecting waterbodies potentially used by GCN should where possible be undertaken outside the breeding season (February – October, inclusive) unless it is impractical to do so.
- A suitable receptor site (to which any GCN/amphibians encountered can be relocated) must be identified before the drain down of a waterbody is undertaken, following guidance from a GCN licenced Principal Contractor's ecologist.
- The Principal Contractor's ecologist should monitor the drain down of the waterbody in order to capture any GCN or other amphibians present. Capture methods can

take place prior to and during drain down and should follow the methodology in the Great Crested Newt Mitigation Guidelines¹⁸ under supervision of the licenced Principal Contractor's ecologist. GCN can be captured by netting as draining takes place and by hand searching through plants, debris and silt when the pond is dewatered.

- Draining down of ponds can be undertaken via use of a pump operated at low speed fitted with a fine mesh filter to prevent GCN being drawn into the pump, or a trench dug into the bank of the pond from which the water can be drawn off. A fine mesh screen should also be fitted over the mouth of the trench to facilitate GCN capture.

During All Works

4.8.11 In addition to the mitigation referenced above the following mitigation measures are required during works:

- If a GCN or reptile is found during works, works should stop in that immediate area and the Principal Contractor's ecologist should be notified. The Principal Contractor's ecologist would move the GCN/reptile to suitable habitat that is at a suitable distance from working areas to release.
- Any activities involving capture/handling of GCN or other amphibian should follow good practice biosecurity measures¹⁹.

4.9 Otter

4.9.1 As detailed within **Otter and Water Vole Survey Report, Appendix 8D, Volume 5, Document 5.3.8D**, potential rest sites have been recorded within the Order Limits with additional evidence of otter recorded during field surveys including spraint, feeding remains, potential slides, and footprints. These were predominately along the River Ouse and The Foss.

4.9.2 The species is far-ranging and the network of ditches within and adjoining the Order Limits provide potential commuting corridors that link to the more extensive areas of suitable habitats of the River Ouse and The Foss.

4.9.3 The following mitigation measures should be applied to all working areas within 30m of a wet ditch, as guided by the Principal Contractor's ecologist:

- A pre-works check by the Principal Contractor's ecologist should be undertaken of any suitable habitat within the working area and any wet ditch habitat extending ~200m up and downstream to check evidence of otter.
- Those general mitigation measures outlined in **Section 3** specifically in relation to working close to water and nocturnal mammals should be followed (e.g., working in accordance with pollution prevention guidance and minimising nocturnal lighting, keeping mammal paths clear).

¹⁸ English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature; Peterborough

¹⁹ ARG UK (2017). ARG UK Advice Note 4: Amphibian Disease Precautions: A Guide for UK Fieldworkers. Amphibian and Reptile Groups of the United Kingdom; Nottingham.

4.10 Water vole

- 4.10.1 Although no conclusive evidence of water voles, such as latrines and feeding remains, were recorded along any watercourses or waterbodies that have been surveyed to date, inconclusive evidence in the form of potential burrows and feeding remains have been recorded along several ditches throughout the Order Limits (**Otter and Water Vole Survey Report, Appendix 8D, Volume 5, Document 5.3.8D**). As both noise and visual impacts do not, in most cases, have a significant impact upon water voles (Dean *et al*, 2016)²⁰, any potential risk of impact to water voles caused by the works is deemed to be via direct impacts to water vole individuals, their burrows, or other habitats which support them.
- 4.10.2 To ensure the vegetation clearance and construction works do not cause any impact upon water voles, the following mitigation measures should be applied to all locations where working areas occur within 10m of a ditch or pond:
- A pre-works check by the Principal Contractor's ecologist should be undertaken to assess the presence of any water vole burrows or field signs prior to any works commencing. The survey should encompass a 20m buffer up and downstream of the working area.
 - Where possible, no work should be undertaken, or equipment or vehicles stored, within 10m of a watercourse. This buffer zone will ensure burrows are not compacted or damaged as a result of the works or equipment used.
 - Works should be carried out in accordance with government (GOV.UK) and EA guidance for pollution prevention⁹.
 - If evidence of water vole is recorded during the pre-works check or during works, the works should stop immediately where safe to do so and advice from the Principal Contractor's ecologist should be sought. Additional mitigation measures may be required such as exclusions zones around burrows. These would be detailed within a separate method statement. If works are to occur within 10m of a water vole burrow, or direct impacts upon any water vole burrows cannot be avoided, a licence from Natural England may be required.

4.11 Invasive non-native plant species

- 4.11.1 Stands of Himalayan balsam, Japanese knotweed, variegated yellow archangel, snowberry, giant hogweed, Japanese rose and *Cotoneaster* sp. have been recorded within the Order Limits and in the 50m buffer. The following mitigation measures should therefore be applied throughout works:
- A pre-works check should be undertaken by the Principal Contractor's ecologist to identify presence of invasive non-native plant species.
 - If invasive non-native plant species are identified, the Principal Contractor's ecologist will advise on an appropriate exclusion zone which should be maintained around areas of these species, and no ground disturbance or vegetation clearance should occur within these areas.

²⁰ Dean.M, Strachan.R, Gow.D and R. Andrews (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds: Fiona Mathews and Paul Chanin. The Mammal Society; London.

- If works are required within an exclusion zone, an invasive non-native species management plan will be prepared and adhered to. This would detail appropriate mitigation measures relevant to the particular species and location, would include bio-security measures and may including the use of an appropriate Contractor to clear the area of invasive non-native plant material prior to works.

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