7 ECOLOGY

Summary

An ecological assessment has been undertaken to identify and assess the potential construction, operational and decommissioning effects resulting from the Proposed Project on ecological features (designated sites, species and habitats).

An extensive number and range of ecological surveys have been undertaken over the past 3.5 years to collate robust knowledge of the ecological baseline conditions across the Proposed Project area and inform the ecological impact assessment. The evolving design of the Proposed Project has taken into account ecological constraints from the onset and also been informed by detailed stakeholder engagement meetings and workshops at key stages of the Project design. The assessment, conducted in accordance with CIEEM guidelines and considering current policy and legal compliance, has identified valued ecological features and has set out the predicted effects of each of the components of the Proposed Project upon them. In turn it has outlined appropriate mitigation and compensation measures to avoid, reduce or offset potentially significant adverse effects.

The Proposed Project will result in predicted effects upon two non-statutory sites; one of which; Wogden Foot Local Wildlife Site, would be significant without additional mitigation. With mitigation measures embedded into the project phases and secured via the implementation of the Landscape and Ecological Management Plan (CEMP Appendix 2B.3) direct and indirect effects upon these sites have been avoided, reduced or mitigated such that the overall significance of residual effects will be Minor Adverse and therefore Not Significant.

The residual effects following the incorporation of mitigation measures on undesignated habitats are assessed as having a significance of Negligible or Minor Adverse, and therefore are also Not considered Significant.

Although the assessment concludes that there will be a number of Minor adverse ecological effects, particularly within Wogden Foot Local Wildlife Site, the integrity of the Local Wildlife Site and associated River Don/Trans Pennine Trail habitat corridor will not be undermined. The permanent habitat loss within Wogden Foot LWS associated with the components subject to planning total 0.28 ha and equate to approximately 2.2 % of the total area of the LWS (11.79ha). The Project design has sought to reduce its footprint as much as possible, particularly along the cable installation corridor and within Wogden Foot Local Wildlife Site. It also avoids significant effects upon statutory designated sites and Western Moors Local Wildlife Site LWS.

Minor residual effects upon habitat and species will be mitigated by measures adopted through the Landscape and Ecological Management Plan. This has been prepared for the Proposed Project to collate and expand on the ecological and landscape mitigation measures included in the Environmental Assessment Report. Measures included have been discussed with relevant stakeholders involved and agreement in principle sought from Barnsley Metropolitan Borough Council, Peak District National Park Authority, Yorkshire Wildlife Trust and Natural England. A period of post construction monitoring has been committed to within Wogden Foot Local Wildlife Site to ensure the habitats reinstated/created can in future return to the diverse mosaic habitat which Wogden Foot Local Wildlife Site is designated for, and provide valuable habitat for birds, invertebrates and other notable species.

There will be no significant ecological effects during the operation phase of the Proposed Project. There are potential benefits to be gained from the removal of the pylons by allowing habitats no longer beneath pylons and Overhead Line's to improve in condition and future disturbance be reduced. The decommissioned Sealing End Compound will be partially reinstated to species rich grassland which will provide local biodiversity enhancement. Where opportunities exist, measures to provide beneficial effects have been outlined.

National Grid is committed to ensuring that the Proposed Project delivers a net gain to biodiversity rather than only ensuring there is no net loss. From the start, we have sought to work closely with Barnsley Metropolitan Borough Council, the Peak District National Park Authority, Natural England, Yorkshire Wildlife Trust, the Trans Pennine Trail office and others to explore and identify opportunities both on and off site to compensate for habitats and species which may be adversely impacted by the Proposed Project. We are continuing to progress with proposals to assist in delivering net gain both on and off site with stakeholders and relevant local landowners.

7.1 Introduction

7.1.1 This chapter of the Environmental Assessment Report considers the likely significance of effects upon identified important ecological features[1] from the Visual Impact Provision (VIP) Peak District (East) Project (here on referred to as 'the Proposed Project'). A detailed Project Description is provided in Chapter 2 (Project Description).

7.1.2 This chapter follows the approach set out in the Chartered Institute for Ecology and Environmental Management (CIEEM) 'Ecological Impact Assessment (EcIA)[2]' guidelines. This EcIA identifies existing ecological features and considers the potential impact of the Proposed Project on these identified features during the construction, operational and decommissioning phases.

7.1.3 Potential ecological effects can be interrelated with other assessment topics, which are assessed separately in other chapters of this Environmental Assessment Report. Where required cross references to these chapters are provided rather than duplicating information.

7.1.4 This chapter is supported by a series of ecological baseline reports or other ecological supporting information, which are provided in Volume 3 as Appendices 7A – 7N.

7.2 Scope and Methodology

7.2.1 This EcIA comprises:

- A review of the national, regional and local ecological planning policy requirements and legislative context;
- A description of the assessment methodology and the significance criteria applied in determining the potential significance of effect;
- Methods employed to obtain ecological baseline information, including consultation conducted with relevant stakeholders and field survey methodologies;
- A summary description of the identified ecological baseline conditions (supported by detailed Appendices 7A – 7N), particularly those of importance relevant to this assessment;
- An assessment of the potential ecological impacts and effects of the Proposed Project considering the identified protected habitats and species, or other habitats and species of conservation significance (features) and the ecological importance (or value) of these ecological features. A feature is defined as an ecological component that could be affected by an action or stressor;
- The identification of additional mitigation measures (where required) to minimise or remove significant adverse effects; and,
- An assessment of residual effects on important ecological features following the adoption of the mitigation measures.

7.2.2 Throughout this chapter, the following terms of reference have been used:

- Site Boundary: The confined boundary of the Proposed Project during its construction and operational phases as shown on Figure 7.1, and 7.2;

[1] Important ecological features as defined by CIEEM (2018) are 'Ecological features requiring specific assessment within EcIA. Ecological features can be important for a variety of reasons (e.g. quality and extent of designated sites or habitats, habitat / species rarity)'.

[2] Chartered Institute for Ecology and Environmental Management (2018) Guidelines for ecological assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Chartered Institute for Ecology and Environmental Management, Winchester

- Area of Search for Permanent and Temporary Works: Established for data collection purposes to encompass the likely maximum extent of all temporary and permanent works associated with the Proposed Project, as detailed in Chapter 3 (Environmental Assessment Process).
- Desk Study Area: The extent of the ecological baseline desk study. A desk study was carried out to identify nature conservation designations and records of fauna within the following distances from the Site Boundary[3]:
  - 5km for European/ Internationally designated sites (and a check for any specifically designed for bats);
  - 2km for national level statutory designated sites;
  - 2km for non-statutory designated sites; and
  - 2km for legally protected and/ or otherwise notable species.
- Survey Areas used for field surveys: The baseline reports provided as Appendices 7A – 7M describe the specific Survey Areas used for each of the individual field surveys; and the timings of each of the species and habitats studies conducted. These Survey Areas were based off the Area of Search for Permanent and Temporary Works and thus, encompass the Site Boundary but also extend as necessary to reflect the potential area within which species ranges/ populations may be present or where disturbance effects could occur to mobile species e.g. birds.

7.2.3 This EcIA uses baseline survey data collected between November 2015 and June 2019, along with desk-based data collection.

Desk Study

7.2.4 A desk study was undertaken to place the Proposed Project in context of the ecological value of the local area. Statutorily designated sites of nature conservation interest were identified through the use of the Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.go.uk). Records of non-statutory designated sites of nature conservation interest and historical habitat and protected species data was obtained from Barnsley Biological Records Centre/ Barnsley Metropolitan Borough Council and Peak District National Park Authority. Additional species-specific data was also obtained from South Yorkshire Bat Group and the Barnsley Bird Study Group.

7.2.5 The Peak District Biodiversity Action Plan (BAP) 2011-2020[4] and Barnsley BAP 2008 -2012[5] (which at the time of writing is in the process of being revised; although some revised sections were available online) were also reviewed for species and habitat specific action plans.

7.2.6 A summary of the relevant desk study data search results for habitats or species/ species group is presented in each of the Appendices 7A - 7M.

Field Survey Methods

7.2.7 A Preliminary Ecological Appraisal (PEA) was initially undertaken in October 2015 in order to assess the habitats and features present within the Desk Study Area. The PEA comprised an Extended Phase 1 Habitat Survey and an appraisal of the potential of the Area of Search for Permanent and Temporary Works to support protected and/ or notable species. As well as the consultation (as outlined in Section 7.3), the initial PEA informed the scope and extent

[3] Chapter 3 of this Environmental Assessment Report contains further details of this defined boundary

[4] http://www.peakdistrict.gov.uk/looking-after/biodiversity/biodiversity-action-plan

[5] http://barnsleybiodiversity.org.uk/biodiversity.html

of the baseline ecological surveys considered necessary to support a robust EcIA for the Proposed Project.

7.2.8 Table 7.1 provides a summary of the ecological field surveys undertaken, coupled with their extent and limitations. The species scoped in were determined through an assessment of known range, habitat preferences, liaison with ecological stakeholders and desk-based data. The detailed methodologies are outlined in each of the respective baseline technical appendices (Appendices 7A – 7M).

Table 7.1: A Summary of Ecological Field Surveys and Survey Limitations

Survey Type	Methodology	Date(s)	Appendix and Limitations
Extended Phase 1 Habitat Survey	The survey was undertaken in accordance with the standard survey method (Joint Nature Conservation Committee, 2010[6]) and involved categorising different habitat types and habitat features within the Phase 1 Survey Area (based upon the area used for the environmental assessment scoping study plus an appropriate buffer to account for the evolving Proposed Project design). The standard survey method was "extended" to record target notes on protected, notable and invasive species.	October – December 2015: Area of Search for Permanent and Temporary Works April 2016: specific parcels of land located around Townhead east of Survey Area for potential access (now scoped out) January 2018: revisit of northern access road route and surrounding area. March 2019 – update survey of Survey Area but focussing on the Site Boundary	The PEA report is not provided in full, as much of its content relating to recommendations for further species or habitat survey is now superseded by each of the baseline technical appendix reports (Appendices 7A - 7M). Details of the desk study and habitat types recorded during the initial PEA and subsequent Phase 1 walkover surveys are described within this Chapter and shown on Figure 7.2. The recording of plant species including invasive non-native plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) was constrained by the time of year that the survey was undertaken. Many species are not visible or cannot be reliably mapped outside the growing season (May to September). However, this is not considered to be a constraint to the overall findings of the Phase 1/ preliminary ecological appraisal. Further botanical survey work was undertaken where applicable (see Appendix 7A).
Botanical Survey	National Vegetation Classification (NVC) surveys were undertaken of habitats highlighted by previous surveys or by stakeholders as being of potential botanical interest. Surveys of grasslands were undertaken in accordance with standard methodology for grasslands (Rodwell, 1992)[7]. Surveys focused on grassland habitats associated with Wogden Foot Local Wildlife Site (LWS), the verges of the Trans Pennine Trail between Wogden Foot LWS and the public car park located to the west at Dunford Bridge and a potential laydown area at	June 2016 and June 2017	Appendix 7A. There were deemed to be no significant limitations.

[6] Joint Nature Conservation Committee (2010) Phase 1 habitat survey: a technique for environmental audit. Joint Nature Conservation Committee, Peterborough
[7] Rodwell, J.S. (Ed.) (1992) *British Plant Communities Volume 3: Grasslands and Montane Communities*. Cambridge University Press, Cambridge

Survey Type	Methodology	Date(s)	Appendix and Limitations
	Winscar reservoir (NB: this area is no longer within the Site Boundary but has been retained within the report for information).		
Breeding Birds	Four visits were made with surveys following an amended Common Bird Census (CBC) methodology (Marchant, 1983; Bibbey *et al*., 1992)[8,9]. Following consultation with stakeholders (see Section 7.3), a species-specific survey for willow tit (*Poecile montanus*) was also undertaken. The survey included an initial assessment of the Trans Pennine Trail, Wogden Foot LWS and the River Don corridor to assess suitability to support nesting willow tit. A survey to identify potential nesting willow tit territories/ pairs was then conducted. The detailed scope and methodology of these surveys was agreed with stakeholders.	April to June 2016- Breeding Bird Survey April to June 2019 – repeat Breeding Bird Survey February and March 2017- Willow Tit Survey February, March and April 2019 – repeat Willow Tit Survey	Appendix 7B. There were deemed to be no significant limitations.
Great crested newt (GCN)	A Habitat Suitability Index (HSI) assessment was undertaken of ten water bodies. This assessment followed the methodology developed by Oldham *et al*. (2000)[10]. Water bodies deemed to be suitable for GCN (*Triturus cristatus*) and were subjected to four survey visits to ascertain presence or absence of GCN based upon environmental DNA (eDNA). On some of these traditional presence/ absence survey visits were conducted (Biggs *et al*. 2014; English Nature 2001)[11][12].These were then ceased once negative eDNA results were received.	April – June 2016 – eDNA and l GCN Surveys (Ponds 1-9 location shown in Appendix 7C) May 2017 - eDNA Survey (Pond 10 location shown in Appendix 7C)	Appendix 7C. There was deemed to be no significant limitations.

[8] Marchant, J.H. 1983. *Common Birds Census instructions*. BTO, Tring. 12pp.
[9] Bibby, C.J., N.D. Burgess & D.A. Hill (1992) *Bird Census Techniques*. London: Academic Press.
[10] Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4), 143 – 155.
[11] English Nature (2001) The great crested newt mitigation guidelines. English Nature, Peterborough
[12] Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R.A., Foster, J., Wilkinson, J., Arnett, A., Williams, P. & Dunn, F. (2014) Analytical and methodological development for improved surveillance of the great crested newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA.Freshwater Habitats Trust, Oxford.

Survey Type	Methodology	Date(s)	Appendix and Limitations
		April 2019 – repeat HSI and eDNA Survey (Ponds 1-10)	
Badgers	A systematic walkover survey was undertaken which involved a search for field signs including: setts, paths, excavations, hair, footprints, dung pits, scratching posts, feeding evidence of bedding trails. Additionally, during other ecological surveys in 2016 and 2017, evidence of badger (*Meles meles*) activity was also noted.	March 2016 and throughout the 2016 and 2017 ecological survey season Update survey in June 2018 and March 2019	Appendix 7D. Small sections of the River Don were considered too hazardous to survey due to the very steep banks, dense bankside vegetation and deep water, making it impossible for surveyors to safely assess these areas. However, spot checks were made along the bankside in accessible areas, thus providing sufficient data to assess badger sett presence within the area.
Bats	Potential Roost Feature (PRF) Assessment – structures and trees were subject to a ground level assessment of their potential to support roosting bats by PRF's. Additionally, a small number of trees were subject to a more detailed aerial inspection where conditions allowed which determined the current roosting status of all PRFs. Bat Activity Transect Surveys and Static Monitoring – Monthly surveys were undertaken based upon published guidance (Collins. 2016)[13]. The transect route was chosen to provide representative coverage of all habitats of potential value within the Bat Survey Area. Transect surveys were complemented by monthly static monitoring surveys undertaken at three survey locations chosen to cover potential bat foraging and commuting habitat potentially affected by the Proposed Project. Bat Roost Surveys – All trees and structures appraised to have a PRF were subject to bat dusk emergence/ dawn re-entry surveys. In total seven structures and four trees were surveyed. Surveys were undertaken at dusk and/ or dawn in accordance with published guidance.	May 2016- PRF Assessment May to September 2016 - Bat Activity Transect Surveys May and September 2016 – Bat Roost Surveys May to July 2018 – repeat/ updated Bat Roost Surveys September 2016 to March 2017- Hibernation Surveys	Appendix 7E. PRF Assessment - None of the structures except for culvert B8 could be fully internally due to health and safety limitations. Such structures were appraised based on information gathered from an external survey and several assumptions were made on internal conditions (informed by the results/images of a laser scan survey conducted in September 2018), based on the construction and condition of the structures. Where necessary, additional surveys were commissioned, such as static monitoring, to compensate for the limitation in the PRF data. Bat Activity Transect Survey and Static Monitoring - The transect survey along the river was restricted due to the uneven and wet terrain, which made walking at night difficult. The static detector was positioned to sample the river corridor making up for the lack of transect data in this area.

[13] Collins, J. (ed) (2016) Bat Surveys: Good Practice Guidance 3rd Edition. Bat Conservation Trust, London

Survey Type	Methodology	Date(s)	Appendix and Limitations
	Hibernation Surveys – The Woodhead Tunnel (B12) and culverts B8, B10 and B13 were assessed to have moderate or high suitability to support hibernation roosts. These structures were subject to hibernation surveys; static bat detectors were deployed to monitor bat activity at each structure to determine whether hibernating bats were present.		Hibernation Surveys - Given the large size of some of the culverts, B10 in particular; active bats within the centre of the culvert may not have been detected in the unlikely event they did not fly out of an entrance. Winter weather effects upon static detectors reduced the number of recorded nights at two recording locations to that advised within guidance. A slightly reduced number of recording nights is not considered to undermine the overall findings.
Reptiles	Surveys comprised a combination of artificial refuge survey and visual encounter survey methodologies along walked transects based upon best practice detailed in Froglife (1999)[14] and with reference to Gent and Gibson (1998)[15] and Natural England (2015)[16].	June and September 2016	Appendix 7F. Two survey visits were conducted in slightly warmer temperatures than the guidance advises, however given the local variable weather conditions at the Peak District/ Dunford Bridge area, this is not considered to represent a significant limitation to surveys.
Riparian Species (Water Vole and Otter)	A survey of watercourses was undertaken to record evidence of water vole (*Arvicola amphibius)* and otter (*Lutra lutra*) occupation. Water vole field signs include: faeces, latrines, feeding stations, burrows, footprints (Strachan and Moorhouse, 2011) [17]. Otter field signs include: spraints, footprints, couches, holts (Chanin, 2003b) [18]. Survey focussed on the River Don and associated tributaries.	July 2016	Appendix 7G. Minor health and safety restrictions affecting survey coverage due to steep banks on southern side of the River Don. Sufficiently addressed by coverage from other areas of the Riparian Species Survey Area, not considered to undermine survey results.

[14] Froglife (1999) Froglife Advice Sheet 10: Reptile Survey. Froglife
[15] Gent, A.H. & Gibson, S.D., eds. (1998) Herpetofauna workers' manual. Joint Nature Conservation Committee, Peterborough
[16] Natural England (2015) Reptiles: Surveys and mitigation for development projects [Online]. Available from: https://www.gov.uk/reptiles-protection-surveys-and-licences
[17] Strachan, R. and Moorhouse, T. (2011), Water Vole Conservation Handbook. Third Edition. Wildlife Conservation Research Unit (WildCRU), Oxon
[18] Chanin P. (2003b) Monitoring the Otter Lutra. Conserving Natura 2000 Rivers Monitoring Series No.10 English Nature, Peterborough.

Survey Type	Methodology	Date(s)	Appendix and Limitations
Terrestrial invertebrates	Surveys focussed on Wogden Foot LWS and the Trans Pennine Trail corridor. A variety of survey techniques were used to record and collate specimens including sweeping vegetation, aerial netting, vacuum sampling and direct observation (Drake *et. al*, 2007) [19]. The scope and methodology of the survey was agreed with stakeholders. In addition, a nocturnal survey to assess the presence of glow-worm was undertaken in 2016 and 2018. This survey was undertaken at dusk and followed a transect approach in accordance with published guidance (Bird and Parker, 2014)[20].	June to August 2016 June 2016 and June & July 2018 (glow worm only)	Appendix 7H. Whilst surveys were commenced slightly later than the guidance advises to detect species more active in April/ May, a broad taxonomic coverage was achieved, and was offset by achieving a wider coverage of the guilds (e.g. pollinators, detritivores or predators) present, and thus the chances of capturing scarcer species.
Wintering Birds	Six survey visits were undertaken, which followed pre-determined transects that provided adequate visual coverage of the complete Winter Bird Survey Area.	November 2015 to March 2016	Appendix 7I. Whilst a survey visit was not undertaken in October (as per the guidance), the first survey was undertaken on the 3rd November, so this is not considered a limitation to the survey methodology.
Fish Habitat Assessment	The baseline fisheries assessment comprised two main elements; a desk study to establish the status of the local fish population within the River Don catchment, followed by a salmonid habitat walkover assessment. The two elements combined assessed the quality, value (e.g. rare or widespread within the reach) and sensitivity of the aquatic habitat within the section of the River Don where the bridge crossings (Bridge 1 and Bridge 2) are proposed in relation to the fishery resource. The objective of the fish habitat assessment was to record the types of habitat and notable features relevant to the life history requirements of fish, brown trout (*Salmo trutta*), in line with the Environment Agency (1997) guidance and the relevant fishery bodies (Westcountry Rivers Trust, 2010 and SEPA, 2010).	March 2017	Appendix 7K. There were deemed to be no significant limitations.

[19] Drake, C.M., Lott, D.A., Alexander, K.N.A. and Webb, J. (2007) Surveying terrestrial and freshwater invertebrates for conservation evaluation. Natural England Research Report (NERR005). Natural England, Sheffield. 132pp

[20] Bird, S. and Parker, J. (2014) Low levels of light pollution may block the ability of male glow-worms (*Lampyris noctiluca* L.) to locate females. Journal of Insect Conservation, 18: 737 – 743

Survey Type	Methodology	Date(s)	Appendix and Limitations
Aquatic Invertebrates	The macroinvertebrate survey was carried out to include three sampling locations; two on the River Don and one on its tributaries (Town Beck). This was carried out in line with standard Environment Agency methodology (Environment Agency, 2012[21]). Invertebrate data was then analysed (Chadd and Extence *et al.,* 2004; Extence *et al*., 1999; Extence *et al*., 2013)[22],[23]. The habitats present at the sample site locations were considered to be representative of the wider stretches of the watercourses which could be subject to direct or indirect effects from the Proposed Project.	March 2017	Appendix 7L. There were deemed to be no significant limitations.
Arboricultural Survey	Whilst not specifically an ecological survey, details of the arboricultural survey and impact assessment are included to support the baseline evaluation and effects upon trees. An arboricultural survey was undertaken in accordance with British Standard (BS) 5837:2012 within proximity to the Sealing End Compound (SEC) within Wogden Foot (within 30m of the SEC boundary including the permanent access track), the Trans Pennine Trail diversion and bridges and access AP7 from Brook Hill Lane (the components of the Proposed Project that require planning permission). In accordance with the survey guidance, all trees with a diameter at breast height (DBH) of 75mm or more were included. A higher level survey which did (not following British Standard guidelines) was also conducted covering several other areas including along the Trans Pennine Trail corridor, and laydown areas to identify the approximate extent of trees forming distinct groups, species composition, approximate age and average density.	July 2017 Updates undertaken July 2018	Appendix 7M. Tree locations were mapped using either LiDAR data or using GPS devices allow. The latter has a variation of approximately +/- 3 – 5m and are therefore considered to be indicative. This minor limitation is deemed acceptable.

[21] Environment Agency (last issue: 2012) Freshwater macroinvertebrate sampling in rivers. Operational instruction 018_08
[22] Chadd, R and Extence, C. 2004. The conservation of freshwater macro-invertebrate populations: a community based classification scheme. Aquatic Conserv. Mar. Freshw. Ecosyst. 14: 597-624
[23] Extence, C., Balbi, D. and Chadd, R. 1999. River flow indexing using British benthic macroinvertebrates: a framework for setting hydroecological objectives. Regul. Rivers: Res. Mgmt. 15: 543–574

Assessment Method

7.2.9 The EcIA has been undertaken with reference to published guidance, including the Chartered Institute of Ecology and Environmental Management ('CIEEM') Guidelines for Ecological Impact Assessment (September, 2018)[2].

7.2.10 Baseline conditions are described, including a summary of legislation/ policy relevant to the baseline conditions, and subsequently the assessment is undertaken taking into account avoidance and mitigation measures that are embedded within the design, or in inherent construction methods.

7.2.11 If following an assessment of the significance of effect (including the implementation of embedded mitigation measures), significant effects are predicted, additional mitigation, compensation and enhancement measures will be implemented to reduce the significance of the predicted effect. An assessment of the significance of residual effects is subsequently provided.

7.2.12 In line with the CIEEM guidelines, the terminology used draws a clear distinction between the terms 'impact' and 'effect'. For the purposes of the EcIA these terms are defined as followed:

- Impact – Actions resulting in changes to an ecological feature. For example, demolition activities leading to the removal of a building utilised as a bat roost.
- Effect – Outcome resulting from an impact, acting upon the conservation status or structure and function of an ecological feature. For example, killing/ injury of bats and reducing the availability of breeding habitat because of the loss of a bat roost may lead to an adverse effect on the conservation status of the population concerned.

Evaluation of Ecological Features

7.2.13 Data received through consultation, desk study and field-based investigations are used to allow relevant ecological features (including designated sites, ecosystems, habitat and species) of value (or potential value) to be identified, and the main factors contributing to their value described and related to available guidance.

7.2.14 Ecological features may be important for multiple different reasons (e.g. rarity in a particular geographic context; role in habitat connectivity; or a species on the edge of their range). Relevant reasons for which an ecological feature is important are described and considered in order to assign each relevant ecological feature an overall value in accordance with the following geographical frames of reference:

- international (i.e. European);
- national (i.e. England);
- regional (i.e. Yorkshire and Humber);
- county (i.e. South Yorkshire);
- district (i.e. Barnsley/ Peak District National Park);
- local (i.e. Parish); or
- negligible (used where the value is lower than the Parish level).

Characterising Ecological Impacts

7.2.15 When describing potential impacts (and where relevant the resultant effects) reference is made to the following characteristics:

- Beneficial/ adverse - i.e. is the change likely to be in accordance with nature conservation objectives and policy;
- Magnitude - the 'size', 'amount' or 'intensity' of an impact - this is described on a quantitative basis where possible;
- Spatial extent - the spatial or geographical area or distance over which the impact/ effect occurs;
- Duration - the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. The likely duration of the impact should be quantified. Consideration has been given to how this duration relates to relevant ecological characteristics, such as a species' lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact. In this Environmental Assessment Report, the following duration framework has been applied:
  - Short Term: during construction and up to 5 years post-construction
  - Medium Term: 5 – 10 years post-construction;
  - Long Term: Over 10 years post-construction;
- Reversibility (i.e. is the impact temporary or permanent)- a temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible, or cannot be achieved within a reasonable timescale (in the context of the feature being assessed); and
- Timing and frequency – this covers consideration of the point at which the impact occurs in relation to critical life-stages or seasons and the number of times an activity is expected to occur.

7.2.16 For each feature only those characteristics relevant to understanding the ecological effect and determining the significance are described.

Method for Determining Significance of Effects

7.2.17 Potential impacts on relevant ecological features are assessed and a judgement reached on whether or not the resultant effect on conservation status or structure and function is likely to be significant. This process takes into consideration the characteristics of the impact, the sensitivity of the ecological feature concerned, and the geographic scale at which the feature is considered important.

7.2.18 The CIEEM guidelines[1] state that:

7.2.19 '*For the purposes of EcIA a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' (i.e. relevant ecological features) or for biodiversity in general'*…

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

7.2.21 For designated sites, defined sites and ecosystems the assessment considers how the Proposed Project are likely to affect the conservation objectives for the site and/ or its interest/ qualifying features. For ecosystems, consideration is given to whether or not the proposals are likely to result in a change in ecosystem structure and/ or function.

7.2.22 For species and habitats, the effects of impacts on individual habitats and species are considered in relation to 'conservation status', which is defined in the CIEEM guidelines as follows:

- For habitats: conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area; and
- For species: conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

7.2.23 In considering effects on conservation status, reference is made to relevant available guidance on the existing conservation status of a feature.

7.2.24 Conclusions on the significance of ecological effects are related to the concepts of 'structure and function' or 'conservation status' as being either:

- not-significant, i.e. an effect on structure and function, or conservation status at a Local level or below; or
- significant, i.e. an effect on the structure and function, or conservation status at a District level or greater.

7.2.25 Such judgements are based, wherever possible, on quantitative evidence. However, where necessary the professional judgement of an experienced ecologist has been applied.

7.2.26 The scale of significance of an effect may not be the same as the geographic context in which the feature is considered important. For example, an effect on a species of principal importance for nature conservation at the national level may not have a significant effect on the conservation status of the national population of that species. For those effects considered significant, the effect has also been characterised as appropriate (e.g. adverse or beneficial), and qualified with reference to the geographic scale at which the ecological effect is significant (e.g. an adverse effect significant at a national level).

Comparing CIEEM Assessment Outputs with Significant Categories used in other Assessments

7.2.27 To provide consistency of terminology in the conclusions of the assessment, the effects of the Proposed Project are translated to a significance level on a scale of Negligible, Minor, Moderate and Major comparable to those that are used in other Environmental Assessment Report Chapters as outlined in Table 7.2. These conclusions are provided in each case in brackets following the equivalent CIEEM assessment conclusion.

Table 7.2: Relating CIEEM assessment terms to those of other Environmental Assessment Report Chapters

Effect significance terminology used in other Environmental Assessment Report Chapters		Equivalent CIEEM assessment
Significant (Beneficial)	Major Beneficial	Beneficial effect on structure/ function or conservation status at regional, national or international level.

Effect significance terminology used in other Environmental Assessment Report Chapters		Equivalent CIEEM assessment
	Moderate Beneficial	Beneficial effect on structure/ function or conservation status at a district or county level.
Non-significant	Minor Beneficial	Beneficial effect on structure/ function or conservation status at local level.
	Negligible	No effect on structure/ function or conservation status.
	Minor Adverse	Adverse effect on structure or conservation status at local level.
Significant (Adverse)	Moderate Adverse	Adverse effect on structure/ function or conservation status at district or county level.
	Major Adverse	Adverse effect on structure/ function or conservation status at regional, national or international level.

7.3 Consultations Undertaken

Screening and Scoping

7.3.1 The initial screening request was undertaken in July 2016 based upon the Proposed Project design at that time. A further screening request was also undertaken in September 2018.

7.3.2 Scoping was conducted at an early stage of the Proposed Project. A draft copy of the ecology section of the Scoping Report, which was prepared following the completion initial Preliminary Ecological Appraisal was issued to ecological stakeholders in May 2016 to invite comments on the proposed scope of ecological surveys and assessment. A number of comments were received on this draft report which for thoroughness are also summarised in Table 7.3. The report was then revised and resubmitted formally to Barnsley Metropolitan Borough Council in July 2016.

7.3.3 Table 7.3 below provides a summary of both the screening and scoping comments received from consultees which are relevant to ecology. Further details of the consultation undertaken is provided in Chapter 4 (Consultation).

Table 7.3: Summary of Consultee Responses relevant to Ecology

Consultee Comment(s)	Response(s)
First Screening Opinion – Submitted December 2015	
Barnsley Metropolitan Borough Council (received January 2017) and Peak District National Park Authority (received March 2016)	
Given the route of the proposed works, a tree survey and full ecological survey would be needed to assess and address the loss of trees and any potential impacts upon	The scope of the ecological surveys was reviewed. A tree survey was conducted (see Appendix 7M) and additional surveys for fish and

Consultee Comment(s)	Response(s)
bats, breeding birds, badgers or other flora and fauna associated with the habitats within and surrounding the application area and the area of any proposed river crossing.	aquatic invertebrates (Appendices 7K and 7L respectively) included in the scope to assess the River Don Trans Pennine Trail diversion crossing.
It is recommended that prior to any surveys the consultants contact Natural England and the Peak District National Park Authority so that appropriate survey effort is undertaken. Local wildlife groups will hold more information, and these should also be contacted.	Consultation on survey scope and extent was undertaken throughout the course of the Proposed Project with ecological stakeholders, particularly the scope of the willow tit and botanical surveys. Local wildlife groups (as detailed in each of the technical baseline reports) were contacted for relevant data.
It is not considered that the scheme is likely to have a significant effect on any European designations based on the nature of the scheme and its distance from the closest site (approximately 300m away).	This comment was based upon an initial layout. A Habitat Regulations Assessment (Appendix 7J) has been undertaken to assess the potential likelihood of significant effects upon Natura 2000 sites occurring. This was submitted to Natural England in October 2018 as an advance draft for in principle agreement which was provided in January 2019.
Second Screening Opinion – submitted September 2018	
Barnsley Metropolitan District Council – received January 2019	
General comments relating to presence of designated sites and habitats of interest; namely Wogden Foot and Western Moors LWS's. Species of conservation concern highlighted and recognition that consultation has been ongoing to agree mitigation approaches.	Noted.
The proposed undergrounding works will impact on trees and ecology with some loss of trees and habitats permanent and some impacts associated with construction only. …. These are not expected to be significant allowing for the current width of the trail …), the relative scale of affected habitat/ trees along the corridor and the overall sensitivity of the habitat/ trees. This view is based on assessment undertaken to date by National Grid and ongoing consultation.	Noted. The EcIA includes assessment of the loss of woodland and trees (Arboricultural Impact Assessment (Appendix 7M).
At Wogden Foot the new SEC and associated construction area will lead to permanent and temporary affects ….as will the proposed trail diversion and bridges over the watercourse, all of which require	Noted. Discussions on mitigation and future reinstatement proposal have been ongoing with the ecology and landscape stakeholders.

Consultee Comment(s)	Response(s)
planning permission. Sensitive habitat in Wogden again highlighted.	
Acknowledgement of agreement made with Natural England that the development is not likely to significantly affect those interest features of the nearby designated sites. BMBC concur this is not anticipated.	Noted. The Habitat Regulations Assessment (Appendix 7J) has been reviewed against minor design changes and following completion of updated 2019 breeding bird surveys, the overall conclusion of the Assessment remains unchanged.
Peak District National Park Authority – received October 2018	
PDNPA have confirmed in their screening response that they considered none of the statutory designated sites would be directly affected but stated that there could be potential impacts upon protected species and habitats down the corridor formed by the Trans Pennine Trail and within Wogden Foot LWS (although outside of the PDNPA). However, it was noted that these potential impacts can be addressed within a full and comprehensive Ecological Assessment and do not in themselves trigger the requirement for a full EIA.	Noted. The EcIA presented here assesses potential effects of the Proposed Project on ecological features including for components of the Project which are subject to formal planning and those which have been confirmed to be Permitted Development.
Scoping Opinion	
Barnsley Metropolitan Borough Council – June 2016	
Desk Study Area to be extended to 5km radius for international designations, although acknowledges that the proposed 2km radius captures the key Special Area of Conservation (SAC) and Special Protection Area (SPA) sites.	Desk Study Area for international sites reviewed and increased.
Requested that data from local groups is obtained including South Yorkshire Badger and Barnsley Bird Study Group.	These groups were contacted for any relevant information. Records relevant to the Proposed Project and this assessment are summarised in each of the technical baseline reports (Appendix 7A – 7L).
Requested the completion of terrestrial invertebrate and detailed botanical surveys at Wogden Foot and within grassland area at Dunford Bridge.	The scope was amended to include completion of these surveys. The specific methodology of these surveys (as detailed in Table 7.1) was issued to ecological stakeholders for comment and approval.
Peak District National Park Authority – various dates	
No formal scoping report comments provided. Informal consultation with PNDPA at the scoping stage requested further information regarding the design of the Proposed Project and the potential	National Grid provided further information relating to the reason for the layout of the Proposed Project. Detailed botanical surveys of habitats of potential greater

Consultee Comment(s)	Response(s)
effects upon Wogden Foot LWS and the grassland areas at Dunford bridge. Additional correspondence was also received regarding the extent of the breeding bird Survey Area (April 2018) and potential effects upon breeding birds of the northern access track. (September 2018)	interest conducted in June 2016 and June 2017. Further justification of survey area for breeding birds and mitigation principles were provided.
Natural England	
May 2016 - Initial response to the draft version confirmed the scope of the surveys was acceptable and that Natural England had no further comments.	Scope of ecological work was adopted.
August 2017 – Final Scoping report – requested that willow tit should be added in to the notable species section. Also, that waders, specifically curlew should be considered as the moorland fringe provides important feeding areas and any mitigation/ re-instatement works should be done in a considerate manner especially tree planting.	Breeding bird surveys were extended to include a specific willow tit survey and the species is assessed as an independent value ecological feature within this assessment. The status of wader species, including curlew which were identified within the Survey Area is discussed in the breeding bird report (Appendix 7B) and assessed as part of the breeding bird assemblage.
Following more recent correspondence relating to laydown areas Natural England provided a Scoping Response in September 2018. *Annex A – Advice related to EIA Scoping Requirements* was provided which outlines the general principals of EIA and specifically in respect of designated sites, protected and notable species. The advice note also sets out requirements for several other technical disciplines including Landscape, Access and Recreation, Soil and Agricultural Land Quality, Air Quality and Cumulative and in-combination effects.	The advice was reviewed against the approach taken by the EcIA. CIEEM guidance on EcIA[24] is being followed and surveys have been conducted in accordance with standing advice.

Consultation Meetings and Technical Workshops

7.3.4 In addition to formal consultation at the screening and scoping stages, there has been considerable ongoing consultation with relevant ecological stakeholders; representatives from Barnsley Metropolitan Borough Council, Peak District National Park Authority, Natural England and Yorkshire Wildlife Trust (initially Sheffield Wildlife Trust), undertaken via a number of Stakeholder Reference Group (SRG) meetings and ecology/ landscape workshops over the last three and a half years since the inception of the Proposed Project in October 2015.

[24] https://cieem.net/wp-content/uploads/2019/02/Combined-EclA-guidelines-2018-compressed.pdf

7.3.5 The purpose of these meetings and workshops has been to update stakeholders on the status and progress of the design and assessment work conducted, and to provide the opportunity for stakeholders to provide comments/ input to various aspects including the scope of ecology work undertaken, and mitigation approaches. The following were key items (but not restricted to) which have been discussed with attendees:

- Scope of ecological survey and desk study work; including specific methodologies of the terrestrial invertebrate, willow tit and tree surveys;
- Ecological policy review;
- Engineering options and key likely effects;
- Construction laydown area options workshops;
- Discussion of key features of interest to be avoided; e.g. sensitive grassland at Dunford Bridge and along cable corridor;
- Ecology survey updates including provision of a number of initial baseline ecology survey reports for review and comment;
- Ecology survey validation;
- Early principles and objectives of the Landscape and Ecology Management Plan (LEMP) and issue of initial drafts of ecological mitigation design plans;
- Provision of outline LEMP for comment prior to the planning submission; and
- Mitigation and re-instatement opportunities.

7.3.1 In addition to the meeting and workshops, ongoing communication has been maintained between National Grid and the ecology stakeholders on various aspects above.

Habitat Regulations Assessment Consultation

7.3.2 Specific consultation has also been undertaken with Natural England regarding the scope of and approach to the Habitat Regulations Screening Assessment which was confirmed as being required at an early stage of the Proposed Project. A site meeting was held with Natural England in February 2016 to discuss the wider ecological assessment work including the need for and scope of Habitat Regulations Assessment (HRA).

7.3.3 Natural England confirmed that breeding bird surveys should be conducted in order to determine the use and importance of habitats within potential works areas to/ by species associated with the South District Moors SPA and Dark Peak Site of Special Scientific Interest (SSSI). A further meeting was held in February 2017 with Natural England to discuss the findings of the wintering and breeding bird surveys and the scope of the HRA.

7.3.4 Correspondence was latterly issued by National Grid and AECOM to Natural England relating to the extent and scope of the breeding bird surveys and the proposed timing of works. Subsequently the validity of the survey data used to inform the EcIA and HRA was also discussed with Natural England, and in October 2018 a copy of the draft HRA was submitted to Natural England for comment. Following clarification of several comments, in December 2018 Natural England formally confirmed that they were satisfied with the conclusion of the HRA of No Likely Significant Effects from the Proposed Project upon the interest features for which the Natura 200 included in the HRA were notified. Whilst minor design changes have occurred to the Proposed Project since this decision was provided,

none of the changes will result in implications to the HRA, a copy of which is included as Appendix 7J.

7.4 Statutory and Planning Context

7.4.1 This assessment has been undertaken taking into account relevant legislation and policy guidance set out in the following national, regional and local planning policy documents. A review of compliance of the EcIA against this policy framework is provided in Appendix 7N.

International and National Legislation

7.4.2 The UK is bound by the terms of the European Birds and Habitats Directives (The Council of the European Communities, 1992) and the Ramsar Convention (1971). The Conservation of Habitats and Species Regulations 2017 provide for the protection of European sites created under this legislation (i.e. SACs designated pursuant to the Habitats Directive, SPAs classified under the Birds Directive, and Ramsar Sites designated as wetlands of international importance). The Conservation of Habitats and Species Regulations 2017 apply specific provisions of the European Directives to SACs and SPAs. This includes the requirement for an Appropriate Assessment to be conducted during the planning process if a project is considered by the 'competent authority' to be likely to result in significant effects on any Natura 2000 site. Should an adverse effect on the integrity of a European site be determined then planning consent could only be granted under very restricted circumstances.

7.4.3 The legal protection of designated sites and protected species within England is set out within the provisions of The Conservation of Habitats and Species Regulations 2017, The Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CRoW) Act 2000 (as amended) and the Natural Environment and Rural Communities (NERC) Act 2006.

National Policy

National Planning Policy Framework

7.4.4 The National Planning Policy Framework (NPPF) was published in July 2018 (and updated in February 2019) by the Ministry of Housing, Communities and Local Government and details the Government's planning policies for England and how these are to be applied. It is a material consideration in planning decisions made by local planning authorities.

The NPPF states the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. It specifies the obligations that Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation, and how this is to be delivered in the planning system. Protected or notable habitats and species can be a material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

Local Policy

7.4.5 Relevant local planning policies to the Proposed Project are detailed in the Barnsley Local Plan (formally adopted January 2019) and Peak District National Park Local

Development Framework, Core Strategy Development Plan Document (adopted October 2011).

7.4.6 A summary of local planning policies relevant to the Proposed Project and this Chapter is provided below; please refer to the source document for further details.

Barnsley Local Plan

7.4.7 Policy BIO1 Biodiversity and Geodiversity states:

- *Development will be expected to conserve and enhance the biodiversity and geological features of the borough by:*
    - *Protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified via Section 41 of the Natural Environment & Rural Communities Act 2006 (for list of the species and habitats of principal importance) and in the Barnsley Biodiversity Action Plan.*
    - *Maximising biodiversity and geodiversity opportunities in and around new developments.*
    - *Conserving and enhancing the form, local character and distinctiveness of the boroughs natural assets such as the river corridors of the Don, the Dearne and Dove as natural floodplains and important strategic wildlife corridors.*
    - *Proposals will be expected to have followed the national mitigation hierarchy (avoid, mitigate, compensate) which is used to evaluate the impacts of a development on biodiversity interest.*
    - *Protecting ancient and veteran trees where identified.*
    - *Encouraging provision of biodiversity enhancements.*
- *Development which may harm a biodiversity or geological feature or habitat, including ancient woodland and aged or veteran trees found outside ancient woodland, will not be permitted unless effective mitigation and/or compensatory measures can be ensured.*
- *Development which adversely effects a European Site will not be permitted unless there is no alternative option and there are imperative reasons of overriding public interest (IROPI).*

7.4.8 Also the Policy GI1 Green Infrastructure has relevance to the Proposed Project and partially to this ecology Chapter (but is predominantly considered within Chapter 6 (Landscape and Visual) and Chapter 13 (Socio-economics and Tourism) particularly in respect of the River Don Valley Corridor. The Policy states:

- *We* (Barnsley Metropolitan Borough Council) *will protect, maintain, enhance and create an integrated network of connected and multi-functional Green Infrastructure assets that:*
    - *Provides attractive environments where people want to live, work, learn, play, visit and invest;*
    - *Meets the environmental, social and economic needs of communities across the borough and the wider City Regions;*

- *Enhances the quality of life for present and future residents and visitors;*
- *Helps to meet the challenge of climate change;*
- *Enhances biodiversity and landscape character;*
- *Improves opportunities for recreation and tourism;*
- *Respects local distinctiveness and historical and cultural heritage;*
- *Maximises potential economic and social benefits; and*
- *Secures and improves linkages between green and blue spaces;*

- *At a strategic level Barnsley's Green Infrastructure network includes the following corridors which are shown on the Green Infrastructure Diagram* (contained in the Local Plan):
  - *River Dearne Valley Corridor.*
  - *River Dove Valley Corridor.*
  - *River Don Valley Corridor – (*within which the Proposed Project is partially located).
  - *Dearne Valley Green Heart Corridor.*
  - *Historic Landscape Corridor.*
- *The network of Green Infrastructure will be secured by protecting open space, creating new open spaces as part of new development, and by using developer contributions to create and improve Green Infrastructure.*

Peak District National Park Local Development Framework

7.4.9 Regarding biodiversity the landscape and conservation policy L2: Sites of biodiversity or geodiversity importance states:

- Development must conserve and enhance any sites, features or species of biodiversity importance and, where appropriate, their setting.
- Other than in exceptional circumstances development will not be permitted where it is likely to have an adverse impact on any sites, features or species of biodiversity importance that have statutory protection or are of international or national importance for their biodiversity.

Local Biodiversity Action Plans

7.4.10 Barnsley Biodiversity Trust and the Peak District National Park Authority have developed Local Biodiversity Action Plans (LBAPs) which identify habitats and species of principal importance which are present in their region and which need to have specific conservation objectives and actions prepared, in line with the UK Post-2010 Biodiversity Framework (JNCC and DEFRA, 2012[25]). These LBAPs for habitats and species are referred to where relevant in this assessment to assist with determining the level of importance/ evaluation of ecological features.

7.4.11 Table 7.4 lists the species and habitats included on the Barnsley Biodiversity Action Plan 2008-2012 (including revised sections as of 2018 updates where these were available online) and Peak District National Park Authority Peak District (Dark Peak)

[25] Joint Nature Conservation Committee and Department for Environment, Food and Rural Affairs (2012) UK Post-2010 Biodiversity Framework.

LBAP which are considered to be relevant to the Proposed Project based upon their presence/ potential presence.

Table 7.4: Relevant Local BAP Species and Habitats

Species	Habitats
Barnsley Metropolitan Borough Council LBAP Mammals – Bats (all species), Otter, Water Vole, Brown and mountain hare Birds - 46 local priority species Fish – Bullhead and brown trout Reptiles – Grass snake and common lizard Amphibians – great crested newt and common toad White clawed crayfish Invertebrates (including glow worm) Peak District National Park LBAP Farmland waders White clawed crayfish Birds of prey	Barnsley Metropolitan Borough Council LBAP Mixed deciduous woodland Lowland dry acid grassland Neutral grassland or lowland meadow Unimproved and semi improved grassland Ponds (standing water) Rivers (and streams) Open Mosaic on previously developed land Peak District National Park LBAP Lowland meadows Rush pasture Rivers and streams Lowland dry acid grassland
Complete LBAP lists (including those species/habitats not relevant to this assessment) are available online at: http://barnsleybiodiversity.org.uk/biodiversity.html http://www.peakdistrict.gov.uk/looking-after/biodiversity/biodiversity-action-plan	

Other Guidance

7.4.12 In July 2012, the UK Post-2010 Biodiversity Framework was published. This covers the period 2011 - 2020 and forms the UK Government's response to the UN Convention on Biological Diversity held in Nagoya in 2010. The Framework shows how the work of the four UK countries joins up to achieve the international biodiversity targets agreed under the UN Convention, as well those required under the European Union biodiversity strategy. In England, the strategic approach to be taken in biodiversity planning over the period 2010 to 2020 is set out in 'Biodiversity 2020, A strategy for England's wildlife and ecosystem services' (DEFRA 2011)[26].

[26] Department for Environment, Food & Rural Affairs (2011). Biodiversity 2020, A strategy for England's wildlife and ecosystem

These country strategies replace the UK Biodiversity Action Plan, with the associated lists of Priority Habitats and Species carried over into the newly defined lists of habitats and species of principal importance for nature conservation in England contained within Section 41 of the NERC Act. This latter list includes 56 habitats and 943 species.

7.4.13 Standing advice has been published by Natural England and DEFRA to guide decision-makers on the determination of proposals with the potential to affect designated sites, species and habitats. The guidance sets out responsibilities and minimum requirements for survey and mitigation, including the need to engage with objectives for no net loss of biodiversity and provision of biodiversity net gain.

7.5 Existing Environment

7.5.1 As detailed in Section 7.2, the importance of ecological features described in this section has been determined through a combination of guidance and professional judgement by evaluating each feature's level of designation, legal protection and status/ distribution (based upon desk study and field survey data).

Designated Sites

7.5.2 Details of these designated sites are summarised in Tables 7.5 and 7.6. The location of these sites in relation to the Proposed Project is shown on Figure 7.1.

Statutory Designated Sites

7.5.3 Two International/ European designated sites of International importance were identified within the 5km Desk Study Area; South Pennine Moors SAC and Peak District Moors (South Pennine Moors Phase 1) SPA.

7.5.4 One designated site of National importance was identified within the 2km Desk Study Area; Dark Peak SSSI.

Non–Statutory Designated Sites

7.5.5 The non-statutory designated sites Wogden Foot LWS and Western Moors LWS, which are of County importance, are both located partially within the Site Boundary (Table 7.6). There are no other non-statutory designated sites of nature conservation interest within the 2km Desk Study Area.

7.5.6 The most botanically diverse habitat types present within the Desk Study Area are those associated with Wogden Foot LWS. Further detail of botanical survey within this LWS is provided in Appendix 7A. Three distinct grassland communities were identified within Wogden Foot LWS; two mesotrophic neutral grassland communities and an acidic grassland community. Most of the grassland present was neutral unimproved grassland attributable to NVC MG5 community.

7.5.7 The other grassland communities present in the LWS were a species-poor U4 acid grassland community located adjacent to Pylon 4ZO158, and a relatively herb-rich neutral MG1 community located outside the permanent footprint of the Proposed Project at the western end of the LWS. These communities contribute to the habitat diversity of the LWS, and as such are considered as part of the overall evaluation of the designated site.

Table 7.5: Statutory designated sites located entirely or partially within the Desk Study Area

Site	Statutory Designation	Ordnance Survey (OS) Grid Reference	Summary of Qualifying/Designated Features	Distance of site to the Site Boundary (at nearest point)
South Pennine Moors	SAC	SK144960	Internationally important moorland principally designated for its Annex I habitats of European dry heath, blanket bogs and old sessile oak (*Quercus petraea*) woods with holly (*Ilex aquilinum*) and fern (*Blechnum spicant*). The site is representative of upland dry heath at the southern end of the Pennine range, the habitat's most south-easterly upland location in the UK. Dry heath covers extensive areas, occupies the lower slopes of the moors on mineral soils or where peat is thin, and occurs in transitions to acid grassland, wet heath and blanket bogs.	266m at its nearest point to the Site Boundary
Peak District Moors (South Pennine Moors Phase 1)	SPA	SK132 901	Internationally important moorland designated for its Annex I breeding species: • golden plover (*Pluvialis apricaria*) (at least 1.9% of the GB breeding population); • merlin (*Falco columbarius*) at least (2.3% of the GB breeding population as at 1990 and 1998); and, • short-eared owl (*Asio flammeus*) (at least 2.2% of the GB breeding population, as at 1990 and 1998).	266m at its nearest point to the Site Boundary
Dark Peak	SSSI	SK116 967	An extensive tract of semi-natural upland moorland supporting several vegetation types (blanket bog, mire and heathland), plants and animals which are at either the southern or northern limits of their distribution in this country. Supports nationally important breeding populations of golden plover (1.7% of the British population) and dunlin (*Calidris alpina*) (0.9% of the British population) as well as very significant numbers of meadow pipit (*Anthus pratensis*). Other species of importance recorded in the SSSI include curlew (*Numenius arquata*), merlin, short-eared owl and twite (*Carduelis flavirostris*). The SSSI supports a wide range of invertebrates; including seven nationally scarce species of beetle. Furthermore, the only	266m at its nearest point to the Site Boundary

Site	Statutory Designation	Ordnance Survey (OS) Grid Reference	Summary of Qualifying/Designated Features	Distance of site to the Site Boundary (at nearest point)
			known breeding site in the county of Derbyshire for golden-ringed dragonfly (*Cordulegaster boltonii*) occurs within the SSSI.	

Table 7.6: Non statutory designated sites located entirely or partially within the 2km Desk Study Area

Site	Non-Statutory Designation	Ordnance Survey (OS) Grid Reference	Summary of Designating Features	Distance of site to the Site Boundary (at nearest point)
Wogden Foot	LWS	SE 177 026	Comprises a narrow strip of land that was formerly occupied by track bed/ operational sidings on the disused Woodhead railway line (which closed in 1981). The LWS which is approximately 11.79ha (which includes the recent extension at its western end), is a mix of acidic, neutral and calcareous grassland habitats with scrub and broadleaved woodland, brought about by the addition of limestone ballast (originating from the adjacent dismantled railway) to this naturally acidic environment. This provides an area of biodiversity interest including, for example species such as cowslip (*Primula veris*), ploughman's spikenard (*Inula conyza*) and wild marjoram (*Origanum vulgare*), that is unusual in the Borough. The slightly unusual nature of the mixture of acid and neutral grassland communities within Wogden Foot LWS, which have been influenced by the history of the land use at the site, are fundamental for the designation of this site as a LWS. It is acknowledged that the neutral grassland to the east is the most botanically diverse grassland community with the LWS. While the other grassland types add to the habitat diversity within the LWS it is considered that these grassland types are not of sufficient botanical interest to merit LWS status in isolation; and likely to be of district ecology	Partially located within Site Boundary

Site	Non-Statutory Designation	Ordnance Survey (OS) Grid Reference	Summary of Designating Features	Distance of site to the Site Boundary (at nearest point)
			and nature conservation value as an example of a Barnsley BAP habitat that is considered scarce and under threat. The LWS also supports breeding bird species of Principal Importance including lesser redpoll (*Carduelis cabaret),* linnet (*Carduelis cannabina*), bullfinch (*Pyrrhula pyrrhula*), willow tit, spotted flycatcher (*Muscicapa striata),* dunnock (*Prunella modularis*) and song thrush (*Turdus philomelos*).	
Western Moors	LWS	SE 150 020	A large expanse (3,400ha) of upland and part of the South Pennines. A range of habitats at the LWS include large areas of heather (*Calluna vulgaris*) moorland with bilberry (*Vaccinium myrtillus*) and locally abundant cloudberry (*Rubus chamaemorus*), a rare plant in the district. Bilberry is found with purple moor-grass (*Molinia caerulea*) and mat-grass (*Nardus stricta*) over some areas and bracken (*Pteridium aquilinum*) forms monospecific stands in patches on the moorland. Several cloughs dissect the upland and it is mainly in these areas that species-rich acidic flushes occur dominated by sphagnum species with cranberry (*Vaccinium oxycoccos*) and cross-leaved heath (*Erica tetralix*) and a variety of herbs and sedges. Characteristic and important species of the breeding bird assemblage present within this LWS are golden plover, curlew (*Numenius arquata*), dunlin, merlin, ring ousel (*Turdus torquatus*), twite (*Carduelis flavirostris*) and short-eared owl and red grouse (*Lagopus lagopus*), all Birds of Conservation Concern (BoCC).	Partially located within Site Boundary

Habitats

7.5.8 The habitats present within the vicinity of the Proposed Project were identified during the Phase 1 Habitat Survey and are shown on Figure 7.2; Phase 1 Habitat Survey.

7.5.9 Whist the survey area as shown on the Phase 1 Survey plan extends to the wider (Phase 1) Survey Area, for the purposes of this EcIA only habitats of Local or higher importance (value) which are located within the Site Boundary (or directly adjacent to it such that potential effects upon them could occur) have been included in the assessment. These are described in Table 7.7.

7.5.10 As detailed in Appendix 7A, generally the most botanically diverse habitat types present within the Survey Area are those associated with Wogden Foot LWS. Three distinct grassland communities were identified within Wogden Foot LWS; two mesotrophic neutral grassland communities and an acidic grassland community. Most of the grassland present was neutral unimproved grassland attributable to NVC MG5 community.

7.5.11 The other grassland communities present in the LWS were a species-poor U4 acid grassland community located adjacent to the existing pylon (4ZO158), and a relatively herb-rich neutral MG1 community located outside the permanent footprint of the Proposed Project at the western end of the LWS. These communities contribute to the habitat diversity of the LWS, and as such are considered as part of the overall evaluation of the designated site.

7.5.12 Beyond the habitats within Wogden Foot LWS, a small number of additional areas of herb-rich MG5 neutral grassland were identified adjacent to the Trans Pennine Trail just east of the main car park at Dunford Bridge. These small areas as detailed in Appendix 7A, are intersected by the Trans Pennine Trail tracks are of moderate botanical diversity, and have a high cover of herbs within the sward.

7.5.13 The southern verge of the Trans Pennine Trail between Dunford Bridge and Wogden Foot LWS, taken to be the peripheral untrampled narrow grassland strip beyond the area subject to everyday use as the Trans Pennine Trail, were also appraised for their botanical value. The botanical interest of the verge is limited by over-shading from trees and scrub. The flora is considered typical of the conditions present and no rare or notable flora was identified, although it is acknowledged less shaded sections support a number of common species of orchid.

7.5.14 Several habitat types present are of Negligible ecological importance because of their limited extent, their species-poor character or because they represent habitat types that are common and widespread. These habitats/ features have been scoped out of further assessment and comprise:

- Poor semi-improved grassland
- Improved grassland
- Marshy grassland
- Amenity grassland
- Bracken
- Arable/ allotments
- Rock exposure & inland cliff faces
- Bare ground/ spoil
- Buildings

Invasive plant species

7.5.15 Rhododendron was recorded at several locations within the Survey Area, the main areas are alongside the south side of the Trans Pennine Trail and on the rock embankment within the existing National Grid Compound at the entrance to the Woodhead Tunnel (Target Note 12, Figure 7.2). Japanese Knotweed was also recorded in one location within the Cable Corridor close to Dunford Bridge car park. Rhododendron and Japanese knotweed are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) as an invasive plant species and as such it is an offence to plant or otherwise cause these plants to grow in the wild, as such there is a legal implication to ensure measures are adopted to avoid the spread of these species.

Table 7.7: Habitats of Importance taken forward for assessment

Habitat Type	Importance	Description
Dry heath/ acid grassland mosaic	County (Areas within Site Boundary Local)	Heathland forms most of the southern part of the Survey Area, directly adjacent to the south of the Trans Pennine Trail and forms part of the Western Moors LWS. Only small areas of this habitat type are located within the Site Boundary around Pylon 4ZO162 and to the south west of Pylon 4ZO161. A small area located to the east of the Bridge 1 adjacent to the Trans Pennine Trail diversion route. This is not considered to be more than Local value given its extent and presence of scattered scrub and grazing regime (by cattle).
Unimproved neutral grassland	County	This is the predominant grassland community present within Wogden Foot LWS, particularly the more open part of the LWS as it extends eastwards of the Pylon 4ZO158 location (Area 3, Appendix 7A). This grassland is most likely to be secondary having developed following disturbance, and as a result the grassland has a wide mix of species typical of natural grassland and colonisers of bare ground.
	District	A small area of unimproved grassland at Dunford Bridge car park that also supports a population of orchids, however the species of orchids present are widespread and do not necessarily increase the ecological value of the grassland. These grasslands do still comprise a relatively large and cohesive area of herb rich grassland within the context of the local area and these grassland types (MG5) are listed on Barnsley BAP.
Unimproved acid grassland	County	A small area/ clearing (approximately 0.2ha) of acid grassland is present within the central area of Wogden Foot LWS, just east of Pylon 4ZO158 (Area 2, Appendix 7A). The grassland is characterised by abundant red fescue (*Festuca rubra*) and Yorkshire-fog (*Holcus lanatus*), below which there is a dense thatch of bryophytes, particularly *Rhytidiadelphus squarrosus*. Herbs are of scattered occurrence and subordinate to grasses but include common mouse-ear-hawkweed (*Pilosella officinarum* agg.), fairy flax (*Linum catharticum*), wild strawberry (*Fragaria vesca),* wild angelica (*Angelica sylvestris*) and various species of clover (*Trifolium* spp.) and vetch (*Lathyrus* and *Vicia* spp.)
Semi-improved neutral and acidic grassland	Local	Along much of the section of the Trans Pennine Trail the botanical interest of the grassland is limited by trampling and by over-shading by trees and scrub; particularly where very narrow and restricted to the bridleway corridor. Semi-improved neutral grassland is present in the field in the west of the Survey Area adjacent to Brook Hill Lane, and semi-improved acid grassland to the north of the Survey Area south of Brook Hill Lane.

Habitat Type	Importance	Description
		The flora of these grasslands are considered typical of the conditions present and no rare or notable flora was observed.
Broadleaved semi-natural woodland (including dense scrub)	District	Broadleaved semi-natural woodland is generally associated with the Trans Pennine Trail embanked corridor and alongside the River Don, covering a total of 9.81 ha within the Survey Area. This is generally relatively young to semi- mature woodland with several woody species. The woodland has established since closure of the railway line (approximately 35 years ago) but includes occasional early–mature to mature trees generally located on the edge of the river bank and steeply sloped banks adjacent to the river. In some areas. Particularly in Wogden Foot LWS and adjacent to the Trans Pennine Trail diversion the woodland is more aligned to mature scrub which has naturally colonised and matured and comprises of hawthorn, eder and willow generally including hawthorn, elder, willow or young silver birch The woodland is not considered to be of a type which meets the characteristics of Habitat of Principal Importance under Section 41 of the NERC Act 2006 or as Priority Habitat of the Barnsley BAP habitat. Given its lack of botanical diversity the woodland would not likely be considered to meet the criteria for LWS status as County value independently. However, it is recognised as an important habitat feature, and in combination with the River Don provides a habitat corridor for flora and fauna within the context of the Proposed Project. As such the woodland habitat associated with the Trans Pennine Trail /River Don corridor is afforded District Importance.
Broadleaved Trees (stand alone)	Local	Occasional broadleaved stand-alone trees are present across the Survey Area; generally located on remnant or stone walled field boundaries on the northern side of the Trans Pennine Trail valley or associated with residential holdings. Species include sycamore, beech and oak. The majority of trees form part of the woodland habitats/ corridor features and therefore the evaluation of individual semi broadleaved trees acknowledges trees which do not form part of woodland or dense scrub habitats. Full details of the trees present within the Survey Area are provided in the Arboriculture Impact Assessment (Appendix 7M). None of the trees were identified as being ancient or aged. Individual broadleaved trees are not listed as a Species of Principal importance nor are included on the Local BAP. However, it is recognised that they provide a valuable ecological resource for fauna including roosting bats, nesting birds and invertebrates. As such these stand-alone trees are afforded Local value.

Habitat Type	Importance	Description
Coniferous plantation woodland	Local	Discreet plots of mature coniferous plantation woodland are located to the far west of the Survey Area close to Winscar reservoir. Generally, this woodland type, where present, are densely planted (Scots Pine or Larch sp.) and have limited ground flora interest. None of this habitat type is located within the Site Boundary.
Mixed plantation woodland	Local	Mixed plantation woodland is located to the far north-west of the Survey Area close to Winscar reservoir. Several distinct blocks of plantation woodland are also present within the pasture habitats on the northern side of the River Don close to Castle Hill but these are more consistent with plantation woodland. None of this habitat type is located within the Site Boundary.
Scattered scrub	Local	Scattered scrub is also present throughout the Survey Area to varying degrees but predominately along the banks of the River Don (and within the Wogden Foot LWS).
Running water (River Don & tributaries)	District (River Don) Local (Tributaries/ other ditches)	The River Don flows westward through the centre of the Survey Area feeding from Winscar Reservoir (and its source further west) via an overflow channel. Within the Survey Area the river comprises a channel approximately 3-4m wide with shallow grassy banks and an approximate depth between 0.5-2m. Several other smaller tributaries are present within the Survey Area; Clough Beck flows from the Lower Windleden Reservoir and several un-named cloughs/ dikes originating off moorland to the south feed into the River Don via culverts. A narrow drainage ditch (with limited flow) is present on the south side of the Trans Pennine Trail at the foot of the embankment. The drainage ditch is no more than 1m wide and 0.5m in depth and comprises of two sections between Dunford Bridge and Wogden Foot; the most westerly is approximately 650m in length and the eastern section approximately 250m. There is limited aquatic vegetation present other than small stands of Juncus sp. and it is subject to partial over shading from encroaching scrub and trees located on the embankment to the south of the Trans Pennine Trail. Whilst the River Don (or other small tributaries) present in the Survey Area is not subject to any formal ecological designation, rivers and running water are a priority habitat within the Barnsley LBAP. Based upon the data collated by the desk study the section of the river within the Survey Area (and Site Boundary) is not of LWS quality. However, the River Don including its tributaries runs through the centre of the Survey Area and is one of the key habitat features providing a value habitat corridor (in combination with the adjacent woodland).
Standing water	Local	Ten waterbodies were identified within the Survey Area (including within the boundary of Wogden Foot LWS). None of the ponds are located within the Site Boundary. Whilst standing water/ ponds are listed

Habitat Type	Importance	Description
		as a priority habitat within the Barnsley BAP, of the 10 ponds identified, eight of these are artificially created and are not considered to provide a significant standing water resource to the Survey Area. The ponds were not deemed to meet the LBAP criteria for LWS/ county designation; given that most support limited aquatic vegetation are small/ disturbed in nature and do not support species of high conservation importance. However, given the limited presence of this habitat type in the Survey Area and none within the Site Boundary, standing water habitat is not considered to be more than Local Importance.
Invasive Plant Species; Rhododendron and Japanese Knotweed	N/A Legal Considerations	Stands of Rhododendron are present within the Survey Area which partially extend into the Site Boundary close to start of Cable Corridor at Dunford Bridge (on embankments close to Woodhead tunnel entrance and on slope of Trans Pennine Trail corridor). A small stand of Japanese Knotweed is also present within the Site Boundary (Target Note 6, Figure 7.2A. No formal Importance category is assigned to these invasive plant species, but they are included within the assessment due to their legal status and implications for control and removal.

Protected Species

7.5.16 A wide range of historical records of protected and/ or notable species were received from the desk study sources. Relevant records are reported in the corresponding technical baseline reports (Appendices 7A – 7M.) with the exception of those for which no targeted surveys were undertaken. Desk study data has been used to inform the scope of this assessment but was also used to inform the evaluation of ecological features, including those which may not have warranted specific targeted surveys. Data received of note includes previous botanical and invertebrate survey work conducted on behalf of Barnsley Metropolitan Borough Council within Wogden Foot LWS and breeding bird data from Natural England for Snailden Moor located within Peak District Moors (South Pennine Moors Phase 1) SPA. Desk study data and survey results are considered together in the evaluation of ecological features below.

Breeding Birds

7.5.17 Up to forty-seven breeding species were recorded within the Breeding Bird Survey Area during the surveys (38 species were recorded in the repeat surveys in 2019). A maximum of 21 species were recorded in 2016 (15 species in 2019) which are included on the Birds of Conservation Concern lists. This included 12 Red list species and nine species on the Amber list. One species; red kite (*Milvus milvus*) which is listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) was recorded in the Wider Survey Area;

7.5.18 As detailed in Appendix 7B, based on Fuller's Criteria, the breeding bird assemblage of the Survey Area is of local importance. However, Fuller's analysis was developed in the 1970's, since which time species diversity has declined significantly (Eaton *et al*., 2015[27]). As a result, Fuller's thresholds are too high for today's bird populations. With these changes in bird populations considered, along with consideration given to the number of species of conservation concern recorded (maximum of 21 species); it is concluded that the breeding bird assemblage within the Survey Area is of **County** importance.

7.5.19 Many of the species of conservation concern were concentrated around the built-up areas within the Survey Area, although others were typically using the wooded strip along the Trans Pennine Trail (such as willow tit). Ground-nesting species, such as curlew and lapwing were using grassland and moorland habitats to the north and south of the Trans Pennine Trail.

7.5.20 Considering the value of the Survey Area for the population of individual species, whilst it is recognised that several red and amber list species were recorded, none were recorded in the Survey Area in numbers that would constitute a significant breeding population at the national, county or district level. As such the Survey Area is of no greater than **Local** importance for all individual species populations (except willow tit).

7.5.21 During the willow tit surveys conducted in 2017 and 2019 two willow tit territories were confirmed within habitats associated with Wogden Foot LWS and the adjacent areas of scrub/ woodland along the River Don and Trans Pennine Trail. The contiguity of habitat, especially along the River Don and the Trans Pennine Trail is an important component of the habitat suitability for this species. Whilst in 2009 the UK estimated number of breeding pairs was 3,400 (Musgrove *et al,* 2009), according to the Rare Breeding Birds Panel, the population of willow tit has

[27] Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. & Gregory, R. (2015) British Birds 108 pp708-746 Birds of Conservation Concern 4: the Population Status of Birds in the UK, Channel Islands and Isle of Man.

experienced a decline recently in the UK to 2,000 breeding pairs (Lancashire Wildlife Trust, 2016). In context of the national population of willow tit it is considered that up to two breeding territories therefore represents approximately 0.1% of the population therefore would not be of national importance (defined as 1% of the national population) or county significance (0.5% of the national population). In the context of the estimated population within Barnsley Bird Study Group Area of approximately 80 breeding pairs (Barnsley Bird Study Group 2015 Atlas), these two territories represent 2.4% of the breeding population. In accordance with the evaluation criteria it is therefore considered that the willow tit population is of **District** importance.

7.5.22 *Wintering Birds*

7.5.23 Full details of the desk study records returned for wintering birds are provided in Appendix 7I. Records of 41 species were provided from within the Desk Study Area from within the last 10 years, which were reviewed in terms of their relevance to the Wintering Bird Survey Area. These included 17 species Red listed Birds of Conservation Concern and 19 Amber listed species.

7.5.24 Relatively large numbers of wintering thrush species, particularly fieldfare (*Turdus pilaris*) and starling (*Sturnus vulgaris*) were recorded foraging in fields on higher ground to the north of the overhead line (OHL). Other species of interest recorded within the wintering Bird Survey Area included:

- Curlew using fields to the north of the OHL;
- Mistle thrush *(Turdus viscivorus)* and song thrush *(Turdus philomelos)* regularly active in fields and residential areas (particularly north of the OHL);
- A dipper (*Cinclus cinclus*) using a watercourse through the village of Dunford Bridge in the west of the Survey Area;
- 14 lesser redpoll *(Carduelis cabaret*) active in scattered trees along the Trans Pennine Trail in early November 2015;
- A hawfinch (*Coccothraustes coccothraustes*) flying over the Trans Pennine Trail in early November 2015;
- Two woodcock (*Scolopax rusticola*) flying along the Trans Pennine Trail in March 2016;
- Dunnock and groups of house sparrow (*Passer domesticus*) associated with the farm and residential buildings,
- Small numbers of meadow pipit (*Anthus pratensis*) using the moorland in the south of the Survey Area;
- Numerous red grouse (peak of 14) in the same moorland habitat and a flock of 50 pink-footed geese (*Anser brachyrhynchus*) flying over the Survey Area in December 2015;
- Lapwing (*Vanellus vanellus*), curlew and linnet were not recorded inside the Survey Area, but were observed immediately north of Brook Hill Lane.

7.5.25 No owls were recorded during the surveys however, given the suitability of the habitats within the Survey Area, it is likely that owls, including short-eared owl, will occasionally use habitats within the Site Boundary during the winter/ passage period.

7.5.26 Wetland species, including gulls, ducks, geese and oystercatcher (*Haematopus ostralegus*) were most active around Winscar Reservoir to the west of the Survey Area or typically only flew over the Survey Area.

7.5.27 Overall the wintering species richness/ assemblage within the Survey Area was determined to be of **Local** importance based upon species and abundance present.

7.5.28 None of the wintering species recorded have a population within the Site Boundary that approaches the 1% level of the national population (a criterion for assessing nationally important bird sites). Likewise, none of the species were recorded in numbers that would constitute a regionally or locally significant wintering population based upon the criteria for LWS designations in the Barnsley region. Therefore, given both the low numbers present and their limited use of the habitats available within the Survey Area, each of the individual species present were considered to be of **Negligible** importance.

Badgers

7.5.29 Barnsley Biological Records Centre held one record of badger tracks and one record of a badger sett from within the Desk Study Area, although this was located outside the Site Boundary.

7.5.30 Suitable habitat to support badger setts was present within the Survey Area at the Trans Pennine Trail, Wogden Foot LWS and Dunford Bridge Compound. No badger setts were identified during the badger surveys or during any of the many other ecological surveys conducted within the Survey Area between 2015 and 2019. Due to the presence of suitable habitats and as they have been recorded in the surrounding area, it is possible that badger may use the Survey Area in low numbers and on a transient basis for example for foraging. Badgers are a common and widespread species and given their likely occasional use of the available habitats they are of **Negligible** importance and have been scoped out of the assessment.

Bats

7.5.31 Barnsley Biological Records Centre and South Yorkshire Bat Group provided bat records for the Desk Study Area of seven species: common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Daubenton's (*Myotis daubentonii*), noctule (*Nyctalus noctula*), Leisler's (*Nyctalus leisleri*), whiskered / Brandt's (*Myotis brandti / mystacinus*), brown long-eared (*Plecotus auritus*) and Natterer's (*Myotis nattereri*). Three records were roosts (two historical records from 1991 located outside of the Bat Survey Area (Natterer's and unidentified bat); one pipistrelle roost located outside the Survey Area; and one undated record of a Daubenton's roost located on the Trans Pennine Trail within the Survey Area). The latter Daubenton's roost was recorded as being within an industrial building that was subsequently demolished. All other bat records refer to bat activity or have no details.

7.5.32 Fourteen structures within the Survey Area were subject to potential roost feature assessment. Eight were assessed to have negligible suitability to support roosting bats. The remaining six were assessed to have suitability to support roosting bats as follows:

- Three features with Low bat roost suitability – B5 (Stone bridge abutments), B12 (Woodhead tunnel, Target Note 2, Figure 7.2) and B16 (culvert beneath footpath), shown on mapping within Appendix 7E;
- One feature with Moderate bat roost suitability – B13 (culvert beneath Trans Pennine Trail); and
- Two with High bat roost suitability – B8 (culvert beneath Trans Pennine Trail) and B10 (culvert beneath Trans Pennine Trail at Clough Beck).

7.5.33 A single bat roost was identified during field surveys; a Daubenton's roost within a culvert beneath the Trans Pennine Trail (B10; Clough Beck), used by a small

number (i.e. one to three) non-breeding bats. There was no evidence that the roost is used by hibernating bats but the culvert could in principal be suitable to be used for hibernation. As detailed in Appendix 7E, the Daubenton's bat (non-breeding) summer roost identified within culvert B10 has been determined to be of **County** scale importance based on guidance (Wray *et al*., 2010).

7.5.34 No other bat roosts were recorded in the other structures surveyed. Two more culverts located along the Trans Pennine Trail (B8 and B13) have potential to be used as roosts; however no evidence of use was identified. These features are therefore considered to be of **Negligible** importance for bats.

7.5.35 Seven stand-alone trees located within the Survey Area and which are in proximity to the Proposed Project, including access AP7 north of the River Don, were assessed to have suitability to support roosting bats and were subject to visual assessment and/or dusk/ dawn surveys. No evidence of the presence of roosting bats was identified in any of the trees subject to survey, and therefore these trees are considered to be of **Negligible** importance for bats.

7.5.36 In terms of the general use of the Survey Area by foraging or commuting bats (bat activity), at least seven bat species were identified comprising common pipistrelle, soprano pipistrelle, Nathusius pipistrelle (*Pipistrellus nathusii*), *Myotis* sp., brown long-eared, noctule and Leisler / serotine bats (*Eptesicus serotinus*). Species, other than common pipistrelle and *Myotis* bats, were recorded rarely. Moderate bat activity was recorded across the Survey Area throughout the survey period (May to September 2016). In comparison relatively low activity was recorded from within Wogden Foot LWS, possibly due to its enclosed nature. Higher commuting and foraging activity was recorded along the Trans Pennine Trail and River Don corridor as would be expected. Bats observed commuting through culvert B10 and underneath the Trans Pennine Trail, were considered likely to be either bats roosting within this culvert or those roosting locally (i.e. in trees/ residential properties at Dunford Bridge).

7.5.37 The Daubenton's bat population using the Survey Area is assessed to be of **District** importance due to the relative rarity of this species, the presence of a roost and the number of bats recorded using the habitats within the Bat Survey Area. All other bat species recorded within the Survey Area are assessed to be of **Local** importance. In accordance with guidance (Wray *et al*., 2010), the highest importance assigned to a species population is used to value the bat assemblage overall. Consequently, the bat assemblage is assessed to be of **District** importance.

Amphibians

7.5.38 No great crested newt records were provided for the Desk Study Area. Ten ponds were surveyed and provided negative results for great crested newt eDNA in 2016/2017 and 2019. Furthermore, no evidence of great crested newt was identified within any of the ponds surveyed through traditional presence/ absence surveys. Therefore, the likely presence of great crested newt within terrestrial habitat within the Site Boundary has been scoped out, as such this species has not been taken forward for further assessment in relation to the Proposed Project.

7.5.39 Common frog (*Rana temporaria*) and common toad (*Bufo bufo*) were recorded in low numbers, and were seen along the Trans Pennine Trail itself (including a number of dead individuals). Due to their occurrence in low numbers these amphibian species are considered to be of **Less than Parish** importance and are scoped out of further assessment in relation to the Proposed Project.

Reptiles

7.5.40 Barnsley Biological Records Centre held two records of viviparous lizard (*Zootoca vivipara*) for within the Desk Study Area. These records are both located within Western Moors LWS; one adjacent to the Survey Area at Windleden Edge; and one approximately 200m north-west of the Survey Area at Winscar Reservoir boat club.

7.5.41 A single juvenile viviparous lizard was identified within habitat around the Yorkshire Water site north of the River Don within a mosaic of improved grassland, bracken and soft rush (close to Target Note 43, Figure 7.2A) . A low population of viviparous lizard (less than 5 individuals) is considered to be present within the Survey Area. It is likely that this population is restricted to the land north of the River Don, as no lizards were recorded elsewhere within the Survey Area. However, as suitable habitat is present south of the River Don and Trans Pennine Trail it remains possible that reptiles may be present within these areas. Common lizard is a Species of Principal Importance and is listed on the Local Barnsley BAP and as such the reptile population and potential reptile habitat within the Study Area is recognised as a feature of **Local** importance.

Water Vole

7.5.42 The Peak District National Park Authority held historic water vole records within the Desk Study Area. All records were for latrines and feeding stations and were located between 320m and 1km from the Survey Area in moorland and along moorland streams, dated from 2003.

7.5.43 No water vole field signs were identified on the 11 sections of watercourses surveyed (i.e. the River Don and nine tributaries, and the ditch on the southern side of the Trans Pennine Trail). Three River Don tributaries provide sub-optimal habitat for water vole and are unlikely to support this species due to the absence of field signs and their isolation from known water vole populations in the wider area. Therefore, water vole is scoped out from further assessment in relation to the Proposed Project.

Otter

7.5.44 The desk study did not identify any records of otter within the Desk Study Area.

7.5.45 The River Don and tributaries provide potential habitat for commuting otter, however, no evidence was confirmed during field surveys and the connectivity to other watercourses for foraging opportunities may be limited. To address the risk of the potential occasional transient use by otter of the River Don and tributaries, otter is included in the assessment in combination with the evaluation and assessment of the riparian habitats generally. The potential occasional use by otter of the River Don and its tributaries within the Survey Area is considered to be of no greater than **Local** importance for this species.

Terrestrial Invertebrates

7.5.46 As detailed in Appendix 7H, Barnsley Biological Records Centre and a local entomologist provided records of several nationally scarce or notable invertebrate species within the Desk Study Area, including cinnabar moth (*Tyria jacobaeae*), small heath butterfly (*Coenonympha pamphilus*) and dingy skipper butterfly (*Erynnis tages*), and also *Meiosimyza (= Lyciella) mihalyii* (a fly) and *Dioxyna bidentis* located at Dunford bridge car park.

7.5.47 A total of 242 species were recorded during the invertebrate surveys conducted within the Survey Area; mainly focussed on Wogden Foot LWS and along the Trans Pennine Trail. Of these, four species have a formal nature conservation status: a soldierfly *Chorisops nagatomii (*Formally nationally scarce, now widespread*);* a fly*;*

*Meiosimyza mihalyii (*Nationally Scarce*);* a click-beetle*; Ctenicera cuprea* (Scarce in South Yorkshire*); and Ontholestes tessellatus* (Scarce in Yorkshire). In addition, two species are considered to be of note: the wood tiger moth *Parasemia plantaginis* (Locally uncommon and experiencing population decline) and a beetle; *Coenonympha pamphilus* (Species of Principal Importance under Section 41 of the NERC Act 2006).

7.5.48 A number of species were recorded that are associated specifically with grassland scrub mosaics, scrub and heathland and dead wood habitats. It is suggested this relationship of scrub and grassland mosaics in close proximity to each other represent the most important habitat for invertebrates within Wogden Foot LWS. The invertebrate assemblage, and presence of several regionally and locally scarce species, that have been identified within habitats within Wogden Foot LWS (and in the grassland at Dunford Bridge from desk study information) meets the criteria for being of **District** importance (i.e. a site with populations of invertebrates or invertebrate habitats considered scarce or rare or threatened in the administrative District of Barnsley.

7.5.49 No evidence of glow-worm was recorded during dedicated survey in 2016 and 2018, or incidentally during any other nocturnal ecology survey (Appendix 7H). This species is considered to be absent from the Survey Area and therefore glow worm are is scoped out of further assessment.

Aquatic Invertebrates

7.5.50 A total of 50 taxa were recorded across the three sites surveyed, of which 24 were identified to the species level, 13 to genus level and 13 to sub-family, family or a higher taxonomic level (Appendix 7L). In total, 21 species were recorded in the River Don and 15 in Town Beck. The BMWP scores (107 to 134) and ASPT values (6.1 to 6.7) indicate that both watercourses are of very good water quality within the stretches surveyed. At each site, the samples were characterised by a relatively high diversity (17 to 21 families) and the presence of several taxa considered being highly sensitive to pollution. The results of the macroinvertebrate analyses undertaken indicate that the benthic macroinvertebrate communities of both the River Don and its tributary the Town Beck within the reaches surveyed are highly sensitive to changes in water quality, flow reductions and increased sedimentation of the streambed.

7.5.51 The macro invertebrate community conservation index scores calculated for the River Don and Town Beck are indicative of waterbodies/ watercourses of 'Moderate' to 'Fairly High' nature conservation value based upon the criteria applied as detailed in Appendix 7L. This reflects the fact that all species recorded are relatively common and widespread, but the samples are indicative of relatively high taxon richness. Whilst this is the case, the watercourses do not support any statutory designated species or species of specific conservation interest. Therefore, the value of the macroinvertebrate communities within the River Don and Town Beck stretches surveyed has been considered of **Local** importance.

7.5.52 There are no records of white clawed crayfish within the Desk Study Area and the PEA did not record any suitable habitat for this species therefore this species was scoped out for detailed survey or assessment.

Fish

7.5.53 Fish population surveys carried out by the Environment Agency within the Desk Study Area between 2005 and 2015 (Environment Agency, 2017[28]) recorded four species, including brown trout, grayling (*Thymallus thymallus*), roach (*Rutilus rutilus*) and bullhead (*Cottus gobio*).

7.5.54 Fry, parr and adult salmonid habitat was both abundant and widespread throughout the Survey Area in association with the River Don. A largely consistent, alternating pattern of fry/parr/glide habitat was observed throughout the habitat assessment, providing brown trout with the variety of different habitats required in order to complete their life cycle. In the absence of obvious spawning habitat recorded during the habitat walkover assessment, the presence of fry, parr and adult brown trout recorded in Environment Agency fish population surveys indicates fish are recruiting naturally within the Survey Area. Given the similarity of the brown trout populations recorded between fish population survey sites, and also a lack of significant barriers to fish passage recorded in the habitat walkover, it is considered likely that an inter-connected population is present throughout the Survey Area. Overall, whilst the Site Boundary only includes a discrete section of the River Don, the catchment is considered to be of **District** importance for fish.

Other species

7.5.55 In addition to the above, the desk study returned records of mountain hare (*Lepus timidus*), brown hare (*Lepus europaeus*) and hedgehog (*Erinaceus europaeus*). No specific surveys were undertaken for these species. These represent Species of Principal Importance under Section 41 of the NERC Act and listed on the Local Barnsley BAP. Suitable habitat is present within the Survey Area to support several notable mammal species, although generally this is confined to the Trans Pennie Trail corridor (hedgehog) and to the moorland to the south of the Trans Pennine Trail (mountain hare and, to a lesser extent, brown hare). As such the use of habitats is of no greater value than **Local** importance for these individual species.

7.6 Key Parameters for Assessment

Proposed Project Components/Elements

7.6.1 The design considerations and description of the Proposed Project together with the design rationale is set out in Chapter 2 and Chapter 3.

7.6.2 As some components are Subject to Planning and others are Permitted Development or do not require consent, the completion of the EcIA for the Proposed Project has been undertaken based upon the six components outlined in Chapter 3 (Environmental Assessment Process).

Embedded Mitigation

7.6.3 Details of embedded mitigation that has been incorporated into the overall design of the Proposed Project are presented in Chapter 2 (Project Description).

7.6.4 An integral part of the iterative design and assessment process has been the consideration of mitigation through sensitive design development with the aim to ensure that the development takes account of environmental constraints and opportunities and achieves the optimum environmental fit as part of an environmentally integrated design.

[28] Environment Agency (2017b) Freshwater Fish Counts for all Species, all Areas and all Years https://ea.sharefile.com/d-s5b6918d01884a129 Accessed 06/03/2017 [accessed 12.04.17]

7.6.5 Embedded mitigation of particular relevance to the ecological assessment are outlined below.

During Design

7.6.6 The design and layout of the Proposed Project has considered the results of all ecological surveys. Through a series of meetings and discussions with stakeholders the design and layout of the Proposed Project has sought to take on board feedback from the stakeholders where possible (see Section 7.3 and Table 7.3). Furthermore, a number of other key design considerations were adopted in order to avoid or reduce ecological effects of the Proposed Project:

- The extent of the Cable Corridor has been minimised as much as is possible to reduce the effects upon the Trans Pennine Trail habitats and associated faunal interest.
- The permanent footprint of the SEC and associated access road have been minimised as much as engineering constraints will allow;
- The extent of all working areas have been minimised as far as possible along the Trans Pennine Trail diversion to reduce effects upon the River Don aquatic habitats and associated fauna, and around pylons and associated infrastructure to be removed;
- Positioning of the SEC within Wogden Foot LWS to avoid and protect grassland of greatest botanical value as discussed at stakeholder meetings;
- Positioning of the new replacement pylon (4ZO157R) to the north of the River Don (within habitat of low importance) to minimise potential effects upon Wogden Foot LWS;
- Identifying areas of woodland or trees which require retention, particularly along the Cable Corridor where more mature trees are present and to retain connectivity along the River Don embankment and corridor on the southern side of Trans Pennine Trail;
- Designing the Cable Corridor such that it was heightened over Clough Beck culvert following the identification of the confirmed bat roost to avoid direct effect and retention integrity of the structure;
- Completion of an options appraisal of the potential laydown areas to minimise environmental effects allowing stakeholders to determine preferred location;
- Avoidance of areas of notable grassland and heathland where feasible;
- Reinstatement of open drain located along the Trans Pennine Trail corridor and avoidance/ reinstatement of waterfall type features along Trans Pennine Trail; and
- Routing of AP7 and the northern access road to minimise disturbance on ground nesting birds (closer to existing residential, less visible to birds which may be present in habitat further north to work with lower contours in topography or closer to stone wall field boundaries which are less likely to be used by ground nesting species such as curlew which prefer an open aspect).

During Construction

7.6.7 The following measures which are of relevance to the ecological assessment will be implemented to minimise potential impacts during the construction phase of the Proposed Project:

- Implementation of a Landscape and Ecological Management Plan (Appendix 2B.3) which outlines principals of ecological mitigation measures and monitoring which will be adopted by the contractor at each stage of the construction phase.
- A Construction Environmental Management Plan (CEMP) will be prepared by the appointed contractor (outline prepared as part of this application provided as Appendix 2B) and used to manage environmental impacts during construction; this will include measures for controlling dust and general pollution from construction operations to the surface and groundwater environments and details of the approach to soil management to ensure protection, conservation and reinstatement of soil material, its physical and chemical properties and functional capacity for its intended end use.
- Environmental Advisors including an Ecological Clerk or Works (ECoW) will be employed for the duration of the project.
- The workforces will be briefed about relevant environmental issues, including pollution control, before work begins and at regular intervals throughout construction.
- Appropriate industry best practice and published guidelines will be followed to reduce pollutant and sediment movement during construction.
- All fuel and chemical storage will comply with relevant storage regulations.
- Suitable precautions will be taken to prevent spillages from equipment containing small quantities of hazardous substances.
- Environment Agency guidance on the assessment of risks from potentially contaminated land will be followed in line with Contaminated Land Report 11 (CLR11).
- Deep excavations may require de-watering. Water pumped or removed from excavations will be passed through a silt-separator tank or equivalent, and discharge to ground. If there was a requirement to discharge to surface water a permit would be sought from the Environment Agency prior to undertaking such operations.
- All soils will be stored as far away from watercourses and standing water as practical and any potentially contaminated soil will be stored on an impermeable surface and covered to reduce leachate generation and potential migration to surface waters.
- Measures contained in relevant DEFRA and Environment Agency best practice guidance on the control and removal of invasive weed species will be implemented.
- Following completion of construction operations all agricultural land will be restored to its previous condition. Topsoil will be prepared and seeded using an appropriate seed mix or returned to previous cultivation. The Outline LEMP (Appendix 2B.3) will be agreed with stakeholders which details restoration objectives and measures for key sensitive areas such as Wogden Foot LWS.

- Permanent surface water/ agricultural drains will be re-installed to reinstate any pre-existing field drainage systems to pre-construction condition.
- Removal of trees and scrub will be conducted outside of the bird breeding season wherever possible, or the vegetation will be examined for active nests by an ecologist immediately prior to removal.
- Following the completion of all cable installation construction works, the land within the working width will be reinstated as near as practically possible to its former condition as agreed with landowners and stakeholders in advance (this will include the reinstatement of most stretches of drain ditches and existing culverts).
- Trees which will have been removed during the construction period will be re-planted as detailed in the LEMP (Appendix 2B.3). Deep rooted trees and shrubs will not be planted above or within 3m of the cable equipment to avoid the risk of damage to the cable by roots, however some shallow rooted species may be possible.
- The use of artificial light will be minimised to that required for safe working, with down lighting to minimise light scatter.
- Unless specified in the LEMP areas of habitat will be restored to equivalent habitat condition post-construction. Restoration will seek to replace vegetation with the same or similar species identified in the extended Phase 1 habitat survey as far as is practicable, unless a specification is provided in the LEMP (Appendix 2B.3).
- Mitigation planting/ screening will be provided at the SEC as outlined within the LEMP (Appendix 2B.3).
- All construction activities shall adhere to the best practices outlined in British Standards Institution code of practice for noise and vibration control on construction and open sites (Part 1 and Part 2) BS 5228.
- All construction equipment will be maintained in good working order and any associated noise attenuation measures such as engine casings and exhaust silencers shall remain fitted at all times.
- Construction will not be undertaken during extreme wet weather where erosion of sediments and risk from flooding may increase and where there is a risk of structural damage to soils during handling.

During Operation

7.6.8 Embedded mitigation during the operational phase relevant to reducing the disturbance effects upon ecological features (sites, habitats and species) are listed below:

- Use of defined access routes to access electrical infrastructure.
- Use of appropriate measures to prevent spillage of potentially polluting substances.
- Fuels, lubricants solvents etc. will be stored in appropriately bunded areas and a range of other pollution prevention measures taken.

During Decommissioning

7.6.9 Embedded mitigation during the operational phase relevant to reducing the disturbance effects upon ecological features (sites, habitats and species) are listed below:

- To prevent further disruption to the Trans Pennine Trail the cable will be left in situ if it is no longer required when it reached the end of its life expectancy.

7.7 Predicted Impacts

7.7.1 The following considers the potential impacts during all phases of the Proposed Project as described in Chapter 2 (Project Description). Each section highlights where any impacts apply to the Proposed Project or to individual components according to the whether they are subject to planning permission or are components where no formal consent is required as detailed in Chapter 3 (Environmental Assessment Process).

Assessment of Impacts during Construction

Statutory Designated Sites

South Pennine Moors SAC

Trans Pennine Trail Diversion, Sealing End Compound, Access Point 7 and Northern Access Road – Subject to Planning Application

7.7.2 The Proposed Project (including all components subject to planning application) does not fall within the South Pennine Moors SAC and therefore no direct impacts upon the SAC habitats will occur from these components of the Proposed Project.

7.7.3 No indirect impacts upon the SAC are predicted for these components of the Proposed Project.

400kV Cable (Undergrounding) and Construction of replacement Pylon 4ZO157R

7.7.4 No direct or indirect impacts upon the SAC are predicted for these components of the Proposed Project.

Removal of Existing Infrastructure (VIP subsection)

7.7.5 The nearest component of the Proposed Project to the SAC are works associated with the removal of the existing SEC and 4ZO164R which are located approximately 270m to the east of the SAC boundary at its nearest distance. Based upon the adoption of pollution prevention control measures as embedded mitigation and the lack of watercourse linkages between the SAC, which is located upstream of the Proposed Project, it is considered that any potential indirect effects upon the Internationally important habitats of the SAC such as ground water hydrological changes will be Negligible and not significant.

7.7.6 The Habitats Regulations Assessment (HRA) (Appendix 7J) which has been undertaken and agreed with Natural England has concluded that there will be no likely significant effects on the designating features of the SAC. From any individual or combined components of the Proposed Project.

Peak District Moors (South Pennine Moors Phase 1) SPA

Trans Pennine Trail Diversion, Sealing End Compound, Access Point 7 and Northern Access Road – Components Subject to Planning Application

7.7.7 The Proposed Project (including those components subject to planning application) does not extend into the SPA boundary and no breeding territories of qualifying bird

species have been identified within the Site Boundary or Survey Area. Therefore, no direct impacts upon the SPA will occur as a result of the Proposed Project.

7.7.8 Indirect impacts upon the qualifying bird species of the SPA are restricted to the potential disturbance during construction activities. Noise and visual disturbance have the potential to result in loss of territories/ contraction in breeding range and decreased breeding success could occur. Increased noise and vibration impacts could occur from piling works associated with construction of the SEC. The HRA (Appendix 7J) has considered the likelihood of significant effects upon the qualifying SPA bird species from construction noise. In brief, when considering a worst-case scenario, the distance separating the noisiest operations (i.e. piling) is sufficient to ameliorate any risk of noise disturbance impacts to SPA bird species. Therefore, this has concluded that in the absence of specific mitigation measures there will be no likely significant effect on the designating features of the SPA. As agreed with Natural England this assessment is also considered sufficient to conclude that during construction the impact of noise disturbance upon the Internationally important bird populations of the SPA will result in a **Negligible** effect, which is not significant**.**

400kV Cable (Undergrounding), Removal of Existing Infrastructure and Construction of replacement Pylon 4ZO157R

7.7.9 No additional effects upon Peak District Moors SPA are predicted beyond those discussed above for these permitted development components of the Proposed Project.

Dark Peak SSSI

Trans Pennine Trail Diversion, Sealing End Compound, Access Point 7 and Northern Access Road – Subject to Planning Application

7.7.10 The Proposed Project (including all components subject to planning application) does not fall within the SSSI boundary and therefore no direct impacts upon SSSI qualifying habitats will occur.

7.7.11 Based upon the embedded pollution prevention control measures and the lack of watercourse linkages between the SSSI, which is located upstream of the Proposed Project, it is considered that there will be no indirect hydrological impacts upon the Nationally important interest features and habitats of the SSSI.

7.7.12 As described in Appendix 7B, Breeding bird surveys have confirmed the presence of breeding lapwing (2 territories) and curlew (7 territories) were using grassland and moorland habitats to the north and south of the Trans Pennine Trail. Although these breeding territories do not fall within the designated boundary of the Dark Peak SSSI, it is reasonable to anticipate that they form part of a wider population that supports the conservation status of the SSSI bird population.

7.7.13 Given the proximity of the territories to the Proposed Project, particularly the Trans Pennine Trail Diversion and Sealing End Compound there is a risk that these breeding lapwing and curlew may be disturbed during construction. The sensitive period for these birds will be during the bird breeding season (March – August inclusive). Increased disturbance as a result of construction during this period has the potential to result in the displacement of birds from their breeding territories, which may result in a temporary reduction in overall breeding success. Best practice measures during vegetation removal in the bird nesting season will mitigate direct impacts upon all nesting birds, including curlew and lapwing. Potential further sources of disturbance are considered to comprise;

- increased human presence; and

- noise.

7.7.14 The assessment of noise disturbance to the bird populations of the Peak District Moors SPA (Appendix 7J) is considered sufficient to conclude that there will be no impact upon the bird assemblage within the boundary of the Dark Peak SSSI. The following considers the potential for disturbance to the populations of curlew and lapwing that support the interest features of the Dark Peak SSSI.

7.7.15 The territories of recorded curlew and lapwing are confined to individual field compartments or (for curlew only) areas of open moorland south of the Trans Pennine Trail. None of these territories fall within the Site Boundary of the Proposed Project. The birds occupying most of the territories are likely to be protected from the impacts of increased human presence by either the extent of intervening habitat (the moorland or pasture) and/ or existing features, such as stone walls, which will create a perceived safe breeding environment for these bird species. As an assumed worst-case, it is considered that at most the disturbance from increased human presence would result in the temporary displacement of a small number (1 or 2) breeding territories into areas of alternative breeding habitat in the wider area. This impact is most likely to occur during the creation of temporary tracks (north of the Trans Pennine Trail) and during OHL removal. This temporary impact of increased human presence is unlikely to undermine the status of the bird populations that support the Nationally important interest features of the Dark Peak SSSI and will result in a **Negligible** effect, which is not significant.

7.7.16 The Proposed Project will involve increased noise from several sources during construction and could occur at various times within the bird breeding season. Noise sources include piling of the proposed SEC within Wogden Foot LWS (subject to planning) and potential for rock breaking at Dunford Bridge (no consent required). On a precautionary basis the noise disturbance from both sources is assumed to be equivalent to impacts piling, which has a noise level of 110 dB at the source (Appendix 7J). Noise levels attenuate by 6 dB with every doubling of distance. This would mean the noise associated with typical impact piling of 110 dB at 0.67m from source would attenuate to a level of 56 dB at most by 341m from source. Noise levels of 50-60 dB are of an equivalent loudness to conversational speech[29], assuming they could be heard at all above background noise levels. The nearest lapwing territory is located approximately 370m from the Proposed Project at the closest point and therefore there will be no noise impact to this species. Two of the recorded curlew territories fall within 340m of proposed SEC at Wogden Foot LWS, with the nearest being approximately 225m away. The temporary displacement of these two curlew territories is not considered likely to undermine the conservation status of the wider population of the Dark Peak SSSI. Therefore, the temporary impact of increased noise construction disturbance upon the bird populations that support the nationally important interest features of the Dark Peak SSSI will result in a **Negligible** effect, which is not significant.

400kV Cable (Undergrounding), Removal of Existing Infrastructure and Construction of replacement Pylon 4ZO157R

7.7.17 Impacts upon Dark Peak SSSI from these Proposed Project components, including disturbance effects upon birds from rock breaking within the cable installation corridor at Dunford Bridge (included in the assessment upon SSSI birds as detailed above), are predicted to be the same as those assessed for the components which are subject to planning. No additional effects upon the designating features of Dark

[29] https://www.noisehelp.com/noise-level-chart.html

Peak SSSI are predicted beyond those discussed above for these components of the Proposed Project.

Non-Statutory Sites of Nature Conservation Importance

Wogden Foot LWS

7.7.18 There will be permanent and/ or temporary losses of each of the habitat types found in Wogden Foot LWS during the construction phase of the Proposed Project. The combined potential impacts of the various components of the Proposed Project on Wogden Foot are shown on planning drawing PDD-33942-LAY-FIGURE 2.4 and summarised in Table 7.8. The following considers the potential impact of habitat loss and disturbance upon the qualifying features and integrity of this LWS.

Trans Pennine Trail Diversion and Sealing End Compound – Subject to Planning Application

7.7.19 Construction of the SEC, the SEC permanent access track and Trans Pennine Trail Diversion (including Bridge 2 construction) within Wogden Foot LWS will result in permanent and temporary habitat losses of qualifying habitats as detailed below:

- Permanent loss of 0.07 ha of unimproved neutral grassland;
- Permanent loss of 0.11 ha of unimproved acid grassland;
- Permanent loss of 0.10 ha of woodland/ scrub;
- Temporary loss of 0.04 ha of unimproved neutral grassland;
- Temporary loss of 0.16 ha and of woodland/ scrub;
- Fragmentation of the LWS during construction.

7.7.20 These permanent habitat losses associated with the components subject to planning total 0.28 ha and equate to approximately 2.2 % of the total area of the LWS (11.79ha). In the context of the whole LWS the habitat losses are relatively localised, with the largest loss being scrub and young woodland habitats. However, the losses do include some areas of mature scrub and species-rich grassland communities that are likely to contribute to the wider structure and function of the habitat mosaic present, including its function as part of an ecological corridor.

Access Point 7 and Northern Access Road – Subject to Planning Application

7.7.21 No predicted effects upon Wogden Foot LWS designating features will occur from these components of the Proposed Project.

400kV Cable (Undergrounding) (including laydown area)

7.7.22 The cable installation corridor including the associated laydown area within the western end of Wogden Foot LWS will result in temporary additional loss of approximately 0.02ha of acid grassland, 0.18ha of semi improved neutral grassland and 0.78ha woodland/scrub; total 0.98ha and equivalent to 8.3% of the total LWS. In the absence of additional mitigation, this temporary loss of habitat is considered to represent a **Moderate** adverse effect upon Wogden Foot LWS, which is significant.

Removal of Existing Infrastructure (VIP subsection)

7.7.23 The removal of Pylon 4ZO158 (shown as indicative overhead line work area on PDD-33492-LAY-FIGURE 2.4) will result in the temporary additional loss of approximately 0.09ha of acid grassland and 0.12ha woodland/ scrub; total 0.21ha and equivalent to 1.7% of the total LWS.

7.7.24 Following the removal of Pylon 4ZO158 from within Wogden Foot LWS there is the potential for **Minor** beneficial effects based upon a re-establishment/ reinstatement of habitats similar to those in the wider LWS which would not be subject to the same management or effects of the pylon being present. Grassland and scrub can be created at the former footprint of the pylon and beneath the OHL immediately adjacent with no restriction of height/management activities.

Construction of replacement Pylon 4ZO157R

7.7.25 Whilst the construction itself of Pylon 4ZO157R will not result in any predicted effects on Wogden Foot LWS (as it is located outside the LWS boundary on the northern side of the River Don). New conductors from the new pylon connecting to the gantries in the proposed SEC will result in the need for pruning of 0.18ha of woodland/ scrub located within the boundary of Wogden Foot LWS (as shown on PDD-33492-LAY-FIGURE 2.4 less part of this area (0.05ha) comprising of neutral grassland). This pruning will be as minimal as National Grid safety considerations allow to create the necessary safe clearance beneath the OHL. As the tree/scrub will be retained, this area has not been included in the overall habitat loss calculations. The scrub and trees in this area are generally young and the pruning anticipated is unlikely to result in significant potential effects upon the habitats within the LWS. Predicted effects of the pruning activities upon protected species, particularly birds, are considered separately below. The pruning will result in a **Negligible** adverse effect, upon the habitats within Wogden Foot LWS, which is not significant

Effects upon birds associated with Wogden Foot LWS

7.7.26 The habitat losses will also reduce the overall availability of suitable habitat for the bird assemblage of Wogden Foot LWS. However, as they are limited in overall extent and localised, the majority of suitable habitat for the bird assemblage will be retained. On this basis it is considered unlikely that the habitat loss will undermine the conservation status of the bird assemblage, and the effect upon this feature will be **Negligible** and not significant.

Disturbance from construction noise will be high during piling that is required at the proposed SEC within Wogden Foot. As detailed above, assuming a worst-case scenario of impact piling noise will attenuate to acceptable levels at a distance of approximately 341m from source. Therefore, the majority of suitable habitat within Wogden Foot LWS will be subject to a noise level that may be expected to disturb nesting birds during the nesting season (March – August, inclusive). This represents a temporary impact that will result in a limited period when birds may be displaced to alternative areas of suitable habitat and will not result in a permanent degradation of habitat suitability. On this basis it is expected that the status of the bird assemblage of Wogden Foot LWS will not be undermined by this temporary impact. Therefore, increased noise disturbance from impact piling of the proposed SEC will result in a short-term **Minor** adverse effect upon the bird assemblage of Wogden Foot LWS, which is not significant.

Indirect Effects

7.7.27 The embedded measures within the CEMP document will control exhaust emissions, dust generation, accidental pollution or runoff and the movement of people, vehicles and construction machinery. These measures are considered sufficient to ensure that the construction impact from disturbance of the qualifying habitat and bird assemblage of Wogden Foot LWS that are of County importance will be **Negligible** and not significant.

Summary of effects in Wogden Foot – All Components

7.7.28 Considering all Proposed Project components within Wogden Foot LWS together; the predicted impacts as detailed above will result in the temporary and permanent loss of LWS habitats and disturbance and fragmentation effects upon the LWS designating habitat and species during and post construction. Therefore, in the absence of the additional mitigation (proposed in Section 7.8) would result in a **Moderate** (County) Adverse effect that is significant.

7.7.29 Additional mitigation measures are required only to address the combined permanent and temporary habitat losses at Wogden Foot LWS. Additional mitigation is not required to address the disturbance impacts during construction.

7.7.30 Table 7.8 provides a summary of habitat effects within the Wogden Foot LWS boundary for all components of the Proposed Project. All the working areas associated with the different components of the Proposed Project as shown on planning drawing PDD-33492-LAY-FIGURE 2.4. Habitats have been calculated for the distinct areas, duplications where areas may overlap have been deducted (i.e. only counted once).

Table 7.8:Total Habitat Loss Summary – within Wogden Foot LWS

Habitat Type	Permanent habitat Loss / ha (SEC and Access Road)	Temporary habitat Disturbance / ha	Total Loss / ha by Habitat Type
Broadleaved Woodland – Semi Natural/Mature Scrub	0.10	0.94 *of which:* 0.16 - Trans Pennine Trail Diversion 0.78 - Laydown Area and Cable Installation *(0.18 pruning area not included)*	1.04
Unimproved neutral grassland	0.07	0.04 (Trans Pennine Trail Diversion)	0.11
Unimproved Acid grassland	0.11	0.11 *of which*: 0.02 - Cable Installation 0.09 - removal of Pylon 4ZO158	0.22
Semi Improved neutral grassland	0	0.18 - Laydown Area	0.18
Total Area Ha	0.28 ha	1.27 ha	1.55 ha

Habitat Type	Permanent habitat Loss / ha (SEC and Access Road)	Temporary habitat Disturbance / ha	Total Loss / ha by Habitat Type
Total % of LWS	2.2%	10.8%	13%

Western Moors LWS

Trans Pennine Trail Diversion, Sealing End Compound, Access Point 7 and Northern Access Road – Subject to Planning Application

7.7.31 None of the components of the Proposed Project which are subject to the planning application fall within the Western Moors LWS boundary and therefore no direct impacts upon the LWS habitats will occur.

7.7.32 Indirect disturbance effects upon the breeding bird assemblage associated with the LWS designation could occur during construction of the Trans Pennine Trail diversion and SEC (and other permitted development components). Consistent with the assessment above of the disturbance upon the supporting populations of the Dark Peak SSSI, there may be some limited displacement of some birds associated with the moorland habitats within the LWS that may use habitats located nearest to these construction activities. However, in the context of the remainder of the LWS habitats, it is considered that there is more than sufficient alternative suitable habitat to support any displaced birds for the period of up to a maximum of two breeding seasons.

400kV Cable (Undergrounding)

7.7.33 The boundary of Western Moors LWS does extend north very slightly into the cable installation working area at its western end at Dunford Bridge. As a result there will be a temporary loss of 0.01ha of neutral unimproved grassland within the boundary of Western Moors LWS from this component of the Proposed Project. The effect of this upon the LWS is less than Negligible; the grassland which does not constitute the main habitat for which Western Moors is designated (heathland) and as a % of the LWS (less than 0.5%) would not have any measurable effect upon the integrity of the LWS. The predicted effects of the cable installation upon notable grassland at Dunford Bridge and along the Trans Pennine Trail has also been assessed more widely in the habitat section below.

7.7.34 Considering indirect effects from this component; moorland habitats within Western Moors LWS are located upstream of all proposed construction works, including the crossing of the tributaries for the cable installation. Given this and the embedded pollution prevention control measures, no potential indirect hydrological effects upon the LWS habitats are predicted.

7.7.35 Disturbance upon breeding birds from the cable installation works (in combination with the components subject to Planning Application) are not considered likely to result in birds relocating to alternative suitable habitat both within Western Moors LWS and outside it for nesting beyond the temporary construction period. Activities will be maintained within the Trans Pennine Trail valley corridor and the retained embankment and woodland on the southern side of the working area (the existing Trans Pennine Trail) will provide visual and acoustic screening. The level of disturbance therefore is not considered to be more than a **Negligible** non-significant

adverse effect that is not significant upon bird populations listed as a designating feature of Western Moors LWS.

Removal of Existing Infrastructure (VIP subsection)

7.7.36 The existing SEC, Pylons 4ZO164R, 4ZO163, 4ZO162 and associated access routes are located within the boundary of Western Moors LWS.

7.7.37 Predicted direct effects on Western Moors from the removal of Pylons 4ZO164R, 4ZO163 and 4ZO162 will be limited to temporary habitat disturbance. The land required for the access roads, crane pads, OHL working platform and conductor removal area (as shown on Figure 2.2) will result in the temporary loss of:

- 0.79 ha of dry heath and acid grassland habitat for the creation of approximately 50m of stone access road to Pylon 4ZO162, and
- 0.78 ha of semi improved grassland.

7.7.38 Except for approximately 50m from the existing track to Pylon 4ZO162, access to this pylon, the existing SEC and Pylon 4ZO164R within the SEC will use an existing stone tracks or roads, which do not result in any loss/ disturbance to the LWS habitat and significantly reduces the already limited magnitude of impact. The land within Western Moors LWS between these three pylons, will also be subject to some limited habitat disturbance when the overhead line conductor's are removed (i.e. lines lying on the ground then being winched up). Given the overall extent of the Western Moors LWS and the localised and temporary loss predicted, combined with the completion of embedded mitigation to fully reinstate disturbed habitats, the predicted effects upon the habitats of this LWS that are of County importance will be **Negligible** and not significant.

7.7.39 Predicted effects to the disturbance of birds are the same as described above in section 7.7.35 and hence not considered to be more than a **Negligible** non-significant adverse effect.

Construction of replacement Pylon 4ZO15R

7.7.40 There will be no predicted direct effects upon Western Moors LWS from this component of the Proposed Project. Disturbance effects upon designating species of birds will be no greater than those considered for other components either in combination or individually.

Summary of effects in Western Moors LWS – All Components

7.7.41 The overall impact of construction disturbance will not undermine the integrity of the Western Moors LWS habitat designation nor result in more than a **Negligible** effect that is not significant upon the conservation status bird populations listed as a designating species of Western Moors LWS.

Habitats

7.7.42 The following section sets out predicted effects upon habitats of importance which are located outside designated site boundaries and have been taken forward for assessment as being of Local or higher importance (as set out in Table 7.7). The predicted effects are again detailed by each of the Proposed Project components. Where relevant, these are combined where predicted effects are consistent.

7.7.43 Habitats assigned the same nature conservation importance (Table 7.7), and where appropriate to do so, have been combined for the purposes of the predicted impacts and mitigation sections.

7.7.44 Effects on habitats which form part of the designating feature for designated sites i.e. those within Wogden Foot LWS and Western Moors LWS's (including dry heath/ acid grassland) have been considered above in the assessment of these designated sites.

Dry heath/ Acid Grassland Mosaic

Trans Pennine Trail Diversion – Subject to Planning Application

7.7.45 A small area (0.04 ha) of dry heath/ acid grassland located on the embankment to the north east side of Bridge 1 could be lost due to the construction of the Trans Pennine Trail diversion. It is unlikely all this area would be fully removed given that it is located on a steep embankment thereby could influence the structural integrity of this feature if removed. Whilst it is recognised that this habitat type, where present in large swathes such as Western Moors LWS, in this context this small area would not be considered to be of more than local importance. Therefore the loss of such a small area, if required, would not result in more than a **Negligible** adverse effect which is not significant.

7.7.46 There will be no effects upon this habitat from any other component of the Proposed Project (excluding that already assessed within Western Moors LWS).

Semi-Improved Neutral and Acid Grassland

7.7.47 There will be an additional temporary total loss/ disturbance of 1.93 ha of semi-improved neutral and acid grassland by the entire Proposed Project made up as follows:

Components Subject to Planning Application:

- Trans Pennine Trail Diversion – Subject to Planning: Application 0.14 ha (all neutral grassland)
- Sealing End Compound (within Wogden Foot LWS) – Subject to Planning Application: already assessed in Wogden Foot LWS section above.
- Access Point 7 and Northern Access Road: 0.13 ha (all neutral grassland);

Other Components:

- 400kV Cable Corridor – 0.88 ha (all neutral grassland)
- Removal of Existing Infrastructure (VIP subsection) at Pylons 4ZO163 and access track AP2 (Conductor removal area not included) - 0.78 ha (neutral grassland) and to access Pylon 4ZO154A - 0.05 ha (semi improved acid grassland disturbance)
- Construction of replacement Pylon 4ZO157R – no predicted effects upon this habitat.

7.7.48 Where possible the extent of the direct impact upon these habitats has been be minimised by ensuring access routes follow existing access tracks, or those which have already been installed for earlier phases of works. The impact of the temporary loss and disturbance of these grasslands is limited by their limited interest and abundance within the wider landscape. These habitats are to be restored following construction, and therefore the impact of temporary losses of these habitats of Local importance will result in a **Negligible** adverse effect that is not significant.

Unimproved Neutral Grassland

7.7.49 There are areas of unimproved neutral grassland located at Dunford Bridge at the start of the existing Trans Pennine Trail (as detailed in Section 7.5 and Appendix 7B).

Trans Pennine Trail Diversion, Sealing End Compound, Access Point 7 and Northern Access Road – Subject to Planning Application

7.7.50 No predicted effects will occur upon this habitat type from the components of the Proposed Project which are subject to Planning Application.

400kV Cable (Undergrounding)

7.7.51 The cable installation works and associated works area will result in the temporary loss of 0.23ha of this habitat. Whilst within the Site Boundary an area of 0.11ha will be retained and protected by fencing. Furthermore, on the completion of works, and as part of the embedded mitigation, the grassland is to be restored as detailed within the LEMP (Appendix 2B.3). On reinstatement of the grassland after construction it is considered that in the medium to long term the impact of the losses from grassland of District importance will be a **Negligible** adverse effect and not significant.

Removal of Existing Infrastructure and Construction of replacement Pylon 4ZO157R

7.7.52 There are no predicted effects upon this habitat from these components of the Proposed Project.

Broadleaved Semi-natural woodland (and scrub)

Trans Pennine Trail Diversion, Sealing End Compound, Access Point 7 and Northern Access Road – Subject to Planning Application

7.7.53 There will be the following losses of young broadleaved woodland habitat from the Proposed Project:

- Trans Pennine Trail diversion – approximately 0.16ha of young semi-natural broadleaved woodland/ scrub at its western extent close to Dunford Bridge and to facilitate the construction of the Bridge 1 crossing.
- Sealing End Compound (and access road) – covered in Wogden Foot LWS section above.

7.7.54 There will be small scale removal of scattered scrub habitats at Dunford Bridge and on the banks of the River Don adjacent to the Trans Pennine Trail Diversion. It is assessed that the limited and temporary loss of such a small proportion of this habitat of Local importance that is common within the wider landscape would result in a **Negligible** adverse effect that is not significant.

400kV Cable (Undergrounding)

7.7.55 Approximately 0.43ha of semi-natural broadleaved woodland located on either side of the existing Trans Pennine Trail will be lost to facilitate the Cable installation (excludes that within Wogden Foot LWS). Following installation, replacement of deep-rooted shrubs and trees within the 3m of the Cable Corridor (shown as the Indicative No Tree Zone on Figure 2.1) will not be possible.

7.7.56 There are extensive areas of similar habitat in the wider area and woodland will be replanted where possible in areas outside the Cable Corridor as detailed in the LEMP (Appendix 2B.3). Therefore, following the re-establishment of replacement habitat in the medium to long term the temporary loss of woodland habitat of District

importance will result in a **Minor** (Local) adverse effect in the short-term, which will reduce to **Negligible** in the medium-term.

7.7.57 Fragmentation of woodland and scrub habitat can reduce its viability as part of an ecological corridor. The Cable Corridor will be kept to a minimum safe working area and so much of the woodland located along the embankment of the River Don and to the southern side of the Cable Corridor (outside the Corridor as shown on Figure 2.1) will be retained and protected. This will limit any fragmentation by maintaining a contiguous stretch of woodland habitat along the corridor of the Trans Pennine Trail. The replanting of woodland as part of reinstatement will further reduce any fragmentation impact in the medium term. Therefore, it is assessed that the fragmentation of woodland habitat will result in a **Minor** (Local) adverse effect in the short-term, which will reduce to **Negligible** in the medium-term.

Removal of Existing Infrastructure and Construction of replacement Pylon 4ZO157R

7.7.58 There are no predicted effects upon this habitat from these components of the Proposed Project.

Individual Trees

7.7.59 Trees present within the Site Boundary in particularly those present on the Trans Pennine Trail corridor and within Wogden Foot LWS, form habitat which has been categorised (in accordance with Joint Nature Conservation Committee (2010)) as broadleaved (young) semi-natural woodland (or dense scrub). The predicted effects upon broadleaved woodland and dense scrub (evaluated for their ecological importance only) have been assessed in this EcIA as outlined in the relevant sections provided and summarised in Table 7.9. The predicted effect upon trees as summarised below has not been assessed using the CIEEM methodology per se and should also be read in combination with Chapter 6 (Landscape and Visual). The predicted effects on individual trees (and estimation of the area and number of trees which could require removal) has been subject to a separate Arboricultural Impact Assessment (AIA) (Appendix 7M). The Arboricutural Impact Assessment draws upon the results of the tree survey which has evaluated trees and tree groups using the BS: 5837 arboricultural, quality and value criteria, rather than just based upon their ecological importance. The AIA has assessed the potential direct loss and indirect disturbance effects of the Proposed Project upon trees from the components of the Proposed Project subject to planning application (within the BS: 5837 Survey Area) and those which are permitted development (non BS:5837 Survey Area).

Trans Pennine Trail Diversion, Sealing End Compound, Access Point 7 and Northern Access Road – Subject to Planning Application

7.7.60 Tree which will require removal for the completion of the Proposed Project components subject to planning are detailed in Appendix 7M (and as shown on Drawings 60495529-SHT-00-0000-LA-008 to 011 within Appendix 7M). In summary, these components of the Proposed Project will require the removal of four individual trees classified as B category (moderate quality), two trees and two partial woodland/scrub areas, which are of low quality (Category C). In additional several tree groups will require partial removal; all classified as Category C. Overall the estimated (based upon assumed densities/ spacing) number of trees requiring removal (including immature trees within Wogden Foot LWS) is approximately 860 trees.

400Kv Cable (Undergrounding)

7.7.61 The Proposed Project will also require the loss of one tree/scrub group (CA1), and partial removal of nine tree/scrub groups classified as C category (low quality) to facilitate the cable installation. Based upon an estimation of average density calculation of each tree group (as shown on Drawings 60495529-SHT-00-0000-LA-008 to 011 within Appendix 7M), approximately 3,000 broadleaved trees (including very young trees/mature scrub specimens) are predicted to require removal.

Removal of Existing Infrastructure and Construction of replacement Pylon 4ZO157R

7.7.62 Whilst some tree pruning work may be required to undertake these components of the Proposed project alongside access tracks, no tree removal will be required.

Plantation woodland – Mixed and Coniferous

Trans Pennine Trail Diversion, Sealing End Compound, Access Point 7 and Northern Access Road – Subject to Planning Application

7.7.63 There are no predicted effects upon plantation woodland from these components of the Proposed Project.

400Kv Cable (Undergrounding)

7.7.64 There are no predicted effects upon plantation woodland from these components of the Proposed Project.

Removal of Existing Infrastructure (VIP subsection)

7.7.65 Whilst there may need to be a negligible amount of pruning of a small number of coniferous trees to facilitate Access route 3 to the existing SEC and Pylon 4ZO164R during removal, this are not considered to warrant further assessment of mitigation beyond that which is embedded in the CEMP. No trees will be removed and as such, there is no predicted loss of this habitat from the Proposed Project.

Construction of replacement Pylon 4ZO157R

7.7.66 There are no predicted effects upon this habitat from this component of the Proposed Project.

Running Water and Riparian Habitats – River Don and Tributaries

Trans Pennine Trail Diversion, Sealing End Compound and Access Point 7 and Northern Access Road - Subject to Planning Application

7.7.67 The River Don will be crossed by the Trans Pennine Trail diversion at two locations as shown on Figure 2.1. Two bridges (as detailed in Chapter 2) will be constructed across the River Don;

- Bridge 1 a new permanent access bridge to replace the existing wooden structure; and
- Bridge 2 a temporary access bridge located north of Pylon 4ZO158.

7.7.68 Both crossings will utilise single span bridging techniques to avoid any in-channel habitats. There will be direct impacts to the bankside habitats of these watercourses of Local importance, although this will be highly localised and therefore is assessed to be a **Negligible** adverse effect and not significant.

7.7.69 The Trans Pennine Trail diversion and northern access road will also cross over several small tributaries, which currently flow in culverts beneath the existing Trans Pennine Trail and alongside the field boundaries. These components of the

Proposed Project will not result indirect effects on these small watercourses or culverts based upon the working methodology and adoption of standard protection measures proposed as part of the CEMP. Therefore, the impact upon these watercourses of Local importance will result in a **Negligible** adverse effect that is not significant.

400Kv Cable (Undergrounding)

7.7.70 The cable installation crosses two main tributaries of the River Don; Clough Beck and Long Grain Beck both of which are currently culverted beneath the existing Trans Pennine Trail. Again, the working methodology summarised in Chapter 2 (Project Description) and embedded mitigation will ensure the avoidance of any direct or indirect predicted effects upon these watercourses of Local importance. As such predicted effects will be **Negligible** and not significant.

7.7.71 A drainage ditch is also present which is located parallel to the existing Trans Pennine Trail along two main sections (as described in Table 7.7). This ditch will be culverted to facilitate the cable installation works. Predicted effects are the temporary loss of approximately 900m of drainage ditch of no more than Local ecological importance. This drainage ditch will be fully reinstated following completion of the installation work (and may benefit from being less over shaded from adjacent woodland) therefore no more than a **Negligible**, non-significant effect is predicted.

Removal of Existing Infrastructure & Construction of Pylon 4ZO157R

7.7.72 Effect upon local tributaries and drainage ditches from these elements of the scheme are consider no greater than those detailed for the other components of the Proposed Project. During the Construction of Pylon 4ZO157R a buffer zone between working activities and the River Don will be adopted and maintained. The adoption of embedded measures and the CEMP will ensure no indirect effects upon the watercourse i.e. silt runoff, pollution incidents will occur.

<u>Standing Water - Ponds</u>

7.7.73 There are 10 standing waterbodies (all classed as ponds) located within the Survey Area. None of these are located within the Site Boundary therefore will not be directly affected by any component of the Proposed Project.

Trans Pennine Trail Diversion, Sealing End Compound – Subject to Planning Application

7.7.74 In terms of potential indirect effects upon standing water habitats, the closest pond (to the Proposed Project is located approximately 80m from the nearest works; being the Trans Pennine Trail diversion (and the SEC) within Wogden Foot LWS. The extent of the working area in Wogden Foot LWS will be clearly defined and maintained at all times throughout the lifespan of the Proposed Project and as such will maintain the 80m buffer. The embedded mitigation put forward to control pollution and runoff, sediment loads, storage of potential pollutants, and precautionary measures will limit the likelihood and effects of pollution incidents and/ or runoff, and control dust and sediment loads on aquatic habitats. Therefore, these best practice measures will ensure that there will be no indirect pollution impacts upon the pond. As such no effects upon this habitat type are predicted and no additional mitigation will be required.

Access Point 7 and Northern Access Road – Subject to Planning Application

7.7.75 No predicted effect will occur upon standing water from this component of the Proposed Project.

400Kv Cable (Undergrounding), Removal of Existing Infrastructure and Construction of Pylon 4ZO157R

7.7.76 No predicted effects will occur upon standing water from the other components of the Proposed Project.

Calculations of Habitat Loss

7.7.77 Temporary and permanent loss for each habitat type for the project as a whole are provided in Table 7.8. The calculations of temporary habitat loss are based on the footprint of the working areas including the laydown areas and access roads as shown on Figure 2.1 during construction, and that required during the OHL removal phase as shown on Figure 2.2.

7.7.78 The calculations should be regarded as an indication of estimated habitat loss rather than a figure precise to the nearest decimal place.

Table 7.8: Total Habitat Loss during Construction (Proposed Project Wide)

Habitat Type	Importance	Permanent habitat Loss / ha	Temporary habitat Disturbance / ha	Total Loss / ha
Dry heath/acid grassland	County	0	1.98[30]	2.00
Unimproved neutral grassland	County	0.07	0.57	0.64
Unimproved Acid grassland	County	0.11	0.73	0.84
Acid & neutral grassland – semi-improved	Local	0	2.90	2.90
Broadleaved Woodland – Semi Natural	District	0.10	2.65	2.76
Scrub – dense/ continuous	Local	0	0.08	0.08
Running water	District	0	0.10	0.10
TOTAL		0.28 ha	9.01 ha	

[30] This area includes OHL conductor removal areas between Pylons to be removal. Minimal habitat disturbance will occur in these areas. No ground works will be conducted therefore the calculations provided here are based upon a precautionary worst-case approach to temporary habitat loss.

All Habitats (Disturbance)

7.7.79 Impacts to habitats of importance from disturbance during construction has been assessed at a total Proposed Project level as the predicted impacts are the same.

7.7.80 There are measures in the CEMP (Appendix 2B) to control:

- Dust generation and exhaust emissions through adoption of best industry practice;
- Pollution and runoff, storage of potential pollutants, and precautionary measures to reduce the risk and potential effects of pollution incidents and/ or runoff effects on habitats, including the River Don and all other aquatic habitats; and
- Movement of people, vehicles and machinery on to and around the site during the construction phase and to minimise degradation and loss associated with increased foot and vehicle traffic on retained habitats.

7.7.81 The implementation of these measures will avoid the risk of disturbance or damage to the habitats during construction, and therefore the effect of disturbance upon all habitats outside the boundary of designated sites will be **Negligible** and not significant.

7.7.82 Overall, there is no requirement for any additional mitigation to address either the loss or indirect disturbance to habitats that are located outside the boundary of designated sites of nature conservation interest.

Protected Species

7.7.83 Impacts upon qualifying bird assemblages or species associated with designated sites in proximity to the Proposed Project are discussed above in the designated site section. Discussion below considers the potential construction impacts upon all other protected or notable species.

Breeding birds (including willow tit)

7.7.84 Effects upon breeding birds have been described for all the Proposed Project components together, including components subject to planning as effects are predicted similarly for all construction elements. Where effects can be directly associated with a particular Proposed Project component this is stated in the text.

7.7.85 The loss of habitat with the potential to support breeding birds occurs during all phases of construction and will reduce the availability of suitable nesting habitat within the Site Boundary, including some habitats that could support willow tit. It is pertinent to this assessment that woodland will be retained alongside the River Don embankment and embankment to the southern side of the existing Trans Pennine Trail throughout the Proposed Project. These retained woodland and scrub corridors will continue to provide nesting habitat for most woodland and scrub specialists present. Furthermore, there is an abundance of suitable habitat within the Survey Area remaining entirely unaffected, and the wider surrounding local area.

7.7.86 The temporary losses of woodland and scrub outside the boundary of designated sites (during cable installation and the Trans Pennine Trail diversion) will result in a temporary reduction in the extent of bird breeding habitat. The commitment to reinstate habitats on the completion of the construction phase will reduce the level of predicted effect upon breeding birds. As detailed within the LEMP replacement planting will be undertaken where possible in appropriate locations (with landowner agreement) in keeping with landscape requirements and ecological function.

Therefore, the impact of these partial losses of suitable breeding habitat within the Site Boundary are unlikely to undermine the conservation status of any bird species present and will result in a **Negligible** adverse effect that is not significant.

7.7.87 Permanent loss of woodland and scrub outside the boundary of designated sites will occur as a result of the installation of the Cable Corridor (approximately 0.6ha). The availability of similar habitat in the wider area will limit the magnitude of the impact of habitat loss for most species present. However, the losses will reduce the availability of suitable breeding habitat for some woodland specialists, including bullfinch, song thrush, spotted flycatcher and willow tit. Except for willow tit, this habitat loss will result in no more than a **Minor** (Local) adverse effect upon all individual bird species. Given their restricted distribution in the wider area of Barnsley, without additional mitigation the loss of one territory and the displacement of a second willow tit territory would result in a **Moderate** adverse effect, which would be significant without the proposed mitigation detailed in Section 7.8.

7.7.88 The embedded mitigation with regards to vegetation removal seeks to avoid direct effects upon nests and nesting birds during breeding bird season (taken to be March – August inclusive) wherever possible, by undertaking vegetation clearance outside this period. Consideration should also be given to the disturbance of ground-nesting species, particularly in those open habitats (rough grassland and heathland) affected by the OHL removal works. Where removal works need to be conducted within the bird breeding season, the areas which may be affected would be subject to a pre-works check for active nests by the EcoW. Therefore, the embedded measures will ensure that the impact from disturbance of active nests during all phases of construction will result in a **Negligible** adverse effect**.**

7.7.89 Indirect disturbance effects on breeding birds along the Cable Corridor and adjacent to the Trans Pennine Trail diversion are likely to occur during the construction phase (two breeding seasons) due to the increased disturbance by noise and construction activities, including increased human presence and vehicular noise. As such this is likely to result in a temporary displacement effect of breeding/ nesting birds in some areas, particularly where retained habitats become more open. Woodland and scrub habitats located further east along the Cable Corridor and adjacent to it such as east of Soughley Farm/ Lane and within Western Moor (for ground nesting species) will offer sufficient alternative nesting habitats for these temporarily displaced birds. Indirect noise disturbance of birds during all phases of construction will not affect the conservation status of the breeding bird population present and will result in a **Negligible** adverse effect.

7.7.90 Additional mitigation is therefore required only to address the effects of habitat loss upon willow tit (within Wogden Foot LWS and along the cable installation corridor).

Wintering Birds

Project Wide – All Components

7.7.91 Effects upon wintering birds have been described for all the Proposed Project components together as effects are predicted similarly for all construction elements.

7.7.92 Construction activities will last approximately 1.5 to 2.5 years and could therefore extend across two winter periods. The Proposed Project has the potential to cause temporary disturbance to the bird wintering assemblage which may otherwise seek to use habitat north of the River Don and south of the Trans Pennine Trail (within Western Moors LWS). Whilst some temporary displacement may occur as a result of construction noise (mainly from the SEC and Trans Pennine Trail diversion work) and/ or increased human presence, the overall magnitude of impact on the wintering bird assemblage is limited by the wide availability of alternative habitats. Based

upon the low number of species recorded within these habitats and the limited interest of the habitats to wintering birds which would be affected by the Proposed Project, it is deemed that the effect upon the wintering bird assemblage of Local importance will be **Negligible** and not significant.

Bats - Roosting

Trans Pennine Trail Diversion, Sealing End Compound and Northern Access Road– Subject to Planning Application

7.7.93 There is one confirmed roost site located within a culvert beneath the existing Trans Pennine Trail and to the south of the Trans Pennine Trail diversion (Clough Beck Culvert). The Trans Pennine Trail diversion will not require the removal or direct works undertaken to the culvert, therefore there is no potential for direct effects on the bat roost (or bats using it) to occur.

7.7.94 No direct effects upon roosting bats will occur from other components of the Proposed Project subject to Planning Application.

7.7.95 Whilst currently there is a level of disturbance from use of the Trans Pennine Trail and farm access on the existing track to the north of the River Don, indirect disturbance of the confirmed roost will be greater during the temporary construction period of the Trans Pennine Trail diversion. Embedded mitigation will be implemented ensuring only daytime working will be undertaken and that the use of artificial lighting is minimised and directed away from the culvert, which will reduce the level of potential indirect disturbance upon the confirmed roost within the culvert. Overall, the effect of disturbance of roosting bats from the project components subject to planning is considered to result in a **Negligible** adverse effect**,** which is not significant**.**

7.7.96 There are a number of trees which have potential to support roosting bats that need to be felled or pruned or lopped during the construction of the Trans Pennine Trail diversion. Although surveys have confirmed the likely absence of roosts in these features currently, they have potential to support roosting bats in the future and it is acknowledged that bats may make occasional or transitory use of these features. Therefore, in the absence of additional mitigation there is a slight risk of harm to bats that may be making occasional use of these features at the time of works, which would at most result in a **Minor** adverse effect, which is not significant. Although this effect is not significant, additional mitigation is required to ensure legal compliance with respect to bats.

400kV Cable (Undergrounding), Removal of Existing Infrastructure and Construction of Pylon 4ZO157R

7.7.97 The potential main source of disturbance to the confirmed bat roost will occur from installation of the cables above Clough Beck Culvert, which will lead to an increase in noise and vibration in proximity to the roost. The potential magnitude of this impact is likely to be reduced by the length of the structures culvert (180m), which has a stone block construction that is likely to offer a variety of alternative roosting opportunities further away from the nearest location to the cable corridor above for the number of bats present (up to 3 individuals). There are also several other culverts with potential roost features present along the River Don and Trans Pennine Trail corridor further east which would also provide other suitable locations for roosting for a small number of bats. Therefore, although some temporary displacement of bats from individual roost locations may occur during installation of the cables above the culvert, this will not affect the Favourable Conservation Status of the local bat population. Similarly, during construction of the Cable Corridor and

other components which do not required formal consent, the impact of disturbance upon the Clough Beck Culvert roost is considered to be no more than a temporary **Negligible** adverse effect**,** which is not significant**.**

Bats – Foraging and Commuting

Project Wide – All Components

7.7.98 The removal of semi-natural habitats (woodland along the Trans Pennine Trail and River Don) to facilitate the Trans Pennine Trail diversion construction, within Wogden Foot LWS (removed scrub for SEC construction) and to facilitate the cable installation will reduce the amount of commuting and foraging bat habitat. When considered against the wider availability of foraging and commuting habitat that is available in the surrounding area, these losses are minor and localised. The retention of contiguous stretches of woodland and scrub habitat along the Trans Pennine Trail/ River Don embankment, the remainder of Wogden Foot LWS and the wider Tran Pennine Trail corridor further east to Hazlehead will also continue to provide an inter-connected resource of alternative suitable foraging and commuting habitat for bats, including near known and potential roosts. Therefore, the impact of habitat losses upon foraging and commuting bats (of District/ Local importance) is considered to be a temporary **Minor** adverse effect, which is not significant.

7.7.99 The embedded measures to control lighting and light spill during the construction period will ensure that the impact of disturbance upon bats from increased artificial lighting during construction is **Negligible.**

Reptiles

Project Wide – All components (except Construction of replacement Pylon 4ZO157R)

7.7.100 Along the Trans Pennine Trail diversion and northern access road the reptile habitats are largely sub-optimal. The works within Wogden Foot LWS, (SEC construction, permanent access road construction, removal of Pylon 4ZO158 and the laydown area), and those required for the removal of Pylon 4ZO162, all occur in habitats that are suitable for reptiles and may be used on an occasional basis by this group.

7.7.101 Work will result in the loss and disturbance of some sub optimal habitat and small areas of more suitable habitat. Given the wide availability of similar habitat in the surrounding area it is considered that these localised losses of habitat are unlikely to affect the conservation status of the reptile populations present. Therefore, the impact of the loss of reptile habitat is considered to be result in a **Negligible** adverse effect that is not significant**.**

7.7.102 However, there is a risk of accidental harm to reptiles during construction works, which could limit the recruitment of adults to populations through increased mortality and / or affect overall breeding success. At most this would result in a **Minor** adverse effect on the local reptile population. Although this effect is not significant, additional mitigation is required to ensure legal compliance with respect to reptiles.

Construction of Pylon 4ZO157R

7.7.103 No predicted effects will occur upon reptiles from this component of the Proposed Project as there is no suitable reptile habitat within the 157R working area.

Terrestrial Invertebrates

Trans Pennine Trail Diversion (section within Wogden Foot LWS Only), Sealing End Compound – Subject to Planning Application

7.7.104 Although not one of the main designating features, the mosaic habitat within Wogden Foot LWS support a diverse assemblage of notable terrestrial invertebrates (as detailed in Appendix 7H and summarised in Section 7.5). The mosaic of grassland and woodland/ scrub habitat and the ballast mounds features are of particular interest for this species group. As such the removal of some these features to facilitate the construction of the Trans Pennine Trail diversion and SEC will result in loss of habitat that supports invertebrates of nature conservation interest. As this represents a localised or partial loss, continuity of habitat will be maintained, although the overall extent of available habitat will be slightly reduced. At worst the impact of these habitat losses would risk undermining the conservation status of some invertebrate species within the assemblage, which may result in a **Moderate** adverse effect that is significant. Therefore, additional mitigation is required to address the potential effects upon invertebrates within Wogden Foot LWS.

Trans Pennine Trail Diversion (north of Rover Don Section) and Access point 7 and the Northern Access road – Subject to Planning Application

7.7.105 There are no predicted effects upon habitats which have been confirmed to support notable terrestrial invertebrate assemblages from these components of the Proposed Project.

400Kv Cable (Undergrounding), Removal of Existing Infrastructure and Construction of replacement Pylon 4ZO157R

7.7.106 While there are small areas of habitat which are likely to support more widespread and common terrestrial invertebrates within the working areas of these components of the Proposed Project, it is not considered that the predicted effects upon notable terrestrial invertebrates would be more than **Negligible** adverse effect, which is not significant.

Aquatic Invertebrates and Fish

Trans Pennine Trail Diversion, Wogden Foot Sealing End Compound (SEC), Access point 7 and the Northern Access road – Subject to Planning Application

7.7.107 As detailed in Chapter 2 (Project Description), and as committed to through the CEMP (Appendix 2B) and embedded mitigation, the River Don and small tributaries will be crossed by the Trans Pennine Trail diversion and northern access road using existing crossing points or temporary single span bridging techniques to avoid any works to in-channel habitats. Therefore, no direct effects upon fish, fish spawning habitat and aquatic invertebrate fauna are predicted.

7.7.108 The embedded mitigation with regards to the CEMP, following best practice guidelines (including controlling pollution and runoff, sediment loads, storage of potential pollutants, and precautionary measures) will limit the likelihood and effects of pollution incidents and/or runoff, and control dust and sediment loads on fish and aquatic invertebrates. Therefore, these best practice measures will ensure that any indirect impacts of pollution or altered water quality upon fish or aquatic invertebrates the will result in a **Negligible** adverse effect, which is not significant.

400Kv Cable (Undergrounding), Removal of Existing Infrastructure and Construction of replacement Pylon 4ZO157R

7.7.109 The cable corridor crosses a number of culverts which contain tributaries of the River Don which may support small number of fish and terrestrial invertebrates

(although not considered to be more than Local value). The embedded mitigation with regards to the CEMP, following best practice guidelines (including controlling pollution and runoff, sediment loads, storage of potential pollutants, and precautionary measures) will limit the likelihood and effects of pollution incidents and/ or runoff, and control dust and sediment loads on fish and aquatic invertebrates. Therefore, these best practice measures will ensure that any indirect impacts of pollution or altered water quality upon fish or aquatic invertebrates will result in a **Negligible** adverse effect, which is not significant.

Other Notable Mammals

Project Wide – All Components

7.7.110 Hedgehog and brown hare may occur at low numbers along the Trans Pennine Trail corridor, Wogden Foot and utilise fields on the northern side of the River Don within proximity of the Trans Pennine Trail diversion. The removal of habitats of woodland and scrub along the existing Trans Pennine Trail to facilitate the SEC, cable installation and the construction of the Trans Pennine Trail diversion in the open grassland field may result in some temporary disturbance to these species. However, alternative suitable habitats for these species are present in the wider landscape which can be used during the temporary construction period. Therefore, the effect of all project wide components upon populations of Local importance would not result in more than a **Negligible** adverse effect, which is not significant**.**

All Fauna (Disturbance)

Project Wide – All Components

7.7.111 Except where detailed separately above for fish and aquatic invertebrates the following assesses the impact upon all other fauna of construction-related habitat degradation.

7.7.112 The embedded mitigation within the CEMP, following best practice and guidelines, (including controlling pollution and runoff, storage of potential pollutants, control of dust, and precautionary measures) will limit the likelihood and effects of pollution incidents and/or runoff and dust on habitats that support fauna. On this basis the impact upon fauna as a result of habitat degradation from pollution is considered to result in a **Negligible** effect that is not significant, and no additional mitigation is required**.**

Non-native plant species

Trans Pennine Trail Diversion, Sealing End Compound and Northern Access Road – Components Subject to Planning Application

7.7.113 There are no predicted effects upon (or constraint caused by) invasive plant species from these components of the Proposed Project.

400Kv Cable (Undergrounding)

7.7.114 Rhododendron is present on the embankment that will be partially removed to facilitate the Cable Corridor and working area. Japanese knotweed is located within the Cable Corridor close to Dunford Bridge. Both areas will be impacted directly by the works and therefore cannot be entirely avoided.

7.7.115 Where it is not possible to avoid disturbance/ removal of the rhododendron and/or Japanese knotweed, measures to ensure treatment and/or removal in accordance with legislative requirements and in advance of the Proposed Project commencing will be adopted (as committed to through the adoption of the LEMP; Appendix 2B.3).

Removal of invasive species, where dominant, may result in a **Minor** beneficial effect upon the habitat by allowing native species to recolonise.

Removal of Existing infrastructure, Construction of replacement Pylon 4ZO157R

7.7.116 Rhododendron is present close to the access route leading to Pylon 4ZO162. Where rhododendron cannot be entirely avoided when accessing the pylon during the infrastructure removal phase, measures to ensure treatment and/ or removal in accordance with legislative requirements and in advance of the removal works commencing will be adopted (as committed through the LEMP; Appendix 2B.3).

Assessment of Impacts during Operation

7.7.117 The following section considers the potential impacts during operation of the Proposed Project.

7.7.118 The temporary components of the Proposed Project; the Trans Pennine Trail diversion and northern access road will have been removed in advance of the operational phase. Therefore, as detailed in Chapter 2 (Project Description), the operational phase consists of the ongoing operation and maintenance of the Sealing End Compound and Cable Corridor. Periodic maintenance inspection visits will be minor and relative to the current use of the Trans Pennine Trail once fully reinstated and as such will not result in any greater human or vehicular disturbance upon ecological features than the current usage and therefore this source of disturbance has been scoped out of the following assessment.

Statutory Sites of Nature Conservation Importance

Sealing End Compound - Subject to Planning Application

7.7.119 There will be no impacts to any statutory sites of nature conservation importance during the operation phase of the Sealing End Compound and therefore no additional mitigation is required.

400kV Cable Corridor

7.7.120 There will be no impacts to any statutory sites of nature conservation importance during the operation phase of the cables and therefore no additional mitigation is required.

Replacement Pylon 4ZO157R

7.7.121 There will be no impacts to any statutory sites of nature conservation importance during the operation phase of the replacement pylon and therefore no additional mitigation is required.

Non-statutory Sites of Nature Conservation Importance

<u>Wogden Foot LWS</u>

Sealing End Compound - Subject to Planning Application

7.7.122 The operation of the SEC has potential to result in indirect impacts upon the habitats and bird assemblage within Wogden Foot LWS in the absence of mitigation. These may comprise habitat degradation or as a result of accidental pollution and disturbance from increased noise and light, particularly initially when the landscape planting and reinstated habitats adjacent to the SEC will not yet have matured/recovered.

7.7.123 Embedded measures to control accidental pollution events will avoid the risk of habitat degradation within Wogden Foot LWS. Therefore, there will be no operational impacts as a result of accidental pollution events.

7.7.124 As detailed in Chapter 14 (Noise), operational noise effects of the SEC have been reduced to a negligible level such that potential disturbance effects (on human receptors) have been scoped out. In terms of potential effects upon ecological features within Wogden Foot, the operational noise would be so low that fauna including birds would not be significantly disturbed/ displaced from use of habitats surrounding the SEC once fully restored. The impact of the localised and very occasional noise for maintenance access will not be more disturbance than the existing use/access of Trans Pennine Trail users therefore is considered to result in a **Negligible** adverse effect, which is not significant.

7.7.125 Lighting will be limited to only that which is required for essential security and safety during maintenance. The impact of the localised use of artificial lighting is unlikely to affect the conservation status of the bird assemblage and is considered to result in a **Negligible** adverse effect, which is not significant.

400kV Cable (Undergrounding)

7.7.126 There will be no impacts to any non-statutory sites of nature conservation importance during the operation phase of the cables and therefore no additional mitigation is required.

Replacement Pylon 4ZO157R

7.7.127 There will be no impacts to any non-statutory sites of nature conservation importance during the operation phase of the replacement pylon and therefore no additional mitigation is required.

Western Moors LWS

7.7.128 There are considered to be no operational impacts upon Western Moors LWS.

7.7.129 Therefore, no additional mitigation is required for any non-statutory sites of conservation interest during the operational phase.

Habitats & Fauna

7.7.130 Operational impacts to habitats and fauna are described on a total Proposed Project level, due to predicted impacts being the same across all operational elements

7.7.131 Embedded measures to control accidental pollution events will avoid the risk of degradation of habitats. Therefore, there will be no operational impacts as a result of accidental pollution events.

7.7.132 There are considered to be no other operational impacts upon any habitats or fauna outside the boundary of designated sites and therefore no additional mitigation is required for either during the operational phase.

Assessment of Impacts during Decommissioning

7.7.133 The baseline conditions at the point of decommissioning are likely to change, subject to the level of management over the operational phase of the Proposed Project. Therefore, an updated baseline assessment would be required to re-determine the features of ecological importance at that stage and to inform the approach to decommissioning.

7.7.134 As described in Chapter 2 (Project Description), the detailed decommissioning methodology cannot be finalised until immediately prior to decommissioning, however, this would be completed in line with relevant legislation and policy at that time.

7.7.135 For assessment purposes, assumptions made for each of the applicable Proposed Project components are outlined below:

Trans Pennine Trail Diversion (retained surface) – Subject to Planning Application

7.7.136 The decommissioning of the retained section of the surface (approximately 410m) along the former diversion (including Bridge 1) is not considered further as it is assumed that this would remain in-situ indefinitely. This is due to the fact that the track would simply follow the route of a pre-existing access track from Dunford Bridge car park to existing Yorkshire Water assets and would be perceived as an upgraded or re-surfaced track.

Sealing End Compound – Subject to Planning Application

7.7.137 The decommissioning of the SEC is not considered in detail in this section. As described above any potential effects would be dependent on baseline conditions at the time. For assessment purposes, this Environmental Assessment Report assumes that the SEC would be removed if no longer required, with the foundations removed to a depth of approximately 1m. The potential effects of removal of the SEC from Wogden Foot LWS would need to be subject to an ecological assessment to determine the mitigation approach based upon conditions and status of habitats and species at that time, alongside a commitment to reinstate habitats within the former footprint of the Sealing End Compound (and access road).

7.7.138 Its assumed that ecological effects would be lower than those linked to construction of the SEC due to anticipated reduction in the activities that would take place in terms of amounts of vehicular movements, equipment and personnel on site. The decommissioning phase would be more localised to the SEC and be completed in a shorter period than the overall Proposed Project when constructed.

7.7.139 Furthermore, the effects post decommissioning would be beneficial as the SEC and associated access would be removed from the landscape and previously lost habitat could be reinstated.

The potential for impacts upon habitat and fauna would be reviewed subject to a updated ecological assessment. Notwithstanding this, compliance with policy and legislation will ensure that there will be no impacts upon habitats or fauna during decommissioning.

400kV Cable (Undergrounding)

7.7.140 Because it is anticipated that the cables will remain in-situ underground there are no impacts upon ecological features anticipated and this has been scoped out of the assessment during decommissioning.

Replacement Pylon 4ZO157R

7.7.141 The decommissioning of the replacement pylon is not considered in this section as it is assumed that this would remain in-situ indefinitely. Should a need be identified for removal of the replacement pylon this will be carried out in line with best practice techniques at the time of removal.

7.7.142 There will be no impacts to any statutory sites of nature conservation importance during the operation phase of the Proposed Project.

7.8 Mitigation

7.8.1 This section relates to where potentially significant adverse effects have been identified for which additional mitigation over and above the embedded mitigation is required to reduce impacts to a predicted non-significant effect.

7.8.2 The mitigation measures below will be delivered as part of the LEMP (Appendix 2B.3), the draft contents of which have been discussed with Barnsley Metropolitan Borough Council Environment Team, Peak District National Park Authority, Natural

England and Yorkshire Wildlife Trust. The requirements for mitigation as detailed in the LEMP will be strictly adhered to by the appointed contractor.

General Mitigation – Project Wide

Pre-construction

7.8.3 Measures within the CEMP (Appendix 2B) and LEMP (Appendix 2B.3) include the completion of several pre-construction ecology surveys which seek to reaffirm the ecological conditions and status of species.

7.8.4 A preconstruction ecological walkover survey will be conducted by the appointed ECoW across the Proposed Project in advance of commencement of any construction activities. This will determine what if any changes there has been to baseline ecological conditions to warrant any changes to the LEMP (or CEMP).

7.8.5 The walkover will include a badger survey to confirm whether any badger setts have appeared within proximity to working areas.

7.8.6 Surveys for bats could be required at least 12 months prior to commencement to inform licence applications and mitigation method statements.

During Construction

7.8.7 Measures as set out in the construction phase section 4.2 of the LEMP (Appendix 2B.3) and as shown on the Figures 1.1a – 1.3a of the LEMP will be adopted.

7.8.8 Staff will be briefed by the EcoW on any key ecological issues affecting the working practices during the site induction, the mitigation to be implemented and methods of working adopted as part of a 'tool box talk'. A tool box talk is a briefing specific to a certain activity, a certain piece of equipment or certain protected species at risk. Subsequently, the talk will be delivered to new staff and as necessary to prior to undertaking any activity within sensitive areas. Updated briefings to all staff will be provided by the EcoW as required as (and at no more than 6-month intervals).

7.8.9 Working areas, where potential encroachment could occur (i.e. there are no current boundaries or barriers present) will be delineated by the EcoW and contractor and areas of all retained habitats, including those of designated sites, outside the working areas will be protected by establishment of appropriate fencing. Fencing, where required, will remain in place until completion of the construction phase of the Proposed Project.

7.8.10 All deep excavations i.e. more than 2m which do not already have a means of escape will either be covered at night where practical to help prevent badgers (and other wildlife) becoming trapped inside. Alternatively, a means of egress provided such as ramps (for example, a scaffolding board) or sloped sides at intervals to allow any trapped wildlife to escape.

7.8.11 Speed limits for construction traffic on site will be set for safety in the Construction Traffic Management Plan, which will limit the chances and severity of any collisions with wildlife.

7.8.12 Periods of intense noise or vibration (drilling, blasting and pilling) will be restricted as far as possible in any areas where badger setts or otter holts are identified following pre-construction surveys. Where potential disturbing activities which meet the threshold as licensable could not be avoided, a Natural England derogation licence to a conduct work would be gained.

7.8.13 Post Construction

7.8.14 Measures to reinstate habitats lost/ disturbed across the Proposed Project during the construction phase, have been embedded in to the Proposed Project as outlined within section 5 of the LEMP (Appendix 2B.3).

7.8.15 The loss of trees across all areas of the Proposed Project will be addressed through re-plating of native woodland and trees.

Specific Additional Mitigation

7.8.16 As detailed in Section 7.7, the Proposed Project is predicted to result in the following potential significant effects upon ecological features which cannot be mitigated for (avoidance or reduction) through design or by embedded mitigation:

- Permanent and temporary effects upon LWS designated habitat at Wogden Foot LWS;
- Loss of woodland and scrub habitat for willow tits (within the LWS and along the Cable Corridor); and
- Habitat loss and disturbance for invertebrates within Wogden Foot LWS.

Significant Effects on Wogden Foot LWS

Grassland Seed Harvesting

7.8.17 In order to use seed of local provenance and which will seek to recreate grassland similar to the distinct habitat conditions currently present within Wogden Foot LWS, seed harvesting operations will be conducted. Seed harvesting will be undertaken from areas of notable grassland (including both areas affected by the Proposed Project and those which will not) as set out in the LEMP (and shown on the accompanying Ecological Mitigation plans Figures 1.1a – 1.3a of Appendix 2B.3) and include Wogden Foot LWS and areas of grassland at Dunford Bridge. It is not intended to conduct seed harvesting from the verge located along the existing Trans Pennine Trail verge (as this is of limited botanical interest and is not likely to be a suitable donor source).

7.8.18 Key receptor areas where harvested seed will be sown at the post construction phase will be those to be affected by the construction of the SEC (laydown area), cable installation area and areas affected by Trans Pennine Trail Diversion and Pylon 4ZO158 removal located within the Wogden Foot LWS boundary.

7.8.19 The area and methodology for seed harvesting will be subject to review between the EcoW, contractors and stakeholders. As a minimum seed harvesting would be conducted in the suitable period (June – end August approximately) prior to the start of Proposed Project commencing, and where possible over two seasons to optimise the seed base taken. Given that the donor grassland areas at each area are not large, the seed/hay will be collected using a small agricultural mower/ brush seed collector and/or manual cutting and collection. The hay/ seed would be dried and stored until the receptor areas were available. The stored seed would be used for the reinstatement of grasslands throughout the Proposed Project, including within the affected areas of Wogden Foot LWS and Western Moors LWS.

7.8.20 Where seed harvesting does not provide sufficient viable seed, the grassland areas within Wogden Foot (as detailed on the landscape masterplans contained within the LEMP) will be restored using an appropriate seed source of local provenance. This seed source will be agreed in consultation with the Stakeholders.

7.8.21 The grassland in other areas including along the Trans Pennine Trail will be reinstated using an appropriate seed source of local provenance.

Restoration of grassland and scrub habitats

7.8.22 Areas to be retained and protected, including waterbodies and vegetated mounds located to the east of the SEC, will be fenced appropriately (Heras or similar) and as necessary signage installed to ensure no incursion by construction vehicles or personnel. The ECoW will, in combination with the contractor assist in delineating working areas required for construction and laydown.

7.8.23 The following details mitigation for reinstating the mosaic of grassland and scrub habitats of Wogden Foot LWS.

7.8.24 Areas of grassland will be lost either permanently (for construction of the SEC and permanent access road) or temporarily (as part of the Cable Corridor or Trans Pennine Trail diversion) within Wogden Foot LWS.

7.8.25 As detailed within Chapter 10 (Geology, Soils and Contaminated Land) measures will be in place to protect soils. Specific measures detailing the restoration objectives are also detailed in the LEMP (Appendix 2B.3). In summary soils will be protected through the following approaches to aid retention of seedbanks:

- retention *in situ*; or
- soil translocation.

7.8.26 Vegetated mound features which are characteristic of Wogden Foot LWS and are botanically rich and provide an important habitat for invertebrates will be reinstated. The translocation of soils and ballast (subject to any contamination restrictions) within Wogden Foot LWS will seek to re-create some vegetated mounds as part of the landscaping proposals but avoiding the Cable Corridor. Material to create mounds should ideally be selected to ensure that the overall characteristics of the substrate are not significantly altered to retain the target grassland habitat and nutrient poor conditions.

7.8.27 Areas alongside the cable installation corridor within Wogden Foot LWS (excluding that required for the permanent access to the SEC) no longer shaded by overhanging trees or scrub encroachment, will be reinstated as grassland using top soil material excavated from trenches or former grassland areas wherever possible.

7.8.28 Additional compensation for the loss of habitat will be achieved within Wogden Foot LWS by creating areas for the establishment of grassland. This will be achieved through the removal of scrub in selected agreed areas and will seek to optimise the coverage of botanically rich grassland that is currently decreasing due to effects of scrub encroachment.

Loss of scrub/young woodland habitat

7.8.29 The loss of scrub habitat will be mitigated through translocation, replanting and natural colonisation. This approach will be planned to both maintain the necessary electricity clearance and to ensure that the existing ration of scrub to grassland will be maintained in the LWS.

7.8.30 Selected examples of mature shrubs from the area of affected scrub within Wogden Foot LWS that are to be lost will be temporarily translocated to a receptor location within the LWS. Translocation will be undertaken in the autumn/ winter period. The receptor will be located in close proximity to existing scrub and selected to ensure that there is adequate depth of soil. Translocation will be undertaken under the supervision of the ECoW during suitable weather conditions (i.e. not after periods

of heavy rain) in the autumn/ winter period. Following the works, the translocated scrub will be re-planted in the laydown area. This area and the margins of the SEC will also be planted with native trees and shallow rooted shrubs (which is also a requirement of essential landscape mitigation around the SEC). Other areas of disturbed ground will be permitted to establish with naturally colonised scrub to maintain the overall habitat mosaic.

7.8.31 The grassland and scrub habitats will be managed in accordance with the principles of the Outline LEMP order to reinstate the close-knit mosaic of habitats present within the wider Wogden Foot LWS.

Willow Tit – Loss of habitat and displacement

7.8.32 The removal of dead tree stumps or rotting dead wood suitable to support willow tit nests (as identified by the ECoW prior to the commencement of vegetation removal) will be avoided wherever possible.

7.8.33 Where avoidance is not possible, tree stumps will be removed and retained wherever possible and reinstated into suitable alternative area outside the working area (further east within Wogden Foot LWS or further east along the Trans Pennine Trail). Removal of these features will be undertaken between end of September and end of February, and in advance of the commencement of site mobilisation and laydown set up within Wogden Foot LWS. This timing will provide alternative/supplementary nesting habitat for willow tit in advance of the following breeding season. As an alternative, newly sourced sections of tree stump/ uprights trunks will also be planted as upright deadwood at the same time. The final location of the re-instated stumps will be agreed on-site with the ECoW.

7.8.34 Planting of scrub in other parts of the LWS or other land located directly to the east and west of the LWS to benefit willow tit will be considered. Nest boxes to provide alternative nesting habitat for competing species (other passerine species).

Mitigation for Invertebrate habitats

7.8.35 The mitigation outlined above for grassland and willow tit will ensure that a mosaic of habitats is still available to invertebrates, including species diverse grassland on completion of the SEC. The creation of log piles will also provide additional habitat for invertebrates.

<u>Other Additional Mitigation</u>

Western Moors LWS

7.8.36 Grassland or heathland will be reinstated where it has been affected by temporary access tracks of a species diverse seed mix of local provenance.

Unimproved (MG5) Neutral Grassland

7.8.37 Soils from the affected area of unimproved neutral grassland will be reinstated in the same manner as that described for Wogden Foot LWS.

Broad-leaved woodland, trees and dense scrub

7.8.38 Additional woodland and scrub planting will be provided to compensate for areas of woodland and scrub that will be permanently lost to the project. Details of on-site planting are detailed in the outline LEMP and shown on the accompanying landscape masterplans. An area equating to approximately 1.02 ha of mixed native woodland 0.83ha) and native woodland edge/scrub (0.19) will be re-planted on site as detailed on the Landscape Masterplan drawings as include with the LEMP.

Furthermore, an area of approximately 0.5 ha) of mixed low growing native scrub will also be planted where cable offset distances apply or other restrictions to deeper roots tree/scrub species apply.

7.8.39 Where there is a need to remove trees (and scrub) to facilitate the construction and operation of the Trans Pennine Trail diversion, they will be replaced, where appropriate, either on or off site.

7.8.40 The loss of trees will be partially mitigated by the provision of on-site planting proposed areas as summarised above and as detailed in the LEMP and on the accompanying Landscape masterplans.

7.8.41 A number of off-site options where tree planting could be undertaken in order to further mitigate the loss of trees (contained with the areas of woodland and scrub habitat which is proposed to be lost) have been investigated and are still being pursued.

7.8.42 Measures to ensure the protection of retained trees will be implemented as outlined in the LEMP and within the AIA (Appendix 7M). Root protection areas will be established prior to establishment of the working area. These will be at least a distance to ensure the trees will not be damaged as informed by the Arboricultural Survey. The extent of the working area will be clearly delineated to avoid encroachment into the established root protection area and fencing will remain in place until the works are complete.

7.8.43 Temporary fencing to protect trees will be installed at the limit of works as appropriate and retained in situ for the duration of the works. Site supervision by a suitable qualified arborist/ Environmental clerk of works during initial tree clearance will be undertaken to ensure buffers are maintained and that tree to be retained are assessed for stability.

Bats – Mitigation for Roosting Bats (if Required)

7.8.44 In the unlikely event that trees with potential to support roosting bats cannot be avoided, these will be subject to a pre-construction bat survey. This survey will comprise aerial tree climbing inspection and / or nocturnal surveys. Nocturnal surveys would be conducted within the period May – September prior to vegetation clearance period of October to end-February. Where evidence of roosting is confirmed, options to avoid direct loss of the roost will be sought, i.e. pruning rather than felling. If this is not possible, mitigation measures will be subject to an European Protected Species (EPS) licence. Mitigation measures would involve the exclusion of the roost and/ or section felling (felled sections would be retained on the ground for minimum 24 hours after felling) under the supervision of a bat licensed ecologist, along with provision of an alternative roost (depending on the time of roost identified).

Reptiles – removal of suitable reptile habitats (Project Wide)

7.8.45 Surveys have concluded that no more than a small population of common reptiles could be present within habitats within the Cable Corridor. However, the following precautionary mitigation approach will be adopted to address the low risk of reptiles being present/ gaining access into working areas and in turn to avoid direct killing or injury:

- Sensitive removal of scrub habitat will be undertaken by strimming to ground level before being excavated (in accordance with embedded measures this should be timed to avoid the bird nesting season);

- Other vegetation that is suitable for reptiles will be strimmed down and maintained at ground level. In the reptile active period (mid-March to mid-October, inclusive) this will only be undertaken during suitable weather conditions (ambient temperatures exceeding 9^{o}C, with little wind and no rain);
- Features/ habitats suitable to provide refuge for reptiles which may be within working areas and cannot be avoided e.g. stone walls, brash or log piles will be dismantled by hand under the supervision of the EcoW. This will only be completed during suitable weather conditions in the reptile active period;
- Any reptiles found will be relocated to suitable habitat away from the working area (e.g. Western Moors LWS to the south of the Trans Pennine Trail).

Delivering Biodiversity Net Gain

7.8.46 The revised National Planning Policy Framework (Feb 2019) (summarised in Section 7.4) states the commitment of the UK government to planning decisions should follow the principles of the mitigation hierarchy and provide net gain for biodiversity. National Grid is committed to ensuring that opportunities to not only ensure no net loss but to provide biodiversity net gain are delivered on the Proposed Project.

7.8.47 Biodiversity net gain is defined as "development that leaves biodiversity in a better state than before" and involves an approach where developers work with local governments, wildlife groups, land owners and other stakeholders in order to support their priorities for nature conservation.

7.8.48 In order for a development to achieve net gain it is important that the principles of the mitigation hierarchy are followed. This process involves first trying to avoid adverse impacts on biodiversity before finding ways to minimise or mitigate effects and as a last resort compensating for any residual impacts. In accordance with industry guidance (CIRIA, 2019)31, there are four sequential steps that must be taken throughout the lifecycle of a project:

- Avoidance - actions taken to avoid causing impacts to the environment prior to beginning development (for example, moving the development to a different location);
- Minimisation - measures taken to reduce the duration, intensity, extent and/or likelihood of the unavoidable environmental impacts caused by development (for example, adapting the development design to minimise impacts);
- Restoration or rehabilitation - actions taken to repair environmental degradation or damage following unavoidable impacts caused by development; and
- Offsets - Measures taken to compensate for any adverse environmental impacts caused by development which cannot be avoided, minimised and/or restored (e.g. including habitat creation to offset losses).

7.8.49 Biodiversity metrics provide a measure of overall Biodiversity Value based on habitat type, area, condition and distinctiveness. A metric is a tool that allows the value of a site to be measured pre- and post-development. The change in Biodiversity Units indicates either a net loss or net gain.

[31] CIRIA, 2019 Biodiversity Net Gain: Good practice principles for development. Part A: A practical guide.

7.8.50 The results of the metric calculation can be used to inform the requirements for on-site mitigation and any off-site compensation that may be needed to achieve the target of net gain in biodiversity.

7.8.51 The assessment is an iterative process and can be applied during the design evolution process to guide the requirements for mitigation and compensation, in terms of the type and extent of habitats to be recreated or restored (in other words, improve habitat condition) to ensure the Proposed Project results in net gain.

7.8.52 National Grid is committed to ensuring that opportunities not only ensure no net loss, but also provide biodiversity net gain are delivered as part of the Proposed Project. In accordance with this commitment and in line with national and local planning policy (see Section 7.4), opportunities to enhance biodiversity to offset habitats being lost or temporarily affected have been investigated since the inception of the Proposed Project.

7.8.53 'On site' options are limited by the very nature of the Proposed Project; which once completed will comprise of the operational SEC footprint and the section of reinstated Trans Pennine Trail route beneath which the cables have been installed. Stakeholders have requested that biodiversity net gain opportunities should be sought within close proximity to the Proposed Project. A number of potential sites within the Dunford Bridge area are being considered, subject to landowner agreement and ongoing land management practices. These areas offer opportunities for measures and management practices to be secured over the longer term to improve the habitat condition and gain biodiversity credits therefore to contribute towards net gain for biodiversity. If suitable sites could not be secured within the immediate proximity of the Proposed Project, National Grid would welcome the opportunities to support ecological offsetting options at alternative off site locations within the Barnsley area for the purpose of delivering gains for biodiversity. Consultation with stakeholders and landowners is ongoing.

During Operation

7.8.54 No additional mitigation is required during the operation phase.

During Decommissioning

400kV Cable (Undergrounding), Sealing End Compound and Replacement Pylon 4ZO157R

7.8.55 The detailed decommissioning methodology cannot be finalised until immediately prior to decommissioning. Works associated with decommissioning would be subject to a separate assessment and appropriate consents required at that time, and as such appropriate mitigation would be decided upon during that process.

7.9 Summary of Effects

7.9.1 A summary of the residual effects that remain after the adoption of embedded and additional mitigation measures have been taken into account is provided in the text below and summarised in Table 7.9 and Table 7.10. Any effects that are negligible in the absence of additional mitigation remain as described in the Section 7.7.

Summary of ecological effects during construction

7.9.2 As summarised in Table 7.9 and Table 7.10. the overall implementation of the embedded and additional mitigation measures outlined will avoid or minimise the potential effects to ecological features during the construction phase of the Proposed Project to Minor or lower. Ttherefore the overall residual ecological effect is considered to be Not Significant.

Summary of ecological effects during operation

7.9.3 As detailed in Table 7.9 for Proposed Project component subject to planning the residual effects on designated sites, habitats and species during operation are considered to be not significant.

7.9.4 As detailed in Table 7.10 for Proposed Project component subject to planning the residual effects on designated sites, habitats and species during operation are considered to be not significant.

Summary of ecological effects during decommissioning

7.9.5 The detailed decommissioning methodology cannot be finalised until immediately prior to decommissioning. Works associated with decommissioning would be subject to a separate assessment and any necessary consent requirements at that time, and as such appropriate mitigation and the resulting residual effects would be decided upon during that process.

7.10 Cumulative Effects

7.10.1 As detailed in Chapter 15 (Cumulative Impact), no cumulative developments have been identified. This ecology chapter has considered potential intra-project interactions on ecological features with noise, accidental pollution, exhaust emissions and dust. Mitigation measures will ensure that significant effects from interactions do not arise.

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
Trans Pennine Trail Diversion - Construction Phase					
Statutory Designated Sites					
South Pennine Moors SAC	International/ European	No predicted direct effects. With embedded mitigation (pollution prevention control measures) there is no potential for indirect effects to occur.	No additional mitigation required	No change	Not significant
Peak District Moors (South Pennine Moors Phase 1) SPA	International/E uropean	No predicted direct effects. Distance separating works from the SPA is sufficient to attenuate any risk of noise disturbance impacts to designated features.	No additional mitigation required	No change	Not significant
Dark Peak SSSI	National	No predicted direct effects Effects on supporting populations of qualifying bird species due to visual disturbance, comprising displacement of lapwing and curlew territories (2 – 4 individuals of each species).	No additional mitigation required	Negligible Adverse Temporary Short Term	Not significant
Non-Statutory Designated Sites					
Wogden Foot LWS	County	Temporary loss of 0.16ha of woodland/scrub and 0.04ha of unimproved neutral grassland.	Grassland and associated soils protected through ground protection (Terram layer) or soil translocation.	Minor Adverse Temporary Medium Term	Not significant

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
			Translocation, replanting and natural colonisation of scrub. Management to maintain the existing habitat mosaic		
Western Moors LWS	County	No predicted direct effects. With embedded mitigation (pollution prevention control measures) there is no potential for indirect hydrological effects to occur. Disturbance effects upon breeding bird assemblage during construction limited – alternative availability of nesting habitat within wider LWS.	No additional mitigation required	Negligible Adverse Temporary Short Term	Not significant
Habitats					
Dry Heath/Acid Grassland	Local	Temporary loss of 0.06 ha of this habitat type close to Bridge 1.	Reinstatement on completion of works as part of embedded mitigation.	Negligible Adverse Temporary Short Term	Not significant
Semi-improved Neutral & Acidic grassland	Local	Temporary loss of 0.14ha of this habitat type.	Reinstatement on completion of works as part of embedded mitigation.	Negligible Adverse Temporary Short Term	Not significant
Semi-natural broadleaved woodland	Local	Loss of 0.17 ha of young semi-natural woodland/ scrub between Dunford Bridge and Bridge 1.	The loss of woodland will be replaced, where appropriate and space permits (to be agreed with landowners). Additional woodland planting will be provided to compensate for areas of	Negligible Adverse Temporary Medium Term	Not significant

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
		Embedded tree protection measures will minimise risk of damage to retained trees.	woodland that will be permanently lost to the Proposed Project.		
Running Water and Riparian Habitats	Local	Temporary loss of riparian habitat - River Don (Bridge 1 and Bridge 2 Construction).	Working areas to be clearly delineated to prevent damage to the surrounding habitat. Fencing will be erected prior to construction and will remain until all works have ceased. The fencing will be placed to limit construction activities to the minimum safe working width possible and no machinery or materials will be stored outside of the delineated working width. The bank top and land adjacent to bridge crossing construction areas will be reinstated following construction and following completion of the Proposed Project on removal of the bridge. The proposed working method will ensure that water flow (and passage by fish) is not impeded or reduced downstream of the crossing point. Banks will be reinstated and re-profiled as required following construction of the Trans Pennine Trail diversion.	Negligible Adverse Temporary Short Term	Not significant
Species					
All birds	Local - County	Direct disturbance of nests.	Avoid vegetation clearance in the nesting season (March – August, inclusive) or pre-clearance nesting bird checks to avoid active nests.	Negligible Adverse Temporary Short Term	Not significant

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
		Indirect noise and / or visual disturbance	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Wintering Birds (Assemblage & individual species)	Local	No direct impacts. Noise / vibration disturbance of roosting bats during cable construction.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Bats (roosting)	County	No direct impacts. Noise / vibration disturbance of roosting bats during Trans Pennine Trail.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
		Disturbance of bats whilst occupying a roost.	Noise and vibration activities e.g. piling or similar to be avoided within proximity to bat roosts excluding general vehicle movement along the Trans Pennine Trail. A method statement approach to bat mitigation measures would be adopted which will include measures to ensure the protection of the roost and avoidance of killing/injury of bats during construction. Alternative roost features will be installed where possible on mature trees to be retained outside working areas.	Minor Adverse Temporary Short Term	Not significant
Bats (Foraging and commuting)	District (Daubenton's) Local (All other species)	Very minor loss of foraging and commuting habitat loss during construction of Trans Pennine Trail (Bridge	No additional mitigation required.	Minor Adverse Temporary Short Term	Not significant

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
		1 and Bridge 2 construction)			
Reptiles	Local	Temporary loss/disturbance of sub optimal reptile habitat Increased risk of killing and/or injury of reptiles.	A precautionary mitigation approach will be adopted to address the low risk of reptiles being present/gaining access into working areas and in turn to avoid direct killing or injury. Sensitive removal of areas of long grassland and scrub habitats will be undertaken by strimming to ground level before being excavated. Features/habitats suitable to provide refuge for reptiles which may be within working areas and cannot be avoided e.g. stone walls, brash or log piles will be dismantled by hand under the supervision of the ECoW. Any reptiles found will be relocated to suitable habitat away from the working area.	Negligible Adverse Temporary Short Term	Not significant
Terrestrial Invertebrates - (Trans Pennine Trail diversion section within Wogden Foot LWS)	District	Loss of habitats/habitat features to support invertebrates of nature conservation interest.	The mitigation outlined above for grassland and willow tit will ensure that a mosaic of habitats is still available to invertebrates, including species diverse grassland on completion of the SEC. The creation of log piles will also provide additional habitat for invertebrates.	Negligible Adverse Temporary Short Term	Not significant
Fish	District	Indirect effects upon fish within River Don (Bridge 1 and Bridge 2 crossings)	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
		With embedded mitigation there is no potential for indirect effects to occur.			
Aquatic Invertebrates	Local	Indirect effects upon fish within River Don (Bridge 1 and Bridge 2 crossings) With embedded mitigation there is no potential for indirect effects to occur.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Other Notable Mammals	Local	Loss of habitat and increased disturbance.	Careful removal of vegetation during site clearance.	Negligible Adverse Temporary Short Term	Not significant
Sealing End Compound and Northern Access Road – During Construction					
Statutory Designated Sites					
South Pennine Moors SAC	International/ European	No predicted direct effects. With embedded mitigation (pollution prevention control measures) there is no potential for indirect effects to occur	No additional mitigation required.	No change	Not significant
Peak District Moors (South Pennine Moors Phase 1) SPA	International/European	No predicted direct effects Effects on qualifying bird species due to noise and visual disturbance attenuated by distance	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
Dark Peak SSSI	National	No predicted direct effects Effects on supporting populations of qualifying bird species due to noise and visual disturbance, comprising displacement of lapwing and curlew territories (2 – 4 individuals of each species)	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Non Statutory Designated Sites					
Wogden Foot LWS	County	Permanent and temporary loss of grassland, woodland and scrub habitat; 0.289ha, equivalent to 2.2% of LWS area	Areas outside the fenced working area will be protected from construction activities. Areas to be retained and protected (including waterbodies and vegetated mounds located to the east of the SEC) will be fenced off to ensure no access by construction vehicles or personnel. The following additional mitigation measures will be adopted: Grassland and associated soils protected through ground protection (Terram layer) or soil translocation. Reinstatement of vegetated mound features, where possible using topsoil and ballast material removed from other construction areas. Translocation, replanting and natural colonisation of scrub. Management to maintain the existing habitat mosaic.	Minor Adverse Permanent Medium Term	significant

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
		Noise disturbance of breeding bird assemblage, including willow tit, from piling at SEC	No additional mitigation required.	Minor Adverse Temporary Short Term	Not significant
		With embedded mitigation (pollution prevention control measures) there is no potential for other indirect effects to occur	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Western Moors LWS	County	No direct effects Indirect noise and disturbance from piling of SEC. Noise levels at the LWS will be attenuated by the intervening distance	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
		With embedded mitigation (pollution prevention control measures) there is no potential for indirect effects to occur	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Habitats					
Running water and riparian habitat	Local	With embedded mitigation there is no potential for indirect effects to occur	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Species					
Breeding Birds - Individual	Local	Limited loss of suitable breeding habitat,	No additional mitigation required.	Minor Adverse	Not significant

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
species (Except willow tit)		particularly for woodland specialists			
Willow tit	District	Loss of nesting and foraging habitat	Remove suitable willow tit nest sites between the end of September and end of February. Tree stumps removed (or newly sourced sections of tree stump/uprights trunks) to be retained wherever possible and reinstated into suitable alternative area outside the working area (further east within Wogden Foot LWS), prior to works commencing. Logs from removed trees could be used to provide supplementary willow tit nest sites along/adjacent to the Trans Pennine Trail. Planting of scrub in other parts of the LWS or other land located directly to the east and west of the LWS to benefit willow tit will be considered. Nest boxes to provide alternative nesting habitat for competing species (other passerine species).	Minor Adverse Temporary Medium Term	Not significant
		Noise disturbance, leading to temporary displacement of at least one territory.	No additional mitigation required.	Minor Adverse Temporary Medium Term	Not significant
All birds	Local - County	Direct disturbance of nests.	Avoid vegetation clearance in the nesting season (March – August,	Negligible Adverse Temporary Short Term	Not significant

Table 7.9 Summary of Ecological Effects - Components Subject to Planning Application					
Feature	**Importance**	**Sources of effect**	**Additional Mitigation (above embedded mitigation)**	**Magnitude and duration of residual effect**	**Significance of Residual Effect**
			inclusive) or pre-clearance nesting bird checks to avoid active nests. No additional mitigation required.		
Terrestrial Invertebrates	District	Loss of habitats/habitat features to support invertebrates of nature conservation interest.	The mitigation outlined above for grassland and willow tit will ensure that a mosaic of habitats is still available to invertebrates, including species diverse grassland on completion of the SEC. The creation of log piles will also provide additional habitat for invertebrates.	Negligible Adverse Temporary Short Term	Not significant
Reptiles	Local	Temporary loss/disturbance of sub optimal reptile habitat Increased risk of killing and/or injury of reptiles.	A precautionary mitigation approach will be adopted to address the low risk of reptiles being present/gaining access into working areas and in turn to avoid direct killing or injury. Sensitive removal of areas of long grassland and scrub habitats will be undertaken by strimming to ground level before being excavated. Features/habitats suitable to provide refuge for reptiles which may be within working areas and cannot be avoided e.g. stone walls, brash or log piles will be dismantled by hand under the supervision of the ECoW. Any reptiles found will be relocated to suitable habitat away from the working area.	Negligible Adverse Temporary Short Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
Table 7.10 Summary of Ecological Effects - Project Components Not Subject to Planning					
400kV Cable Installation (including Laydown Area within Wogden Foot LWS) - Construction Phase					
Statutory Designated Sites					
South Pennine Moors SAC	International/ European	No predicted direct effects. With embedded mitigation (pollution prevention control measures) there is no potential for indirect effects to occur.	No additional mitigation required.	No change	Not significant
Peak District Moors (South Pennine Moors Phase 1) SPA	International/E uropean	No predicted direct effects Effects on qualifying bird species due to noise and visual disturbance. Distance separating works from the SPA is sufficient to attenuate any risk of noise disturbance impacts to designated features	No additional mitigation required.	No change	Not significant
Dark Peak SSSI	National	No predicted direct effects. With embedded mitigation (pollution prevention control measures) there is no potential for indirect hydrological effects to occur.	No additional mitigation required.	No change	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
Non-Statutory Designated Sites					
Wogden Foot LWS	County	Losses of LWS habitat. Temporary losses of 0.78 ha of woodland/ scrub, 0.02 ha of acid grassland and 0.18 ha of semi-improved grassland; 0.98 ha, which is equivalent to 8.3% total LWS area.	Areas alongside the Cable Corridor (excluding that required for the permanent access to the SEC) no longer subject to shading by overhanging trees or scrub encroachment will be re-instated as grassland, using top soil material excavated from the cable trench or former grassland areas wherever possible, or by reseeding with an appropriate wildflower seed mix. Nutrient poor conditions will be maintained to ensure similar botanical conditions will be created to those currently present. Areas of trees and shallow rooted shrubs will be planted to replace habitat lost (also required to screen the SEC as part of the landscape mitigation) as shown on Landscape masterplans (contained within the LEMP). Laydown Area Wogden Foot LWS: As committed to via the LEMP (Appendix 2B.3 of the EAR), the protection of the existing seed bank and top soil/ballast will be retained in situ within areas to be used temporarily for the laydown area. A protective Terram layer (technical specification to be agreed) will be installed over the extent of the proposed laydown area to the west of the SEC within Wogden Foot LWS. This will be installed following	Minor Adverse Temporary Medium Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
			completion of the vegetation clearance assuming the laydown areas and SEC works will commence soon after. On completion of the works that Terram will be removed and the area will be left to recolonise naturally. As outlined in the LEMP the area will be monitored and if considered appropriate the area will be re-seeded with a species diverse mix. Management will also be in place to control potentially dominant weed species.		
		Localised loss of habitat for bird assemblage, which includes willow tit. Disturbance from construction noise. Embedded mitigation as detailed in the LEMP.	No additional mitigation required.	Negligible Adverse – Minor Adverse Temporary Short Term	Not significant
		With embedded mitigation (pollution prevention control measures) there is no potential for indirect hydrological effects to occur.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Western Moors LWS	County	Loss of 0.01 ha of neutral unimproved grassland within LWS boundary (less than 1% of the LWS) at Dunford Bridge. With embedded mitigation (pollution prevention control measures) there is no	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
		potential for indirect hydrological effects to occur			
		Disturbance upon breeding bird assemblage within LWS from cable installation works.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Habitats					
Semi-improved Neutral grassland	Local	Temporary loss of 0.88 ha of this habitat (existing verges of the Trans Pennine Trail) Grassland in laydown area assessed as part of Wogden Foot LWS above)	As committed to via CEMP and LEMP – Reinstatement of grassland along Trans Pennine Trail using appropriate seed source on completion of works as part of embedded mitigation.	Negligible Adverse Temporary Short Term	Not significant
Unimproved Neutral Grassland (at Dunford Bridge)	District	Temporary loss of 0.23 ha of this habitat type Within Site Boundary an area of 0.11 ha will be retained and protected during works.	Reinstatement on completion of works as part of embedded mitigation As committed to via the LMEP: Seed harvesting from the areas of notable grassland to be affected by Proposed Project will be undertaken as identified in the LEMP. Seed harvesting would be conducted in the suitable period (June – end August approximately) prior to the start of the Proposed Project construction phase. Working areas will be delineated and areas of notable grassland located outside the working area will be protected by establishment of fencing (specification to be agreed) to avoid	Negligible Adverse Temporary Medium Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
			encroachment of activities outside working areas. Fencing will be kept in situ until completion of the construction phase of the Proposed Project. A protective membrane e.g. geotextile or reinforced grass protector layer will be installed over notable grassland areas to provide an initial protective layer before establishment of working areas and maintained throughout construction to protect the soil structure and seedbank.		
Broad-leaved semi-natural woodland (and dense scrub)	District	Direct loss of approximately 0.43 ha of woodland (and scrub) habitat along Trans Pennine Trail corridor. (Woodland/scrub effects within Wogden Foot LWS boundary are assessed above as part of total effects upon Wogden Foot LWS) Embedded tree protection measures will minimise risk of damage to retained trees.	The loss of woodland will be replaced, where appropriate and space permits (to be agreed with landowners). Additional woodland planting will be provided to compensate for areas of woodland that will be permanently lost to the Proposed Project.	Minor Adverse reducing to Negligible Adverse Temporary Medium Term	Not significant
		Fragmentation of woodland corridor	Continuous stretches of woodland (and scrub) will be maintained alongside the River Don and Trans Pennine Trail corridor as shown on the Landscape masterplans (LEMP) and Tree Protection Plan (Appendix 7M). The overall integrity of the habitat corridor will be maintained throughout	Minor Adverse reducing to Negligible Adverse Temporary Medium Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
			construction period. Tree losses will be mitigated through re-planting along the existing woodland corridor (where proximity to cables allows).		
Running water (River Don & tributaries)	Local	No direct impacts upon River Don of main tributaries. Temporary loss of drainage ditch located within cable corridor. Embedded measures committed to within the CEMP will ensure indirect effects (pollution/run off) are avoided during the cable installation work.	Reinstatement of drainage ditch on completion of works as part of embedded mitigation (as detailed in LEMP). No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Species					
Wintering Birds (Assemblage & individual species)	Local	Noise and visual disturbance	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Breeding Birds - Assemblage	County	Loss of nesting habitat	Reinstatement of habitat on completion of works.	Minor Adverse Temporary Medium Term	Not significant
Breeding Birds - Individual species (Except willow tit)	Local	Limited loss of suitable breeding habitat, particularly for woodland specialists	No additional mitigation required.	Minor Adverse Temporary Short Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
Willow Tit	District	Loss of potential nesting and foraging habitat Potential for destruction/damage of nests during construction period. Noise/visual disturbance (displacement of breeding birds)	Additional mitigation for willow tit is detailed in the LEMP (Appendix 7B.2). Additional mitigation for willow tit involves the removal of dead tree stumps or rotting dead wood suitable to support willow tit nests, as identified by the ECoW prior to the commencement of vegetation removal, will be avoided wherever possible. Where avoidance is not possible, removal of these features will be undertaken between end of September and end of February. These stump and suitable feature for nesting willow tit will be re-instated in other suitable locations i.e. within area further east in Wogden Foot LWS or further east along the Trans Pennine Trail as identified in the LEMP. Tree stumps removed (or newly sourced sections of tree stump/uprights trunks) will be retained wherever possible and reinstated into suitable alternative area outside the working area (further east within Wogden Foot LWS). These would need to be installed in advance (in autumn/early winter) prior to commencement of site mobilisation and laydown set up within Wogden Foot (following vegetation clearance within the SEC and laydown area) to provide alternative/supplementary nesting habitat for willow tit.	Minor Adverse Temporary Medium Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
All birds	Local - County	Direct disturbance of nests All detailed in the Project Wide section of the LEMP, embedded mitigation will ensure that vegetation clearance will avoid the nesting season (March – August, inclusive) or pre-clearance nesting bird checks to avoid active nests.	No additional mitigation required.	Minor Adverse Temporary Short Term	Not significant
		Indirect noise and / or visual disturbance	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Bats – Roosting	County	No direct impacts. Noise / vibration disturbance of roosting bats during cable construction.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
		Disturbance of bats whilst occupying a roost.	Noise and vibration activities e.g. piling or similar to be avoided within proximity to bat roosts excluding general vehicle movement along the Cable Corridor along the Trans Pennine Trail. A method statement approach to bat mitigation measures would be adopted which will include measures to ensure the protection of the roost and	Minor Adverse Temporary Short Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
			avoidance of killing/injury of bats during construction. Alternative roost features will be installed where possible on mature trees to be retained outside working areas.		
Bats – Foraging and Commuting	District (Daubenton's) Local (All other species)	Localised loss of foraging and commuting habitat, with continuous stretches of woodland and scrub retained.	No additional mitigation required.	Minor Adverse Temporary Short Term	Not significant
Reptiles	Local	Temporary loss/disturbance of sub optimal reptile habitat. Increased risk of killing and/or injury of reptiles	Provision of supplementary habitats features such as log piles to act as reptile refugia to be provided (using some of vegetation material cleared from along the Cable Corridor or scrub/young trees cleared within the laydown area Wogden Foot LWS) alongside the reinstated Trans Pennine Trail corridor A precautionary mitigation approach will be adopted to address the low risk of reptiles being present/gaining access into working areas and in turn to avoid direct killing or injury. Sensitive removal of areas of long grassland and scrub habitats will be undertaken by strimming to ground level before being excavated. Features/habitats suitable to provide refuge for reptiles which may be within working areas and cannot be avoided e.g. stone walls, brash or log piles will be dismantled by hand under the supervision of the ECoW. Any reptiles	Negligible Adverse Temporary Short Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
			found will be relocated to suitable habitat away from the working area (e.g. Western Moors LWS to the south of the Trans Pennine Trail).		
Fish	District	With embedded mitigation there is no potential for indirect effects to occur.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Aquatic Invertebrates	Local	With embedded mitigation there is no potential for indirect effects to occur.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Terrestrial Invertebrates (Wogden Foot Laydown)	District	Loss of habitats/habitat features to support. invertebrates of nature conservation interest.	The mitigation outlined for grassland within the LWS will ensure that a species diverse grassland is available on removal of the laydown area.	Negligible Adverse Temporary Short Term	Not significant
Other Notable Mammals	Local	Loss of habitat and increased disturbance. Careful removal of vegetation during site clearance.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Non-native plant species	Not Applicable	Embedded mitigation will prevent the spread of invasive species.	No additional mitigation required.	No change Permanent	Not significant
Removal of Existing Infrastructure (VIP subsection) – During Construction					
Statutory Designated Sites					
South Pennine Moors SAC	International/ European	No predicted direct effects. With embedded mitigation (pollution prevention control measures) there is no	No additional mitigation required.	No change	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
		potential for indirect effects to occur.			
Peak District Moors (South Pennine Moors Phase 1) SPA	International/European	No predicted direct effects Effects on qualifying bird species due to noise and visual disturbance. Distance separating works from the SPA is sufficient to attenuate any risk of noise disturbance impacts to designated features.	No additional mitigation required.	No change	Not significant
Dark Peak SSSI	National	No predicted direct effects. With embedded mitigation (pollution prevention control measures) there is no potential for indirect hydrological effects to occur.	No additional mitigation required.	No change	Not significant
Non-Statutory Designated Sites					
Wogden Foot LWS	County	Temporary loss of habitat to remove Pylon 4ZO158: 0.09 ha of acid grassland and 0.12 ha of woodland/scrub.	Grassland which will be affected by works within Wogden Foot LWS will be subject to seed harvesting prior to the comments of construction in accordance with the commitment made in the LEMP. Grassland affected by the pylon removal work (crane pad) will be retained in situ. A protective Terram layer (technical specification to be agreed) will be installed over the extent of the pylon working area (in combination with the		

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
			laydown area). This will be installed following completion of the tree/scrub clearance required within Wogden Foot LWS working area at the pre-construction phase. On completion of the works that Terram will be removed and the area which will be restored to grassland will be subject to seeding (using collated seed or an appropriate seed source). As outlined in the LEMP the area will be monitored and if considered appropriate the area will be re-seeded with a species diverse mix. Management will also be in place to eradicate weed species such as dock which can dominate areas. Areas of trees and shallow rooted shrubs will be planted to replace habitat lost (also required to screen the SEC as part of the landscape mitigation).		
		Removed pylon – availability to create /restore habitats	Habitat within Wogden foot LWS will be restored and reinstated in accordance with measures as outlined in the LEMP and shown on the landscape masterplans. A mosaic of habitat will be reinstated within the former pylon footprint as detailed on landscape plans and post construction monitoring and management undertaken to restore the habitat to former LWS condition.		
Western Moors LWS	County	Temporary habitat disturbance to access and remove Pylons 4ZO164R, 4ZO163 and 4ZO162.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
		Loss of 0.79 ha of dry heath/ acid grassland habitat and 0.78 ha of semi improved grassland. Habitat reinstatement included as part of the embedded mitigation will reinstate the area beneath pylons and OHL which have been removed by the Proposed Project.			
Habitats					
Semi-improved Neutral and semi-improved acid grassland	Local	Temporary loss of 0.78 ha of semi improved neutral grassland at Pylon 4ZO163 and 0.05 ha to access Pylon 4ZO154A during restringing works.	As committed to via CEMP and LEMP – Reinstatement of grassland on completion of works as part of embedded mitigation.	Negligible Temporary Short Term	Not significant
Broadleaved Woodland/Scrub (including coniferous plantation).	Local	Minor pruning may be required to access and remove pylon during the removal phase of the Proposed Project. No tree will require removal (except where already assessed for Pylon 4ZO158 within Wogden Foot LWS). Minor pruning along AP3 to facilitate the removal of Pylon 4ZO164R and the SEC.	No additional mitigation required.	Negligible Temporary Short Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
Habitats located beneath former removed pylons and OHL	up to District	Enhanced habitat conditions following removal of eight pylons and associated OHL.	Habitat reinstatement included as part of the embedded mitigation will reinstate the area beneath pylons and OHL which have been removed by the Proposed Project. Additional measures such as supplementary planting and seedling following consultation with landowner/managers will be undertaken to reinstate habitat appropriate to the surrounding land use.	Minor Beneficial Permanent Long Term	Not significant
Species					
Breeding Birds	Local – County	Disturbance and displacement of nesting birds during OHL removal works. All detailed in the Project Wide section of the LEMP, embedded mitigation will ensure that vegetation clearance will avoid the nesting season (March – August, inclusive) or pre-clearance nesting bird checks to avoid active nests.	No additional mitigation required.	Minor adverse Temporary Short Term	Not significant
Bats – Foraging and Commuting	District (Daubenton's) Local (All other species)	Disturbance during OHL removal phase. Embedded mitigation outline within the CEMP and LEMP including restriction hours of works and control of artificial lighting.	No additional mitigation required.	Minor adverse Temporary Short Term	Not significant

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
Construction of replacement Pylon 4ZO157R - During Construction					
Statutory Designated Sites					
Statutory Designated Sites	International/ European/ National	No predicted direct or indirect effects beyond those already assessed for other components of the Proposed Project.	No additional mitigation required	No change	Not significant
Non-Statutory Designated Sites					
Wogden Foot LWS	County	Re-stringing works between replacement pylon and SEC gantries across River Don and Wogden Foot LWS. Tree pruning (approximately 0.18 ha) required beneath new OHL's to provide safe clearance.	Embedded measures as set out in the CEMP and LEMP will be adopted to ensure reduction of tree pruning to safe minimum and to protect retain trees.	Negligible Adverse Temporary Short Term	Not significant
Western Moors LWS	County	No predicted direct effects upon Western Moors LWS from this component of the Proposed Project. Disturbance effects upon designating species of birds will be no greater than those considered for other components either in combination or individually.	No additional mitigation required	No change	Not significant
Habitats					

Feature	Importance	Sources of effect	Additional Mitigation (above embedded mitigation)	Magnitude and duration of residual effect	Significance of Residual Effect
Trees/Scrub	Local	Minor tree pruning may be required to facilitate access for the construction of the replacement pylon, but no trees will be removed.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Running water and riparian habitat	Local	Potential indirect effects upon River Don during pylon construction works. With embedded mitigation, including the incorporation of a buffer zone, as detailed in the CEMP there is no potential for indirect effects to occur.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant
Species					
Aquatic Invertebrates and Fish	Local	Potential indirect effects upon River Don during pylon construction works. With embedded mitigation there is no potential for indirect effects to occur.	No additional mitigation required.	Negligible Adverse Temporary Short Term	Not significant