



Humber Low Carbon Pipelines

Preliminary Environmental Information Report
Volume II Chapter 7 Ecology and Biodiversity
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nationalgrid

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7. Ecology and Biodiversity

7.1 Introduction

- 7.1.1 This Chapter reports the results of the preliminary assessment of the potential impacts and effects of the Project on Ecology and Biodiversity and describes:
- Relevant, legislation, policy and guidance;
 - Engagement undertaken to date;
 - The proposed assessment methodology and associated significance criteria;
 - Preliminary baseline conditions;
 - Potential impacts of construction, operation, and decommissioning;
 - Potential design, mitigation, and enhancement measures;
 - Summary of the preliminary assessment of potential significant effects; and
 - Next steps.
- 7.1.2 This Chapter is supported by four appendices: baseline information is detailed within the Preliminary Ecological Appraisal (PEA) (Appendix 7.2 (Volume III)), Reptile technical appendix (Appendix 7.3 (Volume III)) and Intertidal and Marine technical appendix (Appendix 7.4 (Volume III)); and a draft Conservation Strategy (Appendix 7.1 (Volume III)) has been prepared to underpin the approach to design, mitigation, and enhancement.
- 7.1.3 This assessment considers the simultaneous construction of a dual pipeline system (one for carbon dioxide and one for hydrogen), as well as the associated Above Ground Installations (AGIs). The majority of the carbon dioxide pipeline will be up to 600 mm (24”) nominal diameter and the hydrogen pipeline will be up to 900 mm (36”) nominal diameter. This is referred to as the Base Case in this Preliminary Environmental Information Report (PEIR). Also under consideration is the possibility of deploying a larger carbon dioxide pipeline, with a diameter up to 750 mm (30”) (with the hydrogen pipeline remaining the same diameter as within the Base Case). This is referred to in this PEIR as Sensitivity 1. Further details regarding the Base Case and Sensitivity 1, as well as the diameter and capacity of the pipelines are provided in Sections 2.3 and 2.4 of Chapter 2: Project Description (Volume II). This Chapter assesses the impacts and effects associated with the Base Case. It is anticipated that the types of potential impacts for the Base Case and Sensitivity 1 will be the same, although the magnitude of impacts may differ. A full assessment of Sensitivity 1 will be undertaken and recorded within the Environmental Statement (ES) if the larger carbon dioxide pipeline diameter is taken forward into the Development Control Order (DCO) application.
- 7.1.4 This Chapter (and its associated figures and appendices) is intended to be read as part of the wider PEIR.

7.2 Legislation, policy and guidance

7.2.1 A summary of the following legislation and policy relating to protected species and habitats is provided within Appendix 7.2 (Volume III):

- Wildlife and Countryside Act 1981 (as amended) (Ref 7.1);
- The Conservation of Habitats and Species Regulations 2010 (as amended) (Habitats Regulations) (Ref 7.2);
- Countryside and Rights of Way Act 2000 (Ref 7.3);
- Natural Environment and Rural Communities Act 2006 (Ref 7.4);
- Protection of Badgers Act 1992 (Ref 7.5); and
- The National Planning Policy Framework (NPPF) (Ref 7.6).

7.2.2 A summary of additional international, national, and local legislation, planning policy and guidance relevant to the Ecology and Biodiversity assessment for the Project is set out below.

Legislation

Environment Act 2021 (Ref 7.7)

7.2.3 The Environment Act 2021 introduces a mandatory requirement for biodiversity net gain (BNG) (due to be published in November 2023) for terrestrial Nationally Significant Infrastructure Projects (NSIPs) accepted for examination from “no later than 2025” (but widely estimated to be November 2025) to ensure that they enhance biodiversity and create new green spaces for local communities to enjoy. Integrating BNG into the planning system will provide a step change in how planning and development is delivered. There is also a strong focus on delivering environmental net gain. This would preferably be achieved onsite, however there are options to deliver these gains offsite and this would be demonstrated via the Biodiversity Metric 3.1 (Ref 7.8), the key tool to calculate BNG. Works to deliver BNG can be carried out either on or offsite or through the purchase of biodiversity credits from the Secretary of State and then maintained for at least 30 years after the development has completed. The Project’s approach to pursuing opportunities for securing measurable net gains for biodiversity and for the wider environment (including but not limited to BNG calculations) is presented within the Conservation Strategy (Appendix 7.1 (Volume III)). This approach is in line with the principles of a Nature Recovery Network as outlined in the 25 Year Plan for the Environment (Ref 7.9) (produced as a requirement of the Environment Act 2021) which will deliver “*more habitat; in better condition; in bigger patches that are more closely connected*”.

The Hedgerows Regulations 1997 (Ref 7.10)

7.2.4 The Regulations aim to protect important hedgerows (criteria for which are detailed in the Regulations) in the countryside from damage and destruction. The Project will address these matters through sensitive design and appropriate mitigation as detailed in the Conservation Strategy (Appendix 7.1 (Volume III)).

Marine and Coastal Access Act 2009 (Ref 7.11)

- 7.2.5 The Act provides a system of marine management and established the Marine Management Organisation (MMO). It includes a marine planning system with provisions for the Government's general policies for the marine environment, and for marine plans. It also changed the system of marine licensing, and modified the way licensing, conservation and fisheries rules are enforced, while providing for the designation of conservation zones and an Exclusive Economic Zone for England and Wales. The system for managing migratory and freshwater fish was amended by this Act and it enabled recreational access to the English coast.
- 7.2.6 The Project will ensure that the impact assessment provides an all-encompassing approach that conforms with all relevant policies and is in accordance with the East Inshore and Offshore marine plans, taking into account environmental and socio-economic considerations. The Project will also ensure that sensitive design considers the presence of, and assesses the potential for likely significant effects on Marine Conservation Zones (MCZs) and European protected sites. This information will allow the MMO to assess the required conditions of the marine licence.

Policy

Overarching National Policy Statement for Energy (2011) (EN-1) (Ref 7.12)

- 7.2.7 Section 4.3 (Habitats and Species Regulations) details the requirement for the decision maker to consider whether the project may have a significant effect on a European site. The Project will address this through undertaking a Habitats Regulations Assessment (HRA) to inform the ES.
- 7.2.8 Section 4.10 (Pollution control and other environmental regulatory regimes) outlines the use of a pollution control framework and the assumption that the implementation of relevant pollution control and environmental regulation to minimise the impact of pollution on biodiversity will be enforced by the relevant regulator. The Project will address pollution control measures in a Construction Environmental Management Plan (CEMP).
- 7.2.9 Section 5.3 (Biodiversity and geological conservation) outlines the considerations for the Environmental Impact Assessment (EIA) and advises that '*development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives*'. It also places importance on aged and veteran trees advising that their loss should be avoided. The Project will address these matters through sensitive design and appropriate mitigation as detailed in the Conservation Strategy (Appendix 7.1 (Volume III)).

Draft Overarching National Policy Statement for Energy (2021) (EN-1) (Ref 7.13)

- 7.2.10 Section 4.2 (Environmental Principles) outlines the scope of the EIA, HRA and requirement for the consideration of alternatives to the Project.
- 7.2.11 Section 4.5 (Environmental and Biodiversity Net Gain) outlines the recommendation for environmental and BNG (assessed using the most current version of the DEFRA metric) as part of the Project '*where possible*'. Section 4.5 states that '*although achieving biodiversity net gain is not currently an obligation on applicants, a proposed amendment to the Environment Bill, would mean the Secretary of State may not grant an application for Development Consent Order (DCO) unless satisfied that a biodiversity gain objective*

is met in relation to the development to which the application relates. The biodiversity gain objective will be set out in a biodiversity gain statement. Normally these statements will be included within National Policy Statements (NPS) but the amendment allows for the statement to be published separately where a review of an NPS has begun before the proposed amendment comes into force. This would be the case with the energy NPS, should the amendment come into force. As outlined in the Conservation Strategy (Appendix 7.1 (Volume III)), the Project intends to deliver 10% BNG for areas of permanent land take (i.e. AGI locations) in line with anticipated net gain requirements of the Environment Act 2021.

- 7.2.12 Section 4.11 (Pollution Control and Other Environmental Regulatory Regimes) outlines the use of a pollution control framework and the assumption that the implementation of relevant pollution control and environmental regulation to minimise the impact of pollution on biodiversity will be enforced by the relevant regulator. The Project will address pollution control measures in a CEMP.
- 7.2.13 Section 5.4 (Biodiversity and Geological Conservation) advises that *'the design process should embed opportunities for nature inclusive design'* and that the Project should aim to contribute to BNG in line with the ambition set out in the 25 Year Environment Plan (6.14). The Project will address this in the Conservation Strategy (Appendix 7.1 (Volume III)).
- 7.2.14 Section 5.4 also states that *'sites identified, or required, as compensatory measures for adverse effects on other HRA sites'* should be *'given the same protection as sites covered by the Habitat's Regulations'*, implying that any land identified/used by other Projects to compensate for impacts to European Sites should be included within the HRA. This will be taken into account when producing the HRA.
- 7.2.15 Section 5.4 also states that the Applicant should demonstrate that *'the timing of construction has been planned to avoid or limit disturbance to birds during the breeding season'*. This will be taken into account during Project design.

National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (2011) (EN-4) (Ref 7.14)

- 7.2.16 Section 2.21 (Gas and Oil Pipelines Impacts: Biodiversity, Landscape and Visual) which states that *'in circumstances where the habitat to be crossed contains ancient woodland, trees subject to a Tree Preservation Order, or hedgerows subject to the Hedgerows Regulations 1997, the applicant should consider whether it would be feasible to use horizontal direct drilling under the ancient woodland or thrust bore under the protected tree or hedgerow and the [decision maker] should consider requiring this, where not included in the proposal'*. This has been taken into account during Project design and there are no areas of Ancient Woodland within the Proposed Order Limits (see Table 7.4) and trenchless techniques will be considered for any areas with Tree Preservation Orders (TPOs).

Draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (2021) (EN-4) (Ref 7.15)

- 7.2.17 The text in Section 2.21 (Gas and Oil Pipelines Impacts: Biodiversity, Landscape and Visual) remains unchanged from the current National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (Ref 7.14).

A Green Future: Our 25 Year Plan to Improve the Environment (2018) (Ref 7.16)

- 7.2.18 The Plan sets out the UK Government’s goals for improving the environment to achieve clean air, clean and plentiful water, thriving plants and wildlife, a reduced risk of harm from environmental hazards such as flooding and drought, using resources from nature more sustainably and efficiently and enhanced beauty, heritage and engagement with the natural environment. This will be achieved by (for example):
- Restoring 750,000 ha of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term;
 - Creating or restoring 500,000 ha of wildlife-rich habitat outside the protected site network, focusing on priority habitats as part of a wider set of land management changes providing extensive benefits; and
 - Increasing woodland in England by 12% cover by 2060 – this equates to planting 180,000ha by 2042.
- 7.2.19 The goals within the Plan have been (and will continue to be) taken into account in the design and development of the Conservation Strategy (Appendix 7.1 (Volume III)) which aims to deliver strategic habitat creation and biodiversity enhancement at a landscape scale i.e. benefitting an area larger than the Proposed Order Limits through well-planned connectivity and design.

The UK Post-2010 Biodiversity Framework (2012) (Ref 7.17)

- 7.2.20 The Framework outlines how the four governments of the UK will work together to achieve the Aichi targets and EU Biodiversity Strategy. The Framework is based on five strategic goals:
- Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society;
 - Reduce the direct pressures on biodiversity and promote sustainable land use;
 - To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity;
 - Enhance the benefits to all from biodiversity and ecosystems; and
 - Enhance implementation through participatory planning, knowledge management and capacity building.
- 7.2.21 The Framework will be refreshed to align with a Post-2020 Global Biodiversity Framework once adopted (following Part 2 of the UN Biodiversity Conference (COP-15) to be held in December 2022).
- 7.2.22 The goals within the Framework and the overarching vision that “*by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people*” have been (and will continue to be) taken into account in the design and development of the Conservation Strategy (Appendix 7.1 (Volume III)) which aims to reinstate any temporary habitat loss to equal or better value than those affected, compensate for any permanent habitat loss and deliver strategic habitat creation and biodiversity enhancement at a landscape scale.

East Riding Local Development Plan 2021 – 2029 (Ref 7.18)

- 7.2.23 The Local Plan seeks to retain and enhance the East Riding’s high quality environment. Policy ENV 4: Conserving and enhancing biodiversity and geodiversity emphasises that development proposals should further the aims of the Local Biodiversity Action Plan (BAP), Nature Improvement Areas and other landscape scale biodiversity initiatives. In addition, proposals should seek to deliver BNG, with a particular focus on Priority Habitats and Species and Local Sites, and ‘*safeguard, enhance, create and connect habitat networks*’. These matters will be addressed through implementation of the Conservation Strategy (Appendix 7.1 (Volume III)).

North Lincolnshire Core Strategy 2011 (Ref 7.19)

- 7.2.24 Policy CS17: Biodiversity aims to safeguard protected sites, maintain and promote a ‘*North Lincolnshire network of local wildlife sites and corridors, links and stepping stones between areas of natural green space*’ and ensure that development retains, protects and enhances features of biological interest by delivering a net gain in biodiversity. These matters will be addressed through implementation of the Conservation Strategy (Appendix 7.1 (Volume III)).

Central Lincolnshire Local Plan 2012 – 2036 (Ref 7.20)

- 7.2.25 Policy LP21: Biodiversity and Geodiversity requires that all development should ‘*protect, manage and enhance the network of habitats, species and sites of international, national and local importance (statutory and non-statutory) including sites that meet the criteria for selection as a Local Site*’ and seek to deliver a net gain in biodiversity. It also recommends a landscape scale approach to biodiversity protection and enhancement, with developments contributing to ‘*Biodiversity Opportunity Mapping evidence to maintain a network of wildlife sites and corridors to minimise habitat fragmentation and provide opportunities for species to respond and adapt to climate change*’ with a particular focus on habitats and species set out in the Lincolnshire Biodiversity Action Plan. These matters will be addressed through implementation of the Conservation Strategy (Appendix 7.1 (Volume III)).

Selby District Core Strategy Local Plan 2013 (Ref 7.21)

- 7.2.26 Policy SP18: Protecting and Enhancing the Environment requires that development ensures that ‘*the high quality and local distinctiveness of the natural and man-made environment will be sustained*’ by safeguarding designated sites, ensuring developments enhance and manage features of biological interest through the delivery of BNG. These matters have been addressed during design development with BNG proposals documented in the Conservation Strategy (Appendix 7.1 (Volume III)).

Hull Local Plan 2016 to 2032 (Ref 7.22)

- 7.2.27 Policy 43: Green infrastructure and the Green Network (which includes the River Humber) requires that ‘*development within or in close proximity to the Green Network should seek to protect and/or enhance the functionality and connectivity of the corridor*’. This has been addressed during project design with trenchless techniques being adopted to cross the Humber Estuary (see Table 7.4).

Guidance

Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) (Ref 7.23)

- 7.2.28 The guidance (herein referred to as the 'CIEEM guidelines') aims to promote good practice and a scientifically transparent approach to Ecological Impact Assessment (EclA), provide a common framework to EclA to promote better communication and closer cooperation between ecologists involved with EclA and provide decision-makers with relevant information about the likely ecological effects of a project. CIEEM guidelines have been, and will continue to be, followed during the EIA.

National Planning Practice Guidance (2019) (Ref 7.24)

- 7.2.29 The *National Planning Practice Guidance* (NPPG) is a supplementary suite of guidance prepared by the Ministry of Housing, Communities & Local Government covering a variety of topics including *Natural Environment – Biodiversity, geodiversity and ecosystems*.
- 7.2.30 Paragraph 010 (Reference ID: 8-010-20190721, Revision date: 21-07-2019) states that: '*planning authorities and neighbourhood planning bodies can work collaboratively with other partners, including Local Nature Partnerships, to develop and deliver a strategic approach to protecting and improving the natural environment based on local priorities and evidence. Equally, they need to consider the opportunities that individual development proposals may provide to conserve and enhance the biodiversity and geodiversity, and contribute to habitat connectivity in the wider area (including as part of the Nature Recovery Network).*' This collaborative, strategic approach to mitigation and enhancement at a landscape-scale (i.e. wider area) underpins the Conservation Strategy (Appendix 7. (Volume III)).

District Level Licensing (2022) (Ref 7.25)

- 7.2.31 District Level Licensing (DLL) is a Natural England led alternative approach to mitigation licensing to develop sites which could affect great crested newts. The approach aims to increase the number of great crested newts by providing new/better habitats in targeted areas to benefit their wider population.
- 7.2.32 The DLL approach includes strategic area assessment, the identification of risk zones and strategic opportunity area maps. Where a DLL scheme is in place, developers can make a financial contribution to strategic, habitat compensation (documented within an Impact Assessment and Conservation Payment Certificate (IACPC)) instead of applying for a separate licence or carrying out individual detailed surveys.
- 7.2.33 Natural England have agreed that the DLL approach to Great Crested Newt (GCN) conservation can be taken forward for the Project (see Section 7.6.25).
- 7.2.34 The principles of the DLL (i.e. strategic habitat compensation/mitigation informed by a risk-based approach to the presence of protected and notable species) also underpins the Conservation Strategy which is focused on delivering landscape-scale biodiversity benefits for a range of habitats and species.

DEFRA Licensing Policies (2016) (Ref 7.26)

- 7.2.35 Four innovative policies were created to encourage planners and conservationists to think on a wider, landscape scale – channelling biodiversity investment to be bigger, better and more joined-up. Collectively the policies were designed to facilitate greater

benefits for European Protected Species (EPS) by prioritising habitat creation over mitigation and focusing on landscape scale conservation. The policies were also designed to benefit developers by reducing seasonal delays associated with surveying and mitigation, programme uncertainty and costs. Of the policies, the following three are of note to the Project:

- **Licensing Policy 1: Greater flexibility in excluding and relocating EPS from a development site**

DEFRA considers that compensation for EPS impacts can be delivered without the need to relocate or exclude populations, where: exclusion or relocation measures are not necessary to maintain the conservation status of the local population; the avoid-mitigate-compensate hierarchy is followed; and compensation provides greater benefits to the local population than would exclusion and/or relocation.

- **Licensing Policy 2: Greater flexibility in the location of newly created habitats that compensate for habitats that will be lost**

If the licensing tests are met and the avoid-mitigate-compensate hierarchy is followed, off-site compensation measures may be preferred to on-site compensation measures, where there are good reasons for maximising development on the site of EPS impacts, and where an off-site solution provides greater benefit to the local population than an on-site solution.

- **Licensing Policy 4: Reduced survey data requirements where the impacts of the development can be confidently predicted**

Natural England will be expected to ensure that licensing decisions are properly supported by survey information, taking into account industry standards and guidelines. It may however accept a lower than standard survey effort where: the costs or delays associated with carrying out standard survey requirements would be disproportionate to the additional certainty that it would bring; the ecological impacts of development can be predicted with sufficient certainty; and mitigation and compensation will ensure that the licensed activity does not detrimentally affect the conservation status of the local population of any EPS.

7.2.36 Supported by the Conservation Strategy (Appendix 7.1 (Volume III)), the Project intends to deliver improved conservation outcomes by adopting a similar outcome-based approach to EclA and applying the principles of these policies to all Important Ecological Features (IEFs) (rather than just EPS as they were designed). This will be achieved by placing greater effort on compensation (rather than mitigation) and endorsing Net Gain that demonstrates greater benefit in return for proportionality of survey effort where the ecological impacts of development can be predicted with sufficient certainty.

7.3 EIA Scoping Opinion and engagement

Response to the EIA Scoping Opinion

7.3.1 An EIA Scoping Opinion (Appendix 1.2: EIA Scoping Opinion (Volume III)) was received by the Applicant from Planning Inspectorate (PINS) on 20 May 2022. A subsequent response from Natural England was received on 25 May 2022.

7.3.2 The responses to PINS and other stakeholders in relation to Ecology and Biodiversity and how these requirements will be addressed are set out in Annex A – Summary of EIA Scoping Opinion in relation to Ecology and Biodiversity.

- 7.3.3 PINS was in agreement with the matters to be scoped in/out of the EIA, with the exception of two IEFs (polecat (*Mustela putorius*) and pine marten (*Martes martes*)) which were requested to be scoped in.
- 7.3.4 Natural England requested that an additional Site of Special Scientific Interest (SSSI) (Manton and Twigmoor) be scoped into the EIA and this will be discussed during ongoing stakeholder engagement, along with the approach to ecological survey and assessment as outlined in the Conservation Strategy (Appendix 7.1 (Volume III)).
- 7.3.5 In addition to PINS and Natural England, the following stakeholders provided comments specific to Ecology and Biodiversity;
- Canal and River Trust;
 - Environment Agency;
 - Hull City Council;
 - North Yorkshire County Council and Selby District Council; and
 - Forestry Commission.

Engagement undertaken to date

- 7.3.6 Engagement to date has taken place within the following stakeholders:
- Natural England;
 - MMO;
 - Humber Nature Partnership;
 - Greater Lincolnshire Nature Partnership;
 - Environment Agency;
 - Buglife;
 - Wildlife Trusts;
 - Royal Society for the Protection of Birds (RSPB);
 - Local authorities;
 - Canal and River Trust; and
 - Environment Bank
- 7.3.7 Annex B – Summary of engagement undertaken provides a summary of all the engagement undertaken to inform the assessment to date.
- 7.3.8 Engagement has focused on development of the Conservation Strategy, particularly survey scopes and methodologies, obtaining records/data to inform the ecological baseline and identifying opportunities for biodiversity enhancement (specifically seeking opportunities to provide greater benefit). Stakeholders are in support of the approach documented within the Conservation Strategy.
- 7.3.9 Further engagement throughout the EIA process will be undertaken with the stakeholders listed above. During the assessment phase, requests will be made to obtain relevant additional desk study data to further inform our understanding of the baseline conditions and potential opportunities for enhancement.

7.3.10 The Project will continue to consult with these statutory bodies and key stakeholders to further update them on the survey scope (e.g. where the alternative ecology survey approach requires species-specific surveys to inform impact assessment), inform them of preliminary survey results and to ensure that statutory consultees and key stakeholders are in agreement with the approach that has been adopted for ecological appraisal for the project, particularly with regard to proposed mitigation measures and the approach to biodiversity enhancements documented in the Conservation Strategy (Appendix 7.1 (Volume III)).

7.4 Assessment methodology and significance criteria

Study Area

7.4.1 The CIEEM 2018 guidelines (Ref 7.23) require the assessment to be focused on ‘Zones of Influence’ (Zol) - defined as being the area over which changes arising from construction, operation and decommissioning could lead to ecologically significant impacts.

7.4.2 The Zol varies between different IEFs and was formalised through professional judgement of perceived impact pathways, best practice guidelines and engagement with stakeholders. The Zol for any IEF may be refined as more information becomes available regarding the potential ecological effects of the Project and through consideration of presence, distribution and abundance. For the purpose of this PEIR, a precautionary Zol has been identified for each IEF and is shown in Table 7.1 and on Figures 7.1 - 7.3 (Volume IV).

Table 7.1: Zones of Influence

Important Ecological Feature	Zone of Influence
Internationally designated nature conservation sites e.g. Special Area of Conservation (SAC), Special Protected Area (SPA) and Ramsar sites	2 km buffer around the Proposed Order Limits (extending to 5 km for sites designated for bats and wintering/passage birds), and 250 m from the affected road network ¹ .
Nationally designated nature conservation sites e.g. National Nature Reserve (NNR), SSSI, Local Nature Reserve (LNR) and MCZ	2 km buffer around the Proposed Order Limits (extending to 5 km for sites designated for bats and wintering/passage birds), and 250 m from the affected road network ¹ .
Non-statutory designated nature conservation sites	2 km buffer around the Proposed Order Limits and extending 250 m from the affected road network ¹ .
Priority habitats (including Ancient Woodland), protected, notable and non-native invasive species (NNIS)	2 km buffer around the Proposed Order Limits and extending 250 m from the affected road network ¹ .

¹ Where this distance is greater. See Section 6.3 in Chapter 6 (Air quality) for affected road network criteria.

Important Ecological Feature	Zone of Influence
Arboricultural features (e.g. TPOs and veteran trees)	Proposed Order Limits

Baseline data collection

Desk study

7.4.3 Baseline conditions of the Project were established during a desk study using the sources detailed in Part B of the Conservation Strategy (Appendix 7.1, Table 3.1 (Volume III)).

Site visits and surveys

7.4.4 Part B of the Conservation Strategy (Appendix 7.1 (Volume III)) details ecology survey scope and methods, with justification for which further field survey and assessment will be undertaken and the proposed methodologies. Results from these ecological surveys (once completed) will provide a robust baseline for the ES.

7.4.5 Table 7.2 details the surveys that have been (or will be) undertaken to establish the ecological baseline.

Table 7.2: Baseline surveys

Survey	Date/s of survey	Purpose of survey
Extended Phase 1 habitat survey	9 – 13 & 23 – 27 May 2022; 27 – 28 & 30 June 2022; and 1, 4 – 8 & 18 – 22 July 2022.	To inform PEA, identify key ecological constraints and form the basis for pre-construction BNG calculations.
Phase 2 botanical surveys (e.g. National Vegetation Classification (NVC) and Hedgerow Regulations Survey)	Hedgerow Regulations Survey: 4 – 8 & 18 – 22 July 2022; 22 – 26 August 2022; and 5 – 9 September 2022.	To identify Important Hedgerows.
Intertidal and Marine	Intertidal walkover, intertidal infauna and sediment sampling: 15 – 16 June 2022	To establish the intertidal biotopes and presence and assemblages of intertidal species at the Easington landfall.
Invertebrates (terrestrial and aquatic)	Protected invertebrates and/or notable invertebrate assemblages are considered to be restricted due to the	

Survey	Date/s of survey	Purpose of survey
	<p>unsuitable nature of the majority of the habitat (predominantly structurally poor agricultural fields) within the Proposed Order Limits. For the purposes of this assessment, presence is assumed in all suitable habitat.</p> <p>The general approach to EclA for invertebrates is to ensure that the Project results in an increase in area of better-quality habitat (patch quality) than that affected by the Project and ensure that these habitats are well connected to the wider landscape. By adopting this approach to mitigation, it is proposed that the need for invertebrate surveys to inform impact assessment can largely be avoided and this will be determined following a screening exercise against the criteria outlined in Section 4.2 of the Conservation Strategy (Appendix 7.1 (Volume III)).</p> <p>Where a requirement for surveys to inform construction stage mitigation is identified (e.g. where construction activities pose a risk of killing/injuring protected species), this will be targeted towards a particular species or species group (see Conservation Strategy in Appendix 7.1 (Volume III) for further detail) in the appropriate survey season prior to site enabling and establishment works.</p> <p>This approach has been agreed with the Ecology Working Group (see Annex B – Summary of engagement undertaken</p>	
Fish	<p>A Technical Appendix for fish will be prepared in support of the ES within which all bodies of water affected by the Project will be categorised for fish habitat quality and the potential for utilisation by fish. This assessment will be used to agree survey and mitigation requirements with the Environment Agency.</p>	
Reptiles	<p>Large populations of reptiles are considered unlikely due to the unsuitable nature of the majority of the habitats (predominately structurally poor agricultural fields) within the Proposed Order Limits. For the purposes of this assessment, presence is assumed in all suitable habitat.</p> <p>It is proposed that surveys are undertaken during the appropriate survey season prior to site enabling works and</p>	<p>To establish the presence and assemblages of reptile species to inform type of mitigation during construction.</p>

Survey	Date/s of survey	Purpose of survey
	<p>site establishment works to inform construction stage mitigation.</p> <p>This approach has been agreed with the Ecology Working Group (see Annex B – Summary of engagement undertaken</p>	
Breeding Birds	<p>25 – 28 April 2022; 10 – 13, 17 – 20 & 24 – 27 May 2022; and, 7 – 10 & 21 – 24 June 2022.</p>	<p>Identify species assemblage in areas of importance (or potential importance) for breeding birds, particularly the presence of species listed on Annex 1 of the Birds Directive, Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), red or amber listed species, or notable assemblages of common bird species.</p>
Wintering/passage birds	<p>21 – 24 & 27 – 30 September 2021; 12 – 15, 18 – 22 & 25 – 29 October 2021; 8 – 12 & 23 – 26 November 2021; 7 – 10 & 13 – 17 December 2021; 10 – 14, 17 – 21 & 25 – 28 January 2022; 8 – 11, 22 – 24 & 28 February 2022; 1 – 3, 8 – 11 & 22 – 25 March 2022; 5 – 8 & 26 – 29 April 2022; and 1 – 4 & 15 – 18 August 2022.</p>	<p>Establish:</p> <ul style="list-style-type: none"> • A baseline regarding how passage and wintering bird communities utilise the Proposed Order Limits; • A list of bird species encountered and an estimate of the numbers of each bird species present within the Proposed Order Limits; and • Comparison of results with desktop data to identify any significant changes to the status of European designated sites.
Badger	<p>Badgers are prevalent in the local area and for the purposes of this assessment are assumed present in all suitable habitat.</p>	<p>Establish locations and classifications of badger setts to inform mitigation and/or licensing requirements during construction.</p>

Survey	Date/s of survey	Purpose of survey
	<p>It is proposed that surveys are undertaken during the appropriate survey season prior to site enabling works and site establishment works to inform construction stage mitigation.</p> <p>This approach has been agreed with the Ecology Working Group (see Annex B – Summary of engagement undertaken</p>	
Bats (roosts)	<p>Preliminary Roost Assessment:</p> <p>9 – 13 & 23 – 27 May 2022;</p> <p>27 – 28 & 30 June 2022; and</p> <p>1, 4 – 8 & 18 – 22 July 2022.</p> <p>Tree/structure inspections:</p> <p>11 – 15, 18 – 22 & 25 – 29 July 2022;</p> <p>8 – 12, 15 – 19 & 22 – 26 August 2022; and</p> <p>5 – 9 & 12 – 16 September 2022.</p> <p>Further tree/structure inspections are scheduled for winter 2022 where potential for hibernating bats has been identified.</p> <p>Emergence/re-entry surveys:</p> <p>23, 24, 30 and 31 August 2022; and</p> <p>6, 7, 13 and 14 September 2022.</p>	<p>Confirm the presence/likely absence of roosting bats within the Proposed Order Limits to inform mitigation and/or licensing requirements during construction.</p>

Survey	Date/s of survey	Purpose of survey
Bats (activity)	<p>Spring: 24 – 28 May 2022 (five locations)</p> <p>Summer: 21 – 25 July 2022 (five locations) and 12 – 16 August 2022 (1 location)</p> <p>Autumn: 2 – 6 September 2022 (six locations)</p>	<p>Establish:</p> <ul style="list-style-type: none"> • Baseline regarding bat species, importance and relative abundance within the Proposed Order Limits; • Likely ecological constraints to the Project including the presence of key commuting/foraging habitat within the Proposed Order Limits; and • Opportunities for ecological enhancement.
Otter	<p>Otters are widespread throughout the local area and for the purposes of this assessment, presence in all suitable habitat is assumed.</p> <p>It is proposed that surveys are undertaken during the appropriate survey season prior to site enabling works and site establishment works to inform construction stage mitigation.</p> <p>This approach has been agreed with the Ecology Working Group (see Annex B – Summary of engagement undertaken</p>	<p>Confirm the presence/likely absence of otter (<i>Lutra lutra</i>) holts and resting sites within the Proposed Order Limits to inform mitigation and/or licensing requirements during construction.</p>
Water Vole	<p>Water vole are widespread throughout the local area and for the purposes of this assessment, presence in all suitable habitat is assumed.</p> <p>It is proposed that surveys are undertaken during the appropriate survey season prior to site enabling works and</p>	<p>Confirm the presence/likely absence of water vole (<i>Arvicola amphibius</i>) burrows within the Proposed Order Limits to inform mitigation and/or licensing requirements during construction.</p>

Survey	Date/s of survey	Purpose of survey
	<p>site establishment works to inform construction stage mitigation.</p> <p>This approach has been agreed with the Ecology Working Group (see Annex B – Summary of engagement undertaken</p>	

Impact assessment methodology

7.4.6 The EclA will be undertaken in accordance with the CIEEM ‘Guidelines for Ecological Impact Assessment in the UK and Ireland’ (Ref 7.23). The CIEEM guidelines represent the current best practice for assessing the ecological impact of development projects.

Determining importance

7.4.7 The CIEEM guidelines (Ref 7.23) state the ecological features should be considered within a ‘defined geographical context’ (i.e. spatial scale) and recommends the following frame of reference:

- International and European;
- National;
- Regional;
- Metropolitan, County, vice-county or other Local Authority-wide area;
- River Basin District;
- Estuarine system/Coastal cell; and
- Local.

7.4.8 Assigning importance to ecological features is based on professional judgement informed by available guidance and information and (where necessary) expert advice.

7.4.9 Those ecological features of sufficient value to be considered in decision-making (i.e. those considered to be of ‘Local’ importance or above), and which it is considered could experience significant effects as a result of the Project (i.e. effects that could adversely affect the integrity of the habitat or the favourable conservation status of a species’ population), will be classified as IEFs and thus will be considered in the detailed assessment as outlined in the CIEEM guidelines (Ref 7.23). Other ecological features (i.e. those which are of less than ‘Local’ importance) will be scoped out, and not subject to any further assessment within the impact assessment.

7.4.10 In accordance with the CIEEM guidelines, where there is the potential for a breach of legislation in relation to protected species (regardless of their importance), those species are also considered an IEF.

- 7.4.11 Following identification and valuation of the IEF, it is then necessary to investigate potential impacts on those features to understand how they might be affected by the Project.

Characterising effects

- 7.4.12 The EclA will be based on an understanding of the likely activities associated with the Project, the biophysical changes that are predicted as a result of these activities and the area over which such effects might be experienced by different IEFs.
- 7.4.13 When describing ecological impacts and effects, reference will be made to the following characteristics:
- Positive or negative;
 - Extent;
 - Magnitude;
 - Duration (assessed as either 'short-term' (up to 1 year), 'medium-term' (1-10 years) or 'long-term' (greater than 10 years));
 - Frequency and timing; and
 - Reversibility.

Significance criteria

- 7.4.14 The assessment of likely significant environmental effects as a result of the Project will consider the construction, operational and decommissioning phases.
- 7.4.15 The assessment of significant effects on IEFs will be made using:
- Consideration of best practice/guidance;
 - Professional judgement;
 - Consideration of the baseline information obtained, the Project details and comments raised through stakeholder engagement;
 - Prediction of potential effects based on baseline information and the Project details;
 - Quantification of potential effects;
 - Identification of appropriate mitigation measures; and
 - Prediction of residual effects based on baseline information, the Project details and mitigation measures.
- 7.4.16 The significance of an effect on an IEF will be determined following an analysis of the factors that characterise the effect. The CIEEM guidelines (Ref 7.23) define significant effects as those that:
- '...either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general... In broad terms, significant effects encompass impacts on the structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution).'*

- 7.4.17 Significant effects, as defined by the CIEEM guidelines (Ref 7.23), are determined by assessing any deviation in baseline conditions of an IEF that may occur as a result of individual and cumulative impacts during the construction and operational phases of the Project.
- 7.4.18 Significance will be determined on the basis of a likely effect on the integrity or favourable conservation status of a feature, at a given geographic scale. The geographical scale at which an effect is significant can vary from the geographical importance of the ecological feature being assessed and in accordance with the CIEEM guidelines (Ref 7.23), and this will be a function of the assessment.

Assumptions and limitations

- 7.4.19 To ensure transparency within the EIA process, the following limitations and assumptions have been identified:
- The impact assessment will be based on the likely ecological conditions at the time of construction, operation and decommissioning;
 - Baseline surveys will be implemented as per the Conservation Strategy (Appendix 7.1 (Volume III)) unless otherwise agreed with relevant stakeholders;
 - Private residential, industrial and built-up land has not been surveyed in detail as it is assumed these areas will be excluded from development;
 - Ecology surveys are ongoing, with further survey and assessment work scheduled for 2022 in advance of submitting the DCO application. This PEIR has been prepared on the basis of survey results accrued to date. Results provided within the final ES may differ to those presented here; and
 - Land access to the entire Proposed Order Limits has not yet been available (see Figure 7.5 (Volume IV) for area currently not accessible and therefore assessed using desk-based information only). Ecology surveys will be undertaken during the appropriate survey window when access becomes available. In the event that access is granted after the survey-specific window has passed, and/or health and safety restrictions prevent a full ecological baseline assessment, a precautionary principle will be applied to the assessment of ecological features. The precautionary principle will assume a 'reasonable worst-case' scenario informed by professional experience and knowledge, desk-based information and available field-based evidence for any ecological feature unable to be fully surveyed. Utilising this approach will ensure that appropriate recommendations and/or mitigation are provided where required.

7.5 Baseline conditions

Existing baseline

- 7.5.1 Baseline conditions are reported within the PEA (Appendix 7.2 (Volume III)), the Reptile technical appendix (Appendix 7.3 (Volume III)) and the Intertidal and Marine technical appendix (Appendix 7.4 (Volume III)). Baseline data relating to protected, notable and NNIS is yet to be reviewed in detail. However, the results to date and relevant information from the above documents is summarised in Table 7.3.

Table 7.3: Baseline and determination of IEFs

IEF	Baseline	Importance
Humber Estuary	<p>The Proposed Order Limits extend across the Humber Estuary, which is designated as a SAC, SPA, Ramsar site and SSSI. These sites include marine components and have a shared boundary within the Proposed Order Limits (see Figure 7.1 (Volume IV)). This IEF also includes North Killingholme Haven Pits SSSI, Dawson City Claypits Nature Reserve, East Marsh Local Wildlife Site (LWS), Halton Marsh Clay Pits LWS, Killingholme Haven Pits Nature Reserve, Fort Paull Humber Grassland Candidate LWS and Paull Holme Strays Nature Reserve (see Figure 7.2 (Volume IV)).</p> <p>Features include: habitats, vascular plants, invertebrates, fish, and passage, breeding and non-breeding birds.</p>	International
Holderness Coast	<p>The Proposed Order Limits terminate at the Holderness Coast, extending into the sea to Mean Low Water Spring (MLWS). This IEF includes the intertidal and marine components of the Holderness Coast, sections of which are designated as the Greater Wash SPA (marine), Holderness Inshore MCZ and Dimlington Cliff SSSI (designated for geological features) (see Figure 7.1 (Volume IV)).</p> <p>Features include: habitats, invertebrates (crustaceans, molluscs), algae, sponges and other fauna including fish, and passage, breeding and non-breeding birds.</p>	International
River Derwent	<p>Situated upstream and outside of the Proposed Order Limits but dependent on the Humber Estuary (which is crossed by the Project) (see Figure 7.1 (Volume IV)). Designated a SAC and SSSI in its own right, the IEF also includes the Lower Derwent Valley SPA and Ramsar site.</p> <p>Features include: habitats, aquatic plants and a diverse range of fauna including: invertebrates, fish, otter and passage, breeding and non-breeding birds.</p>	International
Eastoft Meadow	<p>Situated outside of the Proposed Order Limits (see Figure 7.1 (Volume IV)) but immediately adjacent to the affected road network. Designated a SSSI for habitats and vascular plants.</p>	National
Messingham Sand Quarry	<p>Situated outside of the Proposed Order Limits and 1.3 km from the affected road network but with hydrologically connectivity to the Proposed Order Limits. Designated a</p>	National

IEF	Baseline	Importance
	<p>SSSI and including Messingham Northwest LWS and Messingham Sand Quarry (Nature Reserve (see Figures 7.1 and 7.2 (Volume IV))).</p> <p>Features include: habitats, invertebrates and breeding birds.</p>	
Low Wood	Situated outside of the Proposed Order Limits but within 45 m of affected road network. Designated as Low Wood, Barnetby le Wold LWS and supporting ancient woodland (see Figures 7.2 and 7.3 (Volume IV)).	National
Thomas Wood	Situated outside of the Proposed Order Limits but immediately adjacent to the affected road network. Designated as Thomas Wood LWS and supporting ancient woodland (see Figures 7.2 and 7.3 (Volume IV)).	National
Ashbyville	Situated outside of the Proposed Order Limits but immediately adjacent to the affected road network (see Figure 7.2 (Volume IV)). A LNR and LWS of note for its invertebrates and birds.	County
Other non-statutory designated sites situated within the Proposed Order Limits: 20 sites	<p>Barnetby Road Verges LWS; Black Hoe Plantation LWS; Brick Hills LWS; Broom Plantation LWS; Candley Beck, Westrum LWS; Chase Hill Wood LWS; Grasby Bottoms Green Lane LWS; Hatfield Waste Drain LWS; Hedon – Winestead Disused Railway Line LWS; Hodgson's Fields Nature Reserve; Keadby Boundary Drain LWS; New River Ancholme LWS; Oak Hill LWS; Old River Ancholme LWS; Pauper's Drain LWS; Stainforth and Keadby Canal Corridor LWS; Sweeting Thorns LWS; Three Rivers LWS; Warping Drain, Derrythorpe LWS; and West Common North Road LWS.</p> <p>These sites are shown on Figure 7.2 (Volume IV).</p>	County
Other non-statutory designated sites situated outside the Proposed Order Limits but with potential impact pathway: 39 sites	<p>Abbot's Lodge Grassland LWS; Alder Wood LWS; Asselby Island LWS; Beulah Wood LWS; Beckingham Shaw LWS; Black Walk Nook LWS; Brockholes SINC; Brocklesby Park LWS; Burkinshaw's Covert LWS; Butterwick Hale and Common LWS; Donkey Park South LWS; Faraway and Thirty Foot Drains LWS; First Wood North Field LWS; First Wood North LWS; First Wood South LWS; Folly Drain North LWS; Frodingham – Winestead Lane LWS; Greetwell North LWS; Greetwell South LWS; Hollym Carrs LWS; Holme Hall Golf Course LWS; Holme Lane Verge LWS; Howsham Barff Wood LWS; Keadby Warping Drain LWS; Keadby Wet Grassland LWS; Keadby Wetland LWS; Kelsey Hill Gravel Pits Historic LWS; Melton Ross Quarry LWS; Messingham Lakes</p>	County

IEF	Baseline	Importance
	<p>LWS; Newland Ings, Newland SINC; Newstead Drain LWS; North Engine Drain, Belton LWS; Out Newton – Skeffling LWS; River Torne LWS; South Cloister Covert LWS; South Engine Drain, Belton LWS; South Soak Drain, Keaby LWS; Station Road Field LWS; and Swinster Lane Field LWS.</p> <p>These sites are shown on Figure 7.2 (Volume IV).</p>	
<p>Arboricultural features (TPOs and veteran trees)</p>	<p>A total of six TPOs (three groups and three standalone trees) have been identified within the Proposed Order Limits. These features are shown on Figure 7.3 (Volume IV).</p> <p>The Woodland Trust Ancient Tree Inventory provided locations of two ancient, veteran or notable trees within the survey area. These are both located within a woodland parcel situated within the Proposed Order Limits but unaffected by construction activities.</p>	<p>Regional (veteran tree)</p> <p>Local (TPO)</p>
<p>Terrestrial and Freshwater Habitats (including recognised areas of priority habitat) situated outside of the above IEFs</p>	<p>The habitats within the Proposed Order Limits are predominantly arable and grazed pasture (improved) fields bordered by ditches and/or hedgerows (some of which are considered Important under the Hedgerows Regulations 1997). The Proposed Order Limits cross several watercourses, most notably the River Humber, River Trent and the River Aire (see Chapter 17: Hydrology and land drainage - Section 17.5 (Volume II)). Small woodland copses occur infrequently throughout the Proposed Order Limits.</p> <p>Recognised areas of priority habitat situated within the Proposed Order Limits (but outside the above IEFs) include: Coastal and floodplain grazing marsh, Coastal saltmarsh, Deciduous woodland, Lowland dry acid grassland, Mudflats, Traditional orchard and Open Mosaic Habitat. These areas are shown on Figure 7.3 (Volume IV).</p> <p>Additional habitats recorded within the Proposed Order Limits include scattered trees, scrub, unimproved acid and neutral grassland, semi-improved neutral grassland, marshy grassland, tall ruderal, ponds, artificial quarry/spoil/refuse tip, ephemeral/short perennial vegetation, bare ground and buildings.</p> <p>Current results of the Extended Phase 1 Habitat Survey are shown in Figure 7.4 (Volume IV).</p>	<p>Negligible to County</p>

IEF	Baseline	Importance
Notable plants and NNIS	<p>Notable plants have been identified within the Proposed Order Limits, typically associated with the recognised areas of priority habitat and/or the above mentioned IEFs.</p> <p>Occasional stands of NNIS are present throughout the Proposed Order Limits².</p>	Up to County
Invertebrates	Notable terrestrial and aquatic invertebrates are located within the Zol.	Up to Regional
Fish	This IEF excludes fish associated with IEFs noted above. Records exist of protected and notable records of fish species within the Zol, and the Proposed Order Limits extend across several watercourses of varying size.	Up to Regional
Amphibians	Similar to reptiles, terrestrial habitats within the Proposed Order Limits are largely unsuitable for amphibians and limited to field margins and rank semi-natural habitat e.g. rough grassland and scrub; however, amphibians including great crested newt (<i>Triturus cristatus</i> ; GCN) are widespread and localised, supported in aquatic habitats such as ponds and wetlands.	Up to Regional
Reptiles	Habitats within the Proposed Order Limits are largely unsuitable for reptiles; however, distinct habitat patches and intermittent pockets of suitable habitat are sporadically distributed across the area. These are largely associated with linear features (such as railway/roadside embankments/verges, hedgerows and water features) and a few areas of rank semi-natural habitat, for example rough grassland and scrub.	Up to County
Birds	This IEF excludes birds associated with IEFs noted above. Much of the habitat within the Proposed Order Limits has the potential to support passage, breeding and/or non-breeding birds.	Up to County
Badger	Desk study and field survey observations have confirmed that badger (including the presence of setts) are widespread throughout the Proposed Order Limits and local area.	Less than Local

² Importance of NNIS is N/A and has been included here for legislative purposes only

IEF	Baseline	Importance
Bats	Several features have been identified within the Proposed Order Limits which may provide suitable habitat for roosting, foraging and commuting bats. Desk study data suggests that low numbers of mainly common and widespread bat species are found in the local area.	Up to Regional
Otter	Desk study and field survey observations have confirmed that otter are widespread throughout the Proposed Order Limits and local area.	Up to Regional
Water vole	Desk study and field survey observations have confirmed that water vole are widespread throughout the Proposed Order Limits and local area with a high concentration of records near to Drax, Crowle, Keadby, Derrythorpe, and Paull Holme.	Up to County
Polecat	The desk study returned two records of polecat within the Zol including a “field observation” within the Proposed Order Limits near Messingham.	Up to County
Pine marten	The desk study returned a single record of pine marten located approximately 1.3 km west of the Proposed Order Limits near Messingham.	Up to Regional
Other notable mammals	Other relevant notable mammals include brown hare and hedgehog (which are widespread throughout the Proposed Order Limits and local area), with low numbers of harvest mouse.	Less than Local

Future baseline

- 7.5.2 In the event the Project does not proceed, it is considered likely that habitats within the Proposed Order Limits would remain similar to those of the current baseline. The current land use is predominantly agricultural, and it is unlikely that any change to ecological conditions would occur unless agricultural practices (or other current management regimes) cease, in which case natural habitat succession would be expected.
- 7.5.3 It is reasonable to assume that if the Project does not proceed and current conditions are maintained, species abundance and distribution is unlikely to change significantly.
- 7.5.4 The Open Mosaic Habitat at Keadby Ash Tip does not appear to be subject to any current management and as an early successional habitat, is likely to be replaced with ruderal vegetation and scrub/trees over time.
- 7.5.5 Future developments within the Proposed Order Limits are likely to be limited given the rural setting and would likely be localised, industrial-related developments on land close to built up areas such as Scunthorpe, Immingham and Drax. The ES will include assessment of cumulative impacts (which includes future development consents/approvals) as detailed in Chapter 20: Assessment of Cumulative Effects (Volume II).

7.6 Design development, impact avoidance and embedded mitigation

- 7.6.1 A hierarchical approach to mitigation is being adopted through Project design which seeks to avoid adverse impacts on IEFs in the first instance through an iterative approach to design, e.g. informing alignment to avoid sensitive receptors where possible. In areas where avoidance is not possible, measures would be implemented to prevent or reduce potentially significant negative effects. Where residual effects remain, measures to compensate against negative effects may also be required, e.g. habitat creation to offset impacts associated with habitat loss and fragmentation where these cannot be avoided.
- 7.6.2 Where known at the current stage of design, details have been provided below with respect to design, mitigation and enhancement measures. It is important to note that these should be treated as preliminary and are likely to evolve as the design develops.
- 7.6.3 Mitigation measures are undertaken as a response to anticipated adverse effects and can be described as:
- **Primary** – modifications to the location or design made during the pre-application phase that are an **inherent** part of the Project, and do not require additional action to be taken.
 - **Secondary** – actions where potential effects could not be entirely designed out that would require **foreseeable** activity in order to achieve the anticipated outcome.
 - **Tertiary** – actions that are **inexorable**, i.e. that would be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects.

- 7.6.4 Based on the results of survey and assessment, measures that lead to a reduction in adverse effects (i.e. avoidance, mitigation or compensation) have been identified prior to an evaluation of the effects of impacts (i.e. these measures constitute ‘embedded mitigation’ which includes both primary and tertiary mitigation measures).
- 7.6.5 Primary and tertiary mitigation measures are described below; however, secondary mitigation measures are described in Section 7.8 along with enhancement measures.

Primary Mitigation

- 7.6.6 Primary mitigation measures associated with the Project include consideration of ecological features (and additional ones identified through site investigation/survey) to inform the selection and appraisal of Project options, and the methods used during construction. The Scoping Route that underpinned the Proposed Order Limits was identified at the options appraisal stage as having the lowest level of potential effects on the ecological features. IEFs (and additional ones identified through site investigation/survey) have been further considered throughout the development of the Proposed Order Limits and have influenced the design to help further reduce potential effects. Primary mitigation measures relating to Project design are detailed within Chapter 3: Consideration of alternatives (Volume II).
- 7.6.7 The direct impacts of the Project include the clearance of habitats for construction (e.g. reduction of habitat size and fragmentation). In the first instance, impact avoidance measures have been employed throughout the development of the Proposed Order Limits. This has been developed further through field survey, micro-siting the route and/or using trenchless techniques to avoid/minimise losses of higher quality habitat. Table 7.4 provides a list of IEFs where direct impacts have been avoided through use of trenchless techniques and/or avoidance measures.

Table 7.4: IEFs where direct impacts have been avoided through Primary Mitigation

Designated sites	Habitats
Humber Estuary	TPOs
Hatfield Waste Drain LWS	Coastal saltmarsh
New River Ancholme LWS	Traditional orchard
Three Rivers LWS	Maritime cliff and slope
Brick Hills LWS	River Trent
Hodgson's Fields Nature Reserve	Mudflats
Oak Hill LWS	River Aire
Stainforth and Keadby Canal Corridor LWS	
Chase Hill Wood LWS	
Keadby Boundary Drain LWS	
Old River Ancholme LWS	

Designated sites	Habitats
Ancient Woodland	

- 7.6.8 In addition to the above, particular attention has been (and would continue to be) made to avoid priority habitats, woodland habitats, ponds and individual mature trees as far as possible. Following review of survey data, in response to consultation and as design develops, the use of trenchless crossings will be considered at additional IEFs and the location of AGIs would be micro-sited to avoid habitats/features of note.
- 7.6.9 With regards to linear features that could not be avoided, the focus has been on minimising the construction footprint within these areas by crossing them perpendicular to the feature, as far as possible. For hedgerows, the Project would actively avoid hedgerow trees and target existing gaps (within defunct hedgerows or existing access gates). For watercourses, the Project would seek to avoid crossing meanders/wider areas and mature trees.

Tertiary Mitigation

- 7.6.10 At this stage, the baseline conditions are not fully understood, and thus tertiary mitigation is limited. However, mitigation, compensation and enhancement measures are likely to be required in relation to relevant policies, the legal protection afforded to certain species and to ensure that NNIS are not spread as a result of the Project.
- 7.6.11 Full details of all tertiary or essential mitigation measures, along with the mechanism for delivery, will be provided within the ES. It is proposed that a Register of Commitments will also be prepared to list environmental actions and commitments (also described in this Chapter) as set out within the CEMP, Decommissioning Environmental Management Plan (DEMP) and the Conservation Strategy (Appendix 7.1 (Volume III)).
- 7.6.12 Species- and habitat-specific mitigation and the requirement for pre-construction surveys and/or monitoring will be developed during production of the ES. In the event that there is a likelihood of adverse effects on protected species, the Project would only proceed under a licence granted by Natural England. Where certain IEFs have been identified or where there is potential for them, and impacts cannot be avoided during construction, Reasonable Avoidance Measures (RAMs) and/or Precautionary Working Methods (PWMs) may also be developed and implemented under supervision by an Ecological Clerk of Works (ECoW).
- 7.6.13 Construction and de-commissioning impacts would be designed out/minimised as far as possible through, for example, minimising land-take/habitat loss and locating access tracks/haul roads and site compound/material storage areas outside of ecologically sensitive sites/habitats (such as statutory and non-statutory designated sites and priority habitats). Clearly demarcated, dedicated access routes would be provided during construction/de-commissioning and any areas required for temporary works would be reinstated on completion.
- 7.6.14 The CEMP and DEMP would be developed using best environmental practice techniques with the following minimum standards:
- Measures must be taken to prevent the spread of NNIS. Appropriate exclusion zones will be demarcated and enforced around areas of NNIS (informed by an up-to-date site walkover) to avoid spread or propagation. Appropriate biosecurity measures will be documented in a method statement and implemented during

construction to prevent the spread of NNIS. Workers will be equipped with the necessary equipment, Personal Protective Equipment (PPE) and substances to implement biosecurity control measures, including effective hygiene and sanitation practices. This would most frequently comprise disinfectant tablets, sprayers, and brushes to clean and disinfect equipment and PPE prior to entering/leaving NNIS exclusion zones;

- Measures must be taken to prevent dust and other emissions from construction affecting land beyond the Proposed Order Limits;
- Appropriate preventative measures, for example silt fencing, cut-off ditches and silt mats, would be proactively installed to prevent sediment run-off and silt dispersal into watercourses from construction/decommissioning areas, exposed ground, material stockpiles and newly reinstated ground;
- Chemicals and fuels must be stored in secure containers located away from watercourses or water bodies. Spill kits must be available;
- Excavations must be covered or securely fenced (with no potential access points beneath fencing) when not in use (e.g. overnight) to prevent entrapment of animals. Alternatively, the excavation should include measures, such as a battered edge, that allows animals to escape;
- Noise and vibration would be controlled and kept to the minimum necessary; and
- Lighting used for construction/decommissioning must be switched-off when not in use and positioned so as not to spill on to adjacent land or retained vegetation within the Proposed Order Limits. Lighting should be directional, away from IEFs and kept to a minimum so that the surrounding landscape remains unlit.

Habitats

- 7.6.15 Where habitat removal is required to facilitate construction (excluding AGIs), this would be reinstated. Reinstatement would aim to provide habitats of equal or better value to those affected. Permanent land take (i.e. for AGI construction) could be compensated with habitat creation that provides a Net Gain (see Section 7.8 and Appendix 7.1 (Volume III)) and reduces the impacts associated with permanent and temporary habitat loss. Accordingly, hedgerows scheduled for removal during construction would be reinstated and, where appropriate, would be improved from their baseline condition e.g. defunct or species-poor hedgerows would be replanted so as to achieve species-rich and continuous hedgerows, once re-established.
- 7.6.16 Construction Exclusion Zones (CEZ) would be established prior to construction to define working areas and protect habitats outside of the Proposed Order Limits, and retained habitats within, throughout development. A minimum buffer of 10 m (where practicable) would be retained around IEFs to reduce any potential direct or indirect impacts on the species and habitats associated with them and the CEZ may need to be extended beyond 10 m for certain IEFs, such as woodlands and trees, for example to protect root protection zones. The location of CEZs will be defined within the CEMP/DEMP and informed by a pre-construction/pre-decommissioning ecological walkover (to identify any changes to the baseline) and a tree survey (to British Standard (BS) 5837:2012 (Ref 7.27)).
- 7.6.17 Where tree surgery to the crown or roots is necessary, this would be undertaken in accordance with BS 3998:2010 (Ref 7.28); however, the Project, and specific construction tasks, would aim to retain as many trees as possible.

- 7.6.18 Measures would be incorporated into construction to ensure the protection of water quality. In particular, attention would be paid to ensuring protection of water quality for crossed watercourses where open-cut construction is used. A Pollution Control Plan would be implemented during the construction phase which would include best practice construction site drainage management and pollution prevention measures in line with Construction Industry Research and Information Association (CIRIA) guidance (Ref 7.29). All in-channel workings required during construction would be carried out sensitively under a method statement with the appropriate approvals in place.

Fauna

- 7.6.19 The avoidance of periods of particular sensitivity is considered best practice for a range of protected and notable species and construction activities would be planned accordingly. For example, vegetation removal would be undertaken outside of the bird breeding season (where possible) to avoid potential impacts on nesting birds. If vegetation clearance is required within the bird breeding season, all such vegetation would be checked by an ecologist/ECoW for the presence of nesting birds no more than 48 hours prior to clearance. Wherever nests are found, an appropriate CEZ of approximately 15 m would be established around the nest and no works would be permitted within that area until the ecologist/ECoW provides confirmation that the nest is no longer in use and work can proceed.
- 7.6.20 Where construction/decommissioning activities are found to conflict with the presence of other protected or notable species, method statements will be produced and (where appropriate) construction would only proceed under a derogation licence issued by Natural England. Natural England will only issue a derogation licence in relation to a development proposal if the licensed actions maintain the favourable conservation status of a species, or provide a conservation benefit. Thus, overall impacts are anticipated to be neutral/beneficial.
- 7.6.21 Works in areas with potential/confirmed presence of protected species, will be guided or overseen by an ECoW.
- 7.6.22 Part B of the Conservation Strategy (Appendix 7.1 (Volume III)) details the proposed ecology survey scopes and methods, with an explanation for the proposed timing of further field surveys and assessments that have been/will be undertaken. Results from these ecological surveys (once completed) will provide a robust baseline for the ES. In addition, pre-construction and pre-decommissioning ecological checks/surveys would be carried out where required.
- 7.6.23 It is not presently known whether any Potential Roost Features (PRFs) would be lost to construction. Surveys are being undertaken to confirm this and if the loss of any tree/structure with a PRF is required, this would be replaced with an artificial roost site on existing retained trees locally.
- 7.6.24 A method statement will be developed to ensure that any flumes installed within watercourses to facilitate open-cut construction include suitable measures to allow the passage of animals (i.e. otters, water vole and fish) throughout construction, accounting for fluctuating water levels. For otter and water vole this may comprise an adjacent dry pipe. In-channel works would be supported by the use of a cofferdam, and for certain watercourses this would require fish rescue to be carried out under licence from the Environment Agency. This would entail using stop nets or equivalent to enclose the area of work and electric fishing the area a minimum of three times. Rescued fish would then be released a suitable distance downstream. The duration of open-cut construction within watercourses would be kept to a minimum to minimise impacts.

- 7.6.25 Natural England have approved of the use of a DLL approach to mitigate impacts on GCN. Implementation of the DLL will be carried out and overseen by Natural England.
- 7.6.26 The 'embedded mitigation' (primary and tertiary) and implementation of DLL is considered satisfactory for the following IEFs: amphibians (including but not limited to GCN), badger and 'other notable mammals' (i.e. brown hare, hedgehog and harvest mouse). No specific mitigation measures (over and above primary and tertiary) are required for these IEFs and they are not considered further within this report (with the exception of acknowledging the potential need for a badger derogation licence in paragraph 7.8.10).

7.7 Preliminary assessment of potential impacts

- 7.7.1 This Section details the preliminary assessment of potential impacts for the Project during construction, operation and decommissioning phases; these are further summarised in Table 7.5.

Construction

- 7.7.2 As a largely below-ground development (excluding AGI locations), the Project would result in predominantly short-term and temporary impacts to facilitate construction. As such, the majority of IEFs would only be subject to potential impacts during construction.
- 7.7.3 Detailed construction information (such as, storage areas, and duration of works) and any associated enabling works (such as vegetation removal to facilitate access), lighting and drainage are unknown at this stage, although it has been assumed these would be required. Further, the assessment does not take account of specific mitigation measures that would be developed as impacts are better understood; this is particularly relevant to fragmentation effects and potential changes to air quality and hydrological conditions. It is envisaged that the ES will incorporate the recommendations of the other relevant environmental topics to inform a thorough solution.
- 7.7.4 Impacts associated with construction have been separated into two categories: land take (permanent and temporary) and pollution risk.

Land Take

- 7.7.5 Impacts from land take are anticipated across all IEFs (excluding those listed within Table 7.4) within the Proposed Order Limits and include direct physical habitat loss which could result in harm/mortality of individuals, and indirect impacts (including fragmentation and reduction/loss of IEF quality or function). Indirect impacts could also be felt on IEFs situated outside of the Proposed Order Limits where they are connected to/dependent on IEFs within the Proposed Order Limits.
- 7.7.6 Impacts from land take would be largely temporary (with permanent land take associated with AGIs only), though it is acknowledged that the temporal effects of temporary habitat loss would vary for different IEFs (i.e. how long the reinstated IEF/habitat takes to establish and reach the target condition would vary significantly).
- 7.7.7 Specific impacts from land take include:
- Although a trenchless technique would be used to install the pipelines at the Holderness Coast landfall location, the exact technique is currently undecided

and it may be necessary to construct a drilling rig, trench and/or sheet pile cofferdam at the offshore exit point (see Chapter 2: Project Description - Section 2.8 (Volume II)), resulting in temporary, localised direct impacts to the habitats within the Greater Wash SPA. This would affect an area of approximately 700 sqm (which accounts for <0.00002% of the total area of the Greater Wash SPA and <0.0003% of the total area of the Holderness Inshore MCZ);

- Loss and disturbance of land that is functionally linked to IEFs, notably land used by the birds associated with the Humber Estuary;
- An open-cut technique would be used to cross a number of watercourses including Pauper's Drain LWS, Warping Drain, Derrythorpe LWS and Candley Beck, Westrum LWS. Similarly, there are areas of recognised priority habitats within the Proposed Order Limits where habitat loss and/or fragmentation may occur. Of particular note are Sweeting Thorns LWS, Black Hoe Plantation LWS, Broom Plantation LWS, Barnetby Road Verges LWS, Grasby Bottoms Green Lane LWS, Hedon – Winestead Disused Railway Line LWS, West Common North Road LWS and Keadby Ash Tip. Open-cut construction would also result in direct impacts to a large number of hedgerows (including "Important" hedgerows);
- Works to install pipelines below IEFs (i.e. trenchless techniques) could lead to significant vibration or loading that could adversely impact the stability of the IEF; and
- Impacts to notable plants, intertidal and subtidal infauna, fish and shellfish invertebrates (aquatic and terrestrial), reptiles, birds (passage, breeding and non-breeding) and mammals (bats, otter, polecat, pine marten and water vole), could also occur from habitats loss, fragmentation, and direct harm/mortality of individuals.

Pollution Risk

7.7.8 Direct and indirect impacts associated with pollution are of relevance to all IEFs and include:

- Construction pollution (e.g. sediment run-off/silt dispersal/fuel or chemical spill) or discharge of sediment/slurry/drilling fluid during trenchless construction, including potential for dispersal downstream (in the event of discharge to a watercourse);
- Other pollution impacts (such as dust, noise, lighting, vibration and visual);
- Increased deposition of nitrogen and other airborne pollutants during the construction period due to a deterioration in air quality from plant/vehicle emissions and increased traffic volumes on the affected road network; and
- Causing the spread/introduction of NNIS.

7.7.9 Such events could cause direct disturbance leading to reduction, loss (of habitat and function) and/or fragmentation of habitat IEFs within the Proposed Order Limits. Indirect impacts could also be felt on IEFs situated outside of the Proposed Order Limits where they are hydrologically connected to/dependent on IEFs within the Proposed Order Limits and/or are connected to the affected road network. For example, a pollution event during construction impacting the Humber Estuary could also indirectly impact the River Derwent by affecting movements of migratory fish species.

7.7.10 With regards to flora and fauna, such events could cause disturbance, harm and mortality which for fauna could result in changes in behaviour, reduced fitness and abandonment of features upon which they are reliant.

Operation

7.7.11 Operational impacts are restricted to AGI locations only and include lighting and noise (at the Pump Facility only (see Chapter 12: Noise and vibration - Section 12.8 (Volume II)).

7.7.12 Operational impacts are therefore limited to the following IEFs:

- Operational lighting and noise from the Pump Facility could impact passage/wintering birds that are a designating feature of the Greater Wash SPA. Operational lighting at Saltend AGI Options A-D and Hedon AGI Options A and B could also impact roosting passage/wintering birds within the Humber Estuary and functionally linked land.
- Nocturnal species may be impacted by operational lighting at AGI locations.

7.7.13 Such events could cause direct disturbance, changes in behaviour, reduced fitness and abandonment of features upon which they are reliant.

Decommissioning

7.7.14 As the pipelines would be retained below ground once decommissioned, decommissioning impacts are restricted to the dismantling of AGIs and pumping facility and include temporary land take (for compounds) and direct and indirect impacts associated with pollution such as:

- Sediment run-off/silt dispersal/fuel or chemical spill), including potential for dispersal downstream (in the event of discharge to a watercourse);
- Other pollution impacts (such as dust, noise and visual); and
- Increased deposition of nitrogen and other airborne pollutants during the decommissioning phase due to a deterioration in air quality from plant/vehicle emissions and increased traffic volumes on the affected road network.

7.7.15 Such events could cause direct disturbance leading to reduction, loss (of habitat and function) and/or fragmentation of habitat IEFs within the Proposed Order Limits. Indirect impacts could also be felt on IEFs situated outside of the Proposed Order Limits where they are hydrologically connected to AGI locations and/or are connected to the affected road network. For example, construction pollution impacting Hedon Haven Clough (adjacent to Saltend AGI Options A and B) could impact the Humber Estuary, if not contained.

7.7.16 With regards to flora and fauna, such events could cause disturbance, harm and mortality which for fauna could result in changes in behaviour, reduced fitness and abandonment of features upon which they are reliant.

7.8 Mitigation and enhancement measures

7.8.1 This Section sets out the preliminary avoidance, mitigation and compensation measures which are likely to be required to address the potential impacts to IEFs. It follows the primary and tertiary mitigation measures set out in Section 7.6 and accordingly is limited to the information known at this stage of the design. Full details will be provided within the ES.

Construction

- 7.8.2 Specific construction mitigation measures (i.e. secondary mitigation which goes beyond the embedded mitigation in Section 7.6) will be identified within the ES following survey/assessment and further design amendments. It will include specific/strategic habitat provision (which will be detailed within the Conservation Strategy) and any measures necessary to satisfy HRA, Natural England derogation licences, Environment Agency permits and SSSI assent (where required).

Habitat IEFs

- 7.8.3 Specific habitat mitigation will be identified within the ES and will include any reinstatement, replacement and enhancement measures. The Applicant is committed to adopting a sustainable approach to development by pro-actively taking measures to ensure that the Project leaves the environment in a better condition than it was before development, i.e. delivering Net Gain. Net Gain measures include enhancements to biodiversity and natural capital which are over and above the measures which would be implemented to reduce the effects arising from development (i.e. requirements for avoidance, mitigation and compensation). Net Gain includes BNG, and for this Project focuses on strategic habitat enhancement and creation, aiming to identify and implement opportunities to improve patch quality and habitat connectivity and align with national nature recovery objectives and projects.
- 7.8.4 Part A of the Conservation Strategy (Appendix 7.1 (Volume III)) provides further information on the mitigation hierarchy approach to the Project. Mitigation and enhancement measures, including monitoring and maintenance requirements will be documented within the Conservation Strategy. In principle, mitigation measures will focus on seeking to reduce, as far as practical, biodiversity losses and minimising impacts to retained habitats.
- 7.8.5 It is intended that the Conservation Strategy is a 'live' document that is updated throughout Project evolution as a greater understanding of IEFs is achieved and through engagement with stakeholders. As outlined in Section 7.6.11, environmental actions and commitments to deliver the Conservation Strategy will be secured via a Register of Commitments.

Species IEFs (General)

- 7.8.6 Method statements will be developed where appropriate and habitats would be enhanced by reinstating to equal or better condition than pre-construction, enhancing unaffected habitats in proximity of construction activities and/or providing strategic habitat creation to expand and better connect habitats.
- 7.8.7 With regards to derogation licences, the Natural England DLL scheme is proposed for amphibians and thus the Project would contribute (via a conservation payment) towards district level conservation targets for great crested newts (that would also benefit other amphibians); however, derogation licences may be required for badger, bats, otter and water vole (see below).

Birds

- 7.8.8 Although the extent of impact is unknown at this stage, the requirement for bird mitigation (for breeding, passage and non-breeding birds) is anticipated as widespread effects to large areas of suitable habitat is unavoidable. Measures are likely to include:

- Sensitive timing of works and disturbance mitigation measures;
- Installation of severance prevention along flight paths;
- Provision of artificial nest sites;
- Reinstatement of affected habitat to a condition equal or better than it was prior to construction; and
- Enhancement of unaffected habitats in proximity of construction activities and strategic habitat creation to expand and better connect populations.

7.8.9 It is acknowledged at this stage that uncertainty remains regarding the extent and achievability of such measures, particularly to satisfy HRA; however, with regards to designated features of European sites, the HRA will ensure that construction only proceeds if the overall coherence of the site(s) is protected.

Badger

7.8.10 Pre-construction badger surveys are proposed and the Project would seek to avoid badger setts; however, where this is not possible, a derogation licence would be obtained to allow the closure of setts. Where there is a loss of setts, the proposal could include creating artificial setts as a compensation measure.

Bats

7.8.11 The Project would seek to avoid known/suitable roost sites; however, the loss of trees/structures with roosting features cannot be ruled out at this stage. Where known roost sites cannot be avoided, a derogation licence would be obtained to allow the removal of roosts. Where there is a loss of roosts, the proposal will include providing replacement roost sites as a compensation measure.

7.8.12 As noted within the embedded mitigation in Section 7.6, it is proposed that bat boxes are provided to replace PRFs. Additional measures for bats could include:

- Pre-construction roost surveys;
- Sensitive timing of works and disturbance mitigation measures;
- Soft felling of all trees that support PRFs;
- Veteranisation of retained trees which includes creating gaps and cracks with a chainsaw;
- The retention and reinstatement of PRFs from felled trees (for example by reinstating a felled tree trunk within a retained section of hedgerow or fixing the feature, like a bat box, to a retained tree);
- Installation of severance prevention along bat flight lines; and
- Enhancement of known and potential bat flight lines by reinstating habitats in equal or better condition than pre-construction, enhancement of unaffected habitats in proximity of construction activities and/or strategic habitat creation to expand and better connect habitats.

Otter

7.8.13 Construction activities would seek to avoid impacts to watercourses and time works to avoid disturbance to resting sites whilst occupied. Nevertheless, temporary impacts to habitats utilised by otter are anticipated during construction and, accordingly, pre-construction surveys would be undertaken along with the installation of severance prevention along linear watercourses. In the unlikely event that any otter resting places are unavoidable, the loss would be mitigated for under licence from Natural England.

Water Vole

- 7.8.14 Although the extent of impact is unknown at this stage, the requirement for a water vole licence is anticipated as the species is widespread and effects to multiple watercourses are unavoidable. Natural England will only issue a licence in relation to a development proposal if the licensed action is going to provide a conservation benefit for water voles. Thus, the Project could only proceed where impacts are beneficial to this IEF.
- 7.8.15 It is acknowledged at this stage that uncertainty remains as to whether conservation benefits can be achieved; however, measures are likely to include:
- Pre-construction surveys;
 - Sensitive timing of works and disturbance mitigation measures;
 - Installation of severance prevention along linear watercourses;
 - Reinstatement of affected habitat to a condition equal or better than it was prior to construction; and
 - Enhancement of unaffected habitats in proximity of construction activities and strategic habitat creation to expand and better connect populations.

Operation

- 7.8.16 As outlined in Chapter 2: Project description - Section 2.9 (Volume II), low-level lighting would be provided at the AGIs but would only be used when people are on site working in low light conditions. This would ensure lighting is in use for the minimum period required.
- 7.8.17 The Conservation Strategy (an outline version of which is provided within Appendix 7.1 (Volume III)) will be developed as part of the ES to include (as appropriate) monitoring requirements of any habitat creation/reinstatement and protected, notable species and/or NNIS to determine operational effects upon receptors, measure success of mitigation measures and identify further mitigation/remedial measures or enhancements to be deployed post-construction.

Decommissioning

- 7.8.18 The same mitigation measures are assumed for the decommissioning phase as implemented for the construction phase.

7.9 Summary of the preliminary assessment of potential significant effects

7.9.1 Table 7.5 below summarises the preliminary assessment of effects associated with the Project.

Table 7.5: Summary of the preliminary assessment of potential significant effects

IEF	Stage	Description of potential impact/change	Mitigation	Potential significant effects
Humber Estuary and Holderness Coast	Construction	<p>Direct impact to IEF or land functionally linked to it from:</p> <ul style="list-style-type: none"> Physical disturbance i.e. habitat loss, fragmentation, and reduction/loss of IEF quality or function, and disturbance/harm/mortality of associated species; and Pollution risk - direct and indirect impact to habitat and species from construction pollution, changes in air quality, dust, noise, vibration and visual and lighting pollution. 	<p>Embedded mitigation with CEMP and Conservation Strategy to include:</p> <ul style="list-style-type: none"> Pre-construction surveys (where required); Mitigation strategies and method statements; Habitat reinstatement, creation and enhancement; and ECoW presence <p>HRA/ES to document additional measures to reduce significance of pollution (e.g. construction hoarding and habitat provision during construction period).</p> <p>Project would only proceed if it could be demonstrated that it had passed the tests of the Habitats Regulations.</p>	Uncertain but likely Not Significant following implementation of mitigation.
	Operation	Pollution risk to species from lighting and noise.	Conservation Strategy	Not Significant following implementation of mitigation;

IEF	Stage	Description of potential impact/change	Mitigation	Potential significant effects
				to be developed within the Conservation Strategy and Noise chapter for ES.
	Decommissioning	Pollution risk - indirect impact to habitat and species from construction pollution, changes in air quality, dust, noise and visual pollution.	Embedded mitigation with DEMP to include mitigation strategies and method statements	Not Significant following implementation of mitigation.
River Derwent	Construction	Pollution risk – indirect impact to functionally linked land from construction pollution and vibration.	Embedded mitigation with CEMP to include mitigation strategies and method statements	Not Significant following implementation of mitigation.
	Operation	N/A	N/A	N/A
	Decommissioning	Pollution risk – indirect impact to functionally linked land from construction pollution.	Embedded mitigation with DEMP to include mitigation strategies and method statements.	Not Significant following implementation of mitigation.
Eastoft Meadow	Construction	Pollution risk – indirect impact from air quality changes from affected road network.	Embedded mitigation with CEMP to include mitigation strategies and method statements.	Uncertain but likely Not Significant following implementation of mitigation. To be further assessed once affected road network and magnitude of affect is fully understood.
	Operation and Decommissioning	N/A	N/A	N/A
Messingham Sand Quarry	Construction	Pollution risk – indirect impact from construction pollution.	Embedded mitigation with CEMP to include mitigation strategies and method statements.	Uncertain but likely Not Significant following implementation of mitigation.
	Operation	N/A	N/A	N/A
	Decommissioning	Pollution risk - indirect impact to habitat and species from construction pollution	Embedded mitigation with DEMP to include mitigation	Uncertain but likely Not Significant given the distance from AGI (1.8 km) and

IEF	Stage	Description of potential impact/change	Mitigation	Potential significant effects
			strategies and method statements	following implementation of mitigation.
Low Wood, Thomas Wood and Ashbyville	Construction	Pollution risk – indirect impact from air quality changes from affected road network.	Embedded mitigation with CEMP to include mitigation strategies and method statements.	Uncertain but likely Not Significant following implementation of mitigation. To be further assessed once affected road network and magnitude of affect is fully understood.
	Operation and Decommissioning	N/A	N/A	N/A
Other non-statutory designated sites situated within the Proposed Order Limits: 20 sites	Construction	<p>Direct impact to IEF from:</p> <ul style="list-style-type: none"> physical disturbance i.e. habitat loss, fragmentation, and reduction/loss of IEF quality or function, and disturbance/harm/mortality of associated species within 10 sites (Pauper’s Drain LWS, Warping Drain, Derrythorpe LWS, Candley Beck, Westrum LWS, Sweeting Thorns LWS, Black Hoe Plantation LWS, Broom Plantation LWS, Barnetby Road Verges LWS, Grasby Bottoms Green Lane LWS, Hedon – Winestead Disused Railway Line LWS and West Common North Road LWS); and Pollution risk - direct and indirect impact to habitat and species from construction pollution, changes in air 	<p>Embedded mitigation with CEMP and Conservation Strategy to include:</p> <ul style="list-style-type: none"> Pre-construction surveys (where required); Mitigation strategies and method statements; Habitat reinstatement, creation and enhancement; and ECoW presence <p>Additional and site-specific mitigation measures to be developed in conjunction with stakeholders for sites where physical disturbance is possible.</p>	Uncertain but likely Not Significant following implementation of mitigation. To be further assessed once affected road network and magnitude of affect is fully understood.

IEF	Stage	Description of potential impact/change	Mitigation	Potential significant effects
		quality, dust, noise, vibration and visual and lighting pollution.		
	Operation	N/A	N/A	N/A
	Decommissioning	Pollution risk - indirect impact to habitat and species from construction pollution, changes in air quality, dust, noise and visual pollution within three sites (Pauper's Drain LWS, Sweeting Thorns LWS and Black Hoe Plantation LWS).	Embedded mitigation with DEMP to include mitigation strategies and method statements	Not Significant following implementation of mitigation.
Other non-statutory designated sites situated outside the Proposed Order Limits but with potential impact pathway: 40 sites	Construction	Pollution risk – indirect impact from construction pollution and air quality changes from affected road network.	Embedded mitigation would ensure site compounds/haul roads avoid watercourses.	Uncertain but likely Not Significant following implementation of mitigation. To be further assessed once affected road network and magnitude of affect is fully understood.
	Operation	N/A	N/A	N/A
	Decommissioning	Pollution risk - indirect impact to habitat and species from construction pollution and changes in air quality from affected road network within 14 sites (Asselby Island LWS, Black Walk Nook LWS, Burkinshaw's Covert LWS, Donkey Park South LWS, Greetwell North LWS, Greetwell South LWS, Holme Hall Golf Course LWS, Holme Lane Verge LWS, Keadby Warping Drain LWS, Keadby Wet Grassland LWS, Keadby Wetland LWS,; Kelsey Hill Gravel Pits Historic LWS, Out Newton – Skeffling	Embedded mitigation with DEMP to include mitigation strategies and method statements	Not Significant following implementation of mitigation.

IEF	Stage	Description of potential impact/change	Mitigation	Potential significant effects
		LWS and South Soak Drain, Keadby LWS)		
Arboricultural features (TPOs)	Construction	Pollution risk - indirect impact from construction pollution, dust and changes in air quality from affected road network	Embedded mitigation with CEMP to include mitigation strategies and method statements	Not Significant following implementation of mitigation.
	Operation	N/A	N/A	N/A
	Decommissioning	Pollution risk - indirect impact from construction pollution, dust and changes in air quality from affected road network.	Embedded mitigation with DEMP to include mitigation strategies and method statements.	Not Significant following implementation of mitigation.
Terrestrial and Freshwater Habitats (including recognised areas of priority habitat) situated outside of the above IEFs and Protected and Noteworthy Species (Flora, Invertebrates, Fish, Reptiles, Birds, Bats, Otter, Polecat, Pine marten and Water vole)	Construction	<p>Direct and indirect impact to habitat and species from:</p> <ul style="list-style-type: none"> Physical disturbance i.e. habitat loss, fragmentation, and reduction/loss of habitat IEF quality or function, and disturbance/harm/mortality of species IEF; and Pollution risk i.e. construction pollution, changes in air quality, dust, noise, vibration and visual and lighting pollution. 	<p>Embedded mitigation with CEMP and Conservation Strategy to include:</p> <ul style="list-style-type: none"> Pre-construction surveys (where required); Mitigation strategies and method statements; Habitat reinstatement, creation and enhancement; and ECoW presence. <p>Additional mitigation measures specific to birds to be identified in the HRA.</p>	Not Significant following implementation of mitigation.
	Operation	Disturbance to nocturnal species from operational lighting.	Conservation Strategy	Not Significant; however, assumes production of adequate lighting design that minimises light spill by

IEF	Stage	Description of potential impact/change	Mitigation	Potential significant effects
	Decommissioning	Direct and indirect impact to habitat and species from: <ul style="list-style-type: none"> • Physical disturbance i.e. habitat loss, fragmentation, and reduction/loss of habitat IEF quality or function, and disturbance/harm/mortality of species IEF; and • Pollution risk i.e. construction pollution, changes in air quality, dust, noise, vibration and visual and lighting pollution • Landscaping/reinstatement following decommissioning provides an opportunity to enhance biodiversity compared to the operational phase. 	Embedded mitigation with DEMP and Conservation Strategy to include: <ul style="list-style-type: none"> • Pre-construction surveys (where required); • Mitigation strategies and method statements; • Habitat reinstatement, creation and enhancement; and • ECoW presence. 	directing lighting away from adjacent habitats. Uncertain but likely Not Significant following implementation of mitigation; further assessment required following development of DEMP, pre-decommissioning survey, species specific technical appendices and method statements (where required).
NNIS	Construction	Disturbance from site and vegetation clearance causing the spread of NNIS.	Eradication/control to be adopted where/if NNIS occur within construction areas. Invasive Species Management Plan to be developed as necessary and would form part of CEMP.	Not Significant following implementation of mitigation; pre-construction survey and Invasive Species Management Plan required.
	Operation and Decommissioning	N/A	N/A	N/A

7.10 Next steps

Engagement

- 7.10.1 The Ecology and Biodiversity assessment and Conservation Strategy will be further developed and refined based on any relevant responses to Statutory Consultation and/or ongoing engagement.

Surveys

- 7.10.2 Further survey work is required in 2022 (as detailed in Table 7.2) in order to obtain a full and complete baseline with which to inform the EclA. Any gaps in the baseline (e.g. where access restrictions or health and safety considerations prevent surveys from being undertaken) will be considered and addressed along with specific mitigation measures as part of the assessments included within the ES.
- 7.10.3 In addition, it is recognised that ecological conditions may change before the start of construction, and up-to-date survey information will be required (as detailed in Table 7.2) to inform licensing requirements and species-specific mitigation during construction.
- 7.10.4 Any specific monitoring requirements (including the means of recording monitoring data) will be determined following detailed design and documented within the Conservation Strategy and secured via the Register of Commitments.
- 7.10.5 Should Natural England derogation licence(s) be required, then post-development monitoring may be a condition of the licence (i.e. to inform the success of mitigation/compensation and identify management and remedial operations). The survey effort would be agreed with Natural England as part of the licence application.

Assessment

- 7.10.6 Continued assessment of the potential impacts on IEFs during the construction, operational and decommissioning phases of the Project would be undertaken in accordance with the methodologies outlined in Section 7.4. This assessment would be used to influence detailed scheme design, following the mitigation hierarchy outlined in Appendix 7.1 (Volume III). A detailed impact assessment of potential impacts on Ecology and Biodiversity during the construction, operation and decommissioning phases of the Project will be undertaken and included within the ES.
- 7.10.7 Assessment of impacts to designated sites for nature conservation from exhaust emissions from vehicles will be undertaken with traffic modelling data used to provide predictions of traffic flows, for the affected road network. This data will be used to calculate emissions of pollutants such as nitrogen oxides and where the air quality modelling identifies potential exceedances to designated sites, these will then be subject to further assessment of their potential ecological effects within the Ecology and Biodiversity chapter of the ES.
- 7.10.8 Results of the surveys and ecological assessment will be used to inform the development of the Conservation Strategy, specifically the mitigation and enhancement measures to be delivered.
- 7.10.9 A HRA will be prepared and accompany the EIA as part of the DCO application, detailing any potential Likely Significant Effects upon European designated sites as a

result of the Project. Where necessary, the assessment will include requirements for mitigation to ensure the favourable conservation status of qualifying features of European designated sites is maintained.

- 7.10.10 A BNG assessment will accompany the EIA and detail changes in biodiversity units pre- and post-construction of the Project.

7.11 References

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- Ref 7.10: HM Government (1997) *The Hedgerows Regulations 1997*. [online] Available at: <https://www.legislation.gov.uk/uksi/1997/1160/contents/made> (Accessed: 13 February 2022).
- Ref 7.11: HM Government (2009) *Marine and Coastal Access Act*. [online] Available at: <https://www.legislation.gov.uk/ukpga/2009/23/contents> (Accessed: 05 April 2022).
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Annex A – Summary of EIA Scoping Opinion in relation to Ecology and Biodiversity

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
3.3.1	Humber Estuary Ramsar site, Humber Estuary SAC, Humber Estuary SPA, Humber Estuary SSSI, River Derwent SAC, River Derwent SSSI, Eastoft Meadow SSSI, River Derwent SAC, River Derwent SSSI, Messingham Sand Quarry SSSI, Lower Derwent Valley Ramsar site and Lower Derwent Valley SPA - operational phase	<p><i>The Applicant proposes to scope out these statutory designated sites from further assessment with regards to the operational phase of the Proposed Development, on the basis that there are no perceivable pathways to impact any of these statutory designated sites during operation.</i></p> <p><i>Subject to demonstrating that there is no potential effect pathway between the Proposed Development and these designated sites, then the Inspectorate agrees that this matter can be scoped out.</i></p>	Agreement noted. This matter is not considered further within the PEIR or assessed further as part of the EIA.
3.3.2	Eastoft Meadow SSSI, River Derwent SAC, River Derwent SSSI, Messingham Sand Quarry SSSI, Lower Derwent Valley Ramsar site, and Lower Derwent Valley SPA - decommissioning phase	<p><i>The Applicant proposes to scope out these statutory designated sites from further assessment with regards to the decommissioning phase of the Proposed Development, on the basis that there are no perceivable pathways to impact any of these statutory designated sites during decommissioning.</i></p> <p><i>Subject to demonstrating that there is no potential effect pathway between the Proposed Development and these</i></p>	<p>Agreement noted in relation to Eastoft Meadow SSSI, Lower Derwent Valley Ramsar site and Lower Derwent Valley SPA.</p> <p>The AGI locations have been revised since EIA scoping and include four options at Drax, all of which are within approximately 45 m of watercourses that are hydrologically connected to the River Humber.</p> <p>A pollution event during decommissioning impacting the River Humber could affect migratory fish species that are a designating</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<i>designated sites, then the Inspectorate agrees that this matter can be scoped out.</i>	<p>feature of the River Derwent SAC and SSSI. The River Derwent SAC and SSSI will therefore be scoped into the EIA for further assessment on a precautionary basis.</p> <p>Messingham Sand Quarry SSSI is hydrologically connected to Block Valve KP 46.3 and could be indirectly impacted by a pollution event during decommissioning. Messingham Sand Quarry SSSI will also be scoped into the EIA for further assessment on a precautionary basis.</p>
3.3.3	<p>Manton and Twigmoor SSSI, North Killingholme Haven Pits SSSI, Ashbyville LNR, Thorne Moor SAC, Thorne and Hatfield Moors SPA, Thorne, Crowle and Goole Moors SSSI, Sugar Mills Ponds LNR, Cleatham Quarry SSSI, Crowle Borrow Pits SSSI, Humberhead Peatlands NNR, Messingham Heath SSSI, Eskamhorn Meadows SSSI and Hatfield Chase Ditches SSSI – all phases</p>	<p><i>The Applicant proposes to scope out these statutory designated sites from further assessment with regards to the construction, operational and decommissioning phases on the basis that the Thorne Moor SAC, Humberhead Peatlands NNR (designated for raised bog habitat), the Thorne, Crowle and Goole Moors SSSI (the designated features of the site being almost exclusively associated with the sites mire habitat) and the Hatfield Chase Ditches SSSI and the Crowle Borrow Pits SSSI are located upstream of the Scoping Route Corridor. The Proposed Development is not anticipated to impact upstream hydrology and is therefore unlikely to impact the conservation objectives and designated features of these sites.</i></p>	<p>Agreement noted in relation to all sites.</p> <p>However, the Proposed Order Limits have been revised since EIA scoping and have been extended in the area around East Halton to account for site access and a construction compound resulting in the Proposed Order Limits being closer to North Killingholme Haven Pits SSSI (within approximately 350 m compared to 730 m at EIA scoping stage). Drains within the Proposed Order Limits are connected to drains/ditches within North Killingholme Haven Pits SSSI creating a potential impact pathway. As a result, North Killingholme Haven Pits SSSI may be impacted by potential pollution events during construction and will be scoped into the EIA for further assessment on a precautionary basis.</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<p><i>The Thorne and Hatfield Moors SPA, designated for its breeding nightjar population, is 1.1 km south of the Scoping Route Corridor. Nightjars are a predominantly heathland species and the habitats within the Scoping Route Corridor are largely sub-optimal for this species (i.e. open agricultural land) and are unlikely to represent land that is 'Functionally Linked' to the SPA. No perceived effects on breeding nightjar have been identified.</i></p> <p><i>All other statutory designated sites (Manton and Twigmoor SSSI, North Killingholme Haven Pits SSSI, Messingham Heath SSSI, Eskamhorn Meadows SSSI, Cleatham Quarry SSSI, Ashbyville LNR and Sugar Mills Ponds LNR) lack perceivable impact pathways such as hydrological connectivity or are located more than 300 m from the Scoping Route Corridor. It is therefore considered that any effects on statutory designated sites as a result of a potential pollution event during construction are unlikely to be significant given the distance pollutants would need to travel to reach the sites and all other statutory designated sites.</i></p> <p><i>The Inspectorate considers that if it can be demonstrated there is no potential effect pathway between the Proposed</i></p>	

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<i>Development and these designated sites, then the Inspectorate agrees that these can be scoped out.</i>	
3.3.4	Non-statutory designated sites within the Scoping Route and with hydrological connectivity to AGI locations - operational phase	<p><i>The Applicant proposes to scope this matter out of further assessment on the basis that there are no perceivable pathways to impact any of these non-statutory designated sites during operation.</i></p> <p><i>The Inspectorate considers that if it can be demonstrated there is no potential effect pathway between the Proposed Development and these designated sites, then the Inspectorate agrees that these can be scoped out.</i></p>	<p>Agreement noted.</p> <p>Following revisions to the AGI locations since EIA scoping, there are no impact pathways to any non-statutory designated sites during the operational phase. Operational impacts on non-statutory designated sites will not be assessed further within the ES.</p>
3.3.5	Non-statutory designated sites within the Scoping Route or with hydrological connectivity to the Scoping Route (excluding AGI locations) - operational and decommissioning phases	<p><i>The Applicant proposes to scope this matter out of further assessment on the basis that there are no perceivable pathways to impact the sites.</i></p> <p><i>The Inspectorate considers that if it can be demonstrated there is no potential effect pathway between the Proposed Development and these designated sites, then the Inspectorate agrees that this matter can be scoped out.</i></p>	<p>Agreement noted.</p> <p>Following revisions to the AGI locations since EIA scoping, the list of non-statutory designated sites within the Proposed Order Limits, or with hydrological connectivity and/or other potential impact pathway to the Proposed Order Limits has been updated (see Appendix 7.2 (Volume III)).</p> <p>As noted above, there are no impact pathways to any non-statutory designated sites during the operational phase.</p> <p>Decommissioning activities pose a risk of a potential pollution event on non-statutory designated sites which are hydrologically</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
			<p>connected to AGI locations and visual and acoustic disturbance to breeding, passage and wintering birds that are designating features of Paull Holme Strays Yorkshire Wildlife Trust Reserve.</p> <p>Non-statutory designated sites with hydrological connectivity (and/or other potential impact pathway e.g. Paull Holme Strays Yorkshire Wildlife Trust Reserve) to AGI locations will be scoped into the EIA for further assessment of decommissioning impacts. Decommissioning impacts on all other non-statutory designated sites will not be assessed further within the ES.</p>
3.3.6	<p>Non-statutory designated sites outside the Scoping Route and without hydrological connectivity or other potential impact pathway to the Proposed Development – all phases</p>	<p><i>The Applicant proposes to scope this matter out of further assessment with regards to all phases on the basis of a lack of perceivable impact pathways, such as hydrological connectivity to the Scoping Route Corridor.</i></p> <p><i>The Inspectorate considers that if it can be demonstrated there is no potential effect pathway between the Proposed Development and these designated sites, then the Inspectorate agrees that this matter can be scoped out.</i></p>	<p>Agreement noted.</p> <p>Following revisions to the Proposed Order Limits since EIA scoping, the list of non-statutory designated sites outside the Proposed Order Limits, and without hydrological connectivity and/or other potential impact pathway to the Proposed Order Limits has been updated (see Appendix 7.2 (Volume III)).</p> <p>These non-statutory designated sites will not be assessed further within the ES.</p>
3.3.7	<p>Arboricultural features (Tree Preservation Order trees and veteran trees) - operational and</p>	<p><i>The Applicant proposes to scope out this matter from further assessment with regard to the phases identified on the basis that there are no perceivable</i></p>	<p>Agreement noted. In relation to TPOs, this matter is not considered further within the PEIR or assessed further as part of the EIA.</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
	decommissioning phases	<p><i>pathways to impact arboricultural features.</i></p> <p><i>The Inspectorate considers that if it can be demonstrated there is no potential effect pathway between the Proposed Development and these features, then the Inspectorate agrees that this matter can be scoped out.</i></p>	Impacts on veteran trees will be considered within the ES once the PEA is complete.
3.3.8	Ancient woodland – all phases	<p><i>The Applicant proposes to scope this matter out of further assessment on the basis that areas of recognised ancient woodland are located at least 550 m beyond the Scoping Route Corridor with no hydrological connectivity to the Scoping Route Corridor and indirect effects (e.g. pollution from dust/ machinery emissions during construction and decommissioning) are unlikely to be significant at this distance.</i></p> <p><i>The Inspectorate is content with this approach.</i></p>	<p>Agreement noted.</p> <p>The affected road network is within 300 m of areas of recognised Ancient Woodland (i.e. closer than anticipated at EIA scoping).</p> <p>Air quality impacts on Ancient Woodland will be considered within the ES once construction routes and traffic numbers are finalised (see Chapter 6: Air Quality (Volume II) for preliminary details).</p>
3.3.9	Priority Habitats, intertidal ecology, fish and water vole - operational phase	<p><i>The Applicant proposes to scope out these matters from further assessment with regard to the phase identified on the basis that there are no perceivable pathways to impact Priority Habitats, intertidal ecology, fish or water vole during operation.</i></p> <p><i>The Inspectorate considers that if it can be demonstrated there is no potential</i></p>	<p>Agreement noted.</p> <p>The AGI locations have been revised since EIA scoping and include several options which are in close proximity to watercourses. Operational lighting at these locations could impact the migration/passage of fish and operational impacts on fish will be scoped into</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<i>effect pathway between the Proposed Development and the habitats, ecology and species identified, then the Inspectorate agrees that these can be scoped out.</i>	the EIA for further assessment on a precautionary basis.
3.3.10	Marine ecology, reptiles, breeding birds and NNIS - operational and decommissioning phases	<p><i>The Applicant proposes to scope out these matters from further assessment on the basis that there are no perceivable pathways to impact these receptors during operation and decommissioning and it is therefore considered that any effects are unlikely to be significant.</i></p> <p><i>The Inspectorate considers that if it can be demonstrated there is no potential effect pathway between the Proposed Development and the receptors identified, then the Inspectorate agrees that these can be scoped out.</i></p>	<p>Agreement noted.</p> <p>A pollution event during decommissioning could impact intertidal and marine habitats, infauna, fish, shellfish, and reptiles while vibration, acoustic and/or visual disturbance and/or the use of artificial lighting could result in disturbance/dispersal of individuals (see Section 7.7).</p> <p>Decommissioning impacts on intertidal and marine ecology, reptiles and breeding birds will be scoped into the EIA for further assessment on a precautionary basis.</p>
3.3.11	Great Crested Newt (GCN) - all phases	<p><i>The Applicant proposes to scope this matter out of further assessment on the basis that GCN are widespread throughout the region and therefore licensing and mitigation will be required to minimise impacts to this species, sought from Natural England.</i></p> <p><i>The Applicant intends to offset the effects of the Proposed Development on GCN by obtaining a licence through the Natural England District Level Licensing (DLL) scheme. The Inspectorate understands</i></p>	<p>Noted.</p> <p>Engagement with Natural England (DLL team) has confirmed that the project is within a risk zone for GCN and indicative costs for the conservation payment have been provided (see Annex B – Summary of engagement undertaken).</p> <p>The Project will continue to pursue and enrol into the DLL for GCN. By demonstrating that a DLL scheme for GCN will be used, GCN can be scoped out of detailed assessment within the ES. This is because, the DLL approach</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<p><i>that the DLL approach includes strategic area assessment and the identification of risk zones and strategic opportunity area maps. The ES should include information to demonstrate whether the Proposed Development is located within a risk zone for GCN. If the Applicant enters into the DLL scheme, NE will undertake an impact assessment and inform the Applicant whether their scheme is within one of the amber risk zones and therefore whether the Proposed Development is likely to have a significant effect on GCN. The outcome of this assessment will be documented on an Impact Assessment and Conservation Payment Certificate (IACPC). The IACPC can be used to provide additional detail to inform the findings in the ES, including information on the Proposed Development's impact on GCN and the appropriate compensation required.</i></p>	<p>includes impact assessment and will confirm (within the IACPC) that, as a minimum, the impact to GCN associated with the Project is unlikely to be significant.</p>
3.3.12	<p>Other notable mammals (dormouse (<i>Muscardinus avellanarius</i>), brown hare, hedgehog, polecat, pine marten and harvest mouse) – all phases</p>	<p><i>The Applicant proposes to scope these matters out of further assessment.</i></p> <p><i>The Proposed Development is situated outside the natural range of the dormouse and this species is considered to be absent from the study area. On this basis, the Inspectorate agrees that dormice can be scoped out of further assessment.</i></p>	<p>Agreement to scope out dormouse, hedgehog, harvest mouse and brown hare noted.</p> <p>Polecat and pine marten will be scoped into the EIA for further assessment. Incidental findings will be recorded and assessed with desk study information and patch quality as detailed in the Conservation Strategy (Appendix 7.1 (Volume III)).</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<p><i>The Inspectorate has considered the nature and characteristics of the Proposed Development and the records of presence (or anticipated presence) of brown hare, hedgehog, polecat, pine marten and harvest mouse within the Scoping Route Corridor. The Inspectorate agrees that effects on hedgehog, harvest mouse and brown hare may be scoped out. In light of the potential impact of the Proposed Development on field boundaries and hedgerows, the ES should assess potential impacts on polecat and pine marten during construction, operation and decommissioning where significant effects are likely to occur.</i></p>	
3.3.13	Biodiversity Net Gain (BNG)	<p><i>The Inspectorate notes that BNG proposals are currently being considered by the Applicant. The assessment of BNG reported within the ES should be based on an appropriate metric that allows clear understanding of how gains and losses have been calculated. The ES should clearly distinguish between mitigation for significant adverse effects on biodiversity from wider enhancement measures.</i></p>	<p>Noted. The assessment of BNG within the ES will be based on DEFRA's Biodiversity Metric 3.1 (Ref 7.8).</p> <p>The ES will clearly distinguish between mitigation for significant adverse effects on biodiversity and wider enhancement measures.</p>
3.3.14	Confidential annexes	<p><i>Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific</i></p>	<p>Noted. A confidential annex(es) will be provided for any ecological features that could be subject to disturbance, damage,</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<p><i>survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.</i></p>	<p>persecution, or commercial exploitation resulting from publication of the information.</p>
<p>PINS Scoping Opinion – Canal and River Trust response</p>	<p>Ecology and Biodiversity</p>	<p><i>The crossing of our network has the potential to impact upon habitats associated with our waterway. This would include any impact from vibrations from any drilling works below (as identified in paragraph 6.8.2), or any severance of habitat corridors resulting from construction compounds in proximity to the waterspace.</i></p> <p><i>We request that the chapter should specifically identify water courses and canals as a receptor that could be impacted by the works.</i></p> <p><i>The potential impacts of construction works have been identified within the report. We request that any final report should, however, make explicit mention of</i></p>	<p>Noted.</p> <p>Priority Habitats (which includes Rivers and canals (Eutrophic standing waters)) have been scoped into the EIA for further assessment. The ES will document all Priority Habitats that could be impacted by the Project (either directly/indirectly) and assess impacts on each Priority Habitat.</p> <p>Potential wildlife corridors will be identified as part of habitat suitability assessments for each IEF. These assessments will be documented within species-specific Technical Appendices which will be submitted with the ES.</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<i>the potential impact of works on wildlife corridors.</i>	
PINS Scoping Opinion – Environment Agency response	Chapter 6 Ecology and Biodiversity	<i>With regard to the conservation strategy, we have found no reference to how much net gain the applicant intends to deliver. We suggest a minimum of 10% BNG; it would be good to see in writing as an aim or commitment.</i>	Noted. The Applicant intends to deliver 10% BNG at AGI locations and no net loss throughout the rest of the Proposed Order Limits. A detailed BNG assessment will be included within the ES.
PINS Scoping Opinion – Hull City Council response	6. Ecology and Biodiversity (incl. Volume III Appendices A-D Conservation Strategy)	<i>Hull City Council will be happy to share details of relevant plans or projects within the zone of influence as the assessment progresses.</i>	Noted. Hull City Council will be consulted if required as the Conservation Strategy is developed.
PINS Scoping Opinion – North Yorkshire County Council and Selby District Council	Ecology	<i>I would encourage use of the most up to date version of the Defra Biodiversity Metric in presenting data on biodiversity losses and gains.</i>	Noted. The current version of the Defra Biodiversity Metric (version 3.1 as of August 2022) will be used for the calculation of BNG.
PINS Scoping Opinion – Forestry Commission	EN070006 - Humber Low Carbon Pipelines - EIA Scoping Notification and Consultation	<i>The proposed route will potentially affect directly and indirectly a range of woodland sites and a mix of woodland types. From looking at the Forestry Commission mapping system some of these woodland sites have existing Forestry Commission approved Management Plans, Conditional Felling Licenses and a range of agreements on them with a potential</i>	Noted. The Project will contact the Forestry Commission to obtain feedback on individual sites that could be impacted by the Project.

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<p><i>cluster of sites in the Scawby – Manby Wood area south east of Scunthorpe. If you would like individual feedback on sites with Forestry Commission Incentives and Regulatory agreements throughout the entire proposed route please feel free to contact the Forestry Commission.</i></p>	
<p>PINS Scoping Opinion – Forestry Commission</p>	<p>EN070006 - Humber Low Carbon Pipelines - EIA Scoping Notification and Consultation</p>	<p><i>It is worth also noting the proposed route sits within Northern Forest and associated halo area this partnership sets out to increase woodland cover in this area which is mentioned in the DEFRA: England Trees Action Plan 2021 to 2024 - GOV.UK (www.gov.uk) and the DEFRA 25 Year Environment Plan.</i></p>	<p>Noted.</p> <p>Broadleaved woodland is one of the Keystone Habitats within the Conservation Strategy (Appendix 7.1 (Volume III)). The Conservation Strategy will consider the potential to increase woodland cover within the Proposed Order Limits.</p>
<p>Natural England scoping consultation response</p>	<p>Information to be included within the ES</p>	<p><i>Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, sets out the information that should be included in an Environmental Statement (ES) to assess impacts on the natural environment. This includes:</i></p> <ul style="list-style-type: none"> <i>• A description of the development – including physical characteristics and the full land use requirements of the site during construction and operational phases</i> <i>• Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation etc.)</i> 	<p>Noted. This information will be included within the ES.</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<p><i>resulting from the operation of the proposed development</i></p> <ul style="list-style-type: none"> • <i>An assessment of alternatives and clear reasoning as to why the preferred option has been chosen</i> • <i>A description of the aspects of the environment likely to be significantly affected by the development including biodiversity (for example fauna and flora), land, including land take, soil, water, air, climate (for example greenhouse gas emissions, impacts relevant to adaptation, cultural heritage and landscape and the interrelationship between the above factors</i> • <i>A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium, and long term, permanent and temporary, positive, and negative effects. Effects should relate to the existence of the development, the use of natural resources (in particular land, soil, water and biodiversity) and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment</i> • <i>A description of the measures envisaged to prevent, reduce and where possible</i> 	

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<p><i>offset any significant adverse effects on the environment</i></p> <ul style="list-style-type: none"> • <i>A non-technical summary of the information</i> • <i>An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information</i> 	
<p>Natural England scoping consultation response</p>	<p>Cumulative and in-combination effects</p>	<p><i>An impact assessment should identify, describe, and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment (subject to available information):</i></p> <ul style="list-style-type: none"> <i>a. existing completed projects;</i> <i>b. approved but uncompleted projects;</i> <i>c. ongoing activities;</i> <i>d. plans or projects for which an application has been made and which are under consideration by the consenting authorities; and</i> <i>e. plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress</i> 	<p>Noted. The project types advised will be considered for potential cumulative and in-combination effects within the ES.</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<p><i>before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.</i></p>	
<p>Natural England scoping consultation response</p>	<p>Potential impacts on European/internationally designated nature conservation sites.</p>	<p><i>The development site is within or may impact on the following European/internationally designated nature conservation site(s):</i></p> <ul style="list-style-type: none"> • <i>Humber Estuary – Special Area of Conservation (SAC), Special Protected Area (SPA) and Ramsar site.</i> • <i>Greater Wash – SPA...</i> <p><i>... [cont.] The ES should thoroughly assess the potential for the proposal to affect nationally and internationally designated sites of nature conservation importance, including marine sites where relevant. European sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA) fall within the scope of the Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations'). In addition paragraph 181 of the National Planning Policy Framework (NPPF) requires that potential SPAs, possible SAC, listed or proposed Ramsar sites, and any site identified or required as compensatory measures for adverse effects on habitat (European) sites, potential SPAs, possible SACs and listed or proposed Ramsar sites have the</i></p>	<p>Agreed. These sites have been scoped into the EIA and will be considered within a HRA screening report and, where significant effects are likely, an Appropriate Assessment. The HRA screening and Appropriate Assessment will be carried out in line with the comments provided by Natural England.</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<p><i>same protection as classified sites (NB. sites falling within the scope of regulation 8 of the Conservation of Habitats and Species Regulations 2017 are defined as 'habitats sites' in the NPPF). Under Regulation 63 of the Habitats Regulations, an appropriate assessment must be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site. The consideration of likely significant effects should include any functionally linked land outside the designated site. These areas may provide important habitat for mobile species populations that are qualifying features of the site, for example birds and bats. This can also include areas which have a critical function to a habitat feature within a designated site, for example by being linked hydrologically or geomorphologically.</i></p>	
Natural England scoping consultation response	Potential impacts on nationally designated nature conservation sites.	<p><i>The development site is within or may impact on the following Site of Special Scientific Interest:</i></p> <ul style="list-style-type: none"> • <i>Humber Estuary</i> • <i>Dimlington Cliff</i> 	Agree with comments relating to the Humber Estuary SSSI and Dimlington Cliff SSSI. Humber Estuary SSSI has been scoped into the EIA. Dimlington Cliff SSSI is designated for geological features and will be considered as part of the Geology and Hydrogeology chapter

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<ul style="list-style-type: none"> • Manton & Twigmoor • North Haven Pits³... <p>...[cont.] The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSI and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects. The consideration of likely significant effects should include any functionally linked land outside the designated site. These areas may provide important habitat for mobile species populations that are interest features of the SSSI, for example birds and bats. This can also include areas which have a critical function to a habitat feature within a site, for example by being linked hydrologically or geomorphologically..</p>	<p>(Chapter 9: Geology and hydrogeology (Volume II)).</p> <p>Agree with comments relating to North Killingholme Haven Pits SSSI. The Proposed Order Limits have been revised since EIA scoping and have been extended in the area around East Halton to account for site access and a construction compound resulting in the Proposed Order Limits being closer to North Killingholme Haven Pits SSSI (within approximately 350 m compared to 730 m at EIA scoping stage). Drains within the Proposed Order Limits are connected to drains/ditches within North Killingholme Haven Pits SSSI creating a potential impact pathway. As a result, North Killingholme Haven Pits SSSI may be impacted by potential pollution events during construction and will be scoped into the EIA for further assessment on a precautionary basis.</p> <p>Manton and Twigmoor SSSI is designated for habitats/flora and is not hydrologically connected to the Proposed Order Limits. Although within the SSSI Impact Risk Zone for Pipelines, it is considered that any effects on this statutory designated site would only occur as a result of a potential pollution event during construction and this is unlikely to be significant given the distance (approximately 360 m) pollutants would need to travel to reach</p>

³ This site is identified as North Killingholme Haven Pits SSSI in the EIA scoping report.

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
			<p>the site. Agreement with Natural England (Yorkshire and North Lincolnshire Team) regarding whether Manton and Twigmoor SSSI can be scoped out of the ES will be sought as part of stakeholder engagement (see Annex B – Summary of engagement undertaken).</p> <p>The assessment of the effects on the SSSI's detailed above will be carried out in line with the comments provided by Natural England.</p>
Natural England scoping consultation response	Potential impacts on MCZs.	<p><i>The proposal may affect the following Marine Conservation Zone:</i></p> <ul style="list-style-type: none"> • <i>Holderness Inshore.</i> <p><i>The ES should include a full assessment of the direct and indirect effects of the development on the site and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects.</i></p>	<p>Agree. Intertidal and marine habitats and fauna of the Holderness Inshore MCZ will be considered within the Ecology and Biodiversity chapter of the ES and geological features will be considered as part of the Geology and Hydrogeology chapter (Chapter 9: Geology and hydrogeology (Volume II)).</p>
Natural England scoping consultation response	Potential impacts on Regionally and Locally Important sites	<p><i>The ES should consider any impacts upon local wildlife and geological sites, including local nature reserves. Local Sites are identified by the local wildlife trust, geoconservation group or other local group and protected under the NPPF (paragraph 174 and 175). The ES should set out proposals for mitigation of any impacts and if appropriate, compensation measures and opportunities for</i></p>	<p>Noted. Impacts on LWS will be considered within the Ecology and Biodiversity chapter of the ES and geological sites will be considered as part of the Geology and Hydrogeology chapter (Chapter 9: Geology and hydrogeology (Volume II)).</p> <p>Mitigation, compensation and enhancement measures will be detailed within the Conservation Strategy.</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
		<i>enhancement and improving connectivity with wider ecological networks.</i>	
Natural England scoping consultation response	Potential impacts on protected species	<i>The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats)...[cont.] Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area.</i>	<p>Noted. Records of protected species have been obtained from multiple sources as detailed in Part B of the Conservation Strategy (Appendix 7.2, Table 2-1 (Volume III)). Consideration for obtaining additional records from local groups/conservation organisations will be made for each species and requested where it is considered additional data has the potential to change the outcome of a species-specific technical appendix.</p> <p>The Conservation Strategy and ES will consider opportunities for and potential impacts on protected species in a wider context.</p>
Natural England scoping consultation response	Survey effort	<i>The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.</i>	<p>To be discussed. It is not considered proportionate to undertake a full suite of ecological surveys across the entire Proposed Order Limits. Instead, a streamlined yet robust survey programme has been developed, which minimises the collection of irrelevant/abortive information and the need for repeat surveys. This approach assumes a 'reasonable worst-case' valuation is adopted for known and potential IEFs and focuses on improving habitat quality and connectivity across the Project on a landscape scale.</p> <p>Species-specific survey/assessment will be undertaken only where:</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
			<ul style="list-style-type: none"> • An IEF is confirmed, or it is thought there is a reasonable likelihood that an IEF may be present; and • Significant effects on the ecological integrity or conservation status of an IEF may arise from the construction or operation of the Project. <p>This approach has been discussed and agreed with all relevant consultees (Local Planning Authority ecologists/representatives (North Lincolnshire Council, North Yorkshire County Council (also supporting Selby District Council), East Riding of Yorkshire Council, West Lindsey District Council (also supporting Lincolnshire County Council)), Humber Nature Partnership, RSPB, Environment Agency, Yorkshire Wildlife Trust and Lincolnshire Wildlife Trust) (see Annex B – Summary of engagement undertaken)).</p> <p>As noted in Annex B – Summary of engagement undertaken, Natural England were not able to engage in these discussions due to resourcing constraints.</p> <p>The full scope of surveys, methodologies and justifications where surveys for a particular IEF have not been undertaken are included in the Conservation Strategy (Appendix 7.1 (Volume III)).</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
			Survey results, impact assessment and mitigation strategies will be included within the ES and its associated appendices.
Natural England scoping consultation response	District Level Licensing for GCN	<i>District level licensing (DLL) is a type of strategic mitigation licence for great crested newts (GCN) granted in certain areas at a local authority or wider scale. A DLL scheme for GCN may be in place at the location of the development site. If a DLL scheme is in place, developers can make a financial contribution to strategic, off-site habitat compensation instead of applying for a separate licence or carrying out individual detailed surveys. By demonstrating that DLL will be used, impacts on GCN can be scoped out of detailed assessment in the Environmental Statement.</i>	Agree. GCN will be scoped out of detailed assessment in the ES as Natural England have agreed to the use of DLL for GCN (see Section 7.6.25).
Natural England scoping consultation response	Priority Habitats and Species	<i>Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. Sites can be checked against the (draft) national Open Mosaic Habitat (OMH) inventory published by Natural England and freely available to download.</i>	Noted. Sites listed on the OMH inventory are identified on Figure 7.3 (Volume IV).
Natural England scoping	Priority Habitats and Species	<i>An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys should be carried out at</i>	Partially agree. Habitat, ornithological and botanical surveys have been undertaken as detailed in Table 7.2.

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
consultation response		<i>appropriate times in the year, to establish whether any scarce or priority species are present.</i>	No specific invertebrate surveys are proposed to inform the DCO application. Full justification is included in the Conservation Strategy (Appendix 7.1 (Volume III)).
Natural England scoping consultation response	Priority Habitats and Species	<p><i>The Environmental Statement should include details of:</i></p> <ul style="list-style-type: none"> • <i>Any historical data for the site affected by the proposal (e.g. from previous surveys)</i> • <i>Additional surveys carried out as part of this proposal</i> • <i>The habitats and species present</i> • <i>The status of these habitats and species (e.g. whether priority species or habitat)</i> • <i>The direct and indirect effects of the development upon those habitats and species</i> • <i>Full details of any mitigation or compensation measures</i> • <i>Opportunities for biodiversity net gain or other environmental enhancement</i> 	Noted. These matters will be included within the ES and associated appendices.
Natural England scoping consultation response	Ancient Woodland, ancient and veteran trees	<i>The ES should assess the impacts of the proposal on any ancient woodland, ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts. It should also consider opportunities for enhancement.</i>	Agree. Preliminary impacts on arboricultural features are detailed in Section 7.7.

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
Natural England scoping consultation response	Biodiversity net gain	<p><i>The ES should use an appropriate biodiversity metric such as Biodiversity Metric 3.0 together with ecological advice to calculate the change in biodiversity resulting from proposed development and demonstrate how proposals can achieve a net gain. The metric should be used to:</i></p> <ul style="list-style-type: none"> <i>• assess or audit the biodiversity unit value of land within the application area</i> <i>• calculate the losses and gains in biodiversity unit value resulting from proposed development</i> <i>• demonstrate that the required percentage biodiversity net gain will be achieved.</i> <p><i>Biodiversity Net Gain outcomes can be achieved on site, off-site or through a combination of both. On-site provision should be considered first. Delivery should create or enhance habitats of equal or higher value. When delivering net gain, opportunities should be sought to link delivery to relevant plans or strategies e.g. Green Infrastructure Strategies or Local Nature Recovery Strategies.</i></p> <p><i>Opportunities for wider environmental gains should also be considered.</i></p>	<p>Agree. Proposals relating to BNG are detailed in Section 1.2 of the Conservation Strategy (Appendix 7.1 (Volume III)).</p>

Section reference	Applicant's proposed matter	Inspectorate's / consultation bodies comments	Response
Natural England scoping consultation response	Contribution to local environmental initiatives and priorities	<i>The ES should consider the contribution the development could make to relevant local environmental initiatives and priorities to enhance the environmental quality of the development and deliver wider environmental gains. This should include considering proposals set out in relevant local strategies or supplementary planning documents including landscape strategies, green infrastructure strategies, tree and woodland strategies, biodiversity strategies or biodiversity opportunity areas.</i>	Agree. The Conservation Strategy (Appendix 7.1 (Volume III)) has been (and will continue to be) developed in consultation with stakeholders to deliver strategic and wider environmental gains in line with national, regional and local strategies and targets.

Annex B – Summary of engagement undertaken

Consultee	Date and method of engagement	Summary of issues raised	Response
Humber Nature Partnership	27 April 2021 (Meeting)	Humber Nature Partnership agreed with the Project's approach to proportionate surveys and use of DLL for GCN mitigation.	The assessment will be based on proportionate ecology surveys as detailed in the Conservation Strategy (Appendix 7.1 (Volume III)), and with DLL implemented to deliver GCN mitigation.
Natural England (Yorkshire and North Lincolnshire Team)	14 June 2021 (Phone call)	Discussed approach to proportionate surveys (particularly in relation to badgers, water vole and bats), wintering bird	Approach to surveys is documented in the Conservation Strategy (Appendix 7.1 (Volume III)).

Consultee	Date and method of engagement	Summary of issues raised	Response
		<p>constraints and use of DLL for GCN mitigation.</p> <p>No feedback was provided on the approach to surveys for water vole and badgers.</p>	
		<p>Natural England identified wintering birds and the Humber Estuary to be the main considerations and advised that in relation to wintering birds, in-combination effects with other developments across the Humber Estuary needed the greatest consideration.</p>	<p>Wintering bird surveys were undertaken in 2021/2022 (see Table 7.2). In-combination effects will be considered in an HRA.</p>
		<p>Natural England advised further advice should be sought from the licensing team with regard to potential impacts on bats.</p>	<p>The Project sought further engagement with Natural England through the Discretionary Advice Service (DAS) but was advised insufficient resources were available (see correspondence dated 1 November 2021).</p>
<p>Natural England (Yorkshire and North Lincolnshire Team)</p>	<p>28 June 2021, 21 July 2021, 26 July 2021, 18 August 2021, 9 September 2021 and 13 September 2021 (Email)</p>	<p>The Project shared the wintering and passage bird surveys scope and methodology with Natural England for review and feedback. Several rounds of comments were received from Natural England.</p>	<p>The Project addressed all comments/feedback to the satisfaction of Natural England before the winter bird survey methodology was finalised. The final version is included within Part B of the Conservation Strategy (Appendix 7.1 (Volume III)).</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
Royal Society for the Protection of Birds (RSPB)	22 October 2021 (Email)	In response to non-statutory consultation, the RSPB commented on sites and associated bird species that could be impacted by various early route options.	Comments relating to early route options were taken into consideration during the iterative design of the Project.
		The RSPB advised the route options at non-statutory consultation stage pass close to Thorne Moors SAC/SPA and that impacts on this site (including hydrology, pollution and noise disturbance) would need to be considered.	The Project has taken this into account in preparing the EIA Scoping Report (Ref 7.28) and concluded that these sites are designated for their habitat features and no direct or indirect impacts on the SAC or SPA are anticipated due to lack of hydrological connectivity.
		The RSPB advised that impacts on wintering pink-footed geese (<i>Anser brachyrhynchus</i>) and breeding common crane (<i>Grus grus</i>) and nesting Schedule 1 species should be considered.	Wintering birds and breeding birds are scoped into further assessment within the EIA.
		The RSPB advised Thorne and Hatfield Moors SPA supports important populations of breeding nightjars (<i>Caprimulgus europaeus</i>), a species which often forages several kilometres from their territories and impacts on nightjar should be considered.	The Project has acknowledged this and reviewed impacts on the SPA in relation to the Proposed Order Limits and concluded that breeding and foraging nightjar are unlikely to be present within the Proposed Order Limits due to lack of suitable habitat. Thorne and Hatfield Moors is scoped out of further assessment.

Consultee	Date and method of engagement	Summary of issues raised	Response
		<p>Eastoft Meadow SSSI is managed by the RSPB and would potentially be damaged (either directly or indirectly due to pollution).</p>	<p>The Project has acknowledged this and determined there will be no direct impacts to Eastoft Meadow SSSI as the site is situated approximately 220 m west of the Proposed Order Limits. However, Eastoft Meadow SSSI has been scoped into further assessment within the EIA due to the potential for indirect impacts.</p>
		<p>The RSPB advised that impacts on European sites (including land which is functionally linked), and particularly cumulative impacts with projects such as Able Marine Energy Park and Able Logistics Park, will need proper consideration.</p>	<p>The Project will consider functionally linked land and cumulative impacts on European sites and their qualifying features as part of the HRA and also the EIA.</p>
		<p>The RSPB advised that tunnelling beneath the Humber Estuary is less likely to cause significant impact than trenching.</p>	<p>The Project includes trenchless techniques for construction beneath the Humber Estuary.</p>
		<p>The RSPB hope the Applicant utilises BNG to provide high quality landscape specific habitat enhancement to link the rich and important wildlife features of this area.</p>	<p>The Project has developed (and continues to refine) a Conservation Strategy (Appendix 7.1 (Volume III)) which includes BNG to address this.</p>
		<p>The RSPB identified several areas/opportunities for a variety of habitat and wildlife corridor creation/enhancement schemes.</p>	<p>The Project will consider these as the Conservation Strategy (Appendix 7.1 (Volume III)) is developed.</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
		The RSPB hope the Applicant are also considering more nature-based solutions for tackling carbon emissions. The RSPB advised that the Humber region offers multiple opportunities for this e.g., saltmarsh and wetland creation which will also provide long-term cost-effective coastal defence protection.	The Project will consider this as the Conservation Strategy (Appendix 7.1 (Volume III)) is developed.
Natural England (Yorkshire and North Lincolnshire Team)	1 November 2021 (Email)	Natural England advised they are not able to provide any further pre-submission advice due to resourcing constraints. Natural England confirmed that advice would be provided during statutory stages of the Project.	The Project continues to send copies of meeting minutes and slide decks to Natural England so they can respond when resources allow.
Environment Agency (Lincolnshire and Northamptonshire Planning Specialist and Biodiversity Technical Specialists for East Midlands, north bank of Humber and Lincolnshire and Northamptonshire)	25 November 2021 (Meeting)	Environment Agency welcomed the Applicant's commitment to BNG and advised that BNG habitats should be secured for at least 30 years in line with the Environment Bill.	Long-term habitat management for at least 30 years will be incorporated into the biodiversity enhancement and management plan within the Conservation Strategy (Appendix 7.1 (Volume III)).
		Environment Agency requested an opportunity to review the Conservation Strategy	The Conservation Strategy was shared with stakeholders as an Appendix to the EIA scoping report.

Consultee	Date and method of engagement	Summary of issues raised	Response
		Environment Agency provided a number of biodiversity opportunity areas across the Project.	This information will be taken into consideration as the Conservation Strategy (Appendix 7.1 (Volume III)) is developed.
Buglife	2 December 2021 (Meeting)	The Proposed Order Limits overlaps with approximately 8.9 km of Buglife's B-Lines and a meeting was held to discuss the Conservation Strategy approach with regards to bees/pollinators and how the Project could contribute towards this national recovery project.	Bees/pollinators are included as a keystone species within the Conservation Strategy (Appendix 7.1 (Volume III)).
Natural England (DLL Team)	7 December 2021 (Email)	Natural England provided the Project with copies of GCN risk zones.	The Project reviewed these and determined DLL should be considered for the delivery of GCN mitigation.
Marine Management Organisation (MMO)	27 January 2022 (Microsoft Teams call)	MMO advised statutory designations and level of offshore wind development should be considered. Marine conservation, migratory fish and birds should be considered.	Existing levels of offshore wind development will be considered as part of the cumulative impact assessment. Statutory designations, marine conservation, migratory fish and birds will be considered where they are relevant within the Proposed Order Limits as the Conservation Strategy (Appendix 7.1 (Volume III)) and impact assessment are developed.

Consultee	Date and method of engagement	Summary of issues raised	Response
Environment Agency (Lincolnshire and Northamptonshire Planning Specialist)	2 February 2022 and 11 July 2022 (Email)	Environment Agency provided the Project with a list of locations for potential opportunities for biodiversity enhancement. The Environment Agency contacted the Project on 11 July 2022 for feedback on their suggestions.	The locations will be considered as the Conservation Strategy (Appendix 7.1 (Volume III)) is developed and a response provided to the Environment Agency
Local Planning Authority ecologists/representatives (North Lincolnshire Council, North Yorkshire County Council (also supporting Selby District Council), East Riding of Yorkshire Council, West Lindsey District Council (also supporting Lincolnshire County Council)) and Humber Nature Partnership	1 March 2022 (Microsoft Teams call)	Humber Nature Partnership and North Lincolnshire Council confirmed they are in broad agreement with the keystone habitats and umbrella species proposed to be included in the Conservation Strategy.	The Conservation Strategy (Appendix 7.1 (Volume III)) has been developed based on the keystone habitats and umbrella species proposed.
		Consultees raised no concerns with the standard survey approaches proposed. East Riding Council, North Lincolnshire Council, North Yorkshire County Council agreed with the approach to undertake Phase 2 botanical surveys as and when required to inform DCO.	The Conservation Strategy (Appendix 7.1 (Volume III)) has been developed based on the agreed survey approaches.
		East Riding Council, North Lincolnshire Council, North Yorkshire County Council agreed to scope out dormice as geographically isolated from Project	Dormice have been scoped out of further assessment.
		West Lindsey District Council advised they do not currently have in house ecology expertise, therefore intend to draw on external support but this is not yet in place.	The Project continues to engage with West Lindsey District Council.

Consultee	Date and method of engagement	Summary of issues raised	Response
		<p>North Lincolnshire Council agreed that white-clawed crayfish are absent in the county, however, did advise that the Environment Agency discovered white-clawed crayfish near Crowle (close to the Project) in 2021 and suggested further engagement with the Environment Agency on this matter.</p> <p>Subject to further review of the route, East Riding Council, North Lincolnshire Council and North Yorkshire County Council agreed in principle with the alternative ecology survey approach (i.e. avoiding surveys for species where improving patch quality will deliver enhancements).</p> <p>West Lindsey District Council also agreed in principle with these matters, pending further discussion with technical specialist once appointed.</p> <p>The Project provided an overview of the alternative ecology survey approach</p>	<p>Further engagement with the Environment Agency regarding white-clawed crayfish near Crowle has been undertaken (see correspondence dated 1 March 2022) and their response has been taken into account in writing this report and the EIA Scoping Report (Ref 7.28).</p> <p>The Conservation Strategy (Appendix 7.1 (Volume III)) has been developed based on the agreed survey approaches, including:</p> <ul style="list-style-type: none"> • Surveys for fish and bat roosts to be undertaken as/when required to inform DCO; and • Invertebrates, reptiles, breeding birds, badger, bat activity, otters and water voles will be assessed using ad hoc recordings, desk study and patch quality. Habitat measures will be provided to demonstrate greater benefit. Surveys may be undertaken if known presence or high-quality habitat affected.

Consultee	Date and method of engagement	Summary of issues raised	Response
		North Yorkshire County Council advised cumulative impacts will need careful consideration.	Cumulative impacts will be considered within the HRA and ES.
		Humber Nature Partnership advised they are developing a database of cumulative impacts and it was agreed to discuss after the meeting if/how this information could be made available to inform ecological assessment.	This was followed up on 23 March 2022 (see below).
		Consultees raised no concerns with the Project's approach to the biodiversity enhancement and management plan, commitment to net gain and maximising opportunities for biodiversity enhancement delivered by the Project.	The Conservation Strategy (Appendix 7.1 (Volume III)) will be developed based on the principles discussed including reinstatement of habitats affected in areas of temporary habitat loss to equal or better condition than existing.
Natural England	1 March 2022 (Email)	Natural England were invited to attend the above meeting with Local Planning Authority ecologists/representatives and Humber Nature Partnership but were unable to attend.	The Project shared slides from the meeting.
Environment Agency (East Midlands Biodiversity Technical Specialist)	1 March 2022 (Email)	Consultee confirmed a single white-clawed crayfish was found on a berm adjacent to the North Soak Drain approximately 1.7 km west of the Project in May/June 2021. Several follow-up surveys were undertaken in 2021 using traditional traps, artificial refuge traps and environmental DNA	The Project has requested that the results of these surveys are forwarded on to inform ecological assessment.

Consultee	Date and method of engagement	Summary of issues raised	Response
		(eDNA) surveys all of which were negative for white-clawed crayfish. Consultee concluded the results are inconclusive and may return during 2022 survey season to carry out further surveys using artificial refuge traps.	
Local Planning Authority ecologists/representatives (North Lincolnshire Council, North Yorkshire County Council (also supporting Selby District Council), East Riding of Yorkshire Council, West Lindsey District Council), Humber Nature Partnership and Natural England	7 March 2022 (Email)	Project issued minutes of the 1 March 2022 meeting to all attendees and Natural England and consultees raised no concerns	Minutes are accepted as an accurate reflection of the meeting.
RSPB	16 March 2022 (Email)	RSPB were invited to attend the 29 March 2022 meeting with Yorkshire Wildlife Trust and Humber Nature Partnership but were unable to attend.	A separate meeting was held with the RSPB on 4 April 2022 (see below).
Humber Nature Partnership	23 March 2022 (Email)	The Project contacted Humber Nature Partnership to organise a meeting to discuss the cumulative impact database mentioned in the 1 March 2022 meeting.	Humber Nature Partnership responded on 5 April 2022 (see below)
Yorkshire Wildlife Trust (Planning Ecologist) and Humber Nature Partnership	29 March 2022	Yorkshire Wildlife Trust (Planning Ecologist) supported the approach of the Conservation Strategy and use of keystone habitats and umbrella species to target mitigation.	This feedback has been incorporated into the Conservation Strategy.

Consultee	Date and method of engagement	Summary of issues raised	Response
	(Microsoft Teams call	Yorkshire Wildlife Trust (Planning Ecologist) suggested expanding “lapwing” umbrella species to “farmland birds” in general.	
Humber Nature Partnership advised that Biodiversity Opportunity Maps have been produced for Lincolnshire.		The Project requested these on 5 April 2022 (see below) to further inform the Conservation Strategy.	
Consultees raised no concerns with standard survey approaches.		The Conservation Strategy (Appendix 7.1 (Volume III)) has been developed based on the agreed survey approaches,	
Yorkshire Wildlife Trust (Planning Ecologist) queried the format of data collection for Phase 1 habitat survey and whether this would include UK Habitat Classification data.		The Project confirmed that data collection would initially be to Phase 1 habitat standard, but that data would be converted to UK Habitat Classification as the route is refined.	
Consultees raised no concerns with the alternative ecology survey approach (i.e. avoiding surveys for species where improving patch quality will deliver enhancements).		<p>The Conservation Strategy (Appendix 7.1 (Volume III)) has been developed based on the agreed survey approaches, including:</p> <ul style="list-style-type: none"> • Surveys for fish and bat roosts to be undertaken as/when required to inform DCO; and • Invertebrates, reptiles, breeding birds, badger, bat activity, otters and water voles will be assessed 	

Consultee	Date and method of engagement	Summary of issues raised	Response
		<p data-bbox="864 906 1491 1054">Yorkshire Wildlife Trust (Planning Ecologist) suggested recording the decision-making process with regard to how/why areas have been scoped in/out for further survey.</p>	<p data-bbox="1563 272 2018 523">using ad hoc recordings, desk study and patch quality. Habitat measures will be provided to demonstrate greater benefit. Surveys may be undertaken if known presence or high-quality habitat affected.</p> <p data-bbox="1518 560 2040 1406">The Project advised that the Scoping Route Corridor was red/amber/green (RAG) rated for areas requiring ecology surveys (red: areas proposed to be removed from the Scoping Route Corridor to avoid impacts; amber: areas for further discussion with client (including areas for biodiversity improvement and areas for potential trenchless techniques to avoid/minimize impacts); and green: areas of expected low ecological impact (e.g. agricultural fields)). The Project advised a log to record survey area scoping process (i.e., how/why areas are scoped in/out for particular surveys) will be considered. The rationale behind which areas are selected for further survey will be detailed in species-specific Technical Appendices to the ES.</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
		Yorkshire Wildlife Trust (Planning Ecologist) suggested impacts on European Eel (<i>Anguilla anguilla</i>) should be considered.	The Project confirmed this species would be considered in the EIA under the “fish” heading and that impacts would be avoided where possible, using fish rescues where required.
		Yorkshire Wildlife Trust (Planning Ecologist) noted that trenchless techniques can require a larger working area than open cut and possible wider impacts on bankside/adjacent habitats.	The Project confirmed no decisions will be made regarding crossing techniques until each watercourse has been assessed individually.
		Consultees raised no concerns with the Project’s approach to the biodiversity enhancement and management plan, commitment to net gain and maximising opportunities for biodiversity enhancement delivered by the Project.	The Conservation Strategy (Appendix 7.1 (Volume III)) will be developed based on the principles discussed including reinstatement of habitats affected in areas of temporary habitat loss to equal or better condition than existing.
		Yorkshire Wildlife Trust (Planning Ecologist) advised that cumulative impacts, particularly at either end of pipelines, should be considered carefully.	The Project will take note of this and address cumulative impacts in the ES.
		Yorkshire Wildlife Trust (Planning Ecologist) queried the construction period and phases of working.	The Project confirmed the construction programme is not yet decided and decisions have not yet been made about phasing or works. The Project advised that this will be important information for the HRA

Consultee	Date and method of engagement	Summary of issues raised	Response
			e.g., potential displacement of wintering birds.
		The Project requested that Yorkshire Wildlife Trust (Planning Ecologist) reviews the Scoping Route Corridor to identify potential opportunities for enhancement – are there areas Yorkshire Wildlife Trust would suggest are targeted for construction to facilitate land-use change?	Yorkshire Wildlife Trust (Planning Ecologist) advised this would be discussed with colleagues.
		Humber Nature Partnership reiterated their support for the “ <i>refreshing and ambitious</i> ” approach outlined in the Conservation Strategy and early engagement with stakeholders.	The Project continues to engage with stakeholders and develop the Conservation Strategy as the Project progresses.
RSPB and Lincolnshire Wildlife Trust	4 April 2022 (Microsoft Teams call)	Consultees raised no concerns with the keystone habitats and umbrella species proposed to be included in the Conservation Strategy.	The Conservation Strategy (Appendix 7.1 (Volume III)) has been developed based on the keystone habitats and umbrella species proposed.
		Lincolnshire Wildlife Trust supported the consideration of open mosaic habitat, noting that this is important near Scunthorpe.	The Project will take note of this as the Conservation Strategy is developed.
		Lincolnshire Wildlife Trust supported the principle of putting back ‘messy habitats’ but felt that education and information sharing around this would be really important, to explain to landowners and the public why	The Project will take note of this as the Conservation Strategy is developed.

Consultee	Date and method of engagement	Summary of issues raised	Response
		this was intentional and what the benefits are.	
		RSPB emphasised that the Study Area is a varied landscape and the importance of focusing on different habitats in different areas. Lincolnshire Wildlife Trust supported this view.	The Project will take note of this as the Conservation Strategy (Appendix 7.1 (Volume III)) is developed.
		Lincolnshire Wildlife Trust noted that there is currently an American mink (<i>Neovison vison</i>) control project in south Lincolnshire which is intending to extend north. Lincolnshire Wildlife Trust felt that the Project should tie into this strategy. RSPB noted a similar project undertaken by the Wildlife Trust on the north banks of the Humber.	The Project has begun to follow up on these mink control projects with a view to incorporating these into the Conservation Strategy where appropriate (see 8 April 2022 engagement below).
		RSPB would be keen that the assessment recognises the importance of the Humber estuary for non-breeding SPA species.	The Project advised that extensive wintering bird surveys have been undertaken.
		Consultees raised no concerns with standard survey approaches.	The Conservation Strategy (Appendix 7.1 (Volume III)) has been developed based on the agreed survey approaches,
		Lincolnshire Wildlife Trust queried the format of data collection for Phase 1 habitat survey and whether this would include UK Habitat Classification data.	The Project confirmed that data collection would initially be to Phase 1 habitat standard, but that data

Consultee	Date and method of engagement	Summary of issues raised	Response
			would be converted to UK Habitat Classification as the route is refined.
		<p>Consultees raised no concerns with the alternative ecology survey approach (i.e. avoiding surveys for species where improving patch quality will deliver enhancements).</p>	<p>The Conservation Strategy (Appendix 7.1 (Volume III)) has been developed based on the agreed survey approaches, including:</p> <ul style="list-style-type: none"> • Surveys for fish and bat roosts to be undertaken as/when required to inform DCO; and <p>Invertebrates, reptiles, breeding birds, badger, bat activity, otters and water voles will be assessed using ad hoc recordings, desk study and patch quality. Habitat measures will be provided to demonstrate greater benefit. Surveys may be undertaken if known presence or high-quality habitat affected.</p>
		<p>RSPB noted that crane is an important local species, nesting on Thorne Moor and taking chicks to arable land to feed. RSPB requested mitigation during construction, e.g., areas of temporary grassland between nest sites and the pipelines to allow feeding.</p>	<p>The Project acknowledged that the mitigation likely to be required for SPA species would also benefit crane. The RSPB agreed.</p>
		<p>Lincolnshire Wildlife Trust encouraged the Project to look at innovative mitigation and design for AGIs, referring to multi-functional</p>	<p>The Project will investigate this as the Conservation Strategy is developed.</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
		barn owl (<i>Tyto alba</i>) towers and shingle/grass roofs on structures.	
		The project emphasised they are keen to work with landowners and would appreciate suggestions for mitigation opportunities.	The RSPB advised they have a potential landowner in mind and will provide details (see correspondence dated 5 July 2022).
		Lincolnshire Wildlife Trust suggested future joint meetings with LPA ecologists, Natural England, Wildlife Trusts and RSPB.	The Project will adopt this approach for future meetings, establishing an “Ecology Working Group” comprising Local Planning Authority ecologists/representatives (North Lincolnshire Council, North Yorkshire County Council (also supporting Selby District Council), East Riding of Yorkshire Council and West Lindsey District Council), Humber Nature Partnership, Natural England, RSPB, Lincolnshire Wildlife Trust and Yorkshire Wildlife Trust (Planning Ecologist), Environment Agency (Sustainable Places – Planning Advisor, East Midlands (Trent) Biodiversity Officer, Lincolnshire Biodiversity Officer and East Midlands Biodiversity Officer).
		Consultees raised no concerns with the Project’s approach to the biodiversity enhancement and management plan, commitment to net gain and maximising	The Conservation Strategy (Appendix 7.1 (Volume III)) will be developed based on the principles discussed including reinstatement of

Consultee	Date and method of engagement	Summary of issues raised	Response
		opportunities for biodiversity enhancement delivered by the Project.	habitats affected in areas of temporary habitat loss to equal or better condition than existing.
Yorkshire Wildlife Trust (Planning Ecologist)	5 April 2022 and 11 April 2022 (Email)	The Project issued meeting notes and a copy of the slide deck used in the 29 March 2022 meeting. Yorkshire Wildlife Trust (Planning Ecologist) confirmed acceptance of the minutes on 11 April 2022 via email.	Minutes are accepted as an accurate reflection of the meeting.
Humber Nature Partnership	5 April 2022 (Email)	Humber Nature Partnership provided contact details for the Greater Lincolnshire Nature Partnership to allow Biodiversity Opportunity Maps to be requested.	The Project contacted the Greater Lincolnshire Nature Partnership to request copies of Biodiversity Opportunity Maps.
		Humber Nature Partnership advised they have been discussing the database of cumulative impacts (see 1 and 23 March 2022 engagement) internally and will be in touch to arrange a meeting to discuss this.	A meeting will be arranged in due course to discuss.
Lincolnshire Wildlife Trust	5 April 2022 (Email)	Lincolnshire Wildlife Trust provided contact details for the Greater Lincolnshire Nature Partnership and the Lincolnshire Chalk Streams Project.	The Project contacted the Greater Lincolnshire Nature Partnership to request copies of Biodiversity Opportunity Maps.
		Lincolnshire Wildlife Trust advised the Lincolnshire Chalk Streams Project may include American mink control (as noted during the 4 April 2022 meeting) and be able to advise about potential mink control	The Project will contact the Lincolnshire Chalk Streams Project as the Conservation Strategy is developed to discuss mitigation options.

Consultee	Date and method of engagement	Summary of issues raised	Response
		projects in the area for water vole protection and may also be able to provide information about chalk streams and blow wells in the North Lincolnshire area so that these can be avoided or identified in assessments.	
RSPB and Lincolnshire Wildlife Trust	6 April 2022 (Email)	The Project issued meeting notes from the 4 April 2022 meeting.	No concerns were raised, and minutes are accepted as an accurate reflection of the meeting.
RSPB	7 April 2022 (Email)	RSPB provided contact details for the Yorkshire Wildlife Trust mink control project as mentioned in the 4 April 2022 meeting.	The Project contacted the Yorkshire Wildlife Trust mink control project on 8 April 2022 (see below).
Greater Lincolnshire Nature Partnership	8 April 2022 and 28 April 2022 (Email)	Greater Lincolnshire Nature Partnership advised they have recently updated Biodiversity Opportunity Maps and provided up to date Biodiversity Opportunity Mapping for the Scoping Route Corridor.	This information will be used to develop the Conservation Strategy, particularly the biodiversity enhancement and management plan. Further requests for Biodiversity Opportunity Mapping will be made as the Conservation Strategy is developed to ensure full coverage of the Proposed Order Limits.
Yorkshire Wildlife Trust (Living Landscapes)	8 April 2022 (Email and phone call)	Yorkshire Wildlife Trust (Living Landscapes) advised their mink control project currently covers the Holderness Coast and uses remote sensing rather than traditional labour-intensive methods for trap checking. Yorkshire Wildlife Trust (Living Landscapes) advised they are looking to expand the project and are keen to discuss	The Project will review mink control project information when provided and discuss further with Yorkshire Wildlife Trust (Living Landscapes) if there is potential to support the expansion of the project.

Consultee	Date and method of engagement	Summary of issues raised	Response
		<p>opportunities to collaborate on this. Yorkshire Wildlife Trust (Living Landscapes) advised they would send over some information on the current project for the Project to review.</p>	
<p>Local Planning Authority ecologists/representatives (North Lincolnshire Council, North Yorkshire County Council (also supporting Selby District Council), East Riding of Yorkshire Council, West Lindsey District Council), Humber Nature Partnership and Yorkshire Wildlife Trust (Planning Ecologist)</p>	<p>11 April 2022 and 13 April 2022 (Email)</p>	<p>The Project shared the Scoping Route Corridor with consultees and requested feedback on any potential opportunities for biodiversity improvement.</p> <p>North Lincolnshire Council provided a copy of their current Biodiversity Opportunity Map on 13 April 2022 and advised they have more specific points to make about numerous points along the Scoping Route Corridor within the North Lincolnshire boundary.</p>	<p>The Project suggested a meeting is set up to discuss specific opportunities for biodiversity improvement once North Lincolnshire Council have reviewed the Scoping Route Corridor.</p>
<p>Environment Agency (Lincolnshire and Northamptonshire Planning Specialist)</p>	<p>24 June 2022, 29 June 2022 and 8 July 2022 (Email)</p>	<p>The Project requested fish and invertebrate data held by the Environment Agency and contact details for the biodiversity officer to discuss Conservation Strategy approach to fish mitigation and surveys.</p> <p>29 June 2022: The Environment Agency advised that the request for fish and invertebrate data has been forwarded to the National Team.</p> <p>The Environment Agency also advised the Project covers three Environment Agency areas, each with a biodiversity officer. Some</p>	<p>8 July 2022: The Project clarified the approach to fish surveys as outlined in the Conservation Strategy (Appendix 7.1 (Volume III)).</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
		of these officers will attend the meeting scheduled for 11 July 2022 (see below).	
RSPB	5 July 2022 (Email)	<p>The Project requested further details of the landowner.</p> <p>The RPSB provided contact details for the landowner they had in mind who may be willing to engage with regard to potential biodiversity enhancement/opportunities (as noted during the 4 April 2022 meeting).</p>	The Project will review land holdings for the landowner and consider these when designing mitigation and compensation measures.
		The RSPB also advised they have recently purchased some farmland outside of the Proposed Order Limits near Alkborough Flats and are looking to carry out a wetland habitat creation project and queried whether this would be something the Project would support, or whether it was too far outside of the Proposed Order Limits.	The Project will consider whether the RSPB wetland habitat creation project could be supported as part of mitigation/compensation measures.
Environment Agency (East Midlands Biodiversity Technical Specialist)	5 July 2022 and 6 July 2022 (Email)	<p>The Project asked the Environment Agency to clarify if any further white-clawed crayfish surveys were planned for the 2022 survey season (as noted during correspondence received on 1 March 2022).</p> <p>6 July 2022: The Environment Agency confirmed surveys for white-clawed crayfish using artificial traps are due to commence in August 2022.</p>	The Project will request results of these surveys in November 2022 to inform the EIA baseline.

Consultee	Date and method of engagement	Summary of issues raised	Response
<p>Ecology Working Group (Local Planning Authority ecologists/representatives (North Lincolnshire Council, North Yorkshire County Council (also supporting Selby District Council) and East Riding of Yorkshire Council), Humber Nature Partnership, RSPB, Lincolnshire Wildlife Trust and Yorkshire Wildlife Trust (Planning Ecologist), Environment Agency (Sustainable Places – Planning Advisor, East Midlands Biodiversity Officer and Lincolnshire Biodiversity Officer)</p>	<p>11 July 2022 (Microsoft Teams call)</p>	<p>The RSPB queried two sites that Natural England had not mentioned in their scoping response (Eastoft Meadow SSSI and The Lagoons SSSI) and advised that potential impacts on these sites should be considered.</p>	<p>The Project advised that Eastoft Meadow SSSI will not be directly impacted by the Project but has been scoped into the EIA due to the potential for indirect impacts.</p> <p>The Project advised that The Lagoons SSSI is outside of the 2 km Study Area and has therefore been scoped out of the EIA. A subsequent design change has brought The Lagoons SSSI is within the 2 km Study Area, however still sufficiently distant (approximately 1.95 km) to be scoped out of the EIA.</p>
		<p>East Riding of Yorkshire Council raised concern that potential coastal defences work as part of the Project may alter coastal processes that could indirectly impact sites such as The Lagoons SSSI.</p>	<p>The Project raised these comments in a separate coastal processes meeting held on 20 July 2022 which other members of East Riding of Yorkshire Council attended (see Table 17.2 in Chapter 17: Hydrology and land drainage (Volume II)).</p>
		<p>Humber Nature Partnership and North Lincolnshire Council acknowledged agreement with attendees and objectives of the “Ecology Working Group”, with the use of one-to-one/focused conversations where appropriate.</p>	<p>The Project will continue to engage with the Ecology Working Group.</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
		<p>Disused Railway Line at Drax – North Yorkshire County Council advised this site is a deleted Site of Importance for Nature Conservation (SINC) or LWS, previously identified (in 1998) for species-rich grassland. North Yorkshire County Council suspects the site is now scrubbed over and could therefore benefit from scrub management. North Yorkshire County Council are keen to discuss findings from Project surveys in this area when available.</p>	<p>The Project will consider habitat management as the Conservation Strategy is developed. The Project advised survey findings will be made available.</p>
		<p>Paupers Drain LWS – The Environment Agency East Midlands Biodiversity Officer advised there are many issues with fish kills at this site and any open-cut crossings will need to consider this as an additional risk.</p>	<p>The Project will consider this as the Conservation Strategy is developed.</p>
		<p>Keadby Ash Tip – North Lincolnshire Council approved of proposals for the pipelines across the north of the site to an AGI location in the east to avoid the south of Keadby Ash Tip which is considered to have the highest ecological value.</p> <p>North Lincolnshire Council advised to avoid disturbing existing topography and focus on flat areas.</p>	<p>The Project agreed.</p>
		<p>West Common North Road LWS – North Lincolnshire Council advised this site is subject to current management.</p>	<p>The Project queried whether the site should be reinstated as is, or if there are opportunities for improvement.</p>
		<p>Blackhoe LWS and Broom Plantation – North Lincolnshire Council advised lesser</p>	<p>The Project advised lesser spotted woodpecker were not recorded</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
		<p>spotted woodpecker (<i>Dendrocopos minor</i>) (almost extinct in North Lincolnshire) have been recorded in Broom Plantation earlier this year and provided details for recorder (Graham Catley). North Lincolnshire Council advised any trees suitable for woodpecker should be retained.</p>	<p>during 2022 breeding bird surveys at Broom Plantation but followed up on the record (see correspondence dated 11 and 13 July 2022).</p>
		<p>Barnetby Road Verges – North Lincolnshire Council suggested inverting soils during construction to bring chalk to the surface to improve species diversity. North Lincolnshire Council agreed that any disturbance to the verges would require signage to reassure locals this has been done intentionally to provide biodiversity benefits.</p>	<p>The Project offered to extend this to areas outside of the required construction zone if this would be preferable.</p>
		<p>Grasby Bottoms Green Lane LWS – North Lincolnshire Council fully supports the opportunity to invert the soil as suggested for Barnetby Road Verges and would be very keen for this to be implemented.</p>	<p>The Project advised that this would need future management change to ensure success and they would make contact with the landowner to discuss.</p>
		<p>East Halton Beck and woodland – Environment Agency (Sustainable Places – Planning Advisor) queried the construction technique proposed to cross the East Halton Beck.</p> <p>North Lincolnshire Council advised that this site falls within the Lincolnshire Chalk Stream Proposed Order Limits.</p>	<p>The Project advised this is currently open-cut as it is quicker and will minimise disruption to nearby residents.</p> <p>The Project advised contact will be made with the Lincolnshire Chalk Stream project in due course to</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
			discuss this and other potential mitigation opportunities (e.g. mink control which was raised in previous correspondence of 5 April 2022).
		<p>Consultees raised no concerns in relation to the Projects assessment of the following sites:</p> <p>Holme Plantation</p> <p>Bellevue Farm</p> <p>Kettleby Covert</p> <p>Hedon – Winestead Disused Railway Line LWS</p> <p>Dimlington Cliffs SSSI</p>	The Project will continue to consider these sites in the design of mitigation within the Conservation Strategy.
		<p>Swinefleet Warping Drain</p> <p>Folly Drain</p> <p>Warping Drain, Derrythorpe LWS</p> <p>Candley Beck, Westrum LWS</p> <p>Burstwick Drain</p> <p>North Lincolnshire Council advised the drains throughout North Lincolnshire that are managed with meadow cutting are showing greater species diversity than unmanaged drains.</p>	The Project considers impacts from construction are not significantly different from current conditions (i.e. infrequent disturbance) therefore current conditions should be maintained.

Consultee	Date and method of engagement	Summary of issues raised	Response
		<p>Consultees provided no further feedback on opportunities for enhancement/improvement at the 18 sites discussed above following the meeting.</p>	<p>The Project will continue to discuss opportunities for enhancement/improvement with the Ecology Working Group as the Conservation Strategy is developed.</p>
		<p>East Riding of Yorkshire Council and Humber Nature Partnership noted the Newton Garth Impact Avoidance Area</p>	<p>The Project confirmed they are aware of this area.</p>
		<p>East Riding of Yorkshire Council raised concern over potential impacts on Oak Hill LWS.</p> <p>RSPB and East Riding of Yorkshire Council confirmed there are marsh harrier (<i>Circus aeruginosus</i>) nesting on/near the LWS at multiple locations, so the Project may need to consider indirect impacts.</p>	<p>The Project advised construction in this area would be trenchless and would therefore avoid direct impacts.</p> <p>RSPB and East Riding of Yorkshire were asked to provide further details/location of marsh harrier nesting locations (see correspondence dated 19 July 2022).</p>
		<p>Environment Agency (Sustainable Places – Planning Advisor) queried which watercourses would be crossed using trenchless techniques.</p> <p>Environment Agency (Sustainable Places – Planning Advisor and East Midlands Biodiversity Officer) would prefer trenchless crossings wherever possible and advised there may be links with flood risk to consider.</p>	<p>The Project aims to use trenchless techniques to cross all main rivers. Currently only a small number of smaller watercourses will be crossed using trenchless techniques and this is mostly due to logistics (e.g. multiple watercourses in close proximity to each other).</p> <p>The Project advised open-cut is generally the preferred construction method, unless mitigation or</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
			compensation requirements are too high i.e. need a strong justification for use of trenchless technique.
		Environment Agency (East Midlands Biodiversity Officer) advised that water vole will be an additional consideration at open-cut crossings.	Water vole are an umbrella species within the Conservation Strategy and have been scoped into the EIA to allow assessment of impacts.
		Humber Nature Partnership felt the Ecology Working Group forum was very useful and others agreed.	The Project will continue to engage with stakeholders through the Ecology Working Group.
		North Lincolnshire Council advised there was a hedgerow on the Killingholme parish boundary (exact location unknown) that was removed without consent and then replaced with heavy protection. North Lincolnshire Council believes the hedgerow now automatically qualifies as Important as a result of being previously removed without consent. North Lincolnshire Council advised they would discuss with case officer to confirm location, and this was clarified following the meeting (see below).	N/A
North Lincolnshire Council	11 July 2022 (Email)	North Lincolnshire Council provided the Hedgerow Replacement Notice and advised that the replanted hedgerow is considered Important, in accordance with Section 8 of the Hedgerows Regulations 1997.	The Project will ensure any lengths of the replanted Important hedgerow at Killingholme that fall within the Proposed Order Limits are subject to a Hedgerows Regulations Survey.

Consultee	Date and method of engagement	Summary of issues raised	Response
Graham Catley	13 July 2022 (Email)	Graham Catley advised he had heard a possible lesser spotted woodpecker at Broom Plantation, but further searches found no other evidence of the species and the record was therefore discounted.	The Project considers that lesser spotted woodpecker are likely to be absent from Broome Plantation.
Canal and River Trust	13 July 2022 (Microsoft Teams call)	The Canal and River Trust requested that waterspace is considered as a receptor within the ES and that construction impacts on the waterspace and vibration impacts on ecology should also be considered. The Canal and River Trust provided Codes of Practice (Ref 7.30 and Ref 7.31) for working in/near Canal and River Trust sites.	<p>The Project confirmed that the water environment has been scoped in as an IEF for consideration within the ES.</p> <p>Construction impacts (including vibration) are noted in Section 7.7 of this Chapter.</p> <p>The Project will ensure compliance with the Codes of Practice.</p>
Ecology Working Group	18 July 2022, 19 July 2022 and 21 July 2022 (Email)	<p>The Project issued meeting notes and a copy of the slide deck (including screenshots of the 18 sites discussed) from the 11 July 2022 meeting.</p> <p>The Environment Agency confirmed agreement with the issued minutes on 21 July 2022.</p>	<p>On 19 July 2022, the RSPB provided locations of marsh harrier in/around Oak Hill LWS as noted during the meeting and requested involvement in discussion regarding ecological mitigation/enhancement opportunities relating to the Humber Estuary crossing.</p> <p>The marsh harrier data will be incorporated into the PEA. The Project will continue to engage with the RSPB as the Conservation Strategy, and particularly the</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
			<p>biodiversity enhancement and management plan, are developed.</p> <p>Minutes are accepted as an accurate reflection of the meeting.</p>
Natural England (DLL Team)	<p>28 July 2022 and 15 August 2022</p> <p>(Email)</p>	<p>The Project submitted a DLL enquiry form to the Natural England DLL team and requested an indicative cost for the conservation payment.</p> <p>On 28 July 2022, the Natural England DLL team provided an estimated total for the conservation payment and an overview of how the cost had been calculated.</p>	<p>The Project will discuss the conservation payment with the Applicant and will continue to seek to avoid impacts to ponds as the design is developed.</p>
Environment Bank	<p>5 August 2022 and 15 August 2022</p> <p>(Phone call and Email)</p>	<p>The Project contacted The Environment Bank to discuss BNG requirements for the Project. The Environment Bank requested a meeting to discuss further.</p>	<p>The Project responded to the Environment Bank on 15 August 2022 to advise that the Project is still undergoing significant design change and is not yet in a position to provide information for a detailed assessment. At this stage the Project is keen to understand if there are estimated monetary values per hectare of created habitat or per biodiversity unit that could be used to calculate estimated BNG costs.</p> <p>The Project will continue to develop the BNG baseline and engage with the Environment Bank as the design</p>

Consultee	Date and method of engagement	Summary of issues raised	Response
			is developed to inform BNG requirements and establish costs to inform overall Project budget.
Natural England (Yorkshire and North Lincolnshire Team)	24 August 2022 (Email)	Natural England advised they are now able to offer pre-submission advice.	The Project agreed to schedule a meeting to update Natural England on Project progress and discuss technical aspects such as ecological constraints, survey approach and BNG. As part of the meeting, the Project will also seek to resolve issues raised in the EIA scoping response (e.g. whether Manton and Twigmoor SSSI should be scoped in/out of the ES).
Environment Agency	26 August 2022 (Email)	<p>The Environment Agency highlighted ecological risks associated with de-watering and over-pumping for open-cut crossings and reiterated their strong preference for trenchless crossings to avoid ecological impacts.</p> <p>The Environment Agency provided further suggestions for biodiversity enhancement</p>	<p>The Project has and will continue to assess ecological risks and opportunities for each individual watercourse crossed by the Project.</p> <p>The Project will consider the suggestions for biodiversity enhancement as the Conservation Strategy (Appendix 7.1 (Volume III)) is developed and provide a response to the Environment Agency on these suggestions.</p>

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