

Immingham Green Energy Terminal

Environmental Impact Assessment

Preliminary Environmental Information Report

Volume II – Main Report

Chapter 8: Nature Conservation (Terrestrial Ecology)

Associated British Ports



Document History

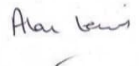
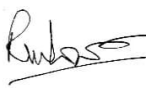
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8 Nature Conservation (Terrestrial Ecology)

8.1 Introduction

8.1.1 This chapter presents the preliminary findings of the assessment of the likely effects of the Project on nature conservation (terrestrial ecology).

8.1.2 The Project would be located partly within, and partly on land adjacent to, the Humber Estuary Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar site and Site of Special Scientific Interest (SSSI), collectively referred to as the Humber Estuary European Marine Site (EMS). All effects on the designated features of the Humber Estuary EMS are assessed in **Chapter 9: Nature Conservation (Marine Ecology)** and **Chapter 10: Ornithology** respectively, and therefore this chapter does not include an assessment of the impacts of the Project on the Humber Estuary EMS.

8.1.3 There may be interrelationships related to the potential effects on terrestrial ecology and other disciplines. Therefore, also refer to the following chapters:

- a. **Chapter 6: Air Quality:** this chapter assesses potential interactions between the Project and the designated habitats of the Humber Estuary EMS.
- b. **Chapter 7: Noise and Vibration:** this chapter this chapter assesses potential interactions between the Project and the designated features of the Humber Estuary EMS that are sensitive to noise and vibration.
- c. **Chapter 9: Nature Conservation (Marine Ecology):** this chapter assesses potential interactions between the Project and the designated marine and intertidal habitat features of the Humber Estuary EMS.
- d. **Chapter 10: Ornithology:** this chapter assesses impacts on the qualifying bird interest of the Humber Estuary SPA/ Ramsar and SSSI, including marine, coastal and supporting terrestrial habitats (i.e. functionally linked land). The assessment considers passage, overwintering and breeding bird species (including non-SPA/ Ramsar breeding birds).

8.1.4 This chapter is also supported by the following figures and appendices:

- a. **Appendix 8.A:** Ecological Impact Assessment Methods (PEI Report, Volume IV).
- b. **Appendix 8.B:** Land off Kings Road, Immingham Preliminary Ecological Appraisal Report (PEI Report, Volume IV).

8.2 Approach to Assessment

Scope and Methods

8.2.1 An EIA scoping exercise was undertaken in August 2022 to establish the form and nature of the nature conservation (terrestrial ecology) assessment, and the approach and methods to be followed. However, terrestrial ecology surveys were commenced in advance of the formal scoping process given the seasonal constraints associated with field survey work. The scope of the terrestrial ecology

surveys was therefore defined at an early stage in the process based on similar projects in the Immingham area undertaken by AECOM.

- 8.2.2 The Scoping Report (**Appendix 1.A** of PEI Report, Volume IV) records the findings of the scoping exercise and details the technical guidance, standards, best practice and criteria being applied in the assessment to identify and evaluate the likely significant effects of the Project on nature conservation (terrestrial ecology).
- 8.2.3 The approach to Ecological Impact Assessment (EclA) for the Project remains as summarised in the Scoping Report, with further details regarding the technical approach provided in **Appendix 8.A** (PEI Report, Volume IV).
- 8.2.4 Following receipt of the Scoping Opinion (**Appendix 1.B** of PEI Report, Volume IV), the following requirements have been identified by the Planning Inspectorate which will be considered as part of the ongoing nature conservation (terrestrial ecology) assessment:
- a. Evidence based assessment of potential impacts on bats and their roosts.
 - b. Reptiles can be scoped out of the assessment provided that precautionary working methods are specified and committed.
 - c. Further information on habitat suitability for white-clawed crayfish (*Austropotamobius pallipes*) in support of the case for scoping this species out of the assessment.
 - d. All relevant statutory nature conservation designations are to be identified with reference to the Impact Risk Zones (IRZs) (defined by Natural England).
- 8.2.5 Having regard to the information presented within the Scoping Report (**Appendix 1.A** in PEI Report Volume IV), the Planning Inspectorate's Scoping Opinion (**Appendix 1.B** in PEI Report, Volume IV) has also confirmed the Applicant's view that significant effects on reptiles and Local Wildlife Sites (LWS) are unlikely. Accordingly, these matters will remain scoped out of consideration in the Environmental Statement (ES). **Table 8.1:** summarises the consultation undertaken to date to inform this chapter, as well as where comments have been addressed within the chapter.

Table 8.1 Scoping Opinion Comments on Nature Conservation (Terrestrial Ecology)

Consultee	Summary of Response	How comments have been addressed in this chapter
<p>Planning Inspectorate</p>	<p>The Scoping Report proposes to scope out further surveys for bat foraging and commuting activity at the West Site due to the prevalence or low quality or unsuitable habitat and because usage would likely be on an occasional and transient basis by small numbers of foraging/ commuting common species of bats. In light of the evidence provided in Appendix C, the Inspectorate agrees that further bat surveys can be scoped out for the West Site only.</p>	<p>No further comment required.</p>
	<p>The Scoping Report notes there are a large number of mature oak and ash trees within Long Strip woodland (Pipeline area) that maybe suitable for roosting bats, but it assumes that all mature trees would be avoided by the Proposed Development. It states that should it become necessary to remove/ prune any mature trees, further assessment work for bats would be undertaken to inform mitigation/ licensing requirements as necessary. The Inspectorate does not agree that this matter can be scoped out at this time. Suitable trees should be evaluated for their roosting potential and this information should be used to inform design development and the assessment of effects. Should substantial bat populations be identified the potential for impacts on foraging/commuting would need to be revisited.</p>	<p>Clarification added at Paragraph 8.3.17 that further inspections of trees for bats will be undertaken as necessary and reported in the ES.</p>

	<p>The Scoping Report states that none of the habitats within the Proposed Development's DCO site boundary have been found to be suitable for reptiles, as they lack the diverse habitat mosaic and varied topography favoured by species of reptiles for basking, refuge and hibernation and adds that in context with the lack of known reptile populations in this part of the county, it is reasonable to conclude that they are likely absent. The Scoping Report also states that the low risk of presence of grass snake on the main drain at the foot of the flood embankment can be addressed through a precautionary approach/ method statement for vegetation clearance during construction. The Inspectorate agrees that this matter can be scoped out of the assessment on this basis. The ES should set out the relevant precautionary working methods proposed to be adopted.</p>	<p>Precautionary working methods will be provided in the final ES with reference to the final design and Site boundary.</p>
	<p>Impacts on designated marine ecology features would be assessed in accordance with ES Chapter 8 and impacts on designated ornithology features would be assessed in accordance with Chapter 9. The Inspectorate agrees that this matter can be scoped from terrestrial ecology assessment on the basis that no impacts are anticipated on the Humber Estuary Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar and Site of Special Scientific Interest (SSSI), collectively referred to as the Humber EMS, and as impacts on marine ecology and ornithology for these designated sites will be assessed elsewhere in the ES.</p>	<p>No further comment required.</p>

	<p>The preliminary ecological appraisal (Appendix C of the Scoping Report) states that ditches within the Proposed Development site boundary are unsuitable for white-clawed crayfish and therefore the species will not be considered further. The appraisal appears to relate only to the West Site of the Proposed Development site. The Inspectorate agrees that this matter may be scoped out for the West site but does not agree that this matter can be scoped out for the other parts of the site unless evidence demonstrating that ditches are unsuitable for white-clawed crayfish is provided for the other parts of the Proposed Development site in the ES or information which demonstrates agreement with the relevant consultation bodies and the absence of a likely significant effect.</p>	<p>The PEA will be updated and included with the ES. All areas of site will be included within the appraisal as evidence to support this conclusion.</p>
	<p>The Scoping Report considers the Humber Estuary Site of Special Scientific Interest (SSSI) may be affected by the Proposed Development but does not explicitly refer to other SSSIs or SSSI impact risk zones. The Inspectorate advises that all relevant SSSI designated sites and impact risk zones should be considered in the assessment (including North Killingholme Haven Pits SSSI and The Lagoons SSSI) and evidence which demonstrates that the Proposed Development is unlikely to have any significant adverse effects on these should be provided in the ES.</p>	<p>North Killingholme Haven Pits SSSI, as a saline lagoon connected to the European Marine Site, falls within the potential scope of Chapters 9 and 10. It is not designated for features of relevance to the terrestrial ecology chapter. The Lagoons SSSI is located at distance (north of the Humber), the outer IRZ band extends to c. 9.9km from the SSSI so the site (nearest terrestrial part of Order Limits is c. 19km from the SSSI) is not located within its IRZ. On this basis, all relevant SSSIs have been considered and the ES will provide further clarity on this point to permit scoping out.</p>
<p>Natural England</p>	<p>We note and welcome the report's consideration of impacts upon local wildlife and geological sites. Local Sites are identified by the local wildlife trust, geoconservation group or a local forum established for the purposes of identifying and selecting local sites.</p>	<p>Mitigation proposals will be included in the final ES, if required, based on the final design and Order Limits, and with reference to the conclusions of the Air Quality Impact Assessment.</p>

	<p>They are of county importance for wildlife or geodiversity. We welcome the report's inclusion of an assessment of the likely impacts on the wildlife and geodiversity interests of such sites. Further information on local wildlife Sites is available from the Yorkshire Wildlife Trust - 01904659570 or Email: info@ywt.org.uk. The ES should set out proposals for mitigation of any impacts and if appropriate, compensation measures and opportunities for enhancement and improving connectivity with wider ecological networks. They may also provide opportunities for delivering beneficial environmental outcomes.</p>	
<p>North East Lincolnshire Council</p>	<p>The site appears to be adjacent to W2 of North East Lincolnshire Borough Council No. 107 (Long Wood, Laporte Road, Stallingborough) Tree Preservation Order 2002. There is a defined drainage ditch between the site and the woodland. I am aware that this site is managed by the Humber Nature Partnership and that there is a management plan in place. Given the woodland is covered by a TPO I feel the impact of the proposal on the woodland should be considered within the EIA.</p>	<p>The potential impact of the Project on the TPO woodland will be fully quantified and considered within the EIA.</p>

8.3 Assessment Method

8.3.1 **Appendix 8.A** (PEI Report, Volume IV) provides details of the ecological impact assessment methods.

8.4 Legislation, Policy and Guidance

8.4.1 **Table 8.2** presents a summary of the legislation, policy and guidance relevant to the nature conservation (terrestrial ecology) assessment and details how their requirements will be met by the Project.

Table 8.2 Relevant Legislation, Policy and Guidance Regarding Nature Conservation (Terrestrial Ecology)

Legislation/ Policy/ Guidance	Consideration within the PEI Report
The Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 8-1)	
<p>The Regulations provide for the protection of 'European sites' and the protection of 'European protected species'. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities.</p> <p>The Regulations require competent authorities to consider or review applications for planning permission/ consents for projects through an appropriate assessment of the plan/ project.</p>	<p>Section 8.3 identifies European Sites and European Protected Species relevant to this assessment. Section 8.4 summarises how these have been addressed in the Project design (this will be considered in more detail in the ES). Sections 8.5-8.7 provide an assessment of potential impacts and effects, and any related requirements for avoidance/ mitigation/ compensation measures.</p> <p>Assessment in respect of the Humber Estuary EMS and its designated features is considered in Chapter 9: Nature Conservation (Marine Ecology).</p>
Wildlife and Countryside Act (WCA) 1981 (as amended) (Ref 8-2)	
<p>Part 1 of the WCA affords general protection to all species of wild bird, and specific protection to flora and fauna listed in Schedules 1 (birds protected by special penalties), 5 (other animals), and 8 (flora, fungi and lichens). In certain circumstances, licences can be granted to permit some actions prohibited under the Act.</p> <p>Schedule 9 provides lists of non-native flora and fauna that it is an offence to release or cause to spread in the wild. Of primary relevance in the context of proposed developments are flora e.g. invasive non-native plant species.</p> <p>Part 2 of the WCA details the law regarding SSSI and other protected areas within Great Britain.</p>	<p>Section 8.3 identifies SSSIs and protected and invasive species relevant to this assessment. Section 8.4 summarises how these have been addressed in the Project design (this will be considered in more detail in the ES). Sections 8.5-8.7 provide an assessment of potential impacts and effects, and any related requirements for avoidance/ mitigation/ compensation measures.</p>

Legislation/ Policy/ Guidance	Consideration within the PEI Report
Natural Environment and Rural Communities (NERC) Act 2006 (Ref 8-3)	
<p>Through Section 40 of the Act, a legal duty is placed on Government Departments and public authorities to have regard for the conservation of biodiversity. This 'biodiversity duty' includes, but is not restricted to, habitats and species of principal importance for nature conservation in England published by the Government in accordance with the requirement set through Section 41 of the Act.</p>	<p>Section 8.3 identifies important habitats and species relevant to this assessment including those named on Section 41 of the Act. Section 8.4 summarises how these have been addressed in the Project design (this will be considered in more detail in the ES). Sections 8.5-8.7 provide an assessment of potential impacts and effects, and any related requirements for avoidance/ mitigation/ compensation measures.</p>
Protection of Badgers Act 1992 (Ref 8-4)	
<p>This Act makes it an offence to kill or take a badger, to cruelly ill-treat a badger, or to interfere with a badger sett, including disturbing a badger while it is occupying a sett. In certain circumstances, licences can be granted to permit some actions prohibited under the Act.</p>	<p>Surveys have been completed to identify if badgers are likely to be affected. Section 8.3 confirms this species is not a constraint to the Project.</p>
The Hedgerow Regulations 1997 (Ref 8-5)	
<p>The regulations do not apply to acts of hedgerow removal covered by the process for granting planning permission. However, it retains value as part of the process for determining the relative value of specific hedgerows/ hedgerow networks and requirements for appropriate mitigation</p>	<p>Surveys have been completed to identify locations where hedgerows occur (see Section 8.3). Section 8.4 summarises how these have been addressed in the Project design (this will be considered in more detail in the ES), while Sections 8.5-8.7 provide an assessment of potential impacts and effects, and any related requirements for avoidance/ mitigation/ compensation measures.</p>
Invasive Alien Species (Enforcement and Permitting) Order 2019 (Ref 8-6)	
<p>The Order allows for the enforcement of European Union Regulation No. 1143/2014 on the prevention and management of the introduction and spread of invasive alien species within England. The Regulation lists species of European Union concern which cannot be imported, kept, bred/ grown, transported, sold, used, allowed to reproduce, or released into the environment. The Order therefore tightens existing rules (e.g. under the Wildlife and Countryside Act 1981 (as amended)) around releasing invasive non-native animals which threaten our native wildlife.</p>	<p>Surveys have been completed to identify if any terrestrial invasive non-native plant species are present on the Site Section 8.3 confirms that there are no known occurrences of invasive non-native plant species within the Site.</p>
National Policy Statement for Ports 2012 (NPSfP) (Ref 8-7)	
<p>Section 5.1 (Biodiversity and geological conservation) provides the nature conservation</p>	<p>Section 8.3 identifies the terrestrial designations, habitats and species relevant to this assessment.</p>

Legislation/ Policy/ Guidance	Consideration within the PEI Report
<p>framework for decisions on proposals for new port development.</p>	<p>Section 8.4 summarises how these have been addressed in the Project design (this will be considered in more detail in the ES). Sections 8.5-8.7 provide an assessment of potential impacts and effects, and any related requirements for avoidance/ mitigation/ compensation.</p>
<p>National Planning Policy Framework (NPPF) 2021 (Ref 8-9)</p>	
<p>Chapter 15 (<i>Conserving and enhancing the natural environment</i>) sets out government planning policies for England and how decision-making should contribute to and enhance the natural and local environment. Specifically, the following principles should be applied:</p> <p>a) if significant harm to biodiversity cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.</p> <p>b) development on land within or outside a SSSI and which is likely to have an adverse effect on it (should not normally be permitted).</p> <p>c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.</p> <p>d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design.</p>	<p>Section 8.3 identifies the SSSIs and biodiversity features relevant to this assessment. Section 8.4 summarises how these have been addressed in the Project design (this will be considered in more detail in the ES). Sections 8.5-8.7 provide an assessment of potential impacts and effects, and any related requirements for avoidance/ mitigation/ compensation.</p>
<p>Government Standing Advice (Ref 8-10 and 8-11)</p>	
<p>The purpose of standing advice is to guide decision-makers on the determination of proposals with potential to affect protected sites, habitats and species.</p>	<p>This advice has informed the overall survey and assessment approach in respect of protected species/ habitats, which is set out in Table 8.3 (field survey scopes and methods) and Appendix 8.A (PEI Report Volume IV) (assessment scope and methods).</p>
<p>Local Policy</p>	
<p><i>North East Lincolnshire Local Plan 2018 (Ref 8-12)</i></p>	

Legislation/ Policy/ Guidance	Consideration within the PEI Report
<p>Policy 9 – Habitat Mitigation – South Humber Bank. This policy requires that proposals within the Mitigation Zone, which will adversely affect the Humber Estuary SPA / Ramsar site due to loss of functionally linked land to provide their own mitigation to comply with the requirements of the Habitats Regulations.</p> <p>Policy 41 – Biodiversity and Geodiversity. This policy sets out a strategic approach, which positively plans for the creation, protection, enhancement and management of sites of biodiversity and geodiversity value.</p>	<p>The Project is located within the Mitigation Zone identified on the policies map and therefore falls within the remit of this policy where land that is functionally linked to the Humber Estuary SPA/ Ramsar site is lost to development. The relevant terrestrial habitats are identified in Section 8.3, but the impact assessment is covered in Chapter 10: Ornithology given the relevant qualifying interest features are birds. Surveys are ongoing to determine whether land within the Project boundary is functionally linked to the SPA/ Ramsar (the scope and methods for the survey are set out in Chapter 10: Ornithology).</p> <p>Section 8.3 identifies the biodiversity features relevant to this assessment. Section 8.4 summarises how these have been addressed in the Project design (this will be considered in more detail in the ES). Sections 8.5-8.7 provide an assessment of potential impacts and effects, and any related requirements for avoidance/ mitigation/ compensation.</p>
Lincolnshire Biodiversity Action Plan (Ref 8-13)	
<p>Identifies biodiversity conservation objectives within the region and provides action plans for priority habitats, species, locally important wildlife and sites.</p>	<p>Section 8.3 identifies the biodiversity action plan habitats and species relevant to this assessment. Section 8.4 summarises how these have been addressed in the Project design (this will be considered in more detail in the ES). Sections 8.5-8.7 provide an assessment of potential impacts and effects, and any related requirements for avoidance/ mitigation/ compensation measures.</p>

Stakeholder Engagement

- 8.4.4 A range of stakeholders, including Natural England, have been engaged as part of the scoping process to obtain their views on the Project and the scope of the nature conservation (terrestrial ecology) assessment, the results of which are presented within the Scoping Opinion (**Appendix 1.B** of PEI Report Volume IV).
- 8.4.5 Further formal consultations will be undertaken to inform the final Project design and to agree the findings of the ecological impact assessment, and any requirements for avoidance/ mitigation/ compensation measures, and a scheme of biodiversity enhancement.
- 8.5 Study Areas
- 8.5.1 The following study areas are applicable to the nature conservation (terrestrial ecology) assessment:

- a. Desk Study Area: defined as land within the Site boundary and a 2km buffer for obtaining baseline data pertaining to terrestrial statutory and non-statutory designated sites, protected species and UK Priority habitats and species. The IRZs defined by Natural England have also been used to identify the SSSIs of relevance to this assessment.
- b. Habitat Survey Area: all terrestrial land within the Site boundary (excluding the jetty) and up to 50m from the Site boundary where accessible/ visible from adjacent land. This includes permanent land take and temporary laydown areas.
- c. Species Survey Areas: these were defined on a case by case basis (refer to **Table 8.2**) in accordance with the good practice survey guidelines for the species concerned and with consideration of the likely pathways for impact.

8.5.2 The potential zone of influence, as defined by the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance and outlined below, seeks to consider the potential distance from the activities being conducted to facilitate the construction (or operation) of the Project, and the designated sites, habitats or species present that may be affected by those activities e.g. the terrestrial habitats within which great crested newt may disperse from a breeding pond. The study and survey areas were considered sufficient to collate ecological baseline data to inform an EclA for the Project and to account for the potential effects likely to occur within the relevant zone of influence for each ecological feature.

Desk Study

8.5.3 A desk-based study was undertaken to obtain terrestrial ecology data from the following key sources:

- a. Multi-Agency Geographical Information for the Countryside (MAGIC) website (Ref 8-14) for statutory designated sites and ancient woodlands within 2km of the Project.
- b. Natural England website (Ref 8-15) for information on statutory designated sites of nature conservation interest within 2km of the Project and to confirm reasons for designation and site condition.
- c. Natural England Priority Habitat Inventory for records of priority habitats within 2km of the Project (accessible via MAGIC, see above).
- d. Lincolnshire Ecological Records Centre (LERC) for non-statutory designated sites and for records of protected and notable species within 2km of the Project.
- e. Local authority planning portal for any potentially relevant ecological records pertaining to the Site boundary and its immediate surrounds.

Field Surveys

8.5.4 The scope of field surveys undertaken is detailed in **Table 8.3**, along with references to the relevant methods and guidance adopted for each survey, and the dates of each survey. The relevant areas of the Site are defined in **Chapter 2: The Project** and shown on **Figure 2.2** (PEI Report, Volume III).

8.5.5 Additional Phase 1 habitat and Phase 2 protected species surveys were undertaken in 2022 to reflect the changes in the Site boundary that occurred since the original Preliminary Ecological Appraisal (PEA) Report was prepared for the West Site (as submitted with the Scoping Report (**Appendix 8.B** of PEI Report Volume IV)). These are summarised in **Table 8.3** below.

Table 8.3: Summary of Field Surveys undertaken in 2022

Survey	Field Survey Method	Field Survey Scope	Timing
Phase 1 habitat survey	Phase 1 Habitat Survey in accordance with the published method (Ref 8-16). Assessment of possible presence of protected, priority or otherwise notable species and, where relevant, the likely importance of habitat features for such species. Record of Invasive Non-Native Species (INNS) of plants. Incidental records of protected or priority species or their field signs.	<ul style="list-style-type: none"> All habitats within the Site boundary 	March – June 2022
Woodland ground flora survey	Walkover survey to record detailed botanical species listed within woodland habitats.	<ul style="list-style-type: none"> Long Strip Woodland (see Figure 2.4 (PEI Report, Volume III)) 	June 2022
Badger	Walkover survey to record any field signs of badger such as setts, latrines, or footprints.	<ul style="list-style-type: none"> All habitats within the Site boundary 	March – June 2022
Bats – foraging/ commuting	Monthly walked bat activity transects in suitable habitats in accordance with standard methods (Ref 8-17).	<ul style="list-style-type: none"> Long Strip Woodland East Site south of Laporte Road 	June, July, August and September 2022
	Monthly deployment of remote static bat detectors in suitable habitats for a minimum of five days per deployment.	<ul style="list-style-type: none"> Long Strip Woodland East Site south of Laporte Road 	June, July, August and September 2022
Otter	Presence/ absence survey for field signs.	<ul style="list-style-type: none"> Main ditch adjacent to flood embankment. 	September/ October 2022
Water vole	Presence/ absence survey following standard methods (Ref 8.18).	<ul style="list-style-type: none"> All ditches within the Site boundary 	May and September/ October 2022
Great crested newt	Habitat Suitability Index (HSI) assessment in accordance with standard methods (Ref 8-19).	<ul style="list-style-type: none"> No ponds within 250m of the Project were accessible in spring 2022. 	N/A
	Environmental DNA (eDNA) sampling.	<ul style="list-style-type: none"> No ponds within 250m of the Project were accessible in spring 2022. 	June 2022

Survey	Field Survey Method	Field Survey Scope	Timing
		<ul style="list-style-type: none"> Ditch at the base of the flood embankment was subject to eDNA sampling. 	
Terrestrial invertebrates	Habitat site appraisal by invertebrate specialist.	<ul style="list-style-type: none"> West Site East Site south of Laporte Road Long Strip Woodland 	June 2022

Field Surveys Scoped Out

- 8.5.6 As set out in the Scoping Report (**Appendix 1.A** of PEI Report Volume IV) and agreed within the Scoping Opinion (**Appendix 1.B** of PEI Report Volume IV), surveys for the following species were scoped out:
- Bat foraging/ commuting activity at the West Site: the habitats comprise mainly open tall-swarded grassland with some areas of dense scrub. Given the open and exposed nature of the West Site, it is considered unlikely that the habitats would be used on anything other than an occasional and transient basis by small numbers of foraging/ commuting common species of bats. Further bat surveys of this habitat are therefore scoped out.
 - Reptiles: none of the habitats within the Site boundary have been found to be suitable for reptiles, as they lack the diverse habitat mosaic and varied topography favoured by species of reptiles for basking, refuge and hibernation. The ditches are mainly dry and therefore unsuitable for grass snake, with the exception of the main drain at the foot of the flood embankment. When considered in context with the lack of known reptile populations in this part of the county, it is reasonable to conclude that they are likely absent. The low risk of presence of grass snake on the main drain at the foot of the flood embankment would be addressed through a precautionary approach/ method statement for vegetation clearance during Project construction.
 - White-clawed crayfish: none of the ditches within the Site boundary are suitable for this species, so further survey is not needed.

- 8.5.7 An updated PEA report will be prepared for the ES Chapter to include all habitats within the Site boundary, as it is acknowledged that the Scoping Report was supported by a PEA that only considered habitats within the West Site. However, this preliminary assessment has taken into account the results of all surveys undertaken (as set out in **Table 8.3**).

Limitations and Assumptions

- 8.5.8 The information presented in this preliminary assessment reflects that obtained and evaluated at the time of reporting and is based on an emerging design for the Project and the maximum likely extents of land required for its construction and operation.
- 8.5.9 The findings of this preliminary assessment, which at present is by necessity precautionary and worst case, may be subject to change as the design of the Project is developed and refined further through the assessment and consultation

processes, and as further research and investigative surveys are completed to fully understand its potential effects.

- 8.5.10 Some areas of land within the Site were inaccessible for the purposes of survey and were therefore mapped from adjacent land and verified with reference to available aerial imagery. Given the relatively low value of the ecological habitats within the Site, it is not considered that this represents a significant constraint to the preliminary assessment in respect of most protected species and priority habitats. Where there is room for doubt over potential impacts and effects, a precautionary assessment has been presented pending further work to address gaps in data coverage.
- 8.5.11 The PEA Report submitted with the Scoping Report was limited to consideration of the western part of the Project referred to as West Site. This comprised the disused arable land off Kings Road within which the main terrestrial elements of the Project would be located. Since the PEA was prepared and the Scoping Report submitted, there have been various amendments to the Site boundary as the design of the Project has evolved. It will therefore be necessary to update the Phase 1 habitat information to reflect these changes, and this information will be contained within an updated PEA to be submitted as an appendix to the nature conservation (terrestrial ecology) chapter of the ES. However, this preliminary assessment has taken into account the results of all surveys undertaken (as set out in **Table 8.3**).
- 8.5.12 Access to two waterbodies (Ponds 1 and 2) within the Associated Petroleum Terminal that are within 250m of the Project was not possible for the purposes of preliminary habitat suitability assessment or further survey work in respect of great crested newt. The Applicant will pursue options for accessing these waterbodies as the Project progresses. This remains a limitation to the assessment in relation to great crested newts at this stage, and the assumptions made are clearly stated herein.

8.6 Baseline Conditions

Current Baseline

- 8.6.1 The PEA Report included a Phase 1 Habitat survey and preliminary ecological appraisal of land within the West Site. As the Project design has evolved, the scope of ecological survey work has been extended as necessary, where access was permitted, to ensure that all terrestrial areas within the Site boundary (and within the relevant zones of influence) have been subject to an appropriate level of survey to inform an EclA. The baseline information presented in the Scoping Report has therefore been updated herein, where relevant. The results of all surveys undertaken will be reported within the nature conservation (terrestrial ecology) chapter of the ES, whilst an updated PEA Report will be submitted as an appendix to the ES. Where survey access to some limited areas, has not yet been possible, the Applicant will seek to survey these sites in Spring 2023 and the results will be included in the ES.

- 8.6.2 Ecological receptors are valued in accordance with the standard Ecological Impact Assessment (EclA) methodology as set out in **Appendix 8.A** (PEI Report, Volume IV).

Statutory Designated Sites

- 8.6.3 There are no statutory designated sites with IRZ that overlap the Site boundary and that have qualifying interest features of relevance to this assessment.

- 8.6.4 The marine elements of the Project are located within the Humber Estuary EMS which encompasses the Humber Estuary SPA, SAC, Ramsar and SSSI designations. The qualifying interest features (including subtidal and intertidal habitats, marine species and ornithology features) are outside the scope of the terrestrial ecology assessment. As such, no further consideration is given to the Humber Estuary EMS in this chapter. Direct and indirect impacts on the designated habitats and features are instead considered within **Chapter 9: Nature Conservation (Marine Ecology)** and **Chapter 10: Ornithology** respectively.

Non-statutory Designated Sites

- 8.6.5 The desk study identified one non-statutory designated site within 2km of the Project, namely the Laporte Road Brownfield Site Local Wildlife Site (LWS) which is located approximately 150m south-east of the Site boundary (the nearest of which is the proposed temporary construction compound off Laporte Road). This site is of County nature conservation value. No pathways by which this LWS could be affected by the Project have been identified at this stage and therefore no further consideration is given to it within this PEI Report.

Habitats

- 8.6.6 A summary of the habitats identified within the Habitat Survey Area is provided in **Table 8.4** using information from a combination of field survey and a review of aerial photography.

- 8.6.7 Most habitats within the Habitat Survey Area are of low ecological value, with the exception of the mature broad-leaved deciduous woodland of Long Strip (within the Pipeline area) as shown on **Figure 2.1** (PEI Report, Volume III). All habitats within the Habitat Survey Area except the woodland are therefore evaluated as being of Site nature conservation value only.

- 8.6.8 The woodland habitat within Long Strip is representative of the UK Priority Habitat type 'lowland mixed deciduous woodland' and the Local Biodiversity Action Plan (BAP) habitat 'trees and woodland'. Lincolnshire is noted to be '*...one of the least wooded counties in Britain*' with the predominance of agricultural cultivation meaning that woodlands have become reduced in extent and fragmented throughout the county's landscape (Ref 8-13). The woodland is also subject to a Tree Preservation Order (TPO) which applies to the whole woodland block (including the area on the south side of Laporte Road, which is outside the Site boundary). Interrogation of freely available historic maps indicates that "Long Strip" woodland was present on the 1889 Ordnance Survey Map where it was a continuous strip of woodland (Laporte Road having not been

constructed at that time). It is therefore likely that this area has been wooded from at least the middle of the 19th century. Given its rarity within the wider local area, but taking into account the fact that it is not subject to any local nature conservation designations (other than the TPO), this habitat is evaluated as being of Borough nature conservation value.

- 8.6.9 Detailed information on habitats will be presented in a revised PEA Report to be submitted as a technical appendix to the nature conservation (terrestrial ecology) chapter of the ES.

Table 8.4: Summary of Habitats within Habitat Survey Area

Habitat	Brief Description
Semi-improved grassland	Dominant habitat in West Site having originated from three abandoned arable fields (abandoned from agricultural cultivation approximately ten years ago). Comprises tall swarded poor semi-improved grassland and tall ruderals dominated by false oat-grass (<i>Arrhenatherum elatius</i>) with tall fescue (<i>Schedonorus arundinaceus</i>), tufted hair-grass (<i>Deschampsia cespitosa</i>) and meadow foxtail (<i>Alopecurus pratensis</i>).
Scrub	Self-seeded goat willow (<i>Salix caprea</i>) scrub has become established in the western and eastern parts of the West Site. Dense areas of self-seeded silver birch (<i>Betula pendula</i>) and bramble are present around a central cleared area in the East Site.
Hedgerow	The former arable field boundaries in the West Site are marked by overgrown species-poor hawthorn (<i>Crataegus monogyna</i>) hedgerows with parallel ditches choked with common reed (<i>Phragmites australis</i>).
Arable	The temporary compound off Laporte Road occupies a large arable field (approximately 15ha) fronting the estuary, which was under a wheat crop at the time of the Phase 1 Habitat survey in March 2022.
Hardstanding	Areas of hardstanding are present within the Habitat Survey Area associated with the existing port road network and land currently in use for port-related storage.
Broad-leaved woodland	The Pipeline and jetty access road is within a narrow band of mature woodland on the north side of Laporte Road referred to as 'Long Strip'. The canopy is dominated by pedunculate oak (<i>Quercus robur</i>) and ash (<i>Fraxinus excelsior</i>), with an understorey of mature hawthorn, elder (<i>Sambucus nigra</i>) and some areas of denser bramble scrub. This habitat is representative of the UK Priority Habitat type 'lowland mixed deciduous woodland'. This habitat would fall within the 'trees and woodland' Local BAP habitat type for which an action plan has been prepared.
Ephemeral/ short perennial	Part of the East Site has previously been in use for ad-hoc overflow parking and storage of construction arisings/ equipment; the central area comprises crushed and levelled aggregate material that has become colonised with ephemeral/ short perennial vegetation. This habitat does not support a sufficiently diverse mosaic of species-rich areas, wetlands and varied topography to fall within the definition of the UK Priority Habitat type 'open mosaic habitat on previously developed land'.

Habitat	Brief Description
	<p>The habitat is also considered insufficiently diverse to meet the Local BAP definition of 'brownfield' habitat, although there are elements of the habitat that may be considered representative of this habitat type such as the bare ground/ loose substrates that are becoming colonized by vegetation.</p>
Ditches	<p>There are a number of ditches within the West Site; some are of recent origin having been constructed approximately five years ago as part of development enabling works for access to the land off Kings Road. There are a number of other ditches in the West Site associated with the overgrown hedgerows that formerly marked the field boundaries. All of the ditches are heavily overgrown with common reed and hold virtually no water.</p> <p>There is a drainage ditch that runs along the western boundary of Long Strip Woodland, and which is culverted beneath Laporte Road. The stretch south of Laporte Road, and approximately three quarters of the ditch north of Laporte Road was dry when surveyed in Spring and supported no evidence of aquatic/ marginal vegetation so is unlikely to regularly hold water. The northernmost section held some water, but supported no vegetation due to substantial shading from shrubs on the banks.</p> <p>A large man-made drainage ditch is present at the base of the flood embankment; this is regularly maintained by the Environment Agency. The ditch is approximately 5m wide and supports areas of dense common reed.</p> <p>North Beck Drain flows north to south adjacent to the eastern boundary of the temporary compound off Laporte Road.</p>
Ponds	<p>There are no ponds within the Site boundary.</p> <p>Three ponds were identified through desk study as present within 250m of the Site boundary. These are discussed in further detail below in respect of their potential to support great crested newt.</p>

Badger

- 8.6.10 The desk study returned no records of badger from within the Desk Study Area.
- 8.6.11 No field signs indicating the presence of badger were found within the Site boundary during surveys undertaken in 2022. There is some potentially suitable habitat in grassland, woodland and areas of scrub for foraging and commuting badgers, but these habitats are not well connected to suitable habitat for badgers in the wider local area. Within the Site boundary, the woodland habitat in Long Strip offered the highest potentially suitable habitat for badgers; however, the woodland is relatively heavily disturbed by pedestrians/ dog walkers (there is a public bridleway along the eastern edge of the woodland) with evidence of fly-tipping within the woodland area, and no signs of badger were found.
- 8.6.12 Although it is difficult to confirm the absence of this species from areas where survey has not been possible to date, given that it is a common, widespread and wide-ranging mammal, given the lack of desk study records and the lack of field evidence, the presence of badger on anything other than a transient and occasional basis within the Site boundary is unlikely. This species is therefore not considered further in this assessment.

- 8.6.13 Precautionary mitigation would be implemented during the Project construction phase to address the low residual risk of encountering badger during clearance activities.

Bats

- 8.6.14 The desk study returned no records of bats from within the Desk Study Area.
- 8.6.15 Most habitats within the Site boundary are of low quality for foraging/ commuting bats due to the open nature of the land and the lack of botanical species diversity to provide large numbers of insect prey. These habitats were not scoped into the survey for foraging bats.
- 8.6.16 The woodland habitat in Long Strip offers the highest potentially suitable habitat for foraging and commuting bats; however, surveys completed to date have only recorded common pipistrelle (*Pipistrellus pipistrellus*) during both the walked transects and the static remote detector deployment periods. It is concluded that the relative isolation of the woodland habitat from other suitable areas of scrub/ woodland in the wider local area due to the operational port and other industrial uses, results in low numbers of bats being present.
- 8.6.17 The walked transects also covered the young woodland/ scrub habitat in the East Site due to its connectivity to Long Strip woodland, but again the surveys undertaken to date indicate the presence of only low numbers of common species foraging/ commuting within the habitats.
- 8.6.18 It is evaluated that the habitats within the Order Limit are of Site value to foraging and commuting bats. A bat survey report will be prepared and submitted as a technical appendix to the nature conservation (terrestrial ecology) chapter of the ES. To address the query raised in the Scoping Opinion regarding the potential for bats to be roosting in trees within Long Strip, the bat survey report will also include information on the suitability of trees likely to be impacted in Long Strip for roosting bats.

Otter

- 8.6.19 The desk study returned one recent record of otter within the Desk Study Area (location withheld). Otter surveys of the West Site in 2011 and 2013 (excluding the newer ditches around the new road infrastructure, which had not been created at that time) for a previous planning application (North East Lincolnshire Council planning reference DM/1027/13/OUT) did not record any evidence of this species.
- 8.6.20 It is possible that otters visit habitats within the Site boundary as a place for rest or shelter given that they are likely present in the nearby Humber Estuary, but no sign of their presence or suitable breeding features were identified within terrestrial habitats closest to the estuary (e.g. Long Strip woodland). The large ditch at the base of the flood embankment has the potential to provide foraging habitat for otter (particularly given its proximity and connectivity to the estuary) although no signs of otter were recorded during a survey undertaken in October 2022.

- 8.6.21 North Beck Drain, which runs along the eastern boundary of the temporary compound off Laporte Road, also provides suitable foraging and resting habitat for otter. This watercourse was not surveyed for otter as it is outside the Site boundary and will not be directly impacted.
- 8.6.22 All the other ditches within the Site boundary are considered unsuitable for otter. The ditches within the West Site (both the ditches associated with the original hedgerow boundaries, and those created in recent years as part of the consented development enabling works) are shallow and likely to be predominantly dry most of the time (due to being heavily overgrown with common reed) and therefore would not be expected to support sufficient fish to provide prey for foraging otter. The West Site is surrounded by roads and otters are vulnerable to road traffic injury or fatality, therefore reducing the likelihood of otter being present. No evidence of otter was recorded on these ditches during an otter survey undertaken in October 2022, and it is concluded that the species is likely absent from these parts of the Site boundary.
- 8.6.23 Despite the lack of otter field signs recorded during an otter survey of ditches within the Site boundary undertaken in October 2022, given the recorded presence of otter in the Desk Study Area, it is reasonable to conclude that this species will likely use suitable habitats within and adjacent to the Site boundary on occasion for foraging and passage. This includes North Beck Drain and the large ditch at the base of the flood embankment, as well as the estuary frontage/intertidal mudflats. This is a wide-ranging species that is likely to be found in suitable habitats throughout the Humber catchment, and it is therefore evaluated that these habitats within the Site boundary are of Local value to populations of otter. An otter survey report will be prepared and submitted as a technical appendix to the nature conservation (terrestrial ecology) chapter of the ES.

Water Vole

- 8.6.24 The desk study returned two recent records of water vole within the Desk Study Area, the closest of which was associated with a ditch on the north side of Kings Road approximately 55m north of the Site boundary (West Site).
- 8.6.25 The LWS citation for Laporte Road Brownfield Site LWS refers to a “*thriving population*” of water vole in North Beck Drain¹.
- 8.6.26 Water vole surveys of the ditches on the West Site in 2011 and 2013 (excluding the newer ditches around the new road infrastructure, which had not been created at that time) conducted for a previous planning application (North East Lincolnshire Council planning reference DM/1027/13/OUT) did not record any evidence of this species.

¹ The LWS was originally surveyed by the local nature partnership in August 2008, and was most recently surveyed in May 2015 – it is not stated in the LWS citation on which survey the water vole population was identified.

- 8.6.27 North Beck Drain, which runs along the eastern boundary of the temporary compound off Laporte Road, provides suitable potential habitat for water vole, and it is noted from the desk study that the species has previously been reported from this drain. This drain was not accessible for the water vole survey undertaken in October 2022; however it will not be directly impacted by the Project.
- 8.6.28 The large ditch at the base of the flood embankment has the potential to provide habitat for water vole and has habitat connectivity via the drainage network to North Beck Drain, which has previously been recorded to support water vole. This ditch was surveyed for water vole in October 2022, and evidence of this species was confirmed.
- 8.6.29 All the other ditches within the Site boundary are considered unsuitable for water vole. The ditches within the West Site (both the ditches associated with the original hedgerow boundaries, and those created in recent years as part of the consented development enabling works) are shallow and likely to be predominantly dry most of the time (due to being heavily overgrown with common reed) and therefore would not be expected to support water vole. The ditches were surveyed for water vole in May 2022 and no evidence of water vole was found. These ditches were re-surveyed for water vole in October 2022 and no evidence of the species was found. It is therefore concluded that the species is likely absent from these ditches and they are not considered further in respect of this species.
- 8.6.30 Surveys undertaken in 2022 recorded water vole field signs on the large ditch at the base of the flood embankment. Given that there are desk study records of water vole on North Beck Drain, and the watercourse is connected to the ditch referred to above, it is reasonable to conclude that it also supports this species. Water vole is listed on the Local BAP as 'widespread' within the county, which is noted to be a population stronghold within the UK despite the national trend for a significant decline in this species. It is therefore evaluated that the water vole population is of County nature conservation value. A water vole survey report will be prepared and submitted as a technical appendix to the nature conservation (terrestrial ecology) chapter of the ES.

Great Crested Newt

- 8.6.31 The desk study returned no recent records of great crested newt within the Desk Study Area. Surveys of the wetland complex in the adjacent landfill site (Pond 3) conducted in 2011 and 2013 for a planning application (North East Lincolnshire Council planning reference DM/1027/13/OUT) did not record great crested newt.
- 8.6.32 There are no ponds within the Site boundary. Three ponds have been identified within 250m of the Site boundary, and these are considered in further detail below:
- a. Pond 1 (TA 211 155) – approximately 10m from Site boundary - this is a large fire water storage lagoon within the Associated Petroleum Terminal, which lies to the immediate west of the jetty landfall site. The pond was not accessible for survey, but was viewed from the public footpath along the flood embankment. The pond appears to be partially shaded by woodland

along the southern margins and supports stands of common reed to its margins.

- b. Pond 2 (TA 210 154) – approximately 95m from the Site boundary - this is square lagoon within the Associated Petroleum Terminal. The pond was not accessible for survey or visible from publicly accessible land. The pond appears from aerial photographs to be heavily overgrown with little open water.
- c. Pond 3 (TA 198 141) – approximately 100m from Site boundary - this is a complex of ponds used for drainage within the landfill site that lies to the south of West Site. It is assumed that the waterbodies are relatively transient due to the nature of the site, resulting in change/ disturbance to their location and extent. The ponds were not accessible for survey. As great crested newt was not recorded in previous surveys, and there are major barriers² to great crested newt dispersal onto the landfill site, there is no reasonable likelihood of great crested newt being present at this location.

- 8.6.33 The large drainage ditch at the base of the flood embankment was considered to represent potentially suitable habitat for great crested newt, although saline influences could not be ruled out given its proximity to the estuary and its potential interactions with the marine environment. The ditch was subject to eDNA sampling in June 2022, which returned an ‘inconclusive’ result, which is often a result of chemical contamination of a watercourse. It is concluded that this habitat is likely unsuitable for great crested newt given its likely contamination and saline influence, and therefore it is not considered further in the assessment.
- 8.6.34 The other drainage ditches within the Site boundary are subject to seasonal fluctuations in water levels and have been observed during the course of other surveys to regularly dry out in the Spring/ early Summer. They are therefore unsuitable for breeding great crested newt because they do not regularly hold sufficient water or aquatic vegetation to enable successful breeding activity (the larvae of this species are entirely aquatic until late Summer).
- 8.6.35 There remains the potential for great crested newt to be present in Ponds 1 and 2. However, given the lack of recorded great crested newt populations in the wider local area (within 1km), and the lack of any other ponds within 500m of Ponds 1 and 2 from which the species could potentially have colonised these man-made ponds since they were constructed for the petroleum terminal in the 1960s, it is considered unlikely that they will be present. However, The Applicant

² The following constitute major barriers to dispersal and are unlikely to be traversed by great crested newts: rivers and larger streams; main roads such as A-roads, motorways or any other road with high traffic volume (i.e. high traffic volume during the night when great crested newt are more likely to be dispersing/ commuting); and major urban infrastructure including extensive areas of hardstanding and buildings and dense networks of minor roads with little green space.

will seek access to these waterbodies for survey in Spring 2023 and the results of any surveys will be reported in the ES.

Terrestrial Invertebrates

- 8.6.36 The desk study returned ten recent records of notable species including the white-letter hairstreak butterfly (*Satyrrium w-album*), which is a UK Priority Species.
- 8.6.37 Elm (*Ulmus* spp.) the larval foodplant of white-letter hairstreak was not recorded within or adjacent to the Site, and it is concluded that this species is likely to be absent.
- 8.6.38 A walkover of the habitats within the Site boundary was undertaken by a terrestrial invertebrate specialist in July 2022 and concluded that the habitats were unsuitable to support any significant populations of rare and/ or notable terrestrial invertebrate species.
- 8.6.39 It is concluded that the habitats within the Site boundary are of Site value only to terrestrial invertebrate species, and further detailed invertebrate surveys of the habitats are not merited. No further consideration is therefore given to terrestrial invertebrates in this assessment.

Protected Species Summary

- 8.6.40 A summary of the protected species surveys undertaken to date and the results obtained are presented in **Table 8.5**.

Baseline reports for each species will be prepared as technical appendices to the ES.

Table 8.5: Protected Species Summary and Evaluation

Species	Desk Study Records	Field Survey Result	Evaluation of Nature Conservation Value	Scoped into Assessment?
Badger	No records from study area.	<ul style="list-style-type: none"> No evidence of badger presence. May be present on transient and occasional basis. 	Site	No
Bats	No records from study area.	<ul style="list-style-type: none"> Majority of habitats are of low quality for foraging/ commuting bats due to the open nature of the land and the lack of botanical species diversity to provide large numbers of insect prey. Long Strip woodland is of slightly higher value to foraging/ commuting bats as it provides a sheltered habitat corridor. It might also be utilised by roosting bats. 	Site	Yes
Otter	One record in study area	<ul style="list-style-type: none"> No evidence of this species recorded during survey. 	Local	Yes

Species	Desk Study Records	Field Survey Result	Evaluation of Nature Conservation Value	Scoped into Assessment?
	(location withheld). Likely to be present in Humber Estuary.	<ul style="list-style-type: none"> • Otter assumed likely present occasionally foraging/ on passage on North Beck Drain and ditch at base of flood embankment, as well as along estuary frontage. • All other ditches unsuitable for otter, and no evidence of the species was recorded during surveys. 		
Water vole	One record from Kings Road area approximately 55m from the Site boundary.	<ul style="list-style-type: none"> • Water vole presence confirmed on ditch at base of flood embankment, and likely on North Beck Drain. • All other ditches unsuitable for water vole, and no evidence of the species was recorded during surveys. 	County	Yes
Great Crested Newt	No records within study area.	<ul style="list-style-type: none"> • No ponds within Site boundary. • Ponds 1 and 2 within 250m were not accessible for survey. • Pond 3 (wetland complex in landfill site) was not accessible for survey but was surveyed in 2011 and 2013 and great crested newt was not recorded. • Most ditches within Site boundary are regularly dry in late Spring and are therefore unsuitable for breeding great crested newt. • Species considered likely absent based on previous negative survey results and lack of desk study records. 	Not applicable – likely to be absent	Not applicable – likely to be absent
Terrestrial invertebrates	Ten recent records of notable species including white-letter hairstreak.	<ul style="list-style-type: none"> • Habitats considered to be of low importance for terrestrial invertebrates. 	Site	No

Invasive Non-native Plants

8.6.41 No non-native invasive plant species were recorded within the Site boundary.

Future Baseline

8.6.42 In the short term, in the absence of the Project, and assuming a continuation of port operations associated with the Queens Road and Laporte Road sites, it is concluded that the limited suite of semi-natural habitats recorded would not change significantly. It is therefore reasonable to conclude that there would

continue to be negligible potential for protected species to occur within that part of the Project footprint.

- 8.6.43 In the medium to long term, in the absence of the Project and other development, the habitats within the West Site would be expected to become further overgrown and encroached by the invading willow scrub, reducing the prevalence of grassland habitat. These habitats may provide additional nesting opportunities for breeding birds, and in time, roosting opportunities for bats.
- 8.6.44 Similarly, in the absence of the Project within the East Site, pioneer vegetation communities on the bare substrate areas would become further established and could increase its ecological value in terms of the niches and habitats provided for botanical species and invertebrates. Over an approximate 5 to 15 year timeframe, it is reasonable to assume that a mosaic of habitats may become sufficiently well established to meet all the criteria for open mosaic habitat (OMH) UK Priority Habitat or have otherwise been replaced by other habitat types e.g. loss to scrub invasion. Similarly, areas of scrub and trees would mature further and may provide additional nesting opportunities for breeding birds and roosting opportunities for bats.
- 8.6.45 The woodland within Long Strip is not expected to change significantly over the short-medium term in the absence of the Project, as it is not subject to any substantial management/ commercial timber extraction. Biodiversity enhancement works have taken place previously and maintenance is undertaken as required to maintain clear access to the bridleway. Given the presence of mature ash, it is at potential risk of losing specimens to ash dieback disease, which is spreading in the UK. This may result in the loss of some specimens and an opening up of the canopy layer, which may encourage the development of more diverse ground flora species. The presence of additional deadwood may also attract a greater diversity of terrestrial invertebrates and fungi to increase the biodiversity of the woodland.
- 8.6.46 The continuation of agricultural cultivation of the arable field north of Laporte Road is not anticipated to result in any changes to the ecological baseline of the habitats.

8.7 Development Design and Impact Avoidance

Embedded Mitigation Measures

- 8.7.1 The Project has been designed, as far as possible, to avoid and minimise impacts and effects to terrestrial ecology through the process of design development, and by embedding mitigation measures into the design.
- 8.7.2 The provision of landscape planting to integrate biodiversity features will be considered although onsite opportunities would be very limited. Further consideration will be given to this in the ES.
- 8.7.3 The Project design aims to minimise lighting impacts beyond the Site boundary, for example by directing lighting away from adjacent habitats. This will be in accordance with a lighting design for the Project that will be set out in an Indicative Lighting Strategy.

- 8.7.4 Surface water discharge at the operational Site would be likely attenuated to green-field run-off rates and therefore there would be unlikely to be any changes in the flow rates within the adjacent drainage ditches. However, once the drainage options are fully identified, any potential for adverse operational effects on the ditch habitats and the protected species that they may support (otter and water vole) will be assessed in the ES.
- 8.7.5 Where necessary and following completion of field surveys, mitigation for protected species to ensure legislative compliance would be identified and set out in the ES.
- 8.7.6 The predicted loss of woodland within the Long Strip would require compensatory measures to be agreed with the local planning authority. Policy 41 (1D) of the North East Lincolnshire Local Plan 2018 states that the council will seek to specifically “*minimise the loss of biodiversity features, or where loss is unavoidable and justified ensure appropriate mitigation and compensation measures are provided*”.
- 8.7.7 Opportunities to meet the planning policy and legislative requirements in respect of biodiversity enhancement will be explored as the Project design progresses.

Standard Mitigation Measures

- 8.7.8 Construction of the Project would be subject to measures and procedures defined within a Construction Environmental Management Plan (CEMP), which would be produced prior to the commencement of construction by the Principal Contractor and would be based on, and incorporate, the contents and requirements of the outline Construction Environmental Management Plan (CEMP) which will be submitted with the DCO Application.
- 8.7.9 The CEMP would include measures for prevention of surface and ground water pollution, fugitive dust management and noise prevention or amelioration. Measures to be included in the CEMP include the following:
- a. An Environmental or Ecological Clerk of Works (ECoW) would be present during construction as appropriate to oversee implementation of impact avoidance commitments.
 - b. Precautionary working methods would be adopted to manage any residual risk of protected species being encountered e.g. reptiles, and a Precautionary Working Method Statement (PWMS) would be prepared as part of the CEMP.
 - c. Precautionary measures would be implemented to prevent trapping wildlife in construction excavations, in order to ensure compliance with animal welfare legislation. Any excavations would be covered overnight, or where this is not practicable, a means of escape would be fitted (e.g. battered soil slope or scaffold plank situated at or below a 45 degree angle), to allow animals (e.g. otter, badger, hedgehog, amphibians) to vacate excavations should they fall in.
 - d. Construction temporary lighting would be arranged so that glare would be minimised outside the construction site. Measures to minimise the impact of construction lighting would be detailed in the CEMP.

- 8.7.10 Where mature trees within the Long Strip woodland would be impacted, further inspections and where necessary surveys, would be undertaken prior to any tree felling. Where bat roosts are confirmed as present and cannot be reasonably avoided, an appropriate Natural England European Protected Species Mitigation (EPSM) licensing route would be adopted. This would either be a Project specific EPSM licence or supervision of tree removal by a Bat Class Licenced ecologist, depending on the nature of the roost identified.
- 8.7.11 Decommissioning would apply to the landside elements of the Project and would be undertaken safely, in line with environmental legislation at the time of the works. The required licences and permits would also be acquired. Decommissioning of the landside elements of the Project would likely involve leaving underground pipelines in situ and making them safe. All above ground infrastructure associated with the Project would likely be dismantled and all materials removed. Land would be restored to a satisfactory state.
- 8.7.12 An outline Decommissioning Environmental Management Plan (DEMP) will be produced and submitted with the DCO application – this will detail measures envisaged to be implemented to avoid or reduce impacts during the decommissioning of the landside elements. Details will be included within the ES. At the appropriate point in time, a detailed Decommissioning Plan would be developed by the Applicant in accordance with the outline DEMP, which would address the relevant statutory requirements at the time; address any extant commitments with landowners/ statutory authorities; and take account of any developed technology and good practice.

8.8 Potential Impacts and Effects

- 8.8.1 The preliminary assessment has identified that construction, operation and decommissioning of the Project has the potential to result in adverse effects on terrestrial ecology.
- 8.8.2 This section describes the potential impacts and effects during the construction, operation and decommissioning of the Project on relevant ecological features that can reasonably be identified at this preliminary stage.
- 8.8.3 To enable focussed impact assessment, only impact pathways that have the potential to result in significant effects on ecological features have been screened into the preliminary impact assessment. Those impacts that are considered unlikely to result in significant effects are scoped out and not considered further herein.
- 8.8.4 The preliminary assessment considers development design and mandatory and committed impact avoidance measures as set out in **Section 8.4**.
- 8.8.5 Given that the Project design details are subject to development, the scope of the ecological impact assessment has been identified taking a precautionary (worst case) assessment of impacts.

Construction

- 8.8.6 The following section provides a preliminary assessment of the potential construction impact pathways on nature conservation (terrestrial ecology). The following pathways have been scoped into the impact assessment:
- Loss of woodland habitat within Long Strip (Borough nature conservation value);
 - Loss of bat roosts (Site nature conservation value);
 - Noise/ visual disturbance to otter (Local nature conservation value); and
 - Damage/ loss of habitat supporting water vole and noise/ visual disturbance (County nature conservation value).

Loss of Woodland Habitat

- 8.8.7 Based on the current Project layout, construction of the pipeline from the jetty (and associated maintenance access track/ wayleave) and a new access road to the jetty would result in direct impacts on Long Strip woodland (the section on the north side of Laporte Road), a mature semi-natural woodland of Borough nature conservation value. At present, construction requirements are uncertain, although the aim would be to minimise the construction footprint and permanent land take as far as practicable (refer to the description of the Project in **Chapter 2: The Project**). Regardless of the scale of impact, the impact on the woodland would result in a likely conflict with Local Planning Policy 41, which states that the council will seek to minimise the loss of biodiversity features, in the absence of appropriate mitigation/ compensation.
- 8.8.8 Given current uncertainties over construction requirements, it is not possible to quantify the exact scale of woodland loss within the Long Strip at this stage, but it is expected to be a large part of the woodland. It is however anticipated that some woodland will be retained along the eastern edge. This tree loss would have a large impact on the woodland and the local network of green infrastructure. Mature deciduous woodland is already reduced in extent and fragmented in the county due to the predominance of agricultural cultivation. Further, in this part of North East Lincolnshire there is very little woodland present due to the presence of the operational port of Immingham and the surrounding industrial land use.
- 8.8.9 Dependent on the alignment of the pipeline and access road there could also be a severance impact on the woodland, with an adverse effect on the integrity of the remaining woodland area. Reduction in the woodland size could also expose it to increased impacts from adjacent land-use e.g. agricultural inputs (both biocides and/ or nutrient enrichment) from neighbouring fields, which could affect a greater proportion of the remaining woodland, leading to changes in woodland composition and structure.
- 8.8.10 The permanent loss of woodland of this age and structure could not be compensated over the short to medium term. Instead, compensation would require a timeframe longer than the proposed 25-year operational life of the Project. So, the effect would be permanent for the purposes of this assessment.

- 8.8.11 Pending further Project design and further impact assessment, the precautionary principle indicates potential for construction of the pipeline and jetty access track to compromise the structure and function and/ or conservation status of Long Strip woodland. Therefore, the effect is assessed as meaningful at the Borough level and is therefore defined as moderate adverse (**significant**).

Loss of Bat Roosts

- 8.8.12 It is not known whether the above woodland habitat loss would also result in impacts to bat roosts. Pending further survey to resolve this, it is assumed that some of the trees present could be suitable for use by roosting bats. However, the very limited bat activity recorded during the bat foraging surveys indicates that if roosts are present, they are only likely to be used by small numbers of common bat species i.e. relatively low value roost types (Site value) that could be readily compensated through standard good practice embedded mitigation. However, in the absence of mitigation, it is assessed that the loss of trees supporting a small number of common species of roosting bats of Site value would be minor adverse (**not significant**).

Noise/ Visual Disturbance to Otter

- 8.8.13 Otter is likely to be present on North Beck Drain and the ditch at the base of the flood embankment and which may be affected by noise and visual disturbance arising from Project construction. If this disturbance affects locations used as resting places, then this would result in potential conflicts with legal protections under The Conservation of Habitats and Species Regulations 2017 (as amended). However, this would depend on the magnitude and duration of the disturbance impact as the legislation only relates to levels of disturbance likely to have an adverse impact on the conservation status of the species.
- 8.8.14 Otter is wide-ranging species that is likely to be found in suitable habitats throughout the Humber catchment. Therefore, it is not likely to be specifically dependent, for resting or foraging, on the North Beck Drain and/or the ditch i.e. these habitats are of up to Local value. Even if present, there is likely to remain sufficient unaffected habitat for otter within its wider territory. Applying the precautionary principle, the effect is assessed as meaningful at the Local level and is therefore assessed as minor adverse (**not significant**).

Damage/ Loss of Habitat Supporting Water Vole, and Related Construction Disturbance

- 8.8.15 This species is present on the ditch at the base of the flood embankment and riparian habitats supporting this species may be directly impacted by Project construction activities for the pipeline and jetty access track, which require crossing of this ditch and a potential new culvert to replace the existing culvert.
- 8.8.16 However, direct habitat impacts would likely be minor in extent and not affect large areas of habitat. There could also be indirect impacts on habitats e.g. construction works may temporarily reduce the water supply to ditches leading to the drying out of ditch habitat, and noise and visual disturbance to water voles.

However, these impacts are only likely to displace a small number of individual water voles within the impacted section of the ditch, and not the entire population.

- 8.8.17 North Beck Drain is also likely to support water vole given the habitat connectivity to the ditch at the base of the flood embankment. However, this watercourse will not be directly affected by construction activities within the temporary construction compound off Laporte Road, which borders the watercourse. Standard mitigation during construction will ensure there is no pollution to the watercourses, and will be incorporated into the CEMP. As a result of the flood embankment at this location, there is also a substantial buffer zone between the watercourse and the construction compound, and therefore it is not considered that there is any potential for indirect effects on water vole e.g. due to noise and visual impacts during construction.
- 8.8.18 Applying the precautionary principle, the effect is assessed as meaningful at the County level and is assessed as minor adverse (**not significant**).

Impact Pathways Scoped Out

- 8.8.19 The following impact pathways during Project construction have been scoped out of the preliminary assessment:
- Loss of habitats other than woodland – all other habitats within the Site boundary are of Site nature conservation value only and are not relevant ecological features for the purposes of ecological impact assessment.
 - Lighting disturbance/ disruption to foraging bats – the impacted habitats are used by very low numbers of foraging bats, which are evaluated to be of Site nature conservation value only and are therefore not relevant ecological features for the purposes of ecological impact assessment.
 - Dust emissions – standard measures to control fugitive dust emissions would be incorporated into the CEMP for legislative compliance and therefore there would be no potential for dust smothering to adjacent higher value habitats within Laporte Road Brownfield Site LWS.
 - Road traffic emissions – the predicted number of construction vehicle movements is lower than the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK) screening guidance (see **Chapter 6: Air Quality**), below which a road traffic impact is unlikely to contribute to a significant effect on local air quality.
 - Surface water pollution – standard measures to control surface water run-off during construction would be incorporated into the CEMP for legislative compliance and therefore there would be no potential for pollution to impact adjacent higher value habitats such as North Beck Drain and Laporte Road Brownfield Site LWS.

Operation

- 8.8.20 The following section provides a preliminary assessment of the potential operational impact pathways on nature conservation (terrestrial ecology). The following pathways have been scoped into the impact assessment:

- a. Lighting disturbance to foraging bats (Site nature conservation value).
- b. Noise/ visual disturbance to otter (Local nature conservation value).
- c. Noise/ visual disturbance to water vole (County nature conservation value).

Lighting Impacts on Foraging Bats

- 8.8.21 Operation of the Project requires new external lighting at the East and West Sites. Operational lighting can be detrimental for bats if poorly designed and located in proximity to habitats of importance for bats e.g. important foraging habitats or movement corridors providing access to important foraging habitats. Light spill and glare can deter bats from accessing affected preferred habitats, and by so doing force bats to use habitats that are less suitable for foraging or expend more energy to go around the lit areas to access foraging habitats.
- 8.8.22 Given the existing very low levels of bat activity, the habitats present are of Site value only for bats. Further, there is a commitment to sensitive design of external artificial lighting. Accordingly, there is no reasonable likelihood of an impact on the conservation status of bats as a result of operational lighting.
- 8.8.23 Applying the precautionary principle and taking into account the embedded mitigation for sensitive lighting design, the effect is assessed as meaningful at the Site level and is therefore assessed as minor adverse (**not significant**).

Noise/ visual Disturbance to Otter

- 8.8.24 Routine operational activities are not likely to disturb the Otter. Otter is regularly encountered in association with urban watercourses and areas of industrial activity, indicating that once the peak disturbance arising from construction is completed, otter is likely to habituate to operational regimes. It is therefore assessed that this will result in a negligible effect on otter (**not significant**).

Noise/ Visual Disturbance to Water Vole

- 8.8.25 The rationale for otter is equally applicable to water vole. This species is likely to occur if suitable habitats are present regardless of operational activities on adjacent land. Even if there is operational disturbance in the vicinity of the jetty/ pipeline/ access track at levels that could disturb water voles, this has the potential to result in only very localised disturbance/ displacement of water voles from the eastern end of the ditch at the base of the flood embankment. This would reasonably only impact single numbers of water voles, and it is reasonable to assume that there is sufficient habitat adjacent to the east (on the same ditch) and further east associated with North Beck Drain, to accommodate any individual water voles displaced from the short section within the vicinity of the operational area. It is therefore assessed that this will result in a minor adverse on water vole (**not significant**).

Impact pathways Scoped Out

- 8.8.26 The following pathways during Project operation have been scoped out of the preliminary assessment:

- a. Road traffic emissions – the predicted number of operational vehicle movements is lower than the IAQM and EPUK screening guidance (see **Chapter 6: Air Quality**), below which a road traffic impact is unlikely to contribute to a significant effect on local air quality.
- b. Surface water pollution – standard measures to control surface water run-off during operation are embedded within the Project design for legislative compliance, and therefore there would be no potential for pollution to impact adjacent higher value habitats such as North Beck Drain and Laporte Road Brownfield Site LWS.

Decommissioning

- 8.8.27 The likely impacts arising from Project decommissioning would be of similar magnitude and scale to those described for the construction phase, with the exception that no further woodland loss would be required, although some woodland vegetation may need to be cut back to permit access to remove infrastructure.
- 8.8.28 The potential for adverse decommissioning impacts and effects on habitats and species would be limited by the nature of the proposed decommissioning activities. It is assumed that decommissioning would remove all above ground infrastructure and that buried pipelines etc would be made safe and left in situ. Therefore, there would be no requirement to remove or disturb habitats to remove buried infrastructure, and no species associated with these habitats would be affected.
- 8.8.29 On this basis, there are no likely significant effects on terrestrial ecology anticipated as a result of the Project decommissioning.

8.9 Mitigation and Enhancement Measures

Loss of Woodland Habitat

- 8.9.1 In order to mitigate for tree loss from the Long Strip and elsewhere, the following approach is proposed:
- a. Tree planting within some peripheral areas around the operational sites of the hydrogen production facility, although again these opportunities will be very limited; and
 - b. Opportunities to be explored for potential off-site tree-planting within areas to be agreed with local bodies/organisations.
- 8.9.2 A habitat compensation strategy will need to be agreed with the local planning authority to ensure compliance with Local Planning Policy 41, which states that the council will seek to “..*minimise the loss of biodiversity features, or where loss is unavoidable and justified ensure appropriate mitigation and compensation measures are provided.*”.
- 8.9.3 Mitigation will be implemented during construction to ensure the protection of retained trees with appropriate root protection areas, and these will be clearly marked in the CEMP.

Loss of Bat Roosts

- 8.9.4 Should a bat roost(s) be identified in trees to be lost/ damaged in Long Strip woodland, a European Protected Species Mitigation (EPSM) licence would be needed from Natural England to ensure compliance with the Habitats Regulations to permit the loss of a roost(s). However, it is reasonable to assume that a licence would be granted by Natural England for low value roosts i.e. those used by small numbers of common species of bats. Standard mitigation would be employed during the construction phase as necessary to meet the terms of the EPSM licence e.g. tree removal in the winter months (which would also be required as standard mitigation for breeding birds).

Damage/ Loss of Habitat Supporting Water Vole

- 8.9.5 A licence to damage/ disturb water vole habitat will be required from Natural England for works to the drainage ditch at the base of the flood embankment. Given the limited extent of the works (<50 m of ditch bank affected), it is considered that the activities would fall within the remit of undertaking works under the supervision of an ecologist with a Natural England Class Licence.
- 8.9.6 This requires appropriate seasonal timing of habitat clearance works to displace water voles prior to damage/ destruction of habitats, and as such initial vegetation clearance works would be limited to the period 15 February to 15 April. Subsequent works to maintain the cleared area can be undertaken after this initial seasonally restricted clearance period to ensure the habitats remain unsuitable for water vole prior to the commencement of construction. Construction works to the ditch are not seasonally constrained following the completion of the initial vegetation clearance works under the Class Licence, assuming the banks are maintained as unsuitable for water vole in the period between the initial clearance and the commencement of construction activities at this location.
- 8.9.7 A water vole method statement would be prepared as part of the CEMP.

8.10 Preliminary Assessment of Residual Effects

Construction

Loss of Woodland Habitat

- 8.10.1 The permanent loss of woodland of this age and structure could not be compensated over the short to medium term. Instead, compensation would require a timeframe longer than the proposed 25-year operational life of the Project. So, the loss of habitat would be permanent for the purposes of this assessment even with compensation. It is therefore assessed that the residual effect remains moderate adverse (**significant**).

Loss of Bat Roosts

- 8.10.2 The requirement for an EPSM licence would provide a legally enforceable mechanism to ensure that there is no significant adverse effect on bat populations. The required mitigation under this licence would involve routine measures that can be expected to be successful.

- 8.10.3 On this basis, given legal requirements would need to be and can be met, the potential residual effect on roosting bats is precautionarily assessed as remaining as minor adverse (**not significant**). This is on the basis that the mitigation strategy will ensure compliance with UK Wildlife Legislation but will not reduce the magnitude or severity of the impact on individual roosting bats.

Noise/ Visual Disturbance to Otter

- 8.10.4 No mitigation requirements have been identified. The residual effect on otter is therefore assessed as meaningful at the Local level and is minor adverse (**not significant**).

Damage/ Loss of Habitat Supporting Water Vole, and Related Construction Disturbance

- 8.10.5 The requirement for a Natural England licence would provide a legally enforceable mechanism to ensure that there is no significant adverse effect on water vole populations. The required mitigation under this licence would involve routine measures that can be expected to be successful.
- 8.10.6 On this basis, given legal requirements would need to be and can be met, the potential residual effect on the conservation status of water voles is precautionarily assessed as remaining as minor adverse (**not significant**). This is on the basis that the mitigation strategy will ensure compliance with UK Wildlife Legislation but will not reduce the magnitude or severity of the impact on individual water voles.

Operation and Decommissioning

- 8.10.7 No residual operational or decommissioning effects on terrestrial ecology receptors are predicted.

8.11 Summary of Preliminary Assessment

- 8.11.1 **Table 8.6** provides a summary of the likely significant terrestrial ecology effects associated with the Project.
- 8.11.2 This preliminary assessment identifies limited potential for significant adverse effects on terrestrial ecology features. This is because the Project generally coincides with land of low biodiversity value, and consequently there is (a) little potential for protected and notable species to occur, and (b) surveys have concluded the minimal presence or likely absence of such species
- 8.11.3 Only one potentially significant (moderate adverse) terrestrial ecology effect is predicted based on current information regarding Project construction and design layout. This relates to the permanent loss of UK Priority deciduous woodland habitat during Project construction as a result of the routing of the pipeline and jetty access road through Long Strip woodland. This impact would result in a potential conflict with planning policy, as well as being adverse for nature conservation at the Borough level. The loss of parts of this mature woodland, if it cannot be avoided, would need to be compensated. However, full compensation would not be achieved over the operational life of the terrestrial elements of the

Project (the hydrogen production facility), so the residual effect would remain significant over the long term.

- 8.11.4 No other likely significant effects on designated nature conservation sites, habitats or species are predicted during Project construction, operation or decommissioning.

Table 8.6: Summary of Preliminary Assessment – Potential Likely Significant Effects

Receptor	Impact Pathway	Potential Effect Significance	Mitigation Measures	Potential Residual Effect	Confidence
Construction Phase					
Mature deciduous woodland	Pipeline and jetty access road construction resulting in loss of/ damage to woodland habitat	Significant	Compensation for loss of/ damage to woodland habitat to be agreed with the local planning authority where it cannot be reasonably avoided.	Significant	High
Bat roosts	Loss of minor tree roosts (if present) during pipeline construction	Not significant	Micro-siting options to be considered to avoid roost loss. EPSM licence if roost loss cannot be avoided.	Not significant	High
Otter (foraging)	Noise and visual disturbance	Not significant	Buffer zone from edge of North Beck Drain. Sensitive temporary lighting design to minimise spill (CEMP).	Not significant	High
	Changes to hydrology of ditches	Not significant	Embedded mitigation to reduce run-off to green field rates.	Not significant	High

Receptor	Impact Pathway	Potential Effect Significance	Mitigation Measures	Potential Residual Effect	Confidence
Water vole	Habitat damage/ loss	Not significant	Displacement of water voles (if confirmed present) from affected habitats under Natural England Class Licence.	Not significant	High
	Noise and visual disturbance	Not significant	Buffer zone from edges of North Beck Drain. Sensitive temporary lighting design to minimise spill.	Not significant	High
Operational Phase					
Bats (foraging)	Lighting disturbance	Not significant	Sensitive permanent lighting design to minimize spill	Not significant	High
Otter (foraging)	Noise and visual disturbance	Not significant	Buffer zone from edge of North Beck Drain. Sensitive permanent lighting design to minimise spill.	Not significant	High
Water vole	Noise and visual disturbance	Not significant	Buffer zone from edge of North Beck Drain. Sensitive permanent lighting design to minimise spill.	Not significant	High

Receptor	Impact Pathway	Potential Effect Significance	Mitigation Measures	Potential Residual Effect	Confidence
Decommissioning Phase					
Otter (foraging)	Noise and visual disturbance	Not significant	Buffer zone from edges of watercourses. Sensitive temporary lighting design to minimise spill.	Not significant	High
	Changes to hydrology of ditches	Not significant	Mitigation measures to be identified as necessary following completion of further assessment work.	Not significant	High
Water vole	Habitat damage/ loss	Not significant	Displacement of water voles (if confirmed present) from affected habitats under Natural England Class Licence.	Not significant	High
	Noise and visual disturbance	Likely not significant	Buffer zone from edges of watercourses if water voles confirmed present. Sensitive temporary lighting design to minimise spill.	Likely not significant	High

8.12 References

- Ref 8-1 The Conservation of Habitats and Species Regulations 2017 (as amended) (SI 2017/1072). London: The Stationery Office.
- Ref 8-2 Wildlife and Countryside Act 1981 (as amended) (SI 1981 c. 39). London: The Stationery Office.
- Ref 8-3 Natural Environment and Rural Communities Act 2006 (SI 2006 c. 16). London: The Stationery Office.
- Ref 8-4 Protection of Badgers Act 1992 ((SI 1992 c. 51)). London: The Stationery Office.
- Ref 8-5 The Hedgerow Regulations 1997 (SI 1997/1160). London: The Stationery Office.
- Ref 8-6 The Invasive Alien Species (Enforcement and Permitting) (Amendment) Order 2019 (SI 2019 No. 1213).
- Ref 8-7 Department for Transport (2012) National Policy Statement for Ports. London: The Stationery Office.
- Ref 8-8 Department of Energy & Climate Change (2011) Overarching National Policy Statement for Energy (EN-1). London: The Stationery Office.
- Ref 8-9 Ministry of Housing, Communities & Local Government (2021) National Planning Policy Framework. London: Ministry of Housing, Communities and Local Government.
- Ref 8-10 Natural England and Defra (2022) Protected Species and Development: Advice for Local Planning Authorities.
- Ref 8-11 Forestry Commission and Natural England (2018). Ancient woodland, ancient trees and veteran trees: protecting them from development
- Ref 8-12 North East Lincolnshire Council (2018) Local Plan 2013 to 2032 (Adopted 2018).
- Ref 8-13 Lincolnshire Biodiversity Partnership (2011) Lincolnshire Biodiversity Action Plan 2011-2020 (3rd Edition). Horncastle: Lincolnshire Biodiversity Partnership.
- Ref 8-14 Natural England (2022) Multi-Agency Geographic Information for the Countryside (MAGIC) website. Available online at <https://magic.defra.gov.uk/>
- Ref 8-15 Natural England (2022) Designated site website. Available online at <https://designatedsites.naturalengland.org.uk/>
- Ref 8-16 Joint Nature Conservation Committee (2016) Handbook for Phase 1 habitat survey – a technique for environmental audit. Peterborough: Joint Nature Conservation Committee.
- Ref 8-17 Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). London: The Bat Conservation Trust.

Ref 8-18 Dean, M., Strachan, R., Gow, D. & Andrews, R., (2016) The Water Vole Mitigation Handbook. London: The Mammal Society.

Ref 8-19 Amphibian and Reptile Groups of the United Kingdom (2010) ARG UK Advice Note 5 Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom.

8.13 Abbreviations and Glossary of Terms

Table 8.7: Glossary and Abbreviations

Term	Acronym	Meaning
Biodiversity Action Plan	BAP	A county (Lincolnshire) strategy for biodiversity conservation, defining the work needed to deliver agreed actions and targets for priority habitats and species and locally important wildlife and sites.
Construction Environmental Management Plan	CEMP	A Construction Environmental Management Plan describes the specific mitigation measures to be followed by the appointed construction contractor to reduce potential environmental and nuisance impacts.
Chartered Institute of Ecology and Environmental Management	CIEEM	The professional body which represents and supports ecologists and environmental managers.
Deoxyribonucleic acid	DNA	The hereditary material (genetic code) in humans and most other organisms.
Ecological Impact Assessment	EclA	A process of identifying, quantifying and evaluating potential effects of development-related or other proposed actions on habitats, species and ecosystems.
Environmental DNA	eDNA	Environmental DNA is DNA shed by organisms and which can be collected from environmental samples such as soil or water,. Various species can be surveyed for using eDNA based methods, but it is a particularly common method for great crested newt survey.
Environmental Impact Assessment	EIA	The statutory process through which the likely significant effects of a development project on the environment are identified and assessed.
Environmental Statement	ES	A statutory document which reports the EIA process, produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations.
Environmental Protection UK	EPUK	Environmental Protection UK is a national charity that provides expert policy analysis

Term	Acronym	Meaning
		and advice on air quality, land quality, waste and noise.
European Marine Site	EMS	Areas at sea, partly or completely covered by tidal water, which are protected under The Conservation of Habitats and Species Regulations 2017 (as amended). These include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).
European Protected Species Mitigation Licence	EPSM licence	A type of licence obtained from the Regulatory Authority (in England this is Natural England) if an activity is likely to affect a European Protected Species (EPS) in a manner that will result in an offence under The Conservation of Species and Habitats Regulations 2017 (as amended).
Institute of Air Quality Management	IAQM	The professional body for air quality practitioners.
Impact Risk Zone	IRZ	The Impact Risk Zones (IRZs) are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. The IRZs also cover the interest features and sensitivities of European sites, which are underpinned by the SSSI designation and "Compensation Sites", which have been secured as compensation for impacts on European /Ramsar sites.
Lincolnshire Environmental Records Centre	LERC	The Lincolnshire Environmental Records Centre is a commercial data provider, providing records of protected species, habitats and sites within Lincolnshire.
Local Wildlife Site	LWS	Sites that support habitats and/or species of regional importance. They are designated by the Lincolnshire Local Sites Partnership and protected through national and local planning policy.

Term	Acronym	Meaning
Multi-Agency Geographic Information for the Countryside	MAGIC	The MAGIC website provides authoritative geographic information about the natural environment from across government. It is presented in an interactive map which can be explored using various mapping tools that are included. Natural England manages the service under the direction of a Steering Group.
Open Mosaic Habitats	OMH	This priority habitat consists of a patchwork of bare, previously disturbed ground and vegetated areas which can be in the process of changing from one vegetation type to another. Typical of this habitat are areas of grassland, tall ruderal plant species, damp areas, patches of scrub and invasive species, both native and non-native. The previous disturbance is often industrial, such as mining, although the habitat can include old quarries or building sites, areas of spoil from old coal mines, disused railway lines and urban brownfield land.
Preliminary Ecological Appraisal	PEA	The term used to describe a rapid assessment of the ecological features present, or potentially present, within a site and its surrounding area (the zone(s) of influence in relation to a specific project (usually a proposed development).
Preliminary Environmental Information	PEI	The information referred to in Part 1 of Schedule 4 of the EIA Regulations that has been reasonably compiled by the applicant and is reasonably required to assess the environmental effects of a project.

Term	Acronym	Meaning
Site of Special Scientific Interest	SSSI	Sites of Special Scientific Interest (SSSIs) are statutory nature conservation designations notified under section 28 of the Wildlife and Countryside Act (1981). They encompass areas of land and water that are considered to best represent our natural heritage in terms of their: <ul style="list-style-type: none"> - flora – i.e. plants - fauna – i.e. animals - geology – i.e. rocks - geomorphology – i.e. landforms - a mixture of these natural feature
Special Area of Conservation	SAC	Sites designated under The Conservation of Habitats and Species Regulations 2017 (as amended) for the protection of habitats and species populations considered to be of international (European) importance.
Special Protection Area	SPA	Sites designated under The Conservation of Habitats and Species Regulations 2017 (as amended) for the protection of bird populations of international (European) importance.
Tree Preservation Order	TPO	An order made by a local planning authority, under the Town and Country Planning Act 1990, in respect of trees or woodlands, The principal effect of a tree preservation order is to prohibit the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of trees without the local planning authority's consent.